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Special Issue on

EMERGING TRENDS IN MULTI DISCIPLINARY RESEARCH

A PEER REVIEWED, REFEREED &
QUARTERLY JOURNAL WITH IMPACT FACTOR

ROOTS



INTERNATIONAL JOURNAL OF
MULTIDISCIPLINARY RESEARCHES

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Dr. M. Davamani Christofer

Dr. J. Helen Ratna Monica

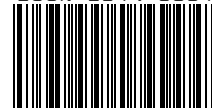
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ROOTS International Journal of Multidisciplinary Researches (RIJMR) is a peer reviewed, refereed and quarterly journal. The Journal is assigned by *National Science Library / NISCAIR, New Delhi* and powered & published by *Center for Resource, Research and Publication Services (CRRPS) Tamil Nadu - India*. The journal provides a valid space for academics, researchers and professionals to share the latest developments and advancements in Multidisciplinary Subjects. It aims to foster the exchange of ideas on a range of important international subjects and to provide stimulus for research and further developments and updating of international perspectives. The international perspective is further enhanced and enriched by the geographical spread of the aspiring contributors.

There are many practical reasons to publish research articles. We do not really understand what we have discovered until we write it up. When we submit an article for publication, we get back critical reviews from colleagues and readers, which undoubtedly can often be very helpful and sometimes, they point out our mistakes or shortcomings in the applied logic therein. When we share the results of our efforts through publication, we become a part of the scientific community. We benefit from the exchange of ideas and learn about what others have already done. We can often establish valuable collaborations with people on the other side of the planet even without seeing them. If everybody kept their results and ideas secret, the progress of science would slow to a crawl. If we want to benefit from the work others have done before, it is only fair that we contribute our bit too. The process of research publication creates a mindset that is vital for research progress.

The scope of the Journal is to facilitate researchers, scholars and academics to come on a strong potential platform and share their findings with magnanimity and openness and thereby we may become instruments of a more refined and enriched world order.

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ROOTS International Journal of Multidisciplinary Researches (RIJMR) is a peer reviewed, refereed and quarterly journal. The journal provides a space for academics, researchers and professionals to share the latest developments in Multidisciplinary Subjects. This journal is an excellent forum, for intra-disciplinary and interdisciplinary study of various aspects of Arts, Science and Professional Studies, as an intellectually stimulating open platform for academicians, consultants, researchers, and business practitioners to share and promulgate their research works. Journal of Roots seeks to publish research findings and articles that would promote research awareness and dissemination knowledge.

Call for papers

The journal aims to publish original research articles and reviews of theses from all fields. The official language of the Journal is English (If needed, articles may be published in their subject languages). The Journal invites Empirical, Conceptual papers, Case studies, PPP model, Meta analysis, and Field researches from leading academicians, Business peoples, Corporate Sectors, researcher scholars and students from academic institutions, research organizations, non-governmental organizations (NGOs), corporate sectors, civil societies, industries, and other enthusiastic writers from India and abroad.

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The papers should be research oriented or related to it, be original and comprise previously unpublished material. Papers must send an abstract of the paper not exceeding 300 words, papers should be typed in MS Word Format with font size 12 Times New Roman. The full paper must not exceed 3000 words, including tables and references. The manuscript should be organized to have Title page, Abstract, Keywords, Introduction, Material & Methods, Findings & Results, Interpretation & Discussion, Conclusion and References. All quoted, reproduced material should be categorically referenced. Other than this, all contents should be original – authors own words, ideas, findings and arguments. Tables and figures should appear in the document near / after where they are referenced in the text. Photographs must be sharp, and exhibit good contrast. All figures and tables must have a caption that is intelligible without reference to the text. Correct and complete referencing of quoted and reproduced material is the obligation of the author. In the text, references should be inserted in parentheses in full. Papers must be sent by e-mail and a hard copy by post.

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Greetings from the Principal of the American College



It gives me immense and immeasurable pleasure to share with you, as the Principal of 137 year old college, some of my thoughts on the genesis of the four day International Conference on *Emerging Trends in Multidisciplinary Research* that the American College is organizing in Singapore in association with Roots International Journal of Multidisciplinary Researches and supported by Singapore Tamil Teachers' Union.

It is our privilege that the President of the Governing Council of the American College **Rt. Rev. Dr. M. Joseph** is inaugurating the conference while the Honorable Vice Chancellor of Alagappa University **Dr S. Subbiah** is delivering the valedictory address at the conference. I learn that nearly 120 short-listed research articles are being presented and deliberated at the conference.

The American College started a unique academic practice in January 2016 by organizing what is popularly known as FIT (Faculty International Trip) with a view to exposing the faculty to international cultural and social practices. Meanwhile, the idea of combining socio-cultural exposure with academic practice was mooted by extending the same opportunities to the faculty in other institutions across the country. It resulted in the concept of international conference organized abroad. It was supported by Roots International and Singapore Tamil Teachers' Union this year.

No national or international conference is complete without the publication of its proceedings preferably in a journal that enjoys both impact factor value and the approval of the University Grants Commission. Individual contributors would find it extremely useful for their API score to move up in their academic journey. Incidentally, their knowledge is being shared throughout the scholarly community since it is being disseminated online through an indexed journal.

I take this opportunity to wish the organizing secretary Dr. J. Helen Ratna Monica and conveners of the Conference all success in their future endeavours as well.




Dr. M. Davamani Christofer

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The American College has many firsts to its credit. It has established its name and place in higher education at the national level. But it is also enthusiastic about taking baby steps into a variety of new ventures. One such venture is hosting an international conference overseas. Over its 136 year old history, the American College has hosted/conducted several international events in different disciplines on campus. But this is the very first time the college community has envisioned the possibility of planning and conducting a large scale conference in a totally different academic and cultural environment.

It has been my proud privilege to serve as the organizing secretary of this mega, multidisciplinary international conference. Planning and organizing this academic meet has been a big learning experience for me. It has also been a joyful experience of bringing alumni together, bringing 120 researchers from 7 disciplines from three countries together. 95 research papers received so far have already been vetted, edited and published in Roots International Journal with the ISSN: 2349-8684.

For some of the participants, it is a first time presentation in an international conference; for some it is also a first time overseas trip. The American College is delighted to create this exciting opportunity and experience for our enthusiastic researchers. Singapore is the welcoming location this time! We look forward to many more such coming together of ideas, disciplines, cultures and people. My God guide us in all our new academic ventures.

EDITORIAL NOTE

Knowledge has no limits. Nothing gains its meaning in isolation. A wholistic personality is imbibed with knowledge in varied disciplines. In this modern era of Research where every discipline is focusing on specialisations, the Four-day International Conference on "Emerging Trends in Multidisciplinary Research" held on 27, 28, 29 & 30 December 2017, organised by The American College, Madurai, Tamil Nadu, India in association with Roots International Journal of Multidisciplinary Researches has enabled researchers of multiple disciplines gather under one shell and increase their stock of knowledge at Singapore, supported by Singapore Tamil Teachers' Union (STTU). This conference serves as a tool to transmute knowledge of the varied disciplines across the globe.

This Journal is a compendium of the discussions, sharing, interactions and feedback of the platform staged practically to express the views of the authors of the papers as the contents are purely their own views based on their knowledge, intake and initiations grabbed and experienced empirically and orally besides reading of the thematic definitions explanations from various sources and resources. Hence it is published here as their own originals for intra and inter-personal discussions.

About 120 research articles are selected for presentation and 95 articles are short-listed for publication by the review panel. This journal comprises 95 research articles on multiple disciplines like Arts, Humanities, Sciences and Technologies. The 28 articles from Commerce, Management and Economics; 45 articles from English, Education, Journalism, Social Science and Tamil; and 22 articles from Mathematics, Physics, Chemistry, Botany, Zoology, Computer Science, Bio-Chemistry, Information Technology and Visual Communication reflect the innovative research initiatives of the researchers across the globe.

We are indebted to all the Professors, Research scholars, Students and other well-wishes who have contributed their papers and efforts with full commitment and conviction to make this publication meaningfully purposeful and successful with knowledge value and thematic conceptual credit. At this Moment we make our wish to conference team and all faculty fraternity of American College for this Successful Academic event backed by their wholehearted contributions and supports, which exhorted us at large that are really appreciably commendable.

We wish you a happy reading.

Editors



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Academic Excellence in research is a continual process. The Roots motivates researchers in all aspects of encounters across disciplines and research fields, by assembling research groups and their projects, supporting publications and organizing programmes. Internationalisation of research work is what the journal seeks to develop through enhancement of quality in publications, visibility of research by creating sustainable platforms for research and publication, and through motivating dissemination of research findings.

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CONTENTS

S. No	Title	Page. No
1	Quantum Approach to Economic Phenomena Dr.K.Gnanasekar	01
2	Extraction and Characterization of Nanohydroxyapatite from waste Shell for Biomedical Applications G.Suresh, V.Ramasamy, P.Anand & A.Sindhya	03
3	Synthesis and Optical Characterization of Silver Doped Hydroxyapatite/TiO ₂ Nanoparticles K.Neyvasagam, A.Mariappan, M.Sumathi & R.Rajeswara Palanichamy	09
4	Synthesis and Characterization of Cu-ZnO thin Films by Spray Pyrolysis A.Jacquiline Regina Mary & S.Arumugam	13
5	Magnetic Field Dependent Raman gain for the Charged Excitons in a CdTe/ZnTe Quantum Dot P.Sujanah & A.John Peter	18
6	Potentiality of Hyaluronidase in Bungarus Cealureus Venom Dr.Sheeja S.Rajan, Albert Rajendran & J.P.Jose Merlin	23
7	A Novel and Facile Procedure for Synthesis Graphene Oxide & Reduced Graphene Oxide Polysulfone Nanocomposite Pellets J.Helen Ratna Monica	28
8	Study of Oxidation of Organic Sulphur Containing Compounds by Carboxylato bound Chromium (V) Complex M.R.K.Hemalatha & Dr.T.K.Ganesan	33
9	One Pot Synthesis of Propargylamines S.Aarthy & K.John Adaikalasamy	39

10	New Polydentate N-Donor Ligand from Heterocyclic Aldehyde and 2,4-Bis(Hydrazinyl)-1,3,5-Triazine and its Transition Metal (II) Complexesssss M.Vathanaruba & P.Tharmaraj	42	23	Startups for Sustainable Growth–Ease of Doing Business Dr.R.Kalidoss	111
11	Edge Detection using Fuzzy Logic in MAT lab Ms.V.S.Selvi	47	24	A Study on Visitors' Perception towards Environmental Impacts of Tourism with Reference to Madurai City R.Faridha	116
12	A Transport Model for Magnetic Drug Targeting using Carbon Nano Tubes Dr.C.R.Uthra	53	25	Green Banking in India-Initiatives and Challenges Dr.K.Karthikeyan	121
13	A Preliminary Study on Avifaunal Species Diversity of the American College, Madurai, Tamilnadu, India M.Rajesh, A.Joseph Thatheyus & C.Kumaresan	58	26	Global Strategy for Customer Satisfaction in E-Marketing System S.Sathya	128
14	Mixture Toxicity of the Heavy Metals, Nickel and Hexavalent Chromium to the Fresh Water Fish, Cyprinus Carpio Communis A.Joseph Thatheyus & M.Rajesh	65	27	Work-Life Balance among Married Working Mothers in Aided and Non – Aided Higher Educational Institutions: Emerging HRM Interventions Dr.(Ms)M.Jegadeeswari & Mr.P.K.Sriram	132
15	Basis and Strategies for Tapping Useful Phytochemicals for Health Care G.Grace Lydial Pushpalatha & G.C.Abraham	70	28	Banking on Indian Economy V.Suganya	140
16	Hiding Finger Print in Images using Interpolative Absolute Moment Block Truncation Coding I.Kaspar Raj	78	29	Students' skill in the Usage of Computer (with Special Reference to Thiruppattur Taluk of Sivagangai District) Dr.P.Kasivairavan	142
17	Collaborative Recommender System for Online Users using Map Reduce Algorithm in Big Data Dr.R.Suguna & Dr.S.Manimekalai	82	30	A Study on Factor Influencing the Consumer in Choosing E-Tailing Dr.RM.Chandrasoodan	148
18	Concept Attainment through Computer Adaptive Testing (CAT) can Overcome the Barriers Like Locality of the Institution Dr.R.Daphine & Mr.A.G.K.Daniel	88	31	Functional Aspects of Unorganised Grocery Business in Madurai District of Tamilnadu Dr.R.Mary Sophia Chitra	155
19	Precision Agriculture System using Wireless Sensor Network: A Study J.Thresa Jeniffer	93	32	Prospects of Kerala Tourism an Economic Analysis Dr.M.Sumathy & K.P.Vipin	161
20	Use of e-Resources by Media Students at the American College, Madurai : A Case Study Mr.D.Gideon Premsingh	97	33	Health Tourism, a Breakthrough in Service Industry – With Reference to India J.Justin Manohar	166
21	The Role of Group Insurance for Students in Educational Institution in India Dr.A.Martin David & Dr.R.Kalyan Kumar	102	34	A Study on Use of Social Media among College Students in Madurai City Mrs.D.Kanakavalli	170
22	Service Quality in E-Banking – A Study of State Bank of India in Madurai District K.Bagavathi	106	35	Consumer Perception towards Online Shopping A.Emimol Grace	175
			36	India Singapore Trade Relations in the Aftermath of Comprehensive Economic Cooperation Agreement – An Overview Dr.A.V.Aruna Kumari	179

37	A Study on Waste Management in India: Challenges and Opportunities D.Angel	185	50	Socio-Political and Diasporic Elements in Rohinton Mistry's <i>Family Matters</i> Mrs.M.Sathya & Dr.R.Latha Devi	247
38	Impact of Global Economic Crisis on Indian Economy Dr.S.Jeyarani	190	51	Disharmony and Dissolution of Marriage in Nayantara Sahgal's <i>Storm in Chandigarh</i> Dr.J.Sobhana Devi	251
39	The Socio-Economic Barriers of an Aboriginal Community and their Empowerment in Australia N.Bairavi	195	52	Role of Culture and Society in the Subjugation of Women: A Study of the Select Indian Female Protagonists Dr.P.Prasanna Devi	255
40	Need for a Stronger IPR Regime to Boost Innovations Prof.V.Manickavasagam	198	53	Anti-Colonialism and Communal Violence in Manohar Malgonkar's <i>A Bend in the Ganges</i> Mrs.K.Rama Jeyalakshmi	260
41	The Effect of Occupational Stress on Managerial Skills of College Teachers Working in Ramnad and Sivaganga Districts in Tamilnadu, India Dr.J.Parasuraman & R.Srivathsan	202	54	The Unappeasable Thirst for Spirituality D.Ans Angel	264
42	Performance Management System: A Key for Organisational Effectiveness Dr.K.Uthayasuriyan & Dr.K.Anuradha	206	55	Analysing the Authors' Style and Purpose: A Reading of Vijay Tendulkar, Manjula Padmanabhan and Mahesh Dattani's Plays Ms.A.Rajina Banu & Dr.S.Subbiah	266
43	A Study on Work Family Conflict and Stress among Dual Career Couples in Madurai Dr.S.Rajarajeswari & Mr.K.Srinivasan	210	56	A Study on the Concept and Nature of Rebellion as Portrayed in R.K.Narayan's <i>The Dark Rooms</i> Dr.M.R.Kumaraswamy	271
44	Relationship between Emotional Intelligence, Self Efficacy and Performance among College Students Dr.P.R.Shini & Mr.S.Sathya Dev	216	57	Streaks of Living Past in the Poetry of Nissim Ezekiel Dr.M.Natarajan	275
45	Strategic Marketing Innovations for Hospitality Entrepreneurs Dr.S.Amutha	223	58	The Art of Rhetoric that Emancipates Humanism with Special Reference to Paulo Coelho's Manuscript Found in Accra and Kahlil Gibran's <i>The Prophet</i> M.J.Roshini	281
46	Innovational HR Techniques for Business Excellence in Banking Sector Dr.A.Vanitha	229	59	The Problem of Identity Crisis in the Works of Aravind Adiga, Nayanthara Sahgal and Kiran Desai Mr.M.Karthikumar	284
47	Dairy Industry in India- An Overview Dr.U.Jerina Bi & Mrs.T.R.Anandhi	234	60	Assessment of Emotion Regulation Difficulties among Prospective Female Teachers Mrs.N.G.Jyothsna	287
48	A Study on Knowledge Management Practice in Public and Private Sector Banking Services B.Ramdiwakar	238	61	Loman and Mohan: A Microcosmic Comparative Study of the Western and the Eastern Psychology R. Nandhini & S.Kanagalatchimi	291
48	Socio-Psychological Concerns in the Tribal Cultural Continuum in India G.Vidhya Lakshmi	241	62	Eugene O' Neill's <i>Anna Christie</i> : A Critical Reading D.Pandiselvi	295
49	No More Marginalized, towards Emancipation as Mirrored in P.Sivakami's <i>The Grip of Change</i> and Bama's <i>Karukku</i> Dr.B.Siva Priya	244	63	Akam Poems & Shakespearean Sonnets: Divergent Depictions of Identical Concepts B.S.Sindamani & T.Sugadev	297

64	A Theoretical Approach on Acquisition of Lexico-Syntactical Items to College Students of English Classrooms through Virtual T20 Cricket Game: With Special Reference to the Use of Adjectives and Adverbs in Degrees of Comparison Dr.C.S.Senthil	301	77	Emotional Intelligence, Aptitude and Achievement in Commerce of Higher Secondary Students Dr.K.Govindarajan	349
65	Self-Scourge and Soul-Satiety in Shashi Deshpande's Roots and Shadows K.P.Vigneswari	305	78	E-Teaching Methodologies and Its Impact on New Millennium Learners- A Perpetual Study among UG Students Dr.R.Lakshmi	356
66	Bharathiyar is a Romantic Poet: An Instance from <i>Kannamma Yen Kathali</i> (<i>Kannamma My Lover</i>) R.Minnal	309	79	A Study on Stress-Burnout and Study Engagement of Trainee Teachers Mrs.S.Georjeena	360
67	Mother's Sacrifice and Hunger of Love in Toni Morrison's <i>A Mercy</i> L.Sofia	311	80	Effectiveness of Inclusive Educational Practices for Students with Special Needs in Sarva Shiksha Abiyan Dr.J.Sujathamalini & Dr.K.Gunasekaran	363
68	Metaphysical Existence in Kate Atkinson's <i>A God in Ruins</i> S.Daffny Orangemary	314	81	Knowledge on Special Education An Approach for Teacher Quality and Inspiration Dr.P.B.Beulahbel Bency	368
69	Threatened Natures: Celebrating the Fabrics of Non-Anthropocentric Humanism B.Gnana Bharathi	318	82	Customer Perception and Satisfaction on E-Service Quality- A Structural Equation Modelling Approach B.Dhana Lakshmi & S.Padmavathi	371
70	Dogme ELT Practice for Enhancing Conversation Dr.J.John Sekar	321	83	Capability Education Program: A Device and Tool to Interface Learning for Knowledge Society G.C.Abraham & G.Grace Lydial Pushpalatha	380
71	English Language Communication Needs for Commerce/Business Administration A.Sherlin Raja	327	84	Augmented Reality (AR): The Emerging Trends in Mass Media N.Ragavan	387
72	Reading in the Age of Watching: A Study on Students' Attitude J.Jehoson Jiresh	330	85	Subaltern Approach: With Special Reference to History of Mahad Choudar Tank Satyagraha (Maharashtra) Dr.Suvarna S. Jadhav	391
73	Enduring the Unendurable Patriarchal Despotism: A Study of Female Protagonists in Bapsi Sidhwa's the Pakistani Bride and Khaled Hosseini's A Thousand Splendid Suns Dr.G.Rajesh Kumar	334	86	Epidemic Diseases and Vaccination in Thane District During British Rule 1800 – 1900 Dr.Rekha V. Gore	395
74	Environment and Women in Arundhati Roy's <i>The God of Small things</i> and Gloria Naylor's <i>Mama Day</i> Dr.R.Karunambigai	338	87	Land Donations to Early Buddhist Communities in Western India [With Special Reference to Donation of Farmlands in Maharashtra] Dr.Anuradha K. Ranade	401
75	Brave Witness and Bitter Division in ISAAC Bashevis Singer's Family Chronicle <i>The Family Moskat</i> G.Bercy	342	88	Educational Development in Raigad District From British Rule: A Research Study Dr.(Mrs.)Ratnaprabha D. Mhatre	405
76	Redefining Diaspora and Migrancy: The Evolution of These Terms Over the Decades R. Kumara Sethupathi	345	89	Missionary Endeavours of Eva May Swift in Madurai 1884-1943 J.Delphine Prema Dhanaseeli	409

90	Religious Symbols, Contested Meaning and Its Socio-Political Significance in India Dr.Swapna Samel	413
91	அந்நியமாதலும் தொடர்ந்து வாழ்தலுக்கான சிக்கலும் (Alienation and Survival Problem) Dr.J.Sarojini	418
92	வாய்மொழி மரபும் பனுவலாக்கமும் சங்கத் தொகைப் பாடல்கள் குறித்த ஆய்வுரைகள் ந.கோவிந்தராஜன்	427
93	தனிப்பாடல்கள்: புலமை மரபின் மீட்டுருவாக்கமும் சமூகப்பொருத்தப்பாடும் முனைவர் சே.பாலகிருஷ்ணன்	433
94	Remarks on Nano Irresolute Functions Dr.M.Davamani Christofer	437
95	Connected Edge Detour Number of an Edge Detour Graph J.M.Prabakar & S.Athisayanathan	442
96	Mirroring Indian History: A New Historicist Reading of Rohinton Mistry's Family Matters Dr.R.Latha Devi	457

QUANTUM APPROACH TO ECONOMIC PHENOMENA

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Abstract

The era of globalization limits the influence of national governments and the very idea of national state on economic and social issues. The global economic crisis and global socio-economic crisis are the consequences of in complete traditional economic theories with macroeconomic stability as the goal of economic policy. Many hidden variables and their chance and uncertainty due to the complexity of interdependent individuals, nations and religions of the world decide the economic reality. Quantum approach is the very successful tool to understand the impact of hidden variables with characteristic chance and uncertainty.

Keywords: quantum mechanics, neo-classical economics, behavioural economics, an individual, globalization.

Introduction

Quantum economics is the need of the hour to address the issues of global economic crisis in a consistent way. Asghar Qadir has triggered the idea of using the formalism and mathematical framework of quantum mechanics to perfectly model the economic phenomena [1]. The main entity of behavioural economics, the individual whose behaviour especially his decision making capabilities depends on an infinite number of factors with probabilistic nature. It leads to the fact that human decision-making on economic issues follows quantum logic [2]. David Orrell proposes that money and price are dualistic and evolves like quantum mechanical particles [3 & 4]. Belal E. Baaquie has successfully used the formalism of quantum mechanics in understanding the nature of pricing and its evolution [5].

The inadequacies of neo-classical economics in addressing the issues of global crisis and financial crisis could be overcome using formalism of quantum mechanics as reported in Ref.[6]. Neo-classical economics assumes that individuals take economic decisions independently in contrary to reality, whereas quantum economics treats individuals as entity in an entangled system. Present day communication technology influences the practical manifestation of the global economy and makes it much more complex and chaotic. The global economy depends on many inter dependable variables which influences one another in an unpredictable manner. This dynamic nature of global economy jeopardise the neo-classical economic theories which advocate the idea of reaching equilibrium.

This paper elaborates how logically the most successful quantum approach in physics can be extended to describe the evolution of economic process at global level. As the inadequacies of classical theory of physics in describing the physical reality at microscopic scale, fragments of universe, are successfully overcome using quantum formalism of nature, the quantum approach to global economic phenomena has much to reveal about dynamics of economics.

Quantum Economics – Theoretical Foundation

The success of quantum approach to understand the dynamics of physical world at microscopic scale and its consequences of technological boom lead to an attempt to understand the dynamics of global economy using the formalism of quantum mechanics, shall reveal its intricacies. Classical physics is an approximate form of the more general formalism of quantum theory. Quantum theory is a very successful theory in explaining the evolution of physical world from microscopic to macroscopic. It is very successful in describing the dynamics of physical entities with dualistic character. Since the key players of the economic phenomena such as individual, money and price are also having dual characters, quantum approach is a natural option to understand the economic phenomena. Individual, money and prices can no longer be considered as micro-grains in solid form with deterministic nature of macro structures. Rather they are dynamic entities with probabilistic patterns like sub-atomic particles of quantum world. Therefore the

most suitable representation of the economical entities such as individual, money and price are as abstract vectors of Hilbert space [7]. All kinds of interactions which can affect the dynamics of economic phenomena are also can be represented by a well defined quantum mechanical operators [8].

Three fundamental principles of quantum theory such as de Broglie's concept of duality, Heisenberg uncertainty principle, and Bohr's correspondence principle have to be suitably applied to understand the dynamics of economy at global level [9]. Economics deals with the act and implications of decision making. Decision making is in the hands of individuals (consumers, businesses, countries, etc.). The response of the individuals to economic process can be quantified only through quantum principles, as they have chance and uncertainty inherently [10]. Therefore the crucial parameters of economy such as individuals, money, price can be perfectly represented by a quantum mechanical state vectors in abstract Hilbert space, i.e., $|\alpha\rangle$. The physical state can be derived through the corresponding wavefunction in space-time as $\langle i|\alpha\rangle$.

The quantization of the respective fields can faithfully be identified as quantum mechanical individual, money, and price. All factors which can affect these parameters are suitably represented by the quantum mechanical operators with characteristic potential profile. The evolutions can better be understood through solving a suitably modified Schrodinger equation. There is a long way to develop a perfect model with multi-disciplinary understanding with paradigm shift in the field of research.

Conclusion

Through this paper, I have tried to impress upon Physicists and Economists the need of multi-disciplinary research to develop a complete and an undisputable theoretical model using the formalism of quantum theory for economic phenomena. Since the factors of physical

world and economy are having lot of similarities and the dynamics of economy is analogous to the evolution of a physical system. The coordinated multi-disciplinary research between physics and economics, certainly improve the economy of society like technological sophistication of human being.

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EXTRACTION AND CHARACTERIZATION OF NANOHYDROXYAPATITE FROM WASTE SHELL FOR BIOMEDICAL APPLICATIONS

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Abstract

Hydroxyapatite (HAp) is well known mineral component of bone teeth of human skeletal system due to its specific properties include biocompatibility. It is used for biomedical applications. Polymer mediated nanohydroxyapatite (nHAp) is effectively useful in making artificial bone implants, bone cements and toothpaste additives. The present work is focused to attain nHAp with good biocompatibility using natural seashell as raw materials by the method of precipitation. For the better biocompatibility and physio-chemical properties, polymers such as PMMA, PVP and PVA were used as capping agents. The functional group, particle size, thermal stability, phase transition and surface morphology of the synthesized samples have been analyzed by the spectrographic tools such as FT-IR, XRD, TG/DTA and SEM respectively. The achieved minimum crystallite size of the end product is about 7.23nm. The present method of synthesis is hot chemicals free and environmental friendly. Thus, the present study suggests that it is possible to achieve nHAp with better biocompatibility in large scale from waste shell by precipitation method.

Keywords: Nanohydroxyapatite, Biocompatibility, Precipitation method, Sea shells.

Introduction

Hydroxyapatite ($\text{Ca}_{10}(\text{PO}_4)_3\text{OH}$ (HAp)) is thermodynamically most stable, dense and insoluble crystalline phase in body fluids, possesses most similarity to the mineral part of bone with high osteointegrative potential [Albrektsson and Johansson, 2001]. HAp is used as coating, would allow direct bonding and fast stabilization of the implant due to its similarity to the inorganic components of human bone [Hench, 1998]. HAp has been used as bone cement, hard tissue implantation, bone fillers, scaffolds and as powders, porous blocks or beads to fill bone defects or voids [Bonfield et al., 1996]. The synthetic HAp has a stoichiometric distribution of its components; therefore it does not have the same mineral traces of natural bone that play a significant role in the osteointegration process [Giraldo-Betancur et al., 2013]. But HAp obtained from natural resources preserves some properties of the precursor material, such as pore structure (morphology), chemical composition as well as mechanical integrity [Wu et al., 2013]. With the ever-growing need to develop clean, non-toxic and environmentally friendly

techniques, HAp powders have been produced using biogenic raw sources like corals, seashells, fish and bovine bones, natural gypsum, eggshells, etc. [Sanosh et al., 2009]. HAp derived from natural sources which are available in abundance, has better tissue response by virtue of its chemical and structural similarity to that of the mineral phase of bone, and easily bonds with natural bone [Groot, 1981]. This is an interesting process, in particular, not only because of some superior characteristics of the extracted material, but also due to the economic and environmental benefits of waste recovery [Liu et al 1998; Wang et al., 2000; Zuki Abu Bakar Zakaria, 2013].

HAp which belongs to the class of calcium phosphates with Ca/P ionic ratio within 1.0 – 1.7 is reported to be non – toxic and does not induce any foreign body reactions. However, the main restriction of HAp, is its low strength which can be overcome, if it is used as coating on metal implants for prosthetic applications [Pfaff et al., 1993]. Some of the biocompatible polymers such as polymethylmethacrylate (PMMA), polyethylene, polyetheretherketone, polysaccharide used as biomaterials [Lee et

al., 2011]. These polymers are now prominently used due to well established synthesis methods and modifiable properties. This leads to emergence of novel material formulations involving polymers and polymer nanocomposites that are biodegradable and biocompatible suitable for artificial bone tissue engineering and in drug delivery systems [Pau Turon et. al, 2017; Sakthivel et. al., 2015; Amin Shavandi et al., 2015].

Due to the size reduction of hydroxyapatite particles to nano range, it has enormous applications in medical fields due to its proven biocompatibility. The nHAp has also been used as an additive material in order to improve already existing and widely used dental materials, in the restorative field.

Nowadays the demand for good biocompatibility materials is essential in medical as well as in commercial applications. Even though, there are several techniques available for synthesizing such materials, most of the techniques utilize some hard chemicals, which indirectly account to form pillars for irreversible side effects in health of mankind. To overcome these problems and to obtain effective biocompatibility nHAp, present study opens a pathway to synthesis HAp nanocomposites (using polymers) with excellent properties from a seashell by using ecofriendly precipitation method and characterizes the composites by FTIR, XRD, TG-DTA and SEM.

Materials and Methods

Chemicals

To synthesize HAp, the following materials such as methyl methacrylate, sodium carbonate anhydrous, Di Ammonium hydrogen orthophosphate $(\text{NH}_4)_2\text{HPO}_4$, Nitric acid, Sodium Hydroxide purchased from authorized chemical dealers were used. All the chemicals are 99% purity. All the glassware used in this experimental work was acid washed. The chemical reagents used were analytical reagent grade without further purification. Ultrapure water was used for all dilution and sample preparation.

Synthesis of Hydroxyapatite

Precipitation Methods is one of the better and favourable Method to synthesis HAp in comparison to other methods. The precipitation reaction is usually conducted at pH values higher than 4.2. its temperatures ranging from room temperature to temperatures close to the boiling point of water (80 - 95°C) [Ferraz MP, et al., 2004]. Shell sample are cleanly and crushed with stainless steel hammer and calcined at 900°C to get calcium oxide.

To synthesize HAp nanoparticles, precipitation can be accomplished using different calcium and phosphate containing reagents, e.g. calcinated sea shells at 900°C were used as the source of Ca^{2+} and diammonium hydrogen phosphate as the PO_4^{3-} source. The 3 gram of calcium oxide (calcined shell) digested in 5 ml of nitric acid for 15 minutes, and then 55 ml of deionized water is added. It is stirred for 15 minutes. The 40 ml of ammonium hydrogen phosphate drop wise added (3:1) while, the molar ratio of elements (Ca/P) is kept at stoichiometry according to its ratio in HAp (1.67). One mole of 40 ml of sodium hydroxide added drop wise, until we get white collided phase. The collide is washed three times with de ionized water. The suspension kept in hot air oven till dried. The polymer mediated nHAp such as nHAp/ PMMA, nHAp/ PVP, nHAp/ PEG can be obtained by adding the polymer drop by drop at the same time addition of sodium hydroxide.

Characterization Techniques

The FT-IR spectra were recorder using using SHIMADZU-8400 with a resolution of $\pm 4 \text{ cm}^{-1}$ in transmittance mode. The X-ray diffraction (XRD) patterns of the synthesized samples were recorded using Inel equinox-1000 diffractometer. $\text{Cu-K}\alpha$ radiation ($\lambda = 1.5406 \text{ \AA}$) used as source to record the samples at room temperature. The experimental pattern was compared with patterns obtained from JCPDS database. Thermo gravimetric analysis (TGA) and differential thermal analysis (DTA) studies have been performed using Thermal analyzer (NETZSCH-STA 449F3 –JUPITER) at a heating rate of 20°C/min in N_2 gas atmosphere.

Results and Discussions

FTIR Analysis

FT-IR spectra were obtained for raw shell, calcinated shell at 900°C, nHAp without polymer, nHAp capped with polymers PMMA/PEG/PVP. This analysis clearly exposes the exact mineral composition of the synthesized sample. The FT-IR spectra of all ten samples were recorded at room temperature and representative spectrum (Figure 1(a)) is taken for analysis. The present results are in good agreement with the spectra recorded by Adler and Kerr, (1962); Daupin and Denis, (2000) and Halford, (1946) which reveals that the sample contains aragonite as major proportion. According to Adler and Kerr (1962), the spectra of aragonite are characterized by strong absorptions at approximately 699, 712, 858 and 1470-1480 cm^{-1} and weak absorptions at approximately 844, 1083, 1782 and

2487 cm^{-1} . On comparing with the above reported wave numbers of calcite group minerals, this present study, obviously shows the presence of aragonite as major proportion in the present sample.

Effect of Temperature on Raw Shell Calcined at 900°C

The FT-IR spectrum was recorded for calcined shell at 900°C (Figure 1(a)). At this temperature, 1082 cm^{-1} (γ_1) is nearly disappeared and instead of γ_4 doublet, the singlet at 710.12 cm^{-1} is ready to form. Also, at the same temperature, peak at 875 cm^{-1} is registered with sharp intensity. The peak observed at 1474.15 cm^{-1} in room temperature spectrum is shifted to 1422.19 cm^{-1} and the shape of the peak 1422.19 cm^{-1} is broadened. The main characteristic peak of calcite is observed at 876 cm^{-1} with strong intensity. Intensities of the other calcite minor peaks are also observed at this temperature. Other peaks such as 3939.44 cm^{-1} , 3643.17 cm^{-1} and 3431.1 cm^{-1} are observed due to the band of water. An intense sharp peak is appeared at 3642 cm^{-1} due to the OH stretching. Thus, at 900°C transformation of Calcium carbonate phase to calcite or calcium oxide phase due to the process of calcinations occurred at 900°C with the removal of carbon - di - oxide as gas.

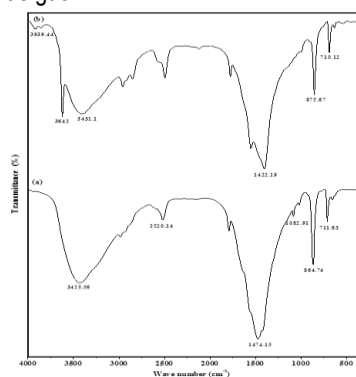


Figure 1 FTIR spectra of (a) raw shell, (b) calcination at 900°C for 2 hrs

FT-IR spectra for nHAp

This study accounts for the extraction of nHAp obtained from the same shell (*Vokesimurex elenensis*) by the method of precipitation. The band observed at 3400 cm^{-1} - 3600 cm^{-1} corresponds to the absorption of H_2O [Adler and Kerr, 1962]. Weak absorptions of IR at 1639.51 cm^{-1} , 1420.1 cm^{-1} and sharp peak at 1384.84 cm^{-1} represents the stretching and bending modes of C-O and P-O bands and air carbonate (CO_3)²⁻ ions, which has been confirmed through the literature Javadpour et. al., 2007. Peak observed at 1036.17 cm^{-1} , 473 cm^{-1} corresponds to

presence of phosphate group. Furthermore, Doubly degenerate planer bending γ_4 of O - P - O bending and P-O bonding was obtained as minor dip at 602.44 cm^{-1} which is matched with the results achieved by Hongsong Fan et. al., 2012. The absorption band at 564.23 cm^{-1} shows the doubly degenerate planer bending mode γ_4 of O - P - O absorption [Khamirul Amil Matori et. al., 2016, Gerard Eddy Poinern et. al., 2009].

The characteristic absorption bands of HAp are observed at 1384.64 cm^{-1} , 1036.64 cm^{-1} , 602.44 and 564.23 cm^{-1} , which reveals all absorption band specify the functional group present in nHAp materials. It obviously shows that there is no new phase formation during synthesis of HAp by precipitation method.

Figure (2(b)) shows the FT-IR spectra of synthesized nHAp/ PMMA, nHAp/ PEG and nHAp/ PVP. All the characteristic peaks observed for the previous case (HAp without polymer) are observed almost with same intensity with additional peaks. Therefore, the FT-IR spectra for nHAp/ PMMA composite shows the characteristic band of nHAp appeared together with the absorption peak of polymer PMMA. The well resolved peaks of both PMMA and nHAp appeared in the finger print region shows the existence of better surface interaction between PMMA and nHAp.

The FT-IR spectrum for nHAp/PEG, nHAp/PVP composite shows the presence of nHAp together with the absorption peak of polymer PEG and PVP respectively. Since, there is no much change observed when compared with FT-IR spectrum of HAp without polymer, Thus nHAp/PEG, nHAp/PVP composites result in the lesser modification of nHAp properties physically.

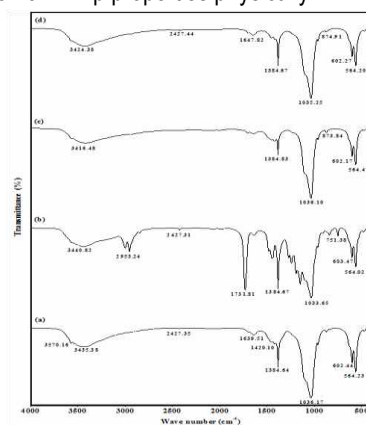


Figure 2 FTIR spectra of (a) nHAp without polymer, (b) nHAp/PMMA, (c) nHAp/ PEG and (d) nHAp/ PVP NCs. XRD analysis

All the ten samples exhibit same XRD crystalline planes with intensity. The mineral phase present in the sample is identified as pure phase of Aragonite by the main reflections at $2\theta = 26.17^\circ, 29.41^\circ, 33.07^\circ, 36.06^\circ, 37.98^\circ, 39.45^\circ, 43.20^\circ, 45.78^\circ, 47.55^\circ, 48.51^\circ, 50.02^\circ, 52.41^\circ, 57.10^\circ, 61.10^\circ$ and 77.11° using JCPDS file (JCPDS: 01- 071- 4891) and no other crystalline phases are detected. Among these planes, high intensity is observed at 29.41° which shows the characteristic plane of rhombohedral CaCO_3 . XRD patterns of shell calcined at 900°C for 2 hrs were observed (Figure 3). The obtained results are indicating the presence of the CaO phase with the planes are matched with standard JCPDS data (JCPDS: 76-0570).

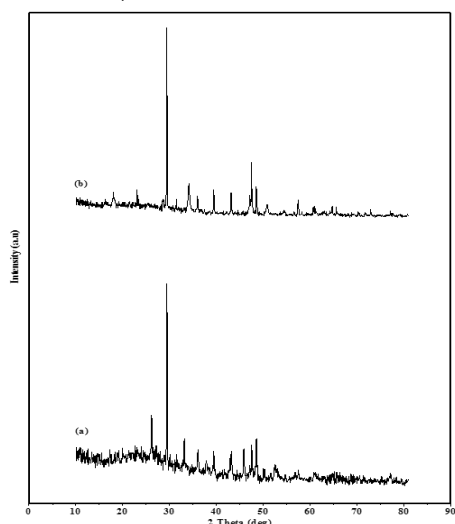


Figure 3 XRD spectra of (a) raw shell, (b) calcination at 900°C for 2 hrs

XRD analysis for nHAp

X-ray diffraction patterns of synthesized nHAp shows that the presence of characteristic intense peaks for pure nHAp are observed at $2\theta = 25.80^\circ, 31.93^\circ, 39.32^\circ, 46.64^\circ, 49.43^\circ$ and 63.97° [Shakir et al., 2015]. It shows the existence of nHAp phase in synthesized sample (JCPDS card no. 74-0566) [Nabakumar Pramanik et. al., 2007].

Diffractionograms were recorded for nHAp/PMMA, nHAp/PEG and nHAp/PVP composites were shown in figure 4. The characteristic peaks of the nHAp are also observed in these cases with some additional peaks. The intense peak observed for nHAp/ PMMA ($2\theta = 32.18^\circ$), nHAp/PEG ($2\theta = 31.86^\circ$) and nHAp/PVP ($2\theta = 31.86^\circ$). However, the peaks of nHAp/PMMA, nHAp/PEG and nHAp/PVP nanocomposite are slightly broader as compared to nHAp without polymer.

The broadening of X-ray diffraction peaks is mainly attributed to the decrease in crystallite size. The broadening of the X-ray diffraction line indicates change in nanocrystalline nature of the powder synthesized with various agents (PMMA, PEG and PVP).

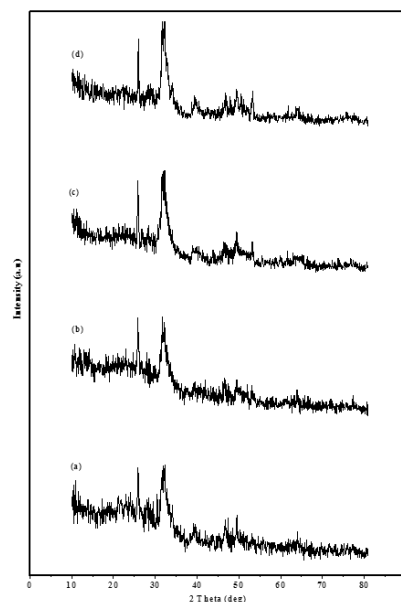


Figure 4 XRD spectra of (a) nHAp without polymer, (b) nHAp/ PMMA, (c) nHAp/ PEG and (d) HAp/ PVP NCs.

Determination of Crystallite Size

Crystallite size of the synthesized particles were calculated using Scherrer's equation,

$$D = \frac{K\lambda}{\beta \cos \theta}$$

'D' represent the size of the crystalline (nm), 'K' is the shape factor ($K=0.9$); ' λ ' is the diffraction wavelength = 1.540 \AA , ' β ' corresponds to the full width and half maximum of peak (radians) and ' θ ' is Bragg's diffraction angle (θ). Among the four types of samples (nHAp without polymer, nHAp/PMMA, nHAp/PEG, nHAp/PVP), nHAp/PMMA composite possess lower particle size. It reveals polymer PMMA acts as good surfactant which controls the further increase in grain size.

TG-DTA analysis for nHAp without polymer and nHAp/PMMA

The TG and DTA analysis are effectively useful to study the thermal stability and phase transition of the materials. For nHAp without polymer, the sample decomposes in a gradual manner with minute intermediate weight losses (Figure 5(a)).

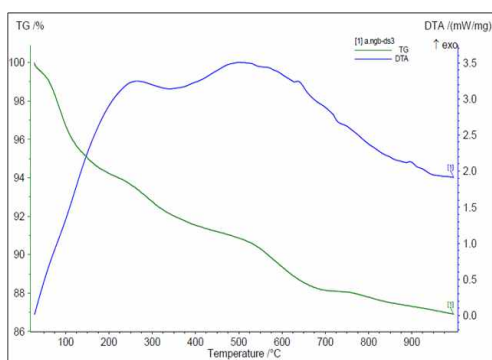


Figure 5 (a) TG-DTA curve for synthesized nHAp without polymer

The minute weight loss is observed in nHAp without polymer around 4% at 120°C, while the polymer mediated HAp sample has total weight loss about 4.7 % at 230° C due to removal of water in surface of the samples. The fast weight loss is observed in nHAp without polymer from 250° C to 460°C may be attributed to lattice water removal [Ikeda et al., 2014]. It is confirmed by the endothermic peaks in the range of 260°C in DTA curve.

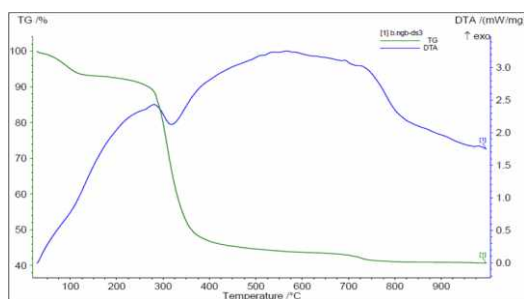


Figure 5(b) TG-DTA curve for synthesized nHAp/PMMA composite

From the curve obtained for polymer mediated sample (Figure 5 (b)), it has a complete fast weight loss 46% observed in the range of 300° C - 380°C is due to capping of PMMA and it could be associated with the elimination of organic residues. This was confirmed by the obvious endothermic peak in the range of 340°C for both samples.

SEM analysis

Morphological nature of synthesized products nHAp and nHAp/PMMA were pictured in the figure 6 (a and b) and (c and d). Figure 6 (a and b) shows the different magnification of synthesized nHAp without polymer which reveals that, the particles are aggregated and at higher magnification crystal like morphs and rough surface was observed. Furthermore, figure 6 (c) shows that the particles are monodispersed and size of the particles were

reduced. When it is in higher magnification, spherical shape was observed is illustrated in figure 6 (d). These changes mainly due to the incorporation of PMMA polymer in the nCaCO_3 matrix. From the result obtained from SEM, polymer PMMA is more suitable for synthesizing nCaCO_3 and nHAp composites.

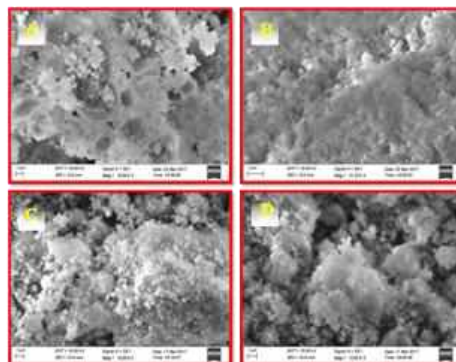


Figure 6 SEM photographs of nHAp without polymer and nHAp/PMMA composites

Conclusion

The HAp nanoparticles and polymer mediated nHAp nanocomposites were effectively synthesized using the waste seashells by environmental friendly precipitation method in an air atmosphere. The results of FT-IR and XRD showed the presence of pure form of hydroxyapatite nanoparticles. By using XRD results the particle size is small for nHAp/PMMA nanocomposite (7.32nm). From the thermal analysis, polymer mediated nanocomposite has lesser weight loss. Particles in polymer mediated samples are modestly dispersed due to the polymer coating on the surface of synthesized products and sizes of the particles were reduced. When it is in higher magnification, spherical shape is observed. Thus, polymer PMMA is more suitable for synthesizing nHAp composites without any phase alternation. From this overall analysis, it is concluded that the natural shell sample can be easily converted into nHAp for several applications. The present study recommends that instead of huge chemicals which are used as a source for calcium composition, natural shell may be used for getting nHAp composite for extensive bio-medical applications with lesser cost.

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SYNTHESIS AND OPTICAL CHARACTERIZATION OF SILVER DOPED HYDROXYAPATITE/ TiO₂ NANOPARTICLES

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Abstract

In the present work, silver doped hydroxyapatite ($\text{Ca}_{10-x}\text{Ag}_x(\text{PO}_4)_6(\text{OH})_2$) with TiO_2 nanocomposites were synthesized using simple sol-gel method. The synthesized silver-doped HAp/ TiO_2 nanopowders were characterized by means of X-ray diffraction (XRD) and Scanning Electron Microscope (SEM). The optical absorption analysis was used to estimate band gap value of HAp/ TiO_2 , 3.86 eV (0%) and Ag^+ doped HAp/ TiO_2 , 3.08 eV (10%), 2.89 eV (25%) and 2.57 eV (50%) respectively. Energy dispersive X-ray (EDAX) analysis is used to estimate the chemical composition and elements present in the samples.

Keywords: HAp, TiO_2 , Ag^+ , UV-Vis, SEM.

Introduction

Nanostructured and nanophasic materials have been extensively studied because of their unique properties which extends the spectrum of their applications in different fields. The impact of nanostructure on the properties of high surface area materials is an area of increasing importance for understanding, creating and improving materials in diverse applications [1-5]. Due to its high biocompatibility hydroxyapatite ($\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2$ - HAp) is one of the most important material for bone replacement and prosthesis. HAp is often used together with other compounds, in a multiphase material, to improve their enhanced new characteristics [6-8]. To improve the antibacterial properties of hydroxyapatite (HAp), various ions like Cu^{2+} , Zn^{2+} , and Ag^+ are incorporated into the HAp through substitution with Ca^{2+} ion to protect the hydroxyapatite against infection.

Ag nanoparticles, one of the most important noble metal nanoparticles, due to their prominent physical and chemical properties, have attracted considerable interest in many fields, especially in antibacterial effects [9].

Immobilization of a biocompatible metal oxide, such as Al_2O_3 , ZrO_2 , SiO_2 and TiO_2 on the surface of the hydroxyapatite can potentially enhance the mechanical properties of HAp, along with enhancing biocompatibility and cellular response. Among these HAp-based composites, HAp- TiO_2 have attracted considerable attention due to the combined advantages of both materials. HAp- TiO_2 composite materials have recently been shown to enhanced load-bearing biomedical applications while also being beneficial in antibacterial applications [10]. In this paper, we used sol-gel method for synthesizing the nanocrystalline hydroxyapatite along with Titanium oxide doped with Silver. The structure, morphology, and optical properties of the obtained nanoparticle samples were systematically characterized by X-ray diffraction (XRD), scanning electron microscope (SEM), and UV-Vis analysis. The elemental composition of the HAp/ TiO_2 and silver doped HAp/ TiO_2 nanoparticles confirmed by Energy dispersive X-ray (EDAX) analysis.

Materials and Methods

Sample preparation

Thesilver ($x_{Ag} = 0, 0.1, 0.25$ and 0.5) doped hydroxyapatite ($Ca_{10-x}Ag(PO_4)_6(OH)_2$) with TiO_2 nanocomposite powders was prepared by sol-gel method. The 25 ml of ethanol was added to 1.67ml of $Ti[OCH(CH_3)_2]_4$ with vigorous stirring at ice bath condition. The $AgNO_3$ solution was prepared by 1.73g of $AgNO_3$ mixed with 25ml of deionized water, ethanol and acetic acid under stirring conditions. The 0.55M of calcium acetate solution was stirred for 2 hrs under vigorous conditions at room temperature while obtaining $Ca(OH)_2$ sol-gel solution. Finally, the transparent solution was formed after stirring for 4hrs by 0.33M of H_3PO_4 add drop by drop in above prepared $Ca(OH)_2$ sol-gel solution with the pH of 10.5 by adding aqueous ammonia. The $Ti[OCH(CH_3)_2]_4$ /ethanol/ $AgNO_3$ / H_2O solution added drop by drop HAp solution under stirred continuously until the gel was formed. Finally, the gel was dried at $110^\circ C$ for half-hour, and annealed at $500^\circ C$ in a muffle furnace at a constant heating rate under an air atmosphere for about 1 hour and then grind in a mortar and pestle.

Results and Discussion

Structure Analysis (XRD)

Fig.1 Shows the XRD patterns of the HAp/ TiO_2 nanocomposites with different amount of silver concentration (10%Ag-HAp/ TiO_2 , 25%Ag-HAp/ TiO_2 and 50% Ag-HAp/ TiO_2) samples. The X-ray diffraction pattern of silver doped HAp/ TiO_2 powder showed peaks correspond to Silver, HAp and TiO_2 phases confirming that HAp was incorporated in the titania matrix. All the diffraction peaks of the HAp/ TiO_2 composite powder, silver doped HAp/ TiO_2 can be indexed to hexagonal HAp (Space group $P6_3/m$ [176], JCPDS file no.09-432, ($a=9.418\text{\AA}$, $c=6.884\text{\AA}$) and anatase phase of TiO_2 . The peaks also confirmed that the samples are polycrystalline nature.

Table 1 Crystallite size and Energy band gap values of Hydroxyapatite powders prepared under different silver doping concentrations.

Sample Name	Crystallite Size in nm	Band gap values in eV
HAp/ TiO_2	16	3.65
10% Ag-HAp/ TiO_2	17	3.08
25% Ag-HAp/ TiO_2	18	2.89
50% Ag-HAp/ TiO_2	20	2.57

The average crystallite size of the composite powders was estimated from the line broadening of the diffraction lines using Debye Scherer's formula $D = \frac{K\lambda}{\beta \cos \theta}$

The estimated average crystallite size of HAp/ TiO_2 composite powder and silver doped HAp/ TiO_2 composite powder samples as shown in table 1. It is concluded that the average crystallite size is increased when the silver concentrations of HAp/ TiO_2 composite samples increased. This may be due to decrease in line broadening (β) value and increasing the silver concentrations.

Morphology (SEM) and EDAX Analysis

The surface morphology and size of synthesized HAp/ TiO_2 and silver doped HAp/ TiO_2 nanoparticles with Ag=10%, 25% and 50% are presented in Fig.2. As shown in Fig.2.(a) images, HAp/ TiO_2 are porous and flower cluster crystal morphology. These highly agglomerated crystals fused together to form a nano porous structure. Fig.2. (b) shows 10% of Ag doped with HAp/ TiO_2 be flower-like hierarchical nanostructures and needle like structures. In high magnification, SEM Images needle like and flower like structures, size is 140-190nm in diameter. Fig.2. (c) shows that 25% of Ag doped with HAp/ TiO_2 are spherical grains more rounded and sub microns with a loose surface covering of size ranges between 128nm to 210nm. Fig.2.(d) shows that 50% of Ag doped with HAp/ TiO_2 are more spherical grains and rounded grains on the surface of plate like, fiber like and porous structure.

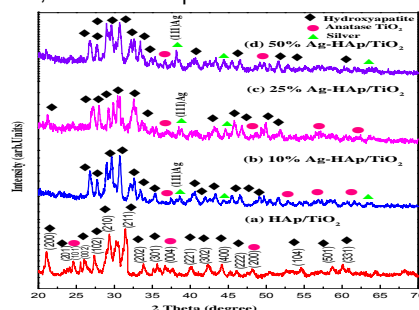
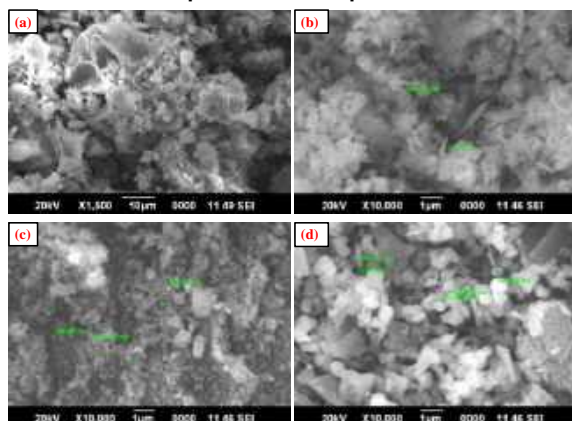


Figure 1 XRD patterns of HAp/ TiO_2 and Ag doped HAp/ TiO_2 nanocomposites



The fiber like structure having the length 1 micron and diameter are 280nm. The EDX spectrum has been collected from the top view of nanocomposite of HAp/TiO₂ powder by using fast moving electrons X-ray signals and presented in Fig.3.(a).Fig.3.(b) reveals that the EDX spectrum has been collected from the top view of 50% Ag - HAp/TiO₂ nanocomposite sample. The EDX spectra confirm that the presence of main elements of HAp/TiO₂ and 50% Ag- HAp/TiO₂ powder sample.

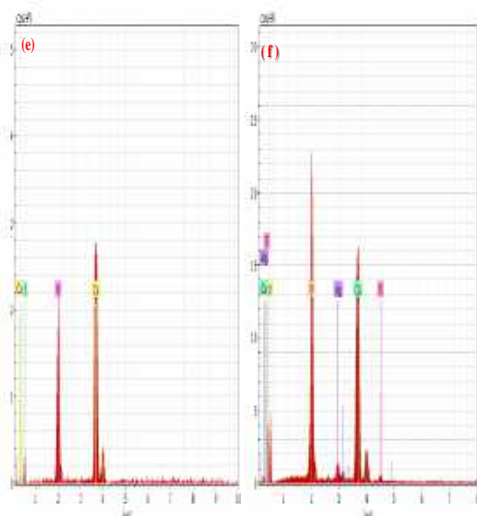


Figure 2 SEM images of the (a)HAp/TiO₂, (b) 10% Ag-HAp/TiO₂, (c) 25% Ag-HAp/TiO₂, (d)50% Ag-HAp/TiO₂ and spectrum (e) & (f) are EDAX spectrum for HAp/TiO₂ and 50% Ag- HAp/TiO₂ powder sample.

Optical Studies

The absorption spectrum of semiconductor directly determines the electronic structure of the material by exciting electrons from the valence band to the conduction band using ultraviolet and visible radiation. UV-Vis photons were passed through the HAp/TiO₂ composite and recorded the spectrum in the wavelength range of 200 nm – 800 nm. The Optical absorbance spectra of the HAp/TiO₂ nanocomposite in the range of 200 nm – 600 nm as shown in Fig.3.(a). It is clear that the strong response in the UV region is observed at 250 nm- 400 nm. The sample possesses an absorption edge around 297 nm. Fig.3.(b) shows that different silver concentrations of HAp/TiO₂ nanocomposite in the range of 200 nm – 800 nm. The sample possesses an absorption edge around 267 nm -264 nm. The absorption spectrum of TiO₂ at 300 nm is due to the charge transfer from the valence band to the conduction band of the Ti⁴⁺cations. As shown in Fig.3.(a) and (b), $(\alpha h\nu)^2 - h\nu$ figure calculated from UV-Vis absorption spectra was plotted to obtain band energy gap.

The band gap of the photo catalysts could be calculated by the following equation: $(\alpha h\nu) = K(h\nu - E_g)^n$

Where α is the absorption coefficient, $h\nu$ is the energy of the incident photon, k is the parameter related to the effective masses which is associated with the valence and conduction bands, n whose value depends upon the type of transition, which may have the values 1/2, 2, 3/2 and 3 for allowed direct, allowed indirect, forbidden direct and forbidden indirect transition respectively, and E_g is the band gap energy. According to Lambert-Beer law, absorption coefficient (α) is proportional to absorbance. Thus, the energy intercept of the curve in $(\alpha h\nu)^2 - h\nu$ plot gives E_g when the tangent line is extrapolated to the zero ordinate. In this study conclude that decrease the band gap values due to increase the silver concentrations and the shift of the absorption band towards shorter wavelength indicates decrease in particle size of the samples tabulated in table 1. The decrease of band gap for the Ag-HAp/TiO₂ sample indicates that light harvest and charge carrier separation can be achieved more easily, which should be helpful to improve photo catalytic reaction efficiencies.

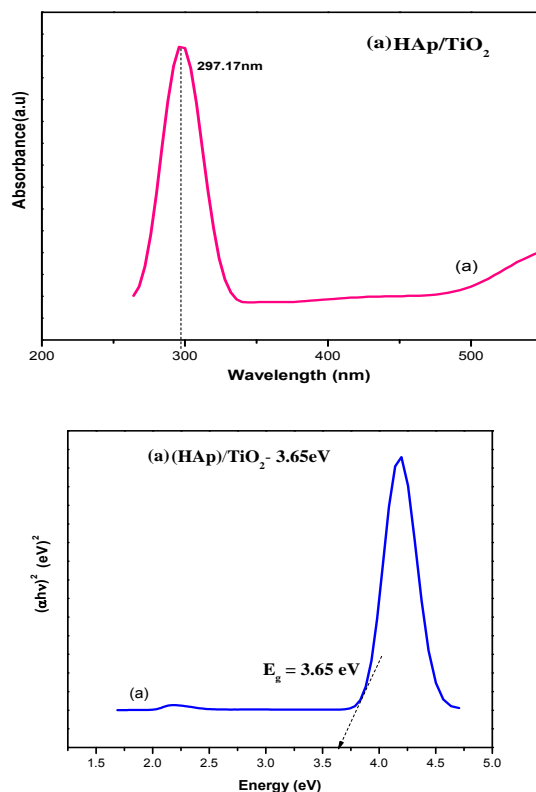


Figure 3(a) UV-Vis absorption spectrum of HAp/TiO₂ and Tauc extrapolation plots for the HAp/TiO₂ sample

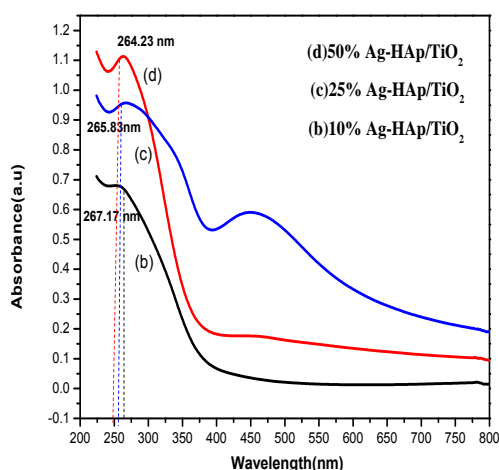


Figure 3(b) UV-Vis absorption spectrum of (b) 10% Ag-HAp/TiO₂, (c) 25% Ag-HAp/TiO₂ and (d) 50% Ag-HAp/TiO₂ the corresponding Tauc extrapolation plots for the $(\alpha h)^2$ vs. Energy curve of the samples.

Conclusion

The HAp/TiO₂ and silver doped HAp/TiO₂ nanocomposites were synthesized by simple sol-gel method. The XRD analysis gives the good crystallite nature of HAp/TiO₂ and silver doped HAp/TiO₂ nanocomposites. The XRD analysis confirms the size of the particles of nanocomposite determined from the XRD pattern are 16nm, 17nm, 18nm and 20nm respectively. The micrographs confirm that the prepared HAp/TiO₂ and silver doped HAp/TiO₂ nanocomposites are in spherical needle and flower like structure. The EDX analysis clearly revealed the presence of the main elements of the HAp/TiO₂ and 50% Ag- HAp/TiO₂ composites is Ca, Ti, P, O and Ag. The energy band gap of HAp/TiO₂ and silver doped HAp/TiO₂ nanocomposites was estimated through optical absorption spectra.

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SYNTHESIS AND CHARACTERIZATION OF Cu-ZnO THIN FILMS BY SPRAY PYROLYSIS

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Abstract

Copper oxide is a earth abundant , non-toxic p-type semiconductor material .The copper doped ZnO layers are used as absorber layer for thin film solar cell. In this view, copper doped Zinc oxide (Cu-ZnO) thin films are synthesized using spray pyrolysis technique by varying copper content from 1 to 5 mole percentage. The XRD spectra showed the formation of polycrystalline hexagonal wurtzite structure confirming the presence of ZnO. The FT-IR spectral analysis revealed the presence of both Zn-O and Cu-O stretching vibrations. The optical analysis revealed the average transmittance of the coated films are about 70%. The deposited oxide films found to have high absorption in the UV region. The optical band gap were estimated from Tauc's plot analysis. The undoped ZnO films have a band gap of 3.56eV. It was found that the band gap narrowed down to 2.48eV for ZnO film alloyed with 5mole% of copper. The electrical properties of Cu-ZnO films were done by Keithley source meter and the films are found to have a minimum resistivity (ρ) of $13.74 \times 10^{-3} \Omega \text{ cm}$. The Cu-ZnO synthesized with 5mole% is optimized for the absorber layer in the solar cell.

Keywords: Thin film, Absorber layer, Polycrystalline, band gap, resistivity.

Introduction

Nanotechnology is the study of the phenomena that deals with the design, characterization and manipulation of materials at atomic and molecular scales. The nano materials find their application in numerous fields like medicine, food, satellites, computer technology water purification etc. Zinc oxide is an excellent material with different nanostructures to date. It has extensive commercial use during the past 100 years. Zinc oxide is a semiconductor with n-type behavior and posses a wide band gap of 3.32eV. It has large exciton binding energy of 60 meV. In addition it is chemically and thermally stable and environment friendly [1]. ZnO as an important II–VI compound semiconductor has many applications in the fabrication of devices including ultraviolet (UV) light-emitters, varistors, transparent high power electronics, piezoelectric transducers, gas-sensors, smart windows and solar cells [2]. The electrical properties of ZnO can be tailored by thermal treatment with H_2 or by alloying with suitable anionic or cationic substitution [3,4]. Researchers chose metal oxides to dope in order to have better morphological, electrical and optical properties. Since Zn^{2+}

and Cu^{2+} have their ionic radii close to each other ,Cu can easily penetrate into ZnO crystal lattice and enhance the oxygen adsorption capacity of the thin film surface [5,6,7].The effect of Cu source on optical properties of ZnO films and blue emission by Cu-ZnO nanocrystals have been reported [8,9,10]. Several methods are available for the synthesis of Cu-doped ZnO films such as spin cating [5], spray pyrolysis [11], Co-Precipitation [12], Sol-gel [13],Dip coating [14], and electrodeposition. Of which spray deposition has many merits such as large area of coating, deposition at atmospheric pressure and low cost. In this paper, we report our investigation about Undoped and Copper doped Zinc oxide thin films. Structural properties of pure and Cu-doped ZnO films, Optical and electrical properties of pure and Cu-doped ZnO films are discussed in detail.

Experimental Details

Materials and Method

Zinc acetate [$\text{Zn}(\text{CH}_3\text{COO})_2 \cdot 2\text{H}_2\text{O}$] (Sigma Aldrich,99% purity) is used as precursor material for preparing pure ZnO and cupric acetate dihydrate as a precursor for Cu-doped thin films.The spray solution was

prepared by dissolving the precursor in Iso-propyl alcohol and de-ionized water in the ratio 3:1. 0.2M of Zinc acetate in 25ml of the solvent is used to deposit pure ZnO. The Cu/Zn ratio in the solvent was varied as 1,2 and 5 taken in mole %. Few drops of acetic acid was added to improve the solubility of Zinc acetate and cupric acetate mixture in the solvent. The films are deposited on to a precleaned glass substrate 1mm thick, at an optimized substrate temperature (400°C), and the substrate to nozzle distance (SND) 25cm. The solution was stirred at 60°C for 1 h to give a homogenous solution, which is used for coating. The coated films are annealed for 1h after deposition. The doped films are labeled as CZO-1, CZO-2 and CZO-5.

Characterization

The structural characterization was made by pan analytical XPERT-PRO X-ray diffractometer system with a scan angle from 20° to 80° and the anode material as copper. The optical studies were carried out by UV-Vis spectrophotometer (Shimadzu, model UV-1800, Japan) in the wavelength range 190-1100nm. FTIR Spectra are recorded by Perkin Elmer BX II spectrometer between the wave number region 4000cm⁻¹ to 400cm⁻¹. The Keithley source meter model SCS 4600 was used to record the I-V characteristics of the samples.

Results and discussion

Structural properties

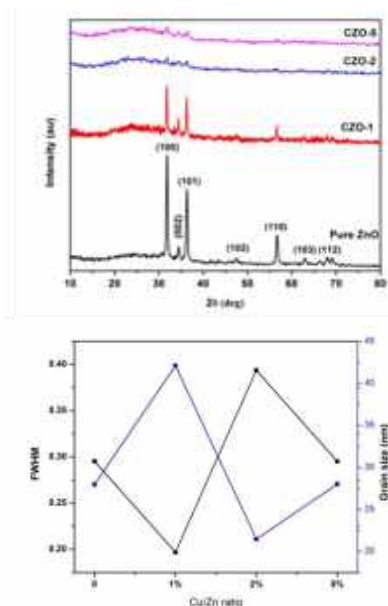


Figure 1(a) XRD pattern of pure and Figure 1(b) Variation of FWHM and grain size Cu doped ZnO thin films with different Cu mole %.

The figure 1(a) shows the X-ray diffractograms of pure ZnO and Cu-doped nano thin films. The spectra shows the existence of main diffraction planes for pure ZnO as (100), (002), (101), (102), (110), and (103) corresponding to the hexagonal wurtzite structure (JCPDS card no 36-1451). There are no peaks originating for other compounds apart from pure ZnO. Smaller additional peaks appear along with ZnO phase for 1wt % of Cu. A new single peak emerged for (111) plane at 1wt% of Cu which corresponds to CuO phase. Thereafter the intensity of the peaks decreases as the dopant concentration increases. The copper impurity degrades the crystallinity of the CZO thin films which may be due to the lattice distortion caused by the incorporation of Cu²⁺ ions, because of the different ionic radii of Zn²⁺ (0.74Å) and Cu²⁺ (0.73Å) [1]. No characteristic peaks arising from impurities are detected.

The size of the crystallites of different samples were determined from XRD data, using Debye-Scherrer formula,

$$D = \frac{0.94\lambda}{\beta \cos \theta}$$

Where β is the width measured at half maximum intensity (FWHM) of the diffraction peak. λ is the wavelength of the Cu K α X-ray radiation and its value is 1.5406Å and θ is the Bragg's angle.

Table 1: Variation of FWHM and Grain size with different Cu dopant percentage

Cu-concentration (Mole %)	FWHM for diffraction planes			Grain size (nm)		
	(100)	(002)	(101)	(100)	(002)	(101)
0	0.2952	0.3936	0.4920	27.98	20.68	21.16
1	0.1968	0.1968	0.1968	42.10	43.3	42.5
2	0.3936	0.3197	0.5904	21.46	26.05	14.2
5	0.2952	0.5904	0.5904	28	14.14	14.17

The changes in the size of the crystal with varying copper content is plotted in the figure 1(b). The FWHM value for (100) orientation is narrower indicating larger crystal size than the other two orientations. The crystallite size for (100) diffraction plane, first increases for 1 mole % of copper and then decreases sharply with rise in copper content [2]. The same trend is followed for (002) and (101) planes. As long as the copper atoms do not substitute the oxygen atoms there is an increase in the grain size, otherwise if segregation at the grain boundaries or at the film surface occurs that reduces the size of the grain at higher Cu-dopant percentage [3]. However, the replacement of Cu-atoms preserves the structure as hexagonal wurtzite, only affecting the crystallite size and the texture of the films and there are no phases corresponding to other oxides found. Kaid et.al observed a similar effect in their study, when ZnO is doped with Al [4].

Fourier Transform Infra red Spectroscopy

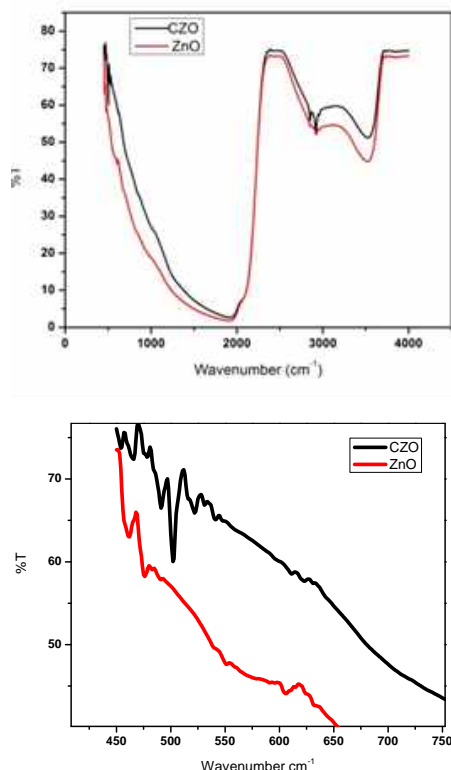


Figure 2 (a) The Fourier Transform Infra Red Transmission (FT-IR) spectra of pure and Copper doped ZnO shown for the wave number region for 400 to 4000cm⁻¹ & (b) FT-IR spectra for the same samples shown for the wave number region 400 to 750 cm⁻¹

The infra red region of the electromagnetic spectroscopic study reveals more details about the nano thin films than their bulk counterpart, since their surface to volume ratio is higher. The presence or absence of characteristic vibrational modes of the elements can be detected through these FTIR studies. The FT-IR spectrum of the pure and copper doped Zinc oxide thin film is shown in figure 2(a). The transmission peak obtained at 461cm⁻¹ corresponds to stretching modes of Zn-O bond for pure ZnO which is shifted to 464cm⁻¹ in the CZO film. This may be because of the change in the bond length due to the substitution of Cu in the Zinc lattice. The existence of CuO is affirmed by other peaks at 502,522,542 and 609 cm⁻¹ (Figure 2(b)) in the CZO thin film. Since the wave number is a function of bond strength and reduced mass, the copper substitution strengthens the bond as the peak is shifted to higher energy (frequency) [5]. The presence of broad peak at 3526 cm⁻¹ shows the -OH group due to the adsorption of H₂O on the film surface [15].

Optical Studies

UV-Absorption Studies

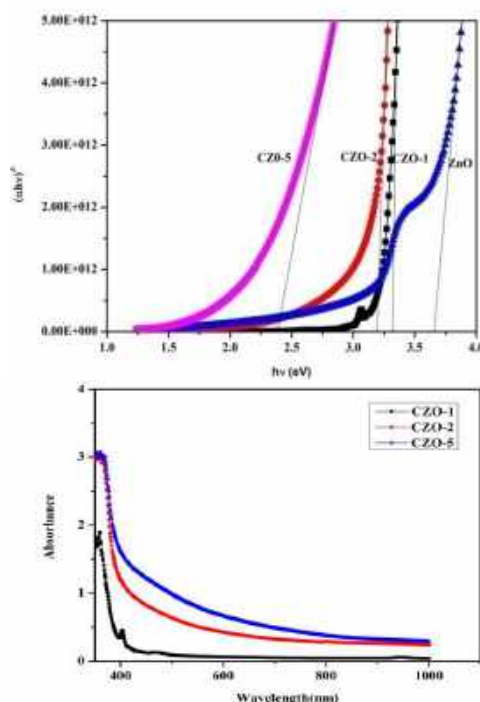


Figure 3(a): (αhν)² vs hν plot for pure ZnO and Copper doped ZnO thin films .

Figure 3(b): Absorption spectra of CZO thin films.

The UV-Visible absorption spectrum is recorded in the wavelength range from 200-1000 nm. From the absorption spectra (figure 3(b)), it is observed that the CZO films show little high absorption in the UV compared to pure ZnO. This characteristic feature of CZO film is useful as absorber layer in the solar cell fabrication. Vanaja et.al demonstrated the same trend in their study when copper is doped with ZnO nano particles [13]. The (αhν)² vs hν plot for CZO and ZnO thin films is shown in figure 3(a). The direct optical band gap of the films was estimated from Tauc's relation.

$$\alpha h\nu = A (h\nu - E_g)^{1/2}$$

Where α the absorption co-efficient and hν the photon energy. The extrapolation of the linear portion of the curve gives the band gap value. The pure ZnO found to have a band gap of 3.65eV there after the band gap gradually decreased from 3.32 to 2.48eV with increase in the Cu from 1 to 5 mole %, indicating a apparent red shift [12]. Muthukumar et.al observed a band gap shortening beyond 0.5 Cu% , which could be due to the formation of impurity band that overlaps with the conduction band edge [4]. The narrowing of band gap is also caused by the closely matching energy levels of 3d and 2p bands of copper

impurity and o atoms leading to the hybridization of copper (3d) and o (2p) bands [7]. The alloying of Copper with Zinc atoms reduces the band gap and a minimum of 2.48eV is obtained for CZO-5 sample. Horzum et.al achieved a band gap minimum of 2.09eV for 3 at wt % of Cu-doped films [14].

UV-Transmittance studies

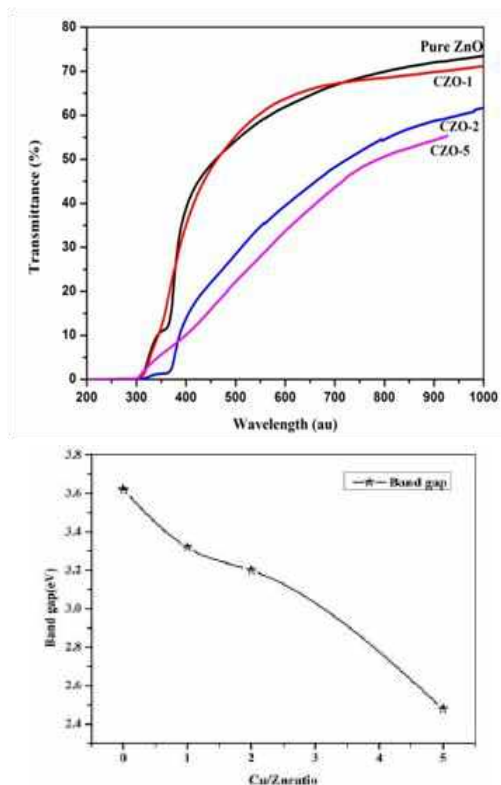


Figure 4(a) The optical transmission spectra of pure ZnO and Cu doped ZnO thin films. Figure 4(b) Variation of band gap (E_g) with copper dopant percentage. Figure 4 (a) shows the transmission spectra of the doped and in doped films .Figure 4(b) shows the variation of band gap (E_g) with copper dopant percentage. The absorption edges of all the doped films lie in the range 358 - 364 nm. The overall transmission of the alloyed films is above 60% in the visible range, except CZO-5 sample. Since there are no interference fringe patterns, this indicates the film surface is somewhat absorptive. With copper the absorption of the ZnO layers are found to increase in the visible from 400-750 nm.

Photoluminescence studies

The photoluminescence (PL) measurement at room temperature was carried out to investigate more on the optical properties. Undoped ZnO thin films show a near band emission peak at 380 nm. The CZO -PL spectra shows a prominent blue and green emission when excited close to the absorption edge.

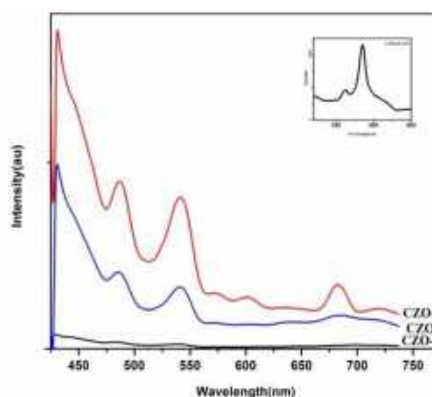


Figure 5 Photoluminescence Spectra of pure ZnO (inset) & CZO thin films deposited for different Cu dopant percentage.

The broad emission at 486 nm (2.54 eV) shows the blue emission which may be attributed to the near band edge emission (NBE) Wang et.al observed a similar blue emission when Copper is doped with ZnO thin films [9].The radiative recombination of the electron and hole arising from the Cu+ d-states are responsible for the blue emission[10]. There is also a green emission exactly at 540 nm which is due to the oxygen vacancies or surface related emission. The positions of the emission peaks remain the same whereas the intensity of the peaks decreases when the Cu-dopant percentage increases. Compared to the blue emission, the intensity of the green emission more for the thin film with 1 mole % of Copper.(CZO-1). A small peak at 683 nm in the red region and a hump at 601 nm are characteristics of CZO-1 sample. There are reports that the near-IR emission originates from defects similar to those responsible for the red emission in ZnO, that is, oxygen vacancy [8]. The intensity of all the peaks drastically reduced for CZO-5 sample, According to Ibrahim et.al the quenching involve some nonradiative recombination that would have taken place in the thin films [5].

Electrical properties

The electrical resistivity of the pure and Cu-doped ZnO nano thin films are studied by Keithley source meter model SCS-4600.The volt-ampere characteristics of the alloyed CZO films are shown in figure 6.It exhibits a better conductivity behaviour for the low dopant concentration (CZO-1) than the CZO-2 and CZO-5 thin films.

The resistivity (ρ) is minimum for the CZO-1 film and it is $13.74 \times 10^{-3} \Omega \text{ cm}$, which is much lower than the undoped ZnO. The decrease in the resistivity (ρ) is due to the replacement of Zn atoms by Cu atoms which can be easily ionized than Zinc atoms. Hence the introduction of the charge carriers are more thereby lowering the resistivity of the films [2].However with further increase in the dopant concentration at 2 wt % and 5wt % of Cu further disorder in

the crystal lattice is produced. This leads to increase in the phonon scattering mechanism and scattering of the ionized impurity which affects the conduction mechanism as demonstrated by Tewari et.al in their study about aluminum doped Zinc oxide thin films [8].

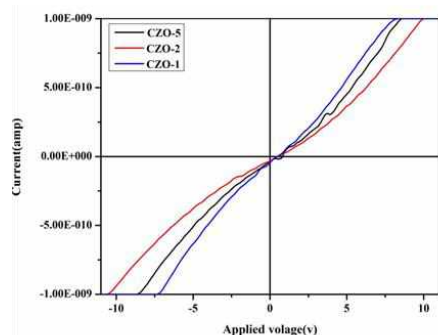


Figure 6 I-V Characteristics of CZO thin films for Cu- dopant concentration

Conclusion

Large area Copper doped Zinc oxide (CZO) thin films are synthesized by spray pyrolysis deposition technique. The prepared films are characterized by XRD and found to have polycrystalline hexagonal wurtzite structure. The degradation in the crystalline quality for the doped films is marked by the grain size measurements. The FT-IR spectra of the pure and Cu-doped ZnO thin films affirm the presence of copper in the Zinc lattice. A band gap narrow down was observed and a minimum band gap (E_g) of 2.48 eV is achieved for 5 wt % of copper. The overall transmission of the alloyed films are above 60% in the visible range, except CZO-5 sample. The absorption of the Cu-doped layers in the UV-region is found to be greater than the pure ZnO. The PL emission shows prominent peaks at the blue and green region of the visible spectrum. The electrical resistivity (ρ) is less for CZO-1 sample. As the prepared CZO samples found to have greater absorption in the UV region and a band gap suitable for solar cell application, these films can be used as absorber layer for thin film solar cell.

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MAGNETIC FIELD DEPENDENT RAMAN GAIN FOR THE CHARGED EXCITONS IN A CdTe/ZnTe QUANTUM DOT

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Abstract

The influence of external perturbations on any low dimensional semiconductor system will drastically alter its properties. CdTe and ZnTe are considered to be promising candidates in group II-VI semiconductors. In the present paper, the electronic and optical properties of charged excitons in a CdTe/ZnTe quantum dot are dealt taking into account the geometrical confinement effect and the application of magnetic field strength. The binding energies of exciton, charged excitons, namely positive and negative trions, and the biexciton are obtained in the presence of external magnetic field and the spatial confinement effect. The optical Raman effect is studied. The magnetic field induced optical Raman optical gain is investigated for the charged excitons. The results may be useful for the potential applications of optical device fabrications.

Keywords: Binding energies; Exciton; Biexciton; Quantum dot.

Introduction

Quantum size effects dominate in the nanorange scale size of any system due to the quantum confinement. The investigations of electronic and optical properties in reduced dimensional systems are quite interesting both theoretically and experimentally due to the invention of novel optical devices [1]. Among reduced structures, quantum dots play a major role and show exotic behaviour because of the quantum confinement in all the three directions and the energies of the charge carriers are quantized depending on the geometrical size of the structure. It results the alteration of the band gap of the quantum dot so called band gap engineering. Thus the size tunable properties can be applied for opto-electronic devices [2].

Not only excitons play a major role in any semiconductor but also the charged excitons namely positive trions and negative trions become important when the dimension is reduced due to the observation of enhanced electronic and optical properties [3-5]. Theoretical computations on charged excitons in any low dimensional semiconductors system are fairly complex because the coulomb interaction plays a major role in the Hamiltonian. The aim of the present work deals with obtaining binding energies of exciton, charged excitons

(positive and negative trions) and biexcitons and thereby the optical properties are obtained taking into account the geometrical confinement effect and the magnetic field.

Model and Calculations

Exciton Binding Energy

The magnetic field induced Hamiltonian of the bound exciton, in a cylindrical quantum dot having CdTe as inner dot and ZnTe as outer barrier material, is expressed as

$$H_{e(h)}(B) = \frac{[\vec{p}_e + e\vec{A}(\vec{r}_e)]^2}{2m_e^*} + \frac{[\vec{p}_h - e\vec{A}(\vec{r}_h)]^2}{2m_h^*} + V_j(\rho_j, z_j) + V_c(\vec{r}) \quad (1)$$

in which j refers as electron and hole, m_e^* and m_h^* are the effective masses of electron and heavy hole respectively and \vec{r}_e, \vec{r}_h denote their respective positions.

$V_j(\rho_j, z_j)$ is the confinement potential for the system.

The charge carrier confined potential owing to the conduction (valence) band offset in the taken quantum dot structure is measured as the addition of radial and axial confinements, taking into account the z-dependent asymmetric confinement, and it is given by

$$V_j(\rho_j, z_j) = \begin{cases} V_j(\rho_j) & |z_j| \leq L/2 \\ V_{e(h)} & |z_j| > L/2 \end{cases} \quad (2)$$

and

$$V_j(\rho_j) = \begin{cases} 0 & \rho_j \leq R \\ V_{1j} & \rho_j > R \end{cases} \quad (3)$$

where R refers the radius and L denotes the height of the cylindrical quantum dot. In the current situation, the barrier height is taken as 50 Å. The conduction (valence) band offsets with the conduction band offset parameter, Q_c is expressed as

$$V_{e(h)} = Q_c \Delta E_g \quad (4)$$

in which the band offset is taken as 80:20 between conduction band and valence band [7].

The trial wave function for the exciton ground state is employed within the variational scheme. An exciton in a CdTe/ZnTe quantum dot is considered within the single band effective mass approximation. Further, it is necessary to use a variational approach to calculate the eigen function and eigen value of the Hamiltonian in order to calculate the bound exciton ground state energy. Taking into consideration of correlation of the electron-hole relative motion, the trial wave ansatz is taken as

$$\Psi(\vec{r}_e, \vec{r}_h) = h_e(\rho_e) f_e(z_e) h_h(\rho_h) f_h(z_h) e^{-\alpha \rho_{eh}^2} e^{-\beta(z_e - z_h)^2} \quad (5)$$

where $f_{e(h)}(\rho_{e(h)})$ is the ground state uncorrelated radial wave function of the charge carriers which are attained using the Bessel function J_0 and the modified Bessel function K_0 whereas the uncorrelated trial wave function in the growth direction, ρ_{eh} is the electron-hole distance in the in-plane direction. The variational parameters (α and β) are responsible for the in-plane correlation and the correlation of the relative motion in the z -direction of the quantum system respectively. $f_e(z_e)$ and $f_h(z_h)$ are ground state solution of the Schrödinger equation for the electrons and holes without the inclusion of Coulomb interaction and it expressed as

$$f_e(z_e) = \begin{cases} \cos(k_e z_e) & z_e \leq |L/2| \\ B_e \exp(-\zeta_e |z_e|) & z_e > |L/2| \end{cases} \quad (6)$$

$$f_h(z_h) = \begin{cases} \cos(k_h z_h) & z_h \leq |L/2| \\ B_h \exp(-\zeta_h |z_h|) & z_h > |L/2| \end{cases} \quad (7)$$

By matching the wave functions and the effective mass and their derivatives at boundaries of the quantum structure and along with the normalization, All the constants in the above equations are fixed with the exception of variational parameters involved in the trial wave function. These constants are obtained by the interface conditions between the inner dot and the outer barrier materials. So the taken trial wave ansatz specifically describes the correlation of the electron-hole relative motion in the cylindrical quantum dot structure.

The magnetic field induced ground state energy of the electron-hole pair in the CdTe/ZnTe cylindrical quantum dot is calculated by minimizing the expectation value of the Hamiltonian using the variational parameters and it is well known that

$$E_{exc}(B) = \min_{\alpha, \beta} \frac{\langle \Psi_{nlk} | H_{e(h)}(B) | \Psi_{nlk} \rangle}{\langle \Psi_{nlk} | \Psi_{nlk} \rangle} \quad (8)$$

The magnetic field dependent electron-hole pair binding energy is obtained using the following equation as

$$E_X(B) = E_e + E_h + \gamma - E_{exc}(B) \quad (9)$$

where E_e, E_h are the self-energies of electron and hole, γ is the measure of magnetic field defined as

$\gamma = \frac{\hbar \omega_c}{2R^*}$ where R^* as the effective Rydberg energy of the electron-hole pair.

Trion Binding Energy

We consider a system comprising an exciton and an electron in the CdTe/ZnTe quantum dot in the presence of magnetic field strength. Within the single band effective mass approximation, the Hamiltonian of the magneto-exciton with a free charge is given by

$$\hat{H} = \sum_{i=1}^3 \left[\frac{1}{2m_i} (\vec{p}_i - e\vec{A}(r_i))^2 + V_{e-h}^B(\vec{r}_i) + g_{e-h} \mu_B S_z^i + V_{e-e}(\vec{r}_i - \vec{r}_e) \right] + \frac{1}{2m_h} (\vec{p}_h + e\vec{A}(r_h))^2 + \left[\frac{1}{2m_e} (\vec{p}_e - e\vec{A}(r_e))^2 + V_{e-h}^B(\vec{r}_e) + g_{e-h} \mu_B S_z^e + V_{e-e}(\vec{r}_e - \vec{r}_e) \right] \quad (10)$$

where V_{e-e} denotes the repulsion term due to electron-electron and V_{e-h} refers the electron-hole attraction term, $g_{e(h)}$ signifies the effective Landé factor of the electron (hole), μ is the Bohr magneton and S_z^i is the z component of the i^{th} particle spin. The potential due to the charge carriers which is screened by the dielectric constant is given by

$$\sum_{i=1}^2 [V_{e-h}(|r_e^i - r_h|)] = -\sum_{i=1}^2 \frac{e^2}{\epsilon |r_e^i - r_h|} \quad (11)$$

where ϵ is the dielectric constant of the inner material and the electron-electron repulsion is given by

$$V_{e-e}(|r_e^1 - r_e^2|) = \frac{e^2}{\epsilon |r_e^1 - r_e^2|} \quad (12)$$

The thecentre of mass is introduced as

$$\vec{R}_{cm} = \frac{m_e^* \vec{r}_1 + m_e^* \vec{r}_2 + m_h^* \vec{r}_h}{2m_e^* + m_h^*} \quad (13)$$

with the relative co-ordinates are expressed as

$$\vec{r} = \vec{r}_1 - \vec{r}_2 \text{ and } \vec{R} = \vec{r}_h - \frac{1}{2}(\vec{r}_1 + \vec{r}_2) \quad (14)$$

Thus, the total Hamiltonian, in the presence of external magnetic field with the corresponding relative coordinates, can be expressed as

$$H = \frac{(p_{cm} - e\vec{A}(\vec{r}_1))^2}{2M} + \frac{1}{2} M \omega_0^2 R_{cm}^2 + \frac{(p_r - e\vec{A}(\vec{r}_1))^2}{2\mu_r} + \frac{1}{2} \mu_r \omega_0^2 r^2 + \frac{(p_R - e\vec{A}(\vec{r}_1))^2}{2\mu_R} + \frac{1}{2} \mu_R \omega_0^2 R^2 \quad (15)$$

where c.m denotes the centre of motion, r denotes the relative motion, $\mu_r = m_h^* / 2$, $\mu_R = 2m_e^* m_h^* / M$ with $M = m_e^* + m_h^*$ and $z = z_e - z_h$.

The trion wave function is selected on the basis on the exciton wave function and it is obtained by a modified Chandrasekhar wave functions and it is expressed as

$$\Phi(\vec{R}) = N(\exp(-\alpha r_1 - a_2 r_2) \exp(-\beta r_1 - a_1 r_2)) \exp[-\gamma(r_1^2 + r_2^2)] (1 + \gamma R) \quad (16)$$

where α, β and γ signify the variational parameters.

The eigen value equation is expressed as $H|\psi\rangle = E|\psi\rangle$. The Hamiltonian is minimized to obtain the confined energies and thereby binding energies of exciton and the charged exciton taking into account the geometrical confinement and the application of magnetic field in the CdTe/ZnTe quantum dot.

Thus, the magnetic field induced binding energy due to the negatively charged exciton is stated as

$$E_{BE}(X^-, B) = E_{exc} + \gamma + 2E_e + E_h - E_X^- \quad (17)$$

where E_{exc} refers the binding energy of the exciton in the ground state, $E_{e(h)}$ is the obtained lowest binding energy of the electron (hole) without the coulomb terms and E_X^- is the corresponding energy eigen value of the

Hamiltonian in which two electrons and a hole wave functions occur and it is called as trion. Likewise, the positively charged exciton binding energy is computed when two holes combined with an electron. A positive trion is defined as the exciton which is bound with extra positive charge.

Similarly, the positively charged exciton binding energy is stated as

$$E_{BE}(X^+, B) = E_{exc} + \gamma + 2E_h + E_e - E_X^+ \quad (18)$$

where E_X^+ is the corresponding energy eigen value of the Hamiltonian.

Biexciton Binding Energy

The magnetic field induced Hamiltonian of a biexciton confined in a quantum dot is expressed as

$$H = H_{XX} + V_{e(h)} \pm V_C \quad (19)$$

here the Hamiltonian of the biexciton comprises the four charged particles and it is obtained as

$$H_{XX} = \sum_{i=1,2} \frac{[\vec{p}_{ei} + e\vec{A}(\vec{r}_{ei})]^2}{2m_e^*} + \sum_{i=1,2} \frac{[\vec{p}_{hi} - e\vec{A}(\vec{r}_{hi})]^2}{2m_h^*} \quad (20)$$

in which all the terms have been defined as earlier. Using the relative coordinates, the Hamiltonian of biexciton, in the presence of magnetic field strength, is stated as

$$H_{XX} = \frac{[\vec{p}_R + e\vec{A}(\vec{r}_R)]^2}{2M} + \frac{[\vec{p}_r - e\vec{A}(\vec{r}_{eh})]^2}{\mu_{eh}} + \frac{[\vec{p}_r - e\vec{A}(\vec{r}_{ee})]^2}{2\mu_{ee}} + \frac{[\vec{p}_r - e\vec{A}(\vec{r}_{hh})]^2}{2\mu_{hh}} \quad (21)$$

where the expressions for the mass are given below. The total mass is given by $M = 2(m_e^* + m_h^*)$ and the

reduced mass is expressed as $\frac{1}{\mu_{eh}} = \frac{1}{m_e^*} + \frac{1}{m_h^*}$,

$\frac{1}{\mu_{ee}} = \frac{1}{m_e^*}$ and $\frac{1}{\mu_{hh}} = \frac{1}{m_h^*}$. The barrier height of the

cylindrical quantum dot has been calculated as done earlier for the electron-hole pair.

The Coulomb interaction between the two electrons and two holes so called biexciton, is expressed as

$$V_C = V_{e1e2} + V_{h1h2} - V_{e1h1} - V_{e1h2} - V_{e2h1} - V_{e2h2} \quad (22)$$

The Coulomb interaction between the charge carriers are given by

$$V_{Cij} = \frac{e^2}{\epsilon r}, \quad (23)$$

where e is the electronic charge and ϵ is the dielectric constant of CdTe semiconducting material.

In general, the biexciton state formation is measured by taking the spatial correlation between the in-plane direction of the two excitons and the wave function ansatz is expressed as [8]

$$\Psi_{biexc}(\rho_1, \theta_1, \rho_2, \theta_2) = \psi_1^x(\rho_1, \theta_1) \psi_2^x(\rho_2, \theta_2) F(\rho_{12}) \quad (24)$$

where $\psi_{1,2}^x$ denotes the in-plane component of the centre of mass trail wave function,

$$\rho_{12} = \sqrt{\rho_1^2 + \rho_2^2 - 2\rho_1 \rho_2 \cos(\theta_{12})} \quad \text{and}$$

$F(\rho_{12})$ refers the repulsive interaction term of the correlation part of the charged particles as expressed as

$$F(\rho_{12}) = 1 - \exp(-\lambda \rho_{12}) \quad (25)$$

where λ states the variational parameter. The expectation value of z-components is attained by solving one dimensional Schrödinger equation as done earlier. The magnetic field induced binding energies of the charged particle is computed as given by

$$E_B(XX, B) = 2E_X(B) + \gamma - E_{XX}(B) \quad (26)$$

where E_B is the ground state energy of the exciton as computed in the first Sec.2.1

Commonly, Raman scattering is the inelastic scattering of photons. It is an optical method which brings out an important information on the electro-optical properties of the semiconducting materials taken into consideration. The electronic and optical properties are found to be sensitive especially for observing the optical transition energies when the magnetic field is applied for the system. Moreover, the sharpening of the absorption resonance peaks, specifically refers, with the reduction of geometrical confinement. The differential scattering cross section is obtained if the unit crystal length and the solid angle are well known. The differential cross section of electron Raman scattering per unit solid angle in the system is given by as [9]

$$\frac{d^2\sigma}{d\omega_s d\Omega} = \frac{V^2 \omega_s^2 \eta(\omega_s)}{8\pi^3 c^4 \eta(\omega_i)} W(\omega_s, \bar{e}_s) \quad (27)$$

where $\eta(\omega_s)$ is referred as the refractive index which is a function of radiation frequency, c is the velocity of light in vacuum, V is the normalized volume of the system, ω_i is the angular frequency of the radiation and \bar{e}_s refers the unit vector of secondary radiation which is emitted

Results and Discussion

Magnetic field related charged excitons' binding energies are carried out in a CdTe/ZnTe quantum dot heterostructure by varying its geometrical confinement. The atomic units are used throughout the calculations in which Planck constant is assumed, the electronic charge and the electron mass m_0 are assumed as unity. The confining potentials of electron and hole are taken as 1.196 eV and 0.299 eV respectively.

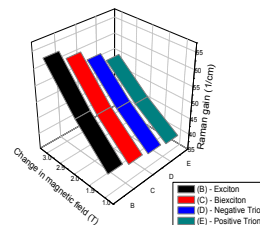


Figure 1 Variation of Raman gain as a function of magnetic field for the charged in a CdTe/ZnTe quantum dot.

Figure 1 shows the variation of Raman gain as a function of magnetic field for the charged excitons in a CdTe/ZnTe quantum dot. The dependence of external perturbations on the optical properties of the charged particles in the CdTe/ZnTe dot is obtained. The application of magnetic field on the quantum dot system also changes the electronic properties since the magnetic field strength gives rise to an additional confinement and this effect is more influenced for larger dot sizes. The applications of magnetic field strength on the quantum dot system can strongly alter the transition energies and it tunes the desired optical emission in any reduced dimensional semiconductor systems.

Raman scattering is described as the absorption and emission by a photon through an intermediate electronic state. The resonant peak occurs when the incident light matches with the interband transition of any material. Hence, the electronic and optical properties can be known from the resonant enhancement. It is observed that the peak values of Raman intensity increase with the application of magnetic field strength and it is more pronounced for higher magnetic fields. The enhancement of magnitude of the resonant Raman intensity is observed with the application of magnetic field [10]. It is found that Raman gain, for both exciton and biexciton, increases with the magnetic field strength, the larger gain is observed for larger magnetic field strength and the nonlinear behaviour

of the Raman gain with the magnetic field is observed. The Raman gain forexciton is found to be more than the Raman shift for biexciton for all the magnetic field strengths. The Raman gain for the negative trion has the least value. The magnetic field shifts the Raman gain considerably for both exciton and biexciton. The application of magnetic field not only shifts the wave number but also increases the resonant peak value. Thus, the effects of external perturbations on Raman intensity will be useful for revealing the electronic structure of the taken material in nano-scales [11].

Conclusion

The electronic and optical properties of charged excitons namely positive and negative trions and a biexciton in a CdTe/ZnTe quantum dot nanostructure have been brought out taking into account the spatial confinement effect and the magnetic field strength. Exciton and biexciton binding energies with the magnetic field strength have been brought out. The magneto-Raman gain has been studied. The applications of external perturbations alter the electronic and optical properties of the charged particles in a CdTe/ZnTe quantum dot significantly. It is hoped that the present theoretical research works on the charged excitons in a group II-VI semiconductor would lend support for the experimental computations in near future.

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POTENTIALITY OF HYALURONIDASE IN BUNGARUS CEALUREUS VENOM

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Abstract

Hyaluronidase enzyme termed, as spreading factor in snake venom toxicity. It is highly detected in *B.caeruleus*. Degradation of hyaluronic acid in the extracellular matrix (ECM) by venom hyaluronidase is a key factor in this diffusion. Hyaluronidase not only increases the potency of other toxins but also damages the local tissue. Hence we can say that the *B.caeruleus* venom hyaluronidase helps in complete degradation of extra cellular matrix and helps for the mobility of the venom. Hyaluronidase in purified enzyme form can act as a very potent pharmaceutical drug. The current paper reviews about the potentiality of hyaluronidase enzyme in the *B.caeruleus* venom. The *B.caeruleus* venom is a highly neurotoxic venom affecting the brain and respiratory system. The activity of hyaluronidase helps in the active movement of venom peptides by cleaving the extracellular membranes of the tissues. The current paper reviews on the pharmaceutical potentiality of the enzyme.

Keywords: *Bungarus caeruleus*, venom, hyaluronidase, neurotoxic.

Introduction

Snake venoms are the most amazing and unique adaptations of animal evolution and have developed as one of the most effective and efficient weapon systems of the animal kingdom. The principal, offensive as well as defensive armament of a venomous snake is its venom. Venom is designed to immobilize, kill and digest the prey (Dufton, 1993) and also used secondarily as a defense system.

Snake venom is an important natural product, which is evolved as a specialized secretory product of exocrine gland. It is synthesized in the venom gland located along the upper jaw and it is injected via a pair of fangs. Snake venoms are generally a thick liquid composed of both organic and inorganic constituents of enzymatic and non-enzymatic protein and peptide toxins.

The most Venomous Snakes of India are Depicted below

Common name	Scientific name	Family	Distribution
Indian Spectacled Cobra	<i>Naja naja</i>	Elapidae	Throughout India, sea level upto 4000 m (in the Himalayas)
King Cobra	<i>Ophiophagus hannah</i>	Elapidae	Confined to the dense forests of the Western Ghats and the Northern hill forests. Himalayan foot hills (upto 2000 m). Forests of Assam, Orissa, Bihar, West Bengal and the Andamans.
Common krait	<i>Bungarus caeruleus</i>	Elapidae	Throughout India, sea level upto 1700 m.
Russell's viper	<i>Viper russelii</i>	Viperidae	Hills and plains throughout India upto 3,000 m.
Saw-scaled viper	<i>Echiscarinatus</i>	Viperidae	Throughout India, sea level upto 2000 m.

The common krait (*Bungaruscaeruleus*)

The common krait (*Bungaruscaeruleus*) also known as Indian krait or blue krait) is a species of venomous snake of the genus *Bungarus* found in the jungles of the Indian subcontinent (Gopalakrishnakone et al., 1997). It is a member of the "big four", species inflicting the most snakebites in India. Kraits are found in the Indian Subcontinent (including Sri Lanka and Bangladesh) and Southeast Asia (including Indonesia and Borneo).

Bungarus have highly potent neurotoxic venom which can induce muscle paralysis. Clinically, their venom contains mostly presynaptic neurotoxins. These affect the ability of neuron endings to properly release the chemical that sends the message to the next neuron. Following envenomation with bungarotoxins, transmitter release is initially blocked (leading to a brief paralysis), followed by a period of massive overexcitation (cramps, tremors, spasms), which finally tails off to paralysis. These phases may not be seen in all parts of the body at the same time. Since kraits are nocturnal, they seldom encounter humans during daylight hours, so bites are rare, but a bite from a krait is potentially life-threatening, and should be regarded as a medical emergency.

Snake venom enzymes

Snake venoms contain several different enzymes. As many as 26 enzymes have been identified in snake venoms (Iwanaga and Suzuki, 1979). Most of these have been isolated and characterized in detail. The distribution of the enzymes varies from one snake species to another. Some enzymes like L-amino acid oxidase, phospholipases and phosphodiesterase are found in almost all snake venoms (Rosenberg, 1979). The remaining enzymes are usually confined to certain taxonomic groups of snakes (Russell, 1980; Iwanaga and Suzuki, 1979). For example, Viperid venom contains proteolytic enzymes like endopeptidases, arginine ester hydrolases, thrombin like enzymes, kininogenases and pro-coagulant enzymes, which are not commonly found in Elapid venoms (Zeller, 1948). Proteolytic and peptidase activities have been identified in some of the Elapid venoms like *Naja nigricollis* (Evans, 1984) and *Naja atra* (Boumrah, 1993).

Apart from these, there are other enzymes like 5' nucleotidase, phosphodiesterase, choline esterase and L-amino oxidase, which may have weak pharmacological activities. The enzymes mainly involved in various pharmacological activities are PLA₂, hyaluronidases and proteases.

Hyaluronidase

Hyaluronidase [E.C. 3.2.2.35], an endoglycosidase has been considered as an invariant factor in the venom of snakes and is frequently referred to as a "spreading factor". Kary Mayer introduced the term "Hyaluronidase" in 1940 to denote the enzyme that degrades hyaluronan. In general Hyaluronidase is groups of glycosidases that have recently taken on greater significance due to the increasing attention being given to their substrate hyaluronan (HA). The spreading property has been evident from its ability to promote the local hemorrhagic effect of a toxin from *Trimeresurus flavoviridis* venom. Degradation of hyaluronan in the extracellular matrix of local tissues is presumed to be the key event in the enzyme mediated spreading process during snake envenomation, although previous studies report the in vitro degradation of hyaluronan (Xu et al., 1982; Pukrittayakamee et al., 1983; Kudo and Tu, 2001). Girish et al., (2004) demonstrated the degradation of extracellular matrix in humans and other tissue samples. This property has been attributed for the fast diffusion of other lethal toxins. The spreading action of hyaluronidases for venom hemorrhagic toxins has been studied in detail. Hyaluronidase, because of the degradation of extracellular matrix is considered an important enzyme in inducing local tissue damage. Its toxicity is due to the synergistic action associated with the other venom toxins (Girish et al., 2004). Regulation of this enzyme is highly beneficial in neutralizing the venom toxicities. In addition, information on the existence of isoforms of hyaluronidase in snake venoms is highly restricted. Few studies report the isolation and characterization of this enzyme from the venom of snakes such as *Agkistrodon acutus* (Xu et al., 1982), *Viperarussellii* (Pukrittayakamee et al., 1983) *Agkistrodon contortrix* (Kudo and Tu, 2001) and Girish et al., (2004) reported the presence of isoenzymes of hyaluronidase in *Naja naja* venom.

Materials and Methods

Materials

Fat free casein, bovine serum albumin (BSA), and hyaluronic acid were purchased from Sigma Chemical Company, St. Louis, MO, USA. Molecular weight markers were from Genei Private Limited, Bangalore, India. Male Swiss Wistar albino mice weighing 20-25 g were obtained from Central Animal House facility at Department of Studies in Zoology, University of Mysore, Mysore, India. The animal care and handling were conducted in compliance with the national regulations for animal

research. The animal experiments were carried out after reviewing the protocols by the animal ethical committee of the University of Mysore, Mysore. All other reagents and chemicals used were of analytical grade. All the solvents were redistilled before use.

Source of Venom

Bungaruscaeruleus venom (500mg) was purchased from Irula Snake Catchers co-operative society. According to the need venom was weighed and diluted in 10mM TrisHCl pH 7.4. Further different concentrations of diluted venom was used for further experiments.

Methods

Protein Estimation

Protein concentration was determined according to the method of Lowry *et al.*, (1951) using BSA as standard. Briefly, 5 ml of Lowry's reagent and different concentrations of *B.caeruleus* venom (2µg, 5µg and 10µg) was made upto a total volume of 6 ml using distilled water and incubated of 15 mints at 37°C for 15 mints. After incubation the reaction mixture was treated with 0.5 ml or 500µl of Folin-ciocalteau reagent and incubated at room temperature for 15 mints. The colour developed was read at 660nm against a reagent blank. Total protein was measured as mg units.

Determination of lethal potency

LD₅₀ was determined according to the method of Meier and Theakston (1986). *B.caeruleus* venom was injected (i.p.) separately into groups of 12 mice with doses ranging from 2 to 20 mg per kg body weight. The symptoms and signs of toxicity were observed upto 24 hr and survival time was recorded.

Electrophoresis

SDS-PAGE was carried out according to the method of Laemmli (1970) and 10 % gel was used under both reduced and non-reduced conditions. *B.caeruleus* venom and molecular weight markers in kDa (Phosphorylase b (97.4), bovine serum albumin (66.0), ovalbumin (43.0), carbonic anhydrase (29.0), soyabean trypsin inhibitor (20.0) and lysozyme (14.3) were mixed separately with equal volumes of 2X sample buffer (4 % SDS, 10 % sucrose, 2 % glycerol with or without 10 % β - mercaptoethanol in 0.5 M Tris-HCl buffer pH 6.8) containing bromophenol blue as a tracking dye and kept in boiling water bath for 3 - 4 min. The samples were then cooled to room temperature and loaded into each well and

electrophoresis was carried out using Tris-Glycine buffer (0.25 M Tris and 0.192 M Glycine pH 8.3 containing 0.1 % SDS) at a constant current of 100 volts for 2 hr.

After electrophoresis, all the gels were stained with 0.25 % Coomassie brilliant blue R-250 and proteins were visualized after destaining with methanol, acetic acid and water (30:10:60 v / v).

Hyaluronidase activity

Hyaluronidase activity was assayed by estimating the amount of N-acetyl glucosamine (NAG) released according to the method of Reissig *et al.*, (1955) using hyaluronic acid as a substrate. Activity was expressed as n moles of NAG released / min / mg protein.

Hyaluronan Zymogram

The zymogram assay was carried out according to the method of Guntenhner *et al.*, (1992). Hyaluronic acid was added at final concentration of 0.17% into the SDS polyacrylamide resolving gel matrix (10%). Different concentrations of *B.caeruleus* venom (50µg, 75µg and 100µg) were loaded on to the gel. Electrophoresis was carried out with a constant voltage of 90 V at room temperature. After electrophoresis, the SDS was removed by washing the gel with 2.5% Triton-X-100 and the gel was incubated with 0.1M sodium formate buffer pH 3.6 containing 0.1mM NaCl at 37°C for 20 hrs and the gel was stained with Alcian blue. Clear zone in the gel indicates hydrolysis of hyaluronan due to enzymatic activity. The Hyaluronidase activity of each sample was expressed numerically as intensity of band activity. Heparin was used as positive control for hyaluronidase activity.

Statistics

The data were expressed as the mean ± SEM of at least 3 independent experiments.

Results and Discussion

Snake toxins vary greatly in their functions. Two major classifications of toxins found in snake venoms include neurotoxins (mostly found in elapids) and hemotoxins (mostly found in viperids) Snake venom toxins form multigene families that are unique bioweapons in the predator-prey arms race (e.g., Daltry, Wuster, and Thorpe 1996) (Daltry *et al.*, 1996) The venom of highly evolved snakes is a well-balanced mixture of systemic toxins and hydrolytic enzymes, which helps in immobilizing the prey and simultaneously to initiate digestion (Dufton, 1993). The LD₅₀ of *B.caeruleus* venom determined by intravenous

injection in mice is 0.9 mg/g body weight. The injected animals suffer from a flaccid paralysis of the skeletal muscles and die from a respiratory block. Hence the lethal toxicity of *B.caeruleus* venom may vary according to regional variation and the toxicity may also vary according to the type of prey available.

Snake venom proteins on electrophoresis resolved into many bands and gave a protein-banding pattern, which is typical to a particular species. Comparatively Low molecular weight proteins are abundant in *B.caeruleus* venom (Figure 1). The electrophoretic protein pattern of *B.caeruleus* is distinctly different where in, the proteins are uniformly distributed from high molecular weight to low molecular weight on SDS-PAGE in the presence of reducing agents. In presence of reducing agents, some of the high molecular weight proteins further resolved and moved to low molecular weight region. This data suggest that few proteins exist in oligomeric complex form where subunits are associated via disulfide linkages. Several protein complexes containing more than one subunit have been characterized from many snake venoms (Chen *et al.*, 2004).

The major manifestation of *B.caeruleus* venom is the induction of minor local tissue damage and severe neurotoxicity, which indirectly suggests that most of the toxins are probably present in the form of hydrolytic enzymes and neurotoxic peptides. Activities of hydrolytic enzymes, which are commonly found in snake venoms, were determined in *B.caeruleus* venom. In *B.caeruleus* venom the myotoxicity due to the activity of PLA₂ and hydrolytic enzymes like hyaluronidase, 5'-Nucleotidase which are more prominent in *B.caeruleus* venom. The specific activity of proteases is found to be very high, many snake venoms and act as the major toxic protein (Jayanthi and Gowda, 1990; Schattner *et al.*, 2005; Sanchez *et al.*, 2005). It directly enters the nervous system through blood vessels and affect the nervous system. As a result the victim feels blindness and respiration troubles.

Hyaluronidase enzyme termed, as spreading factor in snake venom toxicity (Girish *et al.*, 2004) is highly detected in *B.caeruleus*. Degradation of hyaluronic acid in the extracellular matrix (ECM) by venom hyaluronidase is a key factor in this diffusion. Hyaluronidase not only increases the potency of other toxins but also damages the local tissue. In the zymogram assay it was found that the *B.caeruleus* venom gave a very clear zone in the substrate gel within 16 hrs incubation (Figure 2). Hence we can say that the *B.caeruleus* venom hyaluronidase helps in

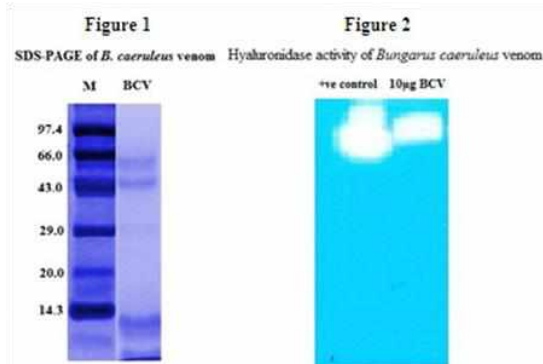
complete degradation of extra cellular matrix and helps for the mobility of the venom.

In conclusion the endemic *B.caeruleus* is very lethal resulting in neurotoxicity, muscle fatigue and respiratory arrest. The observed effect is mainly due to the potent action of PLA₂s and hyaluronidase. Further studies can be conducted to identify the therapeutic potentiality of venom hyaluronidase and its applications as drugs.

List of legends

Figure 1: Shows the pattern of protein distribution.

Figure 2: Shows the degradation of hyaluronidine by hyaluronidase in *B.caeruleus* venom.



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A NOVEL AND FACILE PROCEDURE FOR SYNTHESIS GRAPHENE OXIDE & REDUCED GRAPHENE OXIDE POLYSULFONE NANOCOMPOSITE PELLETS

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Abstract

Efficient nanocomposites, GO-Psf and RGO-Psf has been synthesised from polysulfone and graphene oxide. The synthesised nanomaterials were characterised using SEM, TEM, XRD, TGA, DSC, Raman and FT-IR analytical techniques. The polymeric nanomaterials are attractive due to their porosity, high surface area and thermal stability.

Introduction

Investigations on water pollution has revealed the pharmaceuticals as an alarming contaminant, due to their ubiquitous use in human, veterinary and aquaculture products. The pharmaceuticals are continuously discharged in to lakes and rivers endangering the aquatic life system and polluting the ground water. The greatest concern of these pollutants is that the water does not contain single type of pharmaceuticals but a complex mixture of pharmaceuticals leading to adverse human health effects. Most of the waste water treatment plants (WWTPs) throughout the world are not designed specifically to remove these kind of trace level contaminants. In addition, there are no reliable techniques or protocol for comparison and determination of pharmaceutical traces that are found in surface water, ground water, sewage, effluent from WWTPs and the tap water.

Fluoroquinolone antibiotics are widely utilized in human and veterinary medicines which are non-biodegradable by microorganisms. The most important among them is ciprofloxacin (CIP) which has been detected worldwide in surface water and sludge. Substantial persistence of CIP in sewage plants make them a common pollutant in aquatic environment thereby posing high risk to public health. In addition to the growth of antibiotic resistant bacteria, it also leads to the inhibition of photosynthesis and affects the aquatic organisms. Therefore removal of CIP from waste water is a vital process and new efficient pathways are urgently required. Several

methodologies such as, oxidation, biodegradation, adsorption and photocatalytic degradation have been reported by various research groups for the efficient removal of CIP from waste water. However, owing to its easy operation and efficiency the adsorption is the most utilised and efficient methodology.

In this paper, we demonstrate the application of graphene and reduced graphene polyananocomposites as an alternative adsorbent for removal of ciprofloxacin. The graphene oxide and reduced graphene oxide act as a scaffold loaded on to the polymer to form a uniform sheet possessing high hydrophilicity and excellent adsorption properties.

Experimental

Preparation of Graphene Oxide Polymer nanocomposites (GO-Psf)

All chemicals were purchased from Sigma Aldrich in analytical purity and were used without further purification. The solutions used for the batch experiments were prepared using deionized water.

The GO nanostructures were prepared using the modified Hummers procedure. The synthesized GO (20 mg) was sonicated in 2.5mL DMSO using ultrasound bath for a uniform dispersion. The polysulfone ($M_w \sim 35,000$, 100 mg) was added to the GO dispersion under stirring and heated to 80°C for 5 hrs with occasional sonication. The hot homogenous reaction dispersion was transferred slowly into a 10 mL beaker in presence of nitrogen atmosphere. The solution on standing for 3 hours at 5°C separates out as exfoliated sheets of graphene oxide

based polymer nanocomposite, GO-Psf. However at room temperature the GO-Psf separates out as thin sheet rather than as exfoliated sheet. The GO-Psf sheet was then washed repeatedly using deionized water to remove the excess DMSO and dried.

Preparation of Reduced Graphene Oxide Polymer Nanocomposites (RGO-Psf)

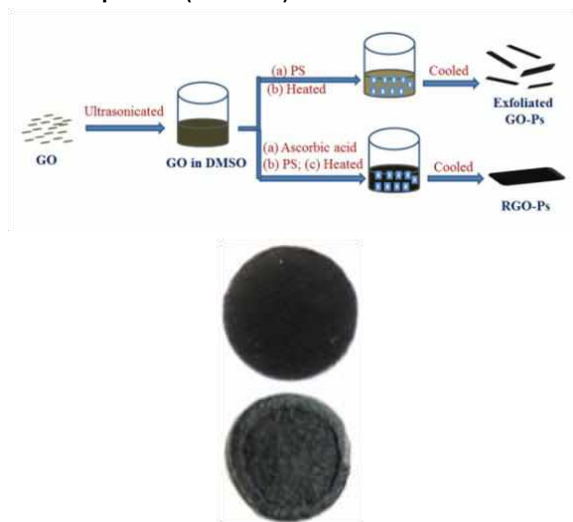


Figure 1 Synthesis of nanocomposites GO-Psf and RGO-Psf. (GO-Graphene oxide; RGO-Reduced graphene oxide; Psf-Polysulfone)

Similar to the previous procedure RGO-Psf was prepared. The GO dispersion (20 mg) in 2.5 mL of DMSO was sonicated on a ultrasound bath to a uniform dispersion. To the GO dispersion, L-ascorbic acid of 0.5 mL prepared from a stock solution (613 mM) using deionized water was added and stirred for 45 minutes. To the reduced GO in DMSO, polysulfone ($M_w \sim 35,000$, 100 mg) was added and heated at 80°C for 2 hrs to a homogenous suspension and poured in hot into a 10 mL beaker in presence of nitrogen atmosphere. The solution on standing overnight at room temperature separates out as a thin sheet of reduced graphene oxide based polymer nanocomposite, RGO-Psf. However, exfoliated nature observed for GO-Psf at lower temperature was not evident for RGO-Psf. The RGO-Psf sheet was then washed repeatedly using deionized water to remove the excess L-ascorbic acid and DMSO.

Batch Sorption Studies

The batch adsorption experiments were carried out using 7 mg of the adsorbents and 15 mL of ciprofloxacin solution of varying initial concentrations in 20 mL glass

vials. The adsorption isotherm was examined at pH of 5 and the initial concentration was set as 13 mg L^{-1} to 130 mg L^{-1} . The initial pH values of all solution were adjusted using 0.1 mol/L hydrochloric acid or 0.1 mol/L sodium hydroxide solution. During the course of the reaction blank experiments were carried out to ensure that the adsorption of ciprofloxacin was due to the adsorbents and not due to other factors. All the experiments were carried out by analysing the supernatant by centrifuging at 3000 rpm for 10 min, using UV-Vis spectrophotometer.

Results and Discussion

Reports on applications of graphene/polysulfone nanocomposites show that the composites are promising and inevitable materials in the field of environmental sciences (Table 1). However there are no reports/comparative study on graphene oxide (GO-Psf) and reduced graphene oxide (RGO-Psf) polysulfone nanocomposites as adsorbents of pharmaceutical pollutant ciprofloxacin. There reported graphene oxide polysulfone nanocomposite (GO-Psf) and reduced graphene oxide polysulfone nanocomposites (RGO-Psf) were fabricated by solution mixing and in situ reduction method respectively.

Table 1 Literature reported applications of polysulfone-graphene composites

S. No	Nanocomposite	Application	Ref
1.	GO-PDADMAC-PSf membrane	Salt, Heavy metal & Dye Rejection	16a
2.	PSf-rGO/PANI	Salt Rejection	16b
3.	PSf/GO	Removal of methylene blue	16c
4.	GO-TFC	Salt rejection & Anti-biofouling	16d
5.	PS/GO	Cytotoxicity, cell viability, proliferation potential	16e
6.	PES-GO	Anti-fouling	16f
7.	TFC PSf/GO	Forward osmosis membrane	16g
8.	PSf-GO	Anti-bacterial/anti-biofouling property	16h
9.	PSf-rGO/PTh	Anti-fouling property	16i
10.	PSf/GO & PSf/rGO	Removal of ciprofloxacin	Present work

Note: PS/PSf/PSf – Polysulfone; PTh – Polythiophene; TFC- Thin film composite; GO-Graphene oxide; rGO-Reduced graphene oxide; PDADMAC-Poly(diallyldimethylammonium chloride); PANI-Polyaniline.

The morphology of the synthesised graphene oxide and reduced graphene oxide polymer nanocomposites were analysed using SEM images. The SEM images showt homogenous and uniform distribution as a result of strong interfacial interactions between the polymer composite and graphene surface. The surface morphology of the GO-Psf exhibits the presence of pores being uniformly distributed throughout the layer whereas the RGO-Psf exhibits petals like layered structures (Fig 2a; 2c). The cross-sectional images of GO-Psf show crosslinked sheet like structures whereas, RGO-Psfnanocomposites exhibits fine fibrous structures (Fig 2b; 2d).

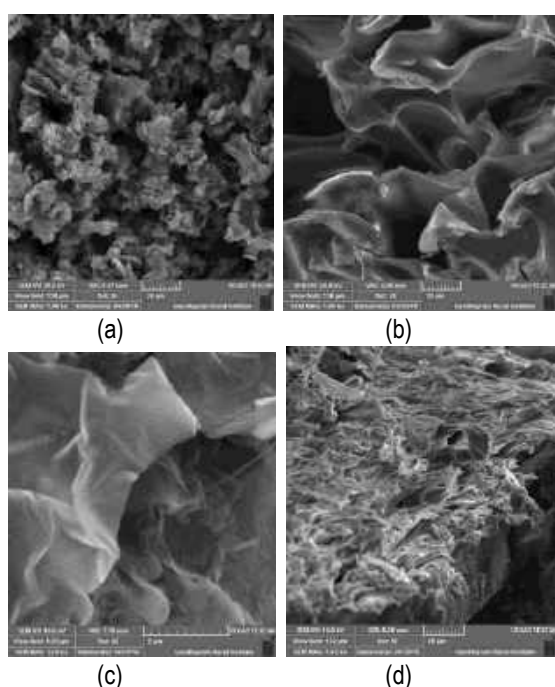


Figure 2 SEM image of surface morphology (a,GO-Psf); (c, RGO-Psf) and cross sectional morphology (b,GO-Psf); (d, RGO-Psf)

The hierarchical pores and fibrous morphology acts as channels, for the flow of the pollutant. This process results in adsorption of the pollutant onto the walls of the graphenepolynanocomposites via uniform networks. The TEM image of GO-Psf(Fig 3a) exhibits characteristic layer like features, whereas RGO-Psf(Fig 3b) exhibits visually evident uniform distribution of pores.

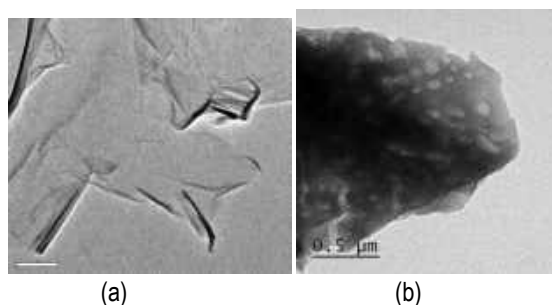
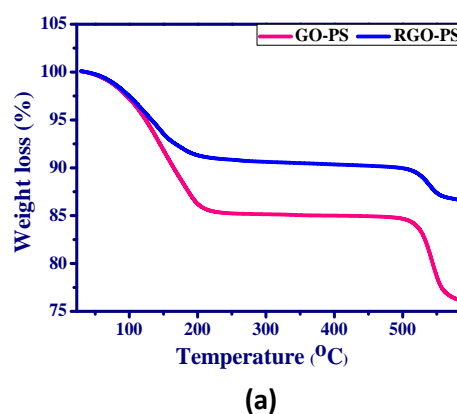
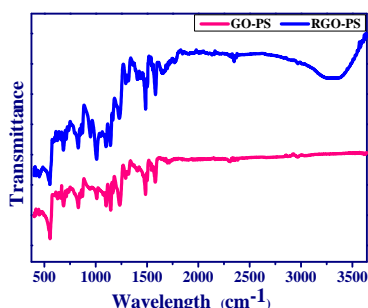


Figure 3: TEM image of (a) GO-Psf; (b) RGO-Psf

The thermal stability of the synthesised polymer nanocomposites was studied by thermogravimetric analytical technique. As shown in Fig 4a, GO-Psf and RGO-Psf, exhibit 15 wt% and 10 wt% weight loss respectively around 200°C, ascribed to the decomposition of labile oxygen functional groups. The loss is comparatively higher in GO-Psf than RGO-Psf, demonstrating that most of the oxygen containing functional groups such as hydroxyl, epoxide and carboxyl being partly removed due to thermal reduction. At 540°C the major loss of 8 wt% and 3 wt% weight loss was observed for GO-Psf and RGO-Psfnanocomposites respectively, which is primarily due to the polymer degradation. Interestingly no significant difference in stability was observed amongpolynanocomposites, however they were more stable than their corresponding starting materials-polysulfone, GO and RGO. The enhancement of thermal stability of GO-Psf and RGO-Psf is due to the formation of composites, which thereby increases thestability by decreasing the defect density of the graphene sheets.



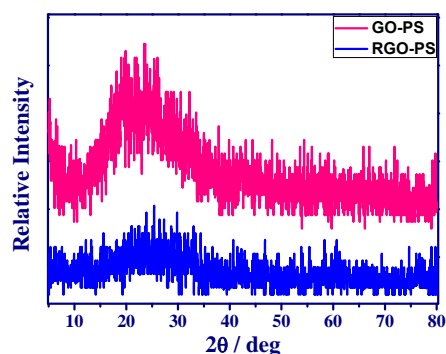


(b)

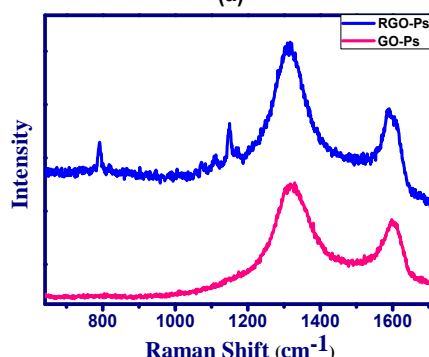
Figure 4: (a) Thermogravimetric analysis of GO-Psf& RGO-Psf; (b) Fourier Transform-IR spectra of GO-Psf and RGO-Psf.

The completely dried nanocomposites were analysed using FT-IR technique. The FT-IR spectra of GO-Psf and RGO-Psf nanocomposites are shown in Fig 4b. The IR spectra of GO-Psf and RGO-Psf exhibit the characteristic C=C aromatic skeletal vibrations at 1579cm^{-1} and 1582cm^{-1} respectively. In addition to the peak corresponding to the $-\text{CH}_3$ observed at 2961cm^{-1} there was no reasonable change in the asymmetric and symmetric vibrations of $\text{O}=\text{S}=\text{O}$ for the synthesised poly-nanocomposites. The $-\text{OH}$ stretching vibration for RGO-Psf is observed at 3269cm^{-1} whereas, the exfoliated GO-Psf shows diminished or completely quenched $-\text{OH}$ stretching vibration. Moreover the characteristic peaks of C-O-C, OH and C=O of RGO-Psf observed at 1234cm^{-1} , 1485cm^{-1} , and 1691cm^{-1} , respectively were absent or observed with reduced intensity for GO-Psf. The absence of $-\text{C}=\text{O}$ and $-\text{OH}$ absorption frequencies of exfoliated graphene oxide polyananocomposites attributed to the extrusion of the graphene oxide CO_2 .

The X-ray diffraction patterns of the nanomaterials are shown in Fig 5a. The X-ray diffraction patterns of the synthesised GO-Psf indicate the disappearance of the characteristic 2θ value around 10.6° corresponding to graphene oxide and appearance of broad peak around $2\theta = 22.1^\circ$. This supports the partial reduction of graphene oxide during the preparation of GO-Psf nanocomposite. In addition the RGO-Psf also shows the appearance of broad peak centred at $2\theta = 24.4^\circ$, clearly exhibiting the complete reduction of graphene oxide. In addition the broad peaks exhibit the presence of amorphous nature of GO-Psf and RGO-Psf nanomaterials.



(a)



(b)

Figure 5: (a) XRD pattern of GO-Psf& RGO-Psf; (b) Raman spectrum of GO-Psf& RGO-Psf nanocomposites.

The Raman spectra results are shown in Fig 5b. The Raman spectra exhibits the characteristic bands of GO-Psf (D- 1317cm^{-1} ; G- 1596cm^{-1}) and RGO-Psf (D- 1316cm^{-1} ; G- 1589cm^{-1}). Additional peaks observed at 792cm^{-1} and 1151cm^{-1} of RGO-Psf corresponds to the characteristic bands of polysulfone. The disappearance of corresponding bands of polysulfone in the Raman spectra of GO-Psf may be due to the observed exfoliation. The reported G band ($\sim 1575\text{cm}^{-1}$) arises due to the first order scattering of the E_{2g} phonons of the sp^2 -hybridised carbon and D band ($\sim 1350\text{cm}^{-1}$) due to breathing mode of the k-point phonons of A_{1g} symmetry of the defects involved in sp^3 hybridised systems such as hydroxyl or epoxide bonds. The extent of defect and quality of graphene structure can be semi-quantitatively known from the intensity ratio of D to the G mode. The I_D/I_G (1.351) intensity ratio of GO-Psf was slightly higher than the RGO-Psf (1.330). The higher intensity ratios of the GO-Psf can be attributed to the observed exfoliation, whereas the comparable intensity ratio observed for RGO-Psf could be suggested due to the removal of large amount of oxygen containing functional groups.

Conclusion

In summary, we have prepared polymer nanocomposites using facile. The superior materialistic property of the GO-Psf is due to the enhanced hydrogen bonding, π - π interaction between ciprofloxacin and the polymeric nanomaterial. The reported nanomaterial therefore can further used as alternative adsorbent for removal of pollutants.

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STUDY OF OXIDATION OF ORGANIC SULPHUR CONTAINING COMPOUNDS BY CARBOXYLATO BOUND CHROMIUM (V) COMPLEX

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Abstract

The oxidation of methionine (Met) plays an important role during biological conditions of oxidative stress as well as for protein stability. When an oxidation sensitive sulphide is located in a biomolecule such as methionine residue in a peptide or protein, the redox reaction is affected by amino and carboxyl groups present in close proximity to sulphide function. Because of its susceptibility to oxidation, methionine is thought to play a key role in the migration of unpaired electron in peptides and proteins. Since Chromium (V) chemistry has received a considerable degree of recent attention, oxo (ehba)₂ chromium (V) is employed as an oxidant in these investigations. The kinetics of oxidation of two sulphur containing amino acids namely dl-methionine and dl-ethionine by oxo (ehba)₂ chromium (V) was carried out in 70% CH₃CN : 30% H₂O at pH 3 spectrophotometrically under pseudo first- order conditions. The reaction is found to be first order each in the oxidant and the substrate. The presence of H⁺ ions accelerates the reaction rate. It is found to be first order with respect to H⁺ ion. The reaction is susceptible to the change in solvent composition. The second order rate constant increases with increase in the water content in the reaction medium. The reaction is carried out at different temperatures and activation parameters are calculated. From the kinetic data and stoichiometric analysis, a suitable mechanism has been proposed for the reaction.

Keywords: Kinetics, oxidation, oxo (ehba)₂ chromium (V), methionine, ethionine, Methionine sulphoxide.

Introduction

The chemistry of chromium is characterised by the large number of available oxidation states and the formation of oxo complexes¹. Chromium (V) has been reported as the intermediate oxidation state in the reaction of chromium (VI) with organic compounds and cellular systems. Further Cr (V) has been shown to react rapidly with DNA, and thus, it may be the active species responsible for chromium (VI) induced carcinogenic effects. The Cr (V) complexes have also been used as efficient oxidants for inorganic and organic substrates. Chromium (V) chemistry has received a considerable degree of recent attention due to two main reasons. First Cr (VI) is used widely as a selective oxidant in fine organic chemical syntheses and Cr (V) intermediates are commonly formed in the reactions of Cr (VI) with organic substances^{2,3}. Therefore, elucidations of the structures, formation and decomposition mechanisms of Cr (V) intermediates are required for the optimisation of reactions using Cr (VI) as an oxidant, as well as for creation of catalytic processes, using only small amounts of

environmentally hazardous⁴ Cr compounds in combination with environmentally safe oxidants⁵. Second, Cr (V) complexes with bio molecules have been implicated as important intermediates in Cr (VI) induced genotoxicities^{3,4,6} and to suggest possible preventive measures for them. In the past two decades, relatively long-lived chromium (V) intermediates have been detected in the reaction of Cr (VI) both in vivo and in vitro. Since Cr (V) intermediates are generally considered labile and reactive, this chromium species is considered to be the key species in the mechanism of Cr (VI) carcinogenesis. Of the Cr (V) complexes studied as biomimetics, some noteworthy ones are chromium complexes containing the ligands 2-ethyl-2-hydroxybutyric acid (ehba), salen, picolinic acid (PA), ethylenediamine (en), phenanthroline (phen), and glutathione (GSH). The isolation of relatively stable Cr (V) complexes has led to a number of detailed studies into the structure and redox chemistry of Cr (V). These stable water – soluble chromium (V) complexes require chelation of hydroxy acids, Schiff bases or sugars⁷. One of the stable classes of chromium (V) complexes is

that obtained in the reaction of tertiary α -hydroxybutanoic acid with chromium trioxide⁸. This complex chosen for the present study was first reported for the oxidation of oxalic acid, primary and secondary hydroxy acids and 2-oxoacids.

Amino acids are susceptible to oxidation by various forms of reactive oxygen species and the oxidation reaction may proceed through one or two electron transfer depending on the nature of the oxidant^{9,10,11}. However, studies show that when an oxidation sensitive sulphide is located in a biomolecule such as methionine residue in a peptide or protein, the redox reaction is affected by amino and carboxyl groups present in close proximity to sulphide function^{12,13,14}. Because of its susceptibility to oxidation, methionine (Met) is thought to play a key role in the migration of unpaired electron in peptides and proteins. It is suggested that Met can serve as an endogenous antioxidant in proteins and Met oxidation to Met sulfoxide (MetO) has a regulatory function, based on its potential reversion by the enzyme methionine sulfoxide reductase (Msr)¹⁵. The study on the oxidation of methionine by Cr (VI) has been extensively studied, but no attempt has been made to study the reactivity of Cr (V) complexes^{16,17}. In the present study, the oxidation of dl-methionine and dl-ethionine with sodium bis (2-ethyl-2-hydroxybutyrate) oxochromate (V) monohydrate ($\text{Na}[(\text{ehba})_2\text{Cr}^{\text{V}}=\text{O}]\cdot\text{H}_2\text{O}$) has been studied spectrophotometrically in aqueous acetonitrile medium and a suitable mechanism is proposed. The kinetics has been studied at different temperatures and activation parameters are calculated.

Experimental Section

Materials

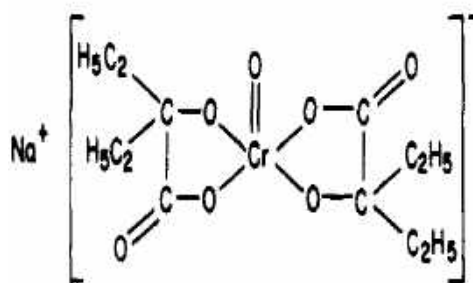
DL-methionine and DL-ethionine (purity \square 99%) were purchased from Sigma – Aldrich and used without further purification. HPLC grade acetonitrile (E.Merck) was used. 70% Perchloric acid (E.Merck) was the source of H^+ utilized to vary the acid concentration in the reaction media. The complex sodium bis (2-ethyl-2-hydroxybutyrate) oxochromate (V) monohydrate ($\text{Na}[(\text{ehba})_2\text{Cr}^{\text{V}}=\text{O}]\cdot\text{H}_2\text{O}$) was prepared by known literature method¹⁸.

Synthesis of Sodium BIS (2-Ethyl-2-Hydroxybutyrate) Oxochromate (V) Monohydrate

1.98g. of 2-Ethyl-2-hydroxy butyric acid (15.0 mmol) was dissolved in 20 ml of HPLC grade acetone. To this solution, 0.65g. of finely pulverized anhydrous sodium dichromate was added and the heterogeneous mixture

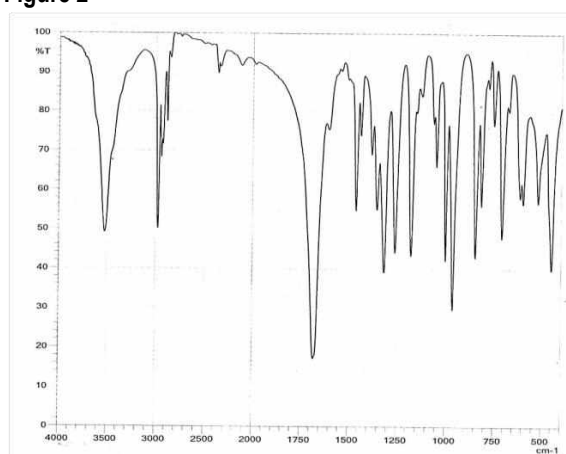
was stirred until the salt was completely dissolved (7-10 min). The resulting dark red solution was maintained at $25\pm 0.1^\circ\text{C}$ for 26 hours. Addition of 50ml of HPLC grade n-hexane led to instant formation of deep red-violet crystals of the chromium (V) complex in essentially quantitative yield. The crude product was dissolved in 20ml of acetone followed by drop wise addition of 50ml of n-hexane to get fine crystals of chromium (V) complex. It was further recrystallized from chloroform. The mixture was left in a refrigerator for overnight and fine recrystallized Cr^{V} crystals were obtained¹⁹. The crystals were washed with n-hexane and dried in vacuum at room temperature to constant weight. The yield is 87%. The structure and FTIR spectrum of sodium bis (2-ethyl-2-hydroxybutyrate) oxochromate (V) are shown in Fig.1 and Fig.2 respectively.

Figure 1



Structure of sodium bis (2-ethyl-2-hydroxybutyrate) oxochromate (V)

Figure 2



FTIR spectrum of sodium bis (2-ethyl-2-hydroxybutyrate) oxochromate (V)

Methods and Instrumentation

The kinetic study for the oxidation of dl-methionine and dl-ethionine with oxo (ehba)₂ chromium (V) was carried out in 70% CH₃CN : 30% H₂O at pH 3. The rate of oxygenation was followed spectrophotometrically under pseudo first order conditions with a substrate: oxidant ratio of at least 10:1 at 300K by measuring the change in the absorbance at 350nm in a 1cm cell placed in the cell compartment of LI – 2800 UV – Visible double beam spectrophotometer. Duplicate kinetic runs showed that the rate constants were reproducible to within $\pm 5\%$. The kinetic studies at different temperatures were carried out in Agilent diode array spectrophotometer.

Results and Discussion

Kinetics were followed under pseudo-first order conditions at 30 ± 0.1 °C spectrophotometrically by measuring the absorbance of the oxidant at 350 nm in a 1cm cell placed in the cell compartment of LI – 2800 UV – Visible spectrophotometer. Rate constants at different initial concentrations of dl-methionine and dl-ethionine are presented in Table 1 and Table 2. Plot of logarithm of optical density against time yielded straight line indicating first order dependence in substrates and from the gradients of plots, pseudo first – order rate constants, k_1 were calculated by the method of least squares. The linear relationship between k_1 and [amino acid] as shown in Figure 3 and constant specific rate constant k_2 ($k_2 = k_1 / [\text{amino acid}]$) as shown in Table 1 and 2 point out the first order dependence in the substrate. The order with respect to oxo(ehba)₂ chromium(V) ion in the concentration range $1.0 \times 10^{-3} - 1.5 \times 10^{-3}$ mol dm⁻³ was found to be unity at constant Methionine and acid concentrations ([Met] = 0.02 mol dm⁻³, acid [HClO₄] = 0.001 mol dm⁻³).

Table 1

Pseudo first order rate constant k_1 and specific rate constant k_2 for the oxidation of methionine by oxo (ehba)₂ chromium(V) complex at 300K
[oxo(ehba)₂Cr(V)] = 0.001M [HClO₄] = 0.001 M Solvent = 70%CH₃CN : 30%H₂O(v/v)

[Met] M	$k_1 \times 10^6 \text{ s}^{-1}$	$k_2 \times 10^4 \text{ M}^{-1}\text{s}^{-1}$
0.01	4.35 ± 0.06	4.35 ± 0.04
0.02	8.68 ± 0.04	4.35 ± 0.03
0.03	12.91 ± 0.05	4.31 ± 0.04
0.04	17.41 ± 0.02	4.32 ± 0.02
0.05	21.68 ± 0.06	4.34 ± 0.05

Table 2

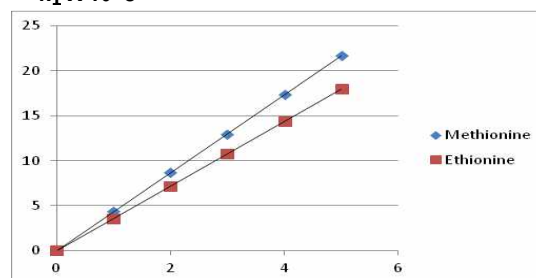
Pseudo first order rate constant k_1 and specific rate constant k_2 for the oxidation of ethionine by oxo (ehba)₂ chromium(V) complex at 300K
[oxo(ehba)₂Cr(V)] = 0.001M [HClO₄] = 0.001 M Solvent = 70%CH₃CN : 30%H₂O(v/v)

[Eth] M	$k_1 \times 10^6 \text{ s}^{-1}$	$k_2 \times 10^4 \text{ M}^{-1}\text{s}^{-1}$
0.01	3.59 ± 0.06	3.59 ± 0.06
0.02	7.19 ± 0.05	3.60 ± 0.05
0.03	10.79 ± 0.04	3.60 ± 0.04
0.04	14.38 ± 0.05	3.59 ± 0.05
0.05	18.02 ± 0.04	3.60 ± 0.04

Figure 3

k_1 vs [Amino acid]

$k_1 \times 10^6 \text{ s}^{-1}$



[Amino acid] × 10² M

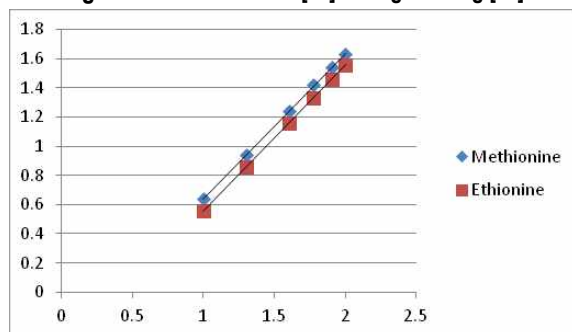
The effect of changing perchloric acid concentration was studied between 0.001 to 0.01 mol dm⁻³ at constant oxidant (0.001M) and substrate (0.01M) concentrations. The pseudo-first order rate constants for different [H⁺] are given in Table3. The order with respect to acid was found to be one from the log – log plot of the rate constants and [H⁺] as shown in Figure 4.

Table 3

Effect of changing the [H⁺] on the second order rate constants for the oxidation of methionine and ethionine by oxo (ehba)₂ chromium(V) complex at 300K

[oxo(ehba)₂Cr(V)] = 0.001M Solvent = 70%CH₃CN : 30%H₂O(v/v) [Met] = 0.01M
[Eth] = 0.01M

[H ⁺] M	$k_1 \times 10^6 \text{ s}^{-1}$	
	Methionine	Ethionine
0.001	4.351	3.594
0.002	8.687	7.201
0.004	17.491	14.404
0.006	26.182	21.599
0.008	34.997	28.976
0.01	42.881	36.266

Figure 4 LOG k_1 vs LOG $[H^+]$ 6+log k_1 4+log $[H^+]$ 

The effect of changing the solvent composition on the rate of the reaction has been carried out. The acetonitrile composition in the solvent mixture was varied while maintaining the other variables constant. The rate was found to increase considerably on increasing the water content of the medium as shown in Table 4.

Effect of changing the solvent composition on the second order rate constants for the oxidation of methionine and ethionine by oxo (ehba)₂ chromium(V) complex in aqueous medium at 300K
 $[oxo (ehba)_2Cr(V)] = 0.001M$ $[Met] = 0.01 M$ $[Eth] = 0.01 M$ $[HClO_4] = 0.001 M$

Table 4

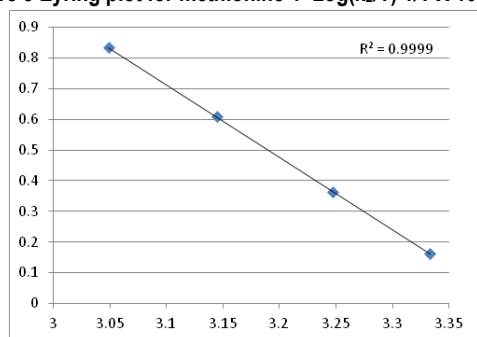
% CH ₃ CN	% H ₂ O	$k_1 \times 10^6 s^{-1}$	
		Methionine	Ethionine
70	30	4.351	3.594
60	40	7.448	6.696
50	50	11.011	8.754
40	60	16.601	12.406
30	70	21.991	15.176
0	100	28.881	20.082

Effect of Temperature

The kinetics was studied at four different temperatures viz. 300K, 308K, 318K and 328K. The specific rate constants were calculated and it was observed that the rate increased with the increase in temperature as summarized in Table 5. The Arrhenius plot of log k_2 versus $1/T$ was found to be linear. From these plots, the energy of activation was calculated. The enthalpy of activation (ΔH^\ddagger), entropy of activation (ΔS^\ddagger) and free energy of activation (ΔG^\ddagger) were calculated from the plot of log k_2/T versus $1/T$ using the Eyring relationship. All data are summarised in Table 5. The Eyring plot for methionine is shown in Figure 5.

Table 5 Specific rate constants for the oxidation of methionine and ethionine by oxo(ehba)₂ chromium(V) complex at 300K, 308K, 318K and 328K and activation parameters $[oxo (ehba)_2 Cr(V)] = 0.001M$ $[Met] = 0.01 M$ $[Eth] = 0.01 M$ $[HClO_4] = 0.001 M$ Solvent = 70%CH₃CN:30%H₂O (v/v)

Amino Acid	$k_2 \times 10^4 M^{-1}s^{-1}$				ΔH^\ddagger	$(-\Delta S^\ddagger)$	ΔG^\ddagger
	T = 300K	T = 308K	T = 318K	T = 328K	KJmol ⁻¹	JK ⁻¹ Mol ⁻¹	KJmol ⁻¹
Methionine	4.3512	7.0847	12.9137	22.3983	45.39	119.79	84.69
Ethionine	3.5939	6.1858	11.0112	19.6743	46.76	116.73	85.04

Figure 5 Eyring plot for methionine 4+Log(k_2/T) $1/T \times 10^3$ 

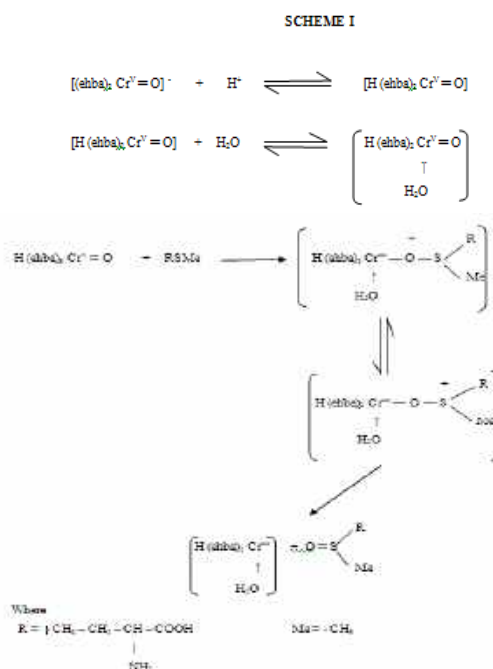
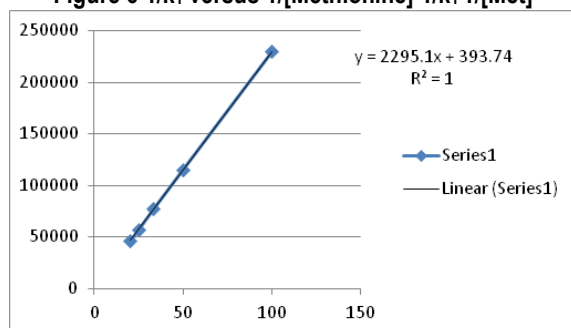
Mechanism

From the kinetic data presented above it is inferred that the oxidation of dl-methionine and dl-ethionine with oxo (ehba)₂ chromium (V) complex in 70:30 (v/v)

CH₃CN:H₂O reacts through a simple kinetics and catalyzed by acid. Experiments carried out by Kochi et al. With isotopically labeled oxo (salen) chromium (V) ion undergoes a complete exchange of its oxygen – 18 with ordinary water in acetonitrile solution confirms the ligation of water to the chromium centre^{20,21}. So the real oxidant in this system will be $[O=Cr^V (ehba)_2-H_2O]$ adduct. The kinetics of the reaction was first order in oxidant and in methionine. Recently Venkataramanan et al. has observed a similar trend during the oxidation of sulfoxides and on the ligand oxide assisted oxidation of organic sulphides by oxo (salen) chromium (V) complexes^{22,23}. Kochi et al. and Rihter and Masnovi^{24,25} have proposed the attack of substrate on the oxygen rather than on metal in the epoxidation of alkenes with oxo (salen) chromium (V) complexes. Oxo-group transfer reactions have also been shown to be viable mechanisms by which oxochromate (V) species are reduced to Cr^{III}^{24,26-30}. Kochi et al^{24,29} have

demonstrated, using oxygen labeled oxochromium (V)-salen complexes, that the epoxidation of alkene occurs via this type of mechanism. The formation of sulphoxide can be visualized as due to oxygen atom transfer from oxochromium (V) to sulphur in the Cr^V-sulphide adduct. The reaction is catalysed by acid. This acid catalysis may be explained with the knowledge that protonation of Cr^V complex. Protonation of Cr^V complex makes the oxidant more electrophilic, thereby facilitating electron acceptance from sulphide at high [H⁺]. The resulting protonated complex would presumably be a stronger oxidant and more reactive than its deprotonated counterpart. A similar explanation has been offered for the acid catalysis in the Cr^{VI} oxidation of organic sulphides³¹⁻³³ and for the oxidation of thiols^{34,35}. Hence a mechanism involving electrophilic attack of [O=Cr^V(ehba)₂-H₂O] adduct on the sulphur centre of the methionine can be proposed as shown in Scheme I. A similar mechanism has been found to operate in the oxidation of organic sulphides by oxo (salen) chromium (V) complexes in the presence of various N-oxide donor ligands. Thus from the previous studies and from the product obtained a mechanism involving oxygen atom transfer by an electrophilic attack of the oxygen at the electron-rich sulphur centre of the methionine can be proposed as the most suitable mechanism. The reaction did not show the polymerization which indicated the absence of free radical intermediate. The stoichiometry of the oxidation of methionine by oxo (ehba)₂ chromium (V) was found to be 1:1. Both these support the above mechanism. The results indicate the formation of complex between RSMc and chromium (V) in presence of perchloric acid. The formation of this complex was proved kinetically by Michaelis – Menten plot i.e., a non-zero intercept of the plot of 1/k₁ versus 1/[Methionine] (Figure 6). The mechanism is also supported by the moderate values of ΔH[#] and ΔS[#]. The negative ΔS[#] value indicates that the complex is more stable than the reactants³⁶. The values of ΔG[#] were nearly constant, indicating that similar mechanisms operated for the oxidation of these substrates.

Figure 6 $1/k_1$ versus $1/[\text{Methionine}]$ $1/k_1$ $1/[\text{Met}]$



Conclusion

The kinetics of oxidation of dl-methionine and dl-ethionine by oxo (ehba)₂ chromium(V) complex were investigated in aqueous acetonitrile medium by spectrophotometric method at 300 K. The presence of water in the reaction system facilitates the ligation of H₂O to the Cr centre. The reaction was first order with respect to the substrate and oxo (ehba)₂ chromium(V) complex. The reaction was catalyzed by perchloric acid. The reaction did not show the polymerization which indicated the absence of free radical intermediate. The order of reactivity was Met > Eth. The stoichiometry of the reaction was 1:1. A mechanism involving oxygen atom transfer by an electrophilic attack of the oxygen of the oxidant at the electron-rich sulphur centre of the methionine can be proposed as the most suitable mechanism.

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ONE POT SYNTHESIS OF PROPARGYLAMINES

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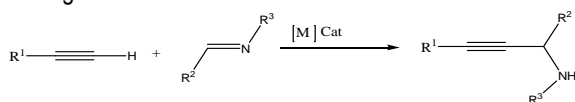
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Abstract

Propargylamines are biologically important molecules and a starting material for many poly heterocyclic compounds and alkaloids. They are synthesised via A³ coupling of aldehyde, amine and an alkyne in the presence of CuCl as catalyst. In this work we have reported the synthesis of two propargylamine derivatives namely 1-methyl-4-(1, 3-diphenylprop-2-ynyl) piperazine and 1-methyl-4-(3-phenyl-1-p-tolylprop-2-ynyl) piperazine.

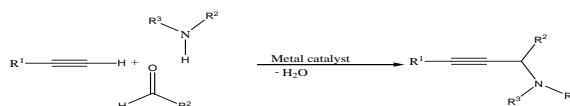
Introduction

Propargylamines are versatile compounds, serving both as intermediates in the preparation of many nitrogen containing compounds and also forming key components in a number of bioactive substances, such as polycyclic pyrroles, benzazepines and alkaloids¹⁻¹⁰. Traditional routes to propargylamine make use of strong bases such as alkyllithium reagents, while other methods feature reactions with isolated imine or enamine intermediate¹¹⁻¹³. However, these methods not only require strict control of reaction conditions and stoichiometry but also occasionally pose challenges in obtaining or handling the required starting materials.



A³ Coupling Reaction of Propargylamine

A³coupling is essentially a combination of the sonagashira and mannich reactions, involving one pot multicomponent reaction which facilitates the combination of terminal alkynes with *insitu* generated imines, from aldehydes and secondary amines⁶⁻¹². This three-component coupling is an example of multicomponent coupling reactions and has received much attention in recent years. A³ coupling has been demonstrated to occur with a good degree of efficiency under the influence of several salts and complexes of the late transition metals, such as silver, gold, nickel, zinc, iron cobalt and others¹⁴⁻³⁰. C-H activation of the terminal alkyne bond mostly studied using copper halides as the catalyst.



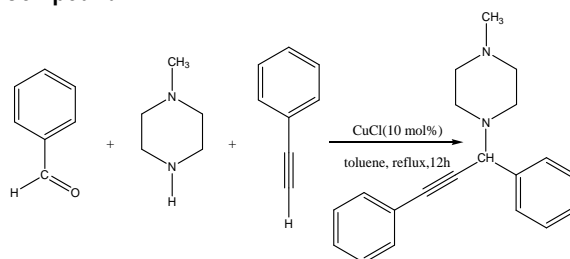
Aim of the Work

Our aim is to prepare propargylamine by A³ coupling reaction of aldehyde, alkyne, amine using CuCl as a catalyst. The products will then be separated by Column chromatography. The structure of the product will be characterized by IR and NMR techniques.

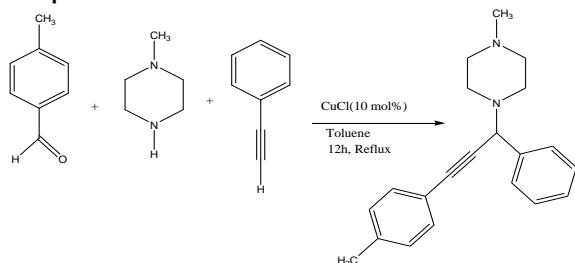
General Procedure for the Synthesis of Propargylamines

A mixture of CuCl (10 mol %), Aldehyde (3 m.mol), Amine (3m.mol), Alkyne (3.3 m.mol) and Toluene (5 ml) was refluxed for 12 hour. After completion of the reaction (monitored by TLC) the mixture was diluted with ethyl acetate washed with water (20 ml) and the aqueous layer was then extracted with ethyl acetate the combined organic layer was dried over Na₂SO₄. Further purification was carried out by column chromatography on silica gel eluting with ethyl acetate-petroleum hexane as solvent.

Compound -1



Compound – 2



Result and Discussion

Propargylamines have been synthesised using N-methylpiperazine, aldehydes (Benzaldehyde and tolualdehyde) and phenyl acetylene in the presence of CuCl. The reactions were carried out at reflux condition for 12 hour. The completion of reaction was confirmed by Thin Layer Chromatography (eluent: ethyl acetate). The compound was purified by column chromatography on silica gel using petroleum hexane: ethyl acetate (9:1) as eluent to isolate the propargylamine. **1-methyl-4-(1, 3-diphenylprop-2-ynyl) piperazine (Compound – 1)**

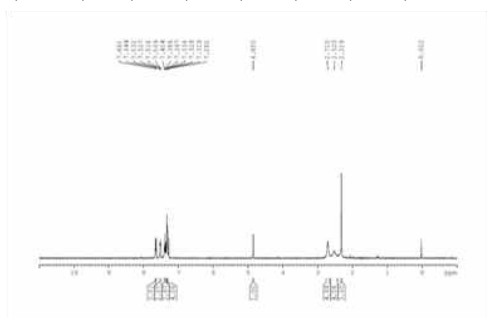
Physical State: Brown viscous liquid.

Yield : 78%

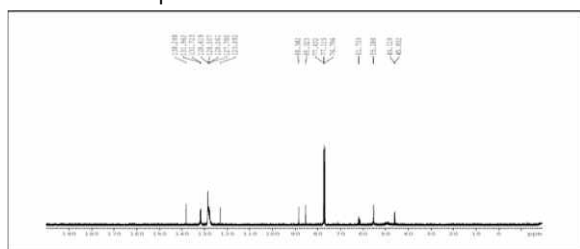
IR (Neat cm^{-1}): 3059, 2934, 2693, 1670, 1598, 1489, 1451, 1373, 1321, 1283, 1158, 1142, 1106, 1073, 1008, 969, 916, 812, 756, 726, 695.

^1H NMR (δ ppm): 7.64-7.66 (m, 2H), 7.50-7.53 (m, 2H), 7.33-7.40 (m, 2H), 7.33(m, 4H), 4.85 (s, 1H), 2.71 (s, 4H), 2.52 (s, 4H), 2.31(s, 3H).

^{13}C NMR (δ ppm) : 138.2, 131.9, 131.7, 128.6, 128.5, 128.0, 127.7, 123, 88.3, 85.3, 61.7, 55.2, 46.1, 45.9.



^1H NMR of Compound – 1



^{13}C NMR of Compound – 1

1-methyl-4-(3-phenyl-1-p-tolylprop-2-ynyl) piperazine (Compound – 2)

Physical state : Golden brown viscous liquid

Yield : 74%

IR (Neat, cm^{-1}): 3026, 2934, 2793, 2691, 1680, 1598, 1510, 1489, 1451, 1373, 1320, 1284, 143, 1104, 969, 828, 756, 691.

^1H NMR(δ ppm): 7.50-7.53(m, 4H), 7.31-7.32(m, 3H), 7.18-7.28(m, 2H), 4.8(s, 1H), 2.7(m, 4H), 2.5(m, 4H), 2.37(s, 3H), 2.31(3H)

^{13}C NMR(δ ppm): 137.3, 135.2, 131.8, 128.4, 128.2, 128.0, 127.8, 123.1, 88.1, 85.6, 61.3, 55.2, 45.9, 21.1

Conclusion

Propargylamines were synthesised by one pot three component coupling reaction using CuCl as catalyst. The product formation was confirmed by NMR, IR techniques.

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NEW POLYDENTATE N-DONOR LIGAND FROM HETEROCYCLIC ALDEHYDE AND 2, 4-BIS (HYDRAZINYL)-1,3,5-TRIAZINE AND ITS TRANSITION METAL (II) COMPLEXESSSSS

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Abstract

A new series of transition metal(II) complexes derived from furfuraldehyde and 2-(4-chlorophenyl amino)-4,6-dihydrazinyl-1,3,5-triazine are synthesised and characterized by spectral and analytical methods. The non electrolytic behaviour of the complexes is confirmed from their molar conductance data. Electronic absorption spectra and magnetic susceptibility measurements of the complexes suggest the square pyramidal geometry for metal(II) complexes. The redox behaviour of the copper (II) complexes has been studied by cyclic voltammetry. The synthesized compounds are screened for their antibacterial activity against the bacterial species, *E.coli*, *B. subtilis*, *K.pneumoniae*, and *s. aureus* and the fungi *candida albicans*, by well diffusion method. The activity data show that the metal(II) complexes to be more potent activity than the parent Schiff base ligand against the bacterial species.

Keywords: s- triazine, metal (II) complexes, electrochemical behaviour, biological activity.

Introduction

Triazines and their derivatives have been widely studied in terms of their synthetic methodologies and reactivity since some of these derivatives have shown promising potential as antitumor agents, enzyme inhibitors and other forms of bioactivity¹⁻³. The appeal of the 1,3,5-triazine core is largely due to the ease of systematic substitution of the chlorine atoms in cyanuric chloride (2,4,6-trichloro-1,3,5-triazine) with amine nucleophiles to generate new compounds. Several derivatives of s-triazine show antimicrobial⁴ and herbicidal activities. 1,3,5-triazine derivatives containing various amino groups on the position 2, 4 or 6, such as tretamine, furazil and dioxadet, have been reported as anticancer agents. The 1,3,5-triazine nucleus is also the core structure of a great number of cancer growth inhibitors^{5,6}.

Design of metal-based pharmaceuticals depends on the ligand framework, the choice of metal ion and its oxidation state. As the biological activity of a complex depends strongly on the nature of the ligands and the coordination behavior of the metal. Recent researches have been directed at the synthesis and evaluation of the biological activity of metal complexes with biologically interesting ligands. With the aim of widening the spectrum

of complex activity, in this present study a substituted 2,4-bis hydrazenyl s-triazine derivative and its transition metal(II) complexes are synthesised, characterised and also screened for their antimicrobial activities.

Experimental

Materials and Physical Measurements

The solvents used in the reactions were dried as per standard procedures. The UV-visible spectra were recorded using a JASCO V-530 Spectrophotometer. The metal content of the complexes was estimated by incinerating them in to the oxides. FT-IR spectra were recorded on a SHIMADZU FT-IR spectrophotometer using KBr discs. ¹H NMR spectrum was recorded in a Bruker DRX-300, 300 MHz NMR spectrometer, using TMS as reference. Magnetic susceptibility measurements were performed at room temperature using Sherwood MSB Mark 1, Gouy Balance UK. Cyclic voltammetry measurement was carried out with an electrochemical analyzer using a three-electrode cell containing a reference Ag/AgCl electrode and Pt wire auxiliary electrode, and glassy carbon working electrode with tetrabutylammoniumperchlorate (TBAP) as supporting electrolyte.

Synthesis of 4-chlorophenyl)-4,6-dihydrazinyl-1,3,5-triazin-2-amine

4,6-dichloro-N-phenyl-1,3,5-triazin-2-amine (1.788g, 0.005 mole) in ethanol is refluxed with excess of hydrazine hydrate in ethanol for about one hour. The resulting mixture is poured into ice cold water. The white solid obtained was filtered, dried and recrystallized from hot ethanol. Yield 90% IR (KBr, cm^{-1}): 3319, 3328, 1489, 1429, 1010

Synthesis of 2,4-Bis ((2-((furan-2-yl) methylene) hydrazinyl)-6-(4-chlorophenylamino)-1,3,5-triazine (BFHT)

To an ethanolic solution of 1.33g (5mmol) of 4-chlorophenyl)-4,6-dihydrazinyl-1,3,5-triazin-2-amine, few drops of dilute 0.1M HCl was added followed by furfuraldehyde (9ml, 10 mmol) with constant stirring for about 3 hrs. The resulting mixture was concentrated and cooled. The separated pale yellow solid was dried and recrystallized from ethanol. (Fig.1) (Yield:72% , Melting point : 233-238°C) IR (KBr, cm^{-1}): 3329,1618, 1489,1419, and 1014 . ^1H NMR (in CDCl_3) (ppm): 9.95 (s, 2H, NH), 8.78(s, H, NHAr), 8.07(s, 2H, =CH), 7.00-7.52, (m, Ar-H). EI-mass: m/z 422.5. Elemental analysis found. C, 53.88; H, 3.46; N, 26.42 %.

Synthesis of metal (II) complexes

An ethanolic solution of 0.01 mmol of metal(II) chloride [$\text{CuCl}_2 \cdot 2\text{H}_2\text{O}$, $\text{NiCl}_2 \cdot 6\text{H}_2\text{O}$, $\text{CoCl}_2 \cdot 6\text{H}_2\text{O}$] was stirred under reflux with ethanolic solution of 0.01 mmol of the ligand BFHT for about 3hrs. The metal chelates thus separated were filtered, washed with ethanol and dried over CaCl_2 in vacuum. (Yield: 72-75%).

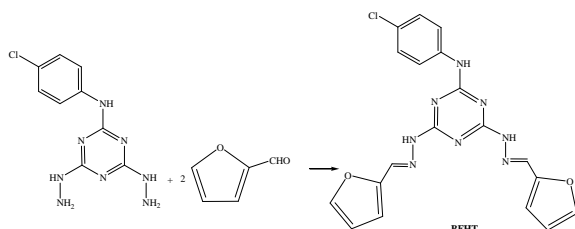


Figure 1 Synthesis of BFHT

Results and Discussion

The molar conductivity measurement of metal(II) complexes in the range $5\text{--}10 \Omega^{-1}\text{cm}^{-1}\text{mol}^{-1}$ indicates the non-ionic nature of these complexes and hence they are considered as non-electrolytes⁷.

FT- IR Spectral Studies

The IR spectra of the metal complexes show features that can be correlated with complex formation. The IR spectra of the ligand and metal (II) complexes were performed as KBr pellets in the range $4000\text{--}400 \text{ cm}^{-1}$ and the spectral data are given in Table 1. The IR spectra of the ligand shows a strong band at 1419 cm^{-1} and 1491 cm^{-1} which is a characteristic stretching vibrations of the $\nu(\text{C}=\text{N})$ groups in s-triazine⁸. In complexes this strong absorption bands at $1514\text{--}1541 \text{ cm}^{-1}$ correspond to the $\nu(\text{C}=\text{N})$ stretching vibrations of the triazine rings of the ligand exhibit shifts as well as splitting indicating the involvement of s- triazine nitrogen in coordination^{9,10}. On comparing IR spectra of ligand with their complexes stretching band at 1618 cm^{-1} corresponding to $\nu(\text{C}=\text{N})$ (azomethine) group is found to be shifted by $20\text{--}10 \text{ cm}^{-1}$ indicating the co-ordination of azomethine N atom¹¹ to the metal ion. Consequently the shift to higher frequency is observed in N-N stretching vibration by $6\text{--}12 \text{ cm}^{-1}$ in the spectra of all the complexes also confirmed the involvement of hydrazino nitrogen (corresponding to exocyclic azomethine function) in the coordination¹².

Table 1 IR spectral data (cm^{-1}) for the ligand and its metal (II) complexes

Compound	$\nu(\text{C}=\text{N})$	$\nu(\text{C}=\text{N})_{\text{ring}}$	$\nu(\text{N}-\text{N})$	$\nu(\text{M}-\text{N})$
BFHT	1618	1419,1489	1014	-
$[\text{Cu}(\text{BFHT})\text{Cl}_2]$	1614	1462,1519	1018	457
$[\text{Ni}(\text{BFHT})\text{Cl}_2]$	1610	1423, 1512	1020	453
$[\text{Co}(\text{BFHT})\text{Cl}_2]$	1614	1492,1514	1018	457

The IR spectra of the complexes in the far IR region shows weak bands at $462\text{--}467 \text{ cm}^{-1}$ can be assigned to $\nu(\text{M}-\text{N})$ ¹³ vibration and confirm the interaction between metal and the ligand. Absence of any band around 3500 cm^{-1} indicates that neither coordinated nor lattice water is present in the complexes. The $\nu(\text{NH})$ stretching frequency shows irregular variation in the complexes, which ruled out the possibility of its coordination.

Electronic Absorption Spectra and Magnetic Susceptibility

The electronic absorption spectral data provides easy and reliable information on coordination geometry around central metal ion. The electronic spectra of the ligand and its complexes were recorded in DMF and presented in Table.2. The absorption bands for the ligand in the region of 30303 cm^{-1} and 37037 cm^{-1} are due to $n \rightarrow \pi^*$ and $\pi \rightarrow \pi^*$ transition (INCT transition) in the ligand¹⁴.

The electronic spectrum of Cu(II) complex in DMF solution shows two absorption bands at , 14204 cm^{-1} and 24038 cm^{-1} which can be tentatively assigned to the transitions $^2B_1 \rightarrow ^2A_1$ (ν_1), and $^2B_1 \rightarrow ^2B_2$ (ν_2) respectively, are characteristic of square pyramidal geometry¹⁴. The magnetic moment of Cu(II) complex is observed at 1.79 B.M. On the basis of electronic spectra and magnetic susceptibility measurements a square pyramidal geometry around Cu(II) is suggested¹⁵. The electronic spectrum of Ni(II) complex is consistent with a five-coordinate square-pyramidal. Thus, it seems reasonable to consider the structure to be distorted square-pyramidal. The various bands at 13241 cm^{-1} , and

15698 cm^{-1} can be assigned to the transitions $^3B_1(F) \rightarrow ^3E(F)$ (ν_1) and $^3B_1(F) \rightarrow ^3A_2(P)$ (ν_2), assuming the effective symmetry to be square pyramidal¹⁶. The solution electronic spectrum of the Co(II) complex exhibits three bands at 14858 cm^{-1} , 16420 cm^{-1} and 24038 cm^{-1} in the visible region which are assigned to $^4A_2 \rightarrow ^4B_1(\nu_1)$, $^4A_2 \rightarrow ^4E(P)$ (ν_2) and $^4A_2 \rightarrow ^4A_2(P)$ (ν_3) transitions respectively, as expected for square pyramidal geometry¹⁷. Cobalt(II), and Nickel(II) complexes have magnetic moment values 4.69 and 3.02B.M, respectively, also further confirms the square pyramidal geometry.

Table 2 Electronic absorption spectral data (cm^{-1}) and magnetic susceptibility data of the metal (II) complexes

Compounds	Frequency (cm^{-1}) (ϵ , $\text{M}^{-1} \text{cm}^{-1}$)	Assignment	Geometry	μ_{eff} (BM)
Cu(BFHT)Cl ₂ (4)	14204(11.6) 24038(2.3486)	$^2B_1 \rightarrow ^2A_1$ $^2B_1 \rightarrow ^2B_2$	Square pyramidal	1.79
Ni(BFHT)Cl ₂ (5)	13245 (4.8) 15698(8.98)	$^3B_1(F) \rightarrow ^3E(F)$ $^3B_1(F) \rightarrow ^3A_2(P)$	Square pyramidal	2.89
Co(BFHT)Cl ₂ (6)	14858 (27.58) 16420 (18.80) 24038 (222.37)	$^4A_2 + ^4E \rightarrow ^4B_1$ $^4A_2 + ^4E \rightarrow ^4E(P)$ $^4A_2 + ^4E \rightarrow ^4A_2(P)$	Square pyramidal	4.53

ESR Spectral Studies

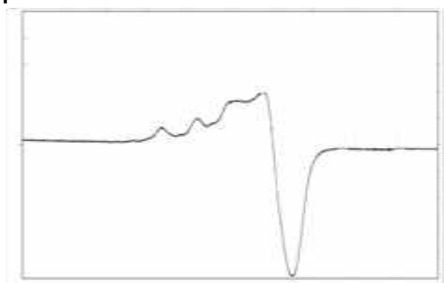


Figure 2 ESR spectrum of [Cu (BFHT)Cl₂] in DMF at LNT

The ESR spectrum of Cu(II) complex was recorded at room temperature shows one intense absorption band and in the high field region, and it is isotropic, due to the tumbling motion of the molecules. The ESR spectrum of Cu(II) complex at LNT is shown in Fig.2 and the spin Hamiltonian parameters are given in table 3. However the spectrum at LNT shows four well resolved peaks in the low field region corresponding to g_{\parallel} (2.23) and g_{\perp} (2.050). Since the g_{\parallel} and g_{\perp} values are closer to 2 and $g_{\parallel} > g_{\perp}$, suggesting an axially elongated square pyramidal geometry¹⁸. The trend, g_{\parallel} (2.23) $>$ g_{\perp} (2.050) $>$ g_e (2.0023) shows that the unpaired electron of Cu(II) lies predominantly in the $d_{x^2-y^2}$ orbital, thus implying a $^2B_{1g}$ ground state^{19,20}. The fact that the unpaired electron is localised in the $d_{x^2-y^2}$ orbital and also supported by the value of the exchange interaction term G estimated from

the expression $G = (g_{\parallel} - 2.0023) / (g_{\perp} - 2.0023)$. If $G > 4.0$, the local axes are aligned parallel or only slightly misaligned. If $G < 4.0$, significant coupling is present and

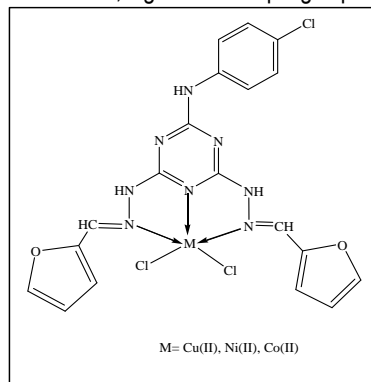


Figure 3 Proposed Structure of the metal (II) complexes of BFHT

The misalignment is appreciable. The observed value for the exchange interaction parameter for the Cu(II) complex ($G = 4.77$) suggests that the local tetragonal axes are aligned parallel or slightly misaligned. The observed G value for the Cu(II) complex suggests that there is no appreciable coupling¹⁸. The calculated magnetic moment for the copper(II) complex (1.82BM) as per the relation $\mu^2 = 3/4 |g|^2$ is indicative of an unpaired electron. Kivelson and Neiman²¹ showed that g_{\parallel} serves as a single parameter measuring the total covalency of the in-plane σ and π bonding. The observed value of α^2 (0.773) of the

complex is less than unity, which indicates the complex has some covalent character in the ligand environment²². The spin orbit coupling constant value λ , calculated using the relations $g_{av} = 1/3(g_{\parallel} + 2 g_{\perp})$ and $g_{av} = 2(1-2\lambda/10Dq)$, is less than the free Cu(II) ion (-832cm^{-1}) which also supports the covalent character of M-L bond in the complex.

Electrochemical Behavior

The cyclic voltammogram of copper(II) complex (Fig.) at a scan rate of 0.1 V/s exhibits a well-defined irreversible redox peak. The cyclic voltammogram of the copper (II) complex exhibits reduction wave at - 0.508V and oxidation wave at 0.753V with the redox peak potential separation (ΔE_p) of 0.245V suggests that the Cu(II)/Cu(I) redox couple is an irreversible reduction. The irreversibility observed for the reductive response of the complex may be due to a short-lived reduced state of the metal(II) ion or due to the oxidative degradation of the ligand. The area under wave I is same as that of wave II in the reverse scan. This suggests that the electron number involving in wave II may be same as that of wave I 23. The ratio of anodic to cathodic peak currents ($I_{pc}/I_{pa} \approx 1$) shows that Cu(II)/Cu(I) couple is a monoelectronic system.

Antimicrobial Studies

The emerging bacterial resistance causes a widespread problem for the treatment of various infections.

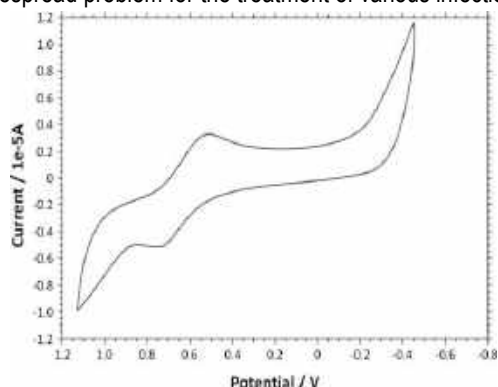


Figure 4 Cyclic voltammogram of [Cu(BFHT)Cl₂]

Fungal infections are generally observed as superficial or systemic infections in humans, animals as well as plants. The development of antifungal agents has surpassed the development of antibacterials. The microorganisms employed for antibacterial studies were *B. subtilis*, *E. coli*, *K. pneumoniae*, and *S. aureus* the organism used for antifungal studies was *candida albicans*. Antimicrobial studies were performed by well diffusion method. Amikacin and Ketoconazole were taken as the standard for antibacterial and antifungal studies

respectively. The antimicrobial studies reveals that the ligands were resistant against the fungi *candida albicans* while the cobalt(II) and nickel(II) complexes are more potent towards the fungi similar to the standard used. Cu(II), Co(II), Ni(II) complexes of BFHT show significant antibacterial activity towards the bacteria *S. aureus* similar to the standard amikacin. Other complexes show moderate activity towards the organisms used. Metal complexes showed enhanced antimicrobial activity over free ligand due to greater lipophilic nature of the complexes 24, 25. Generally, it is suggested that the chelated complexes deactivate various cellular enzymes, which play a vital role in various metabolic pathways of these microorganisms. Other factors such as solubility, conductivity and dipole moment, which are affected by the presence of metal ions, may also be possible reasons for increasing the biological activity of the metal complexes as compared to the corresponding ligand.

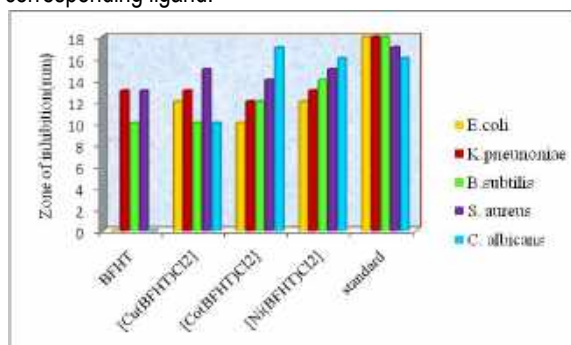


Figure 5 Antimicrobial studies of BFHT and its metal (II) complexes

Conclusion

A novel N-donor tridentate ligand 2,4-bis (hydrazinyl) s-triazine derivative and its transition metal(II) complexes have been synthesized and characterized. From the spectral and analytical data all the M(II) complexes are tentatively assigned as square pyramidal geometry. The electrochemical studies of Cu(II) complex reveals that the Cu(II)/Cu(I) redox couple is irreversible in nature. The antimicrobial studies clearly illustrates that the metal(II) complexes have significant antimicrobial activity against tested organism and show more potent activity against the fungi compared to standard drugs. The produced compounds possess good microbial toxicity due to presence of pharmacologically active heterocyclic rings. These results, although preliminary, are promising and may shed some light on designing new potential antibacterial and antifungal agents in the future.

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EDGE DETECTION USING FUZZY LOGIC IN MAT LAB

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Abstract

Image processing is the technique of processing images using mathematical operations by using signal processing and the output is an image. Most image processing techniques involve treating the image as 2D and 3D signal and applying standard signal processing techniques to it. Edge detection of an image reduces significantly the amount of data and filters out relevant information are, prescribing the important structural properties of the image. Various edge detection algorithms have been developed in the process of finding the perfect edge detection. The current articles reveals about the image processing using fuzzy logic in Matlab. It is a collection of all the various types of approaches that understand, represent and process the images, their segments and features as fuzzy sets.

Keywords: Algorithms, Matlab, Fuzzification, Defuzzification.

Introduction

Digital image processing techniques have become popular in a wide variety of fields such as engineering, computer science, information science, and medicine. Image processing is a method to perform some operations on an image, in order to get an enhanced image or to extract some useful information from it. It is a type of signal processing in which input is an image and output may be image or characteristics/features associated with that image. Nowadays, image processing is among rapidly growing technologies. It forms core research area within engineering and computer science disciplines too.

Image processing basically includes the following three steps:

- Importing the image via image acquisition tools;
- Analysing and manipulating the image;
- Output in which result can be altered image or report that is based on image analysis.

There are two types of methods used for image processing namely, analogue and digital image processing. Analogue image processing can be used for the hard copies like printouts and photographs. Image analysts use various fundamentals of interpretation while using these visual techniques. Digital image processing techniques help in manipulation of the digital images by using computers. The three general phases that all types of data have to undergo while using digital technique are pre-processing, enhancement, and display, information extraction.

Edge Detection has been very useful image processing tool for image analysis in computer vision and pattern recognition field. In image, edges carries essential information of an object of interest in image as they separate dissimilar regions in an image.

The goal of edge detection is to produce something like a line drawing of an image. In practice we will look for places in the image where the intensity changes quickly. Observe that, in general, the boundaries of objects tend to produce sudden changes in the image intensity.

The proposed work is based on an edge detection technique by dividing the image into 3-fuzzy partitions (regions) and then finding the maximum entropy to give the best edge, which also defines the necessary condition to maximize the entropy function. Based on these condition three-level thresholding is obtained. Fuzzy rule-based operators built on IF-THEN-ELSE rule-based architecture for edge detection.

The current paper explains the methods by which neighbouring pixel around a centre pixel are assumed in some classes and then using some appropriate membership function, fuzzy inference system is designed which extract the edges from the image.

Edge Detection

Edge detection is the name for a set of mathematical methods which aim at identifying points in a digital image at which the image brightness changes sharply or, more formally, has discontinuities. The points at which image brightness changes sharply are typically organized

into a set of curved line segments termed edges. Unlike the real world, images do not have edges. An edge is a sharp change in intensity of an image. An edge is not a physical entity just like a shadow. It is where the picture ends and the wall starts, where the vertical and the horizontal surface of an object meet. If there were a sensor with infinitely small footprints and zero-width point spread functions, an edge would be recorded between pixels within an image.

In reality, what appears to be an edge from the distance may even contain other edges when looked at in closeup. The edge between a forest and a road in an aerial photo which may not look like an edge any more in a image taken on the ground. Edge is scale dependent and an edge may contain other edge, but at a certain scale an edge still has no width. If the edge in an image is identified accurately all the objects are located and their basic properties such as area, perimeter and shape can be measured. Therefore edges are used for boundary estimation and segmentation in the scene. Since computer vision involves the identification and classification of objects in an image, edge detection is an essential tool.

Types of Edges

All edge is locally directional. Therefore, the goal in edge detection is to find out what occurred perpendicular to an edge. The following is a list of commonly found edges.

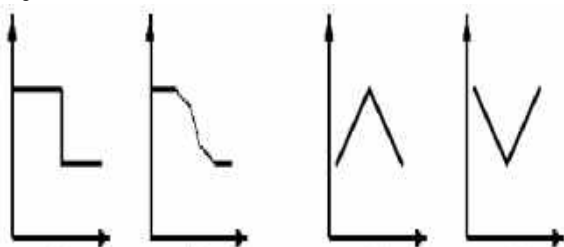


Figure 2.1

A sharp step is an idealization of an edge. Since an image is always band limited, this type of graph cannot ever occur. The change in intensity is not as quick or sharp. A roof is different than the first two edges. The derivative of this edge is discontinuous. A roof can have a variety of sharpness, widths, and spatial extents. The trough is the inverse of a roof. Edge detection is very useful in a number of contexts. Edges characterize object boundaries and are, therefore, useful for segmentation, registration and identification of objects in scenes.

The goal of the edge detection process in a digital image is to determine the frontiers of all represented

objects, based on automatic processing of the color or grey level information in each present pixel. Edge detection has much application in image processing and computer vision.

Techniques for Edge Detection

Edge detection of an image reduces significantly the amount of data and filters out information that may be regarded as less relevant, preserving the important structural properties of an image. Therefore, edges detected from its original image contain major information, which only need a small amount of memory to store. The original image can be easily restored from its edge map. Various edge detection algorithms have been developed in the process of finding the perfect edge detector.

Edge detection may be grouped into two categories, namely, gradient based edge detection and Laplacian – based edge detection. In this gradient based edge detection, we calculate an estimate of the gradient magnitude using the smoothing filter and use the calculated estimate to determine the position of the edge. In other words the gradient method detects the edges by looking for the maximum and the minimum in the first derivative of the image.

In the Laplacian method we calculate the second derivative of the signal and the derivative magnitude is maximum when second derivative is zero. In short, Laplacian method searches for zero crossing in the second derivative of the image to find edge. The original image can be easily restored from its edges.

Algorithms used for Edge Detection

Classical methods of edge detection involve convolving the image with an operator (a 2-D filter), which is constructed to be sensitive to large gradients in the image while returning values of zero in uniform regions. There is an extremely large number of edge detection operators available, each designed to be sensitive to certain types of edges. Variables involved in the selection of an edge detection operator include:

Edge orientation: The geometry of the operator determines a characteristic direction in which it is most sensitive to edges. Operators can be optimized to look for horizontal, vertical, or diagonal edges.

Noise environment: Edge detection is difficult in noisy images, since both the noise and the edges contain high-frequency content. Attempts to reduce the noise result in blurred and distorted edges. This results in less

accurate localization of the detected edges. Operators used on noisy images are typically larger in scope, so they can average enough data to discount localized noisy pixels.

Edge structure: Not all edges involve a step change in intensity. Effects such as refraction or poor focus can result in objects with boundaries defined by a gradual change in intensity. The operator needs to be chosen to be responsive to such a gradual change in those cases. Newer wavelet-based techniques actually characterize the nature of the transition for each edge in order to distinguish,

Gradient: The gradient method detects the edges by looking for the maxima and minima in the first spatial derivative of the image. Mathematically, the gradient of a two-variable function (here the image intensity function) at each image point is a 2D vector with the components given by the derivatives in the horizontal and vertical directions.

This method of locating an edge is characteristic of the 'gradient filter' family of edge detection filters and includes the Sobel method. A pixel location is declared an edge location if the value of the gradient exceeds some threshold.

Intensity values Partial derivative $\left| \frac{\partial f(x,y)}{\partial x} \right|$ to x

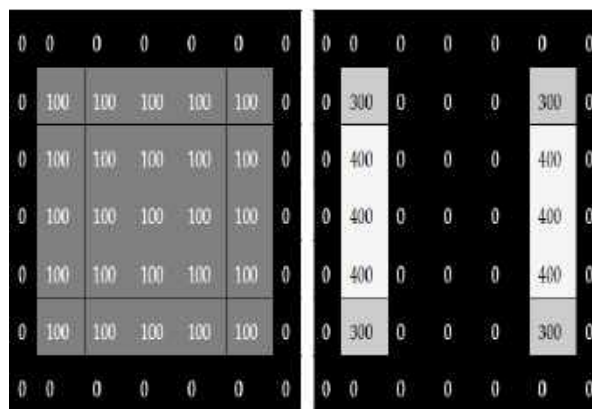


Figure 2.3.1

C) $\left| \frac{\partial f(x,y)}{\partial y} \right|$ to y direction. d) Spatial derivative $\left| \frac{\partial^2 f(x,y)}{\partial x \partial y} \right|$ of pixel.

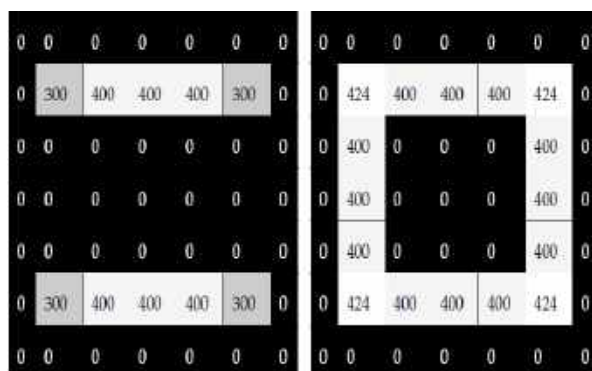


Fig.2.3.2

Second order derivative: Second order derivative, also known as Laplacian method for zero crossings in the second derivative of the image to find edges. An edge has the one-dimensional shape of a ramp and calculating the derivative of the image can highlight its location. Furthermore, when the first derivative is at a maximum, the second order derivative is zero. As a result, another alternative to finding the location of an edge is to locate the zeros in the second order derivative. Second order derivative of an image can be obtained by applying a suitable operator.

Fuzzy Image Processing

Fuzzy logic is a powerful problem-solving methodology with a myriad of applications in embedded control and information processing. Fuzzy provides a remarkably simple way to draw definite conclusion from vague, ambiguous or imprecise information. In a sense, fuzzy logic resembles human decision making with its ability to work from approximate data and find precise solution. Fuzzy logic and probability theory is the most powerful tool to overcome the imperfection.

Fuzzy image processing is not a unique theory. It is a collection of different fuzzy approaches to image processing. Fuzzy image processing is the collection of all approaches that understand, represent and process the images, their segments and features as fuzzy sets. Fuzzy image processing has three main stages: image fuzzification, modification of membership values, and image Defuzzification.

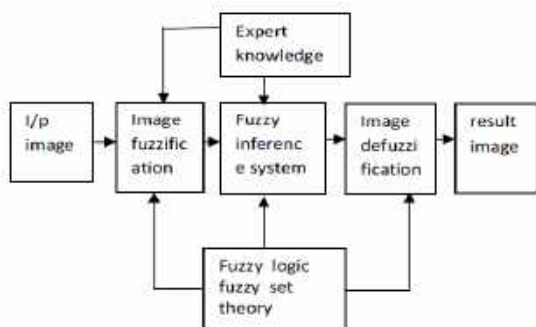


Figure 3.1 The General Structure of Fuzzy Image Processing.

Fuzzy set theory and fuzzy logic offer us powerful tools to represent and process human knowledge in form of fuzzy if-then rules. On the other side, many difficulties in image processing arise because the data/tasks/results are uncertain. This uncertainty, however, is not always due to the randomness but to the ambiguity and vagueness. The question whether a pixel should become darker or brighter than it already is, the question where is the boundary between two image segments, and the question what is a tree in a scene analysis problem, all of these and other similar questions are examples for situations that a fuzzy approach can be the more suitable way to manage the imperfection. Fuzzy logic and fuzzy set theory provide a rich and meaningful addition to standard logic. The mathematics generated by these theories is consistent, and fuzzy logic may be a generalization of classic logic.

Edge Detection using Fuzzy Logic

The current paper is based on an algorithm based on fuzzy logic rules are developed for detecting edges from an image. In order to avoid the complexity, scanning mask of 2x2 pixels window is used. A fuzzy inference based system has been designed under MATLAB platform to detect the edge. A rule-base consisting of 16 rules has been developed to detect the pixel under consideration in a 2x2 window as White, Edge or Black.

Design of fuzzy inference system

In order to detect the edge in the image, a fuzzy inference system has been designed which take different pixel value as inputs, fuzzified these input i.e. convert it into fuzzy plane and then using some predefined rule mark the considered pixel as edge, Black, White. Mandani method is chosen as the defuzzification method and the output of the system is calculated as the centroid of the resulting membership functions.

Window Mask

Fuzzy inference system for this algorithm has four inputs and one output. Since in this algorithm 2x2 window mask is used for scanning purpose, therefore four-pixel values obtained by this mask is used as four inputs.

Membership Function

The choice of membership function is problem dependent. In this algorithm Triangular Membership functions is used for input as well as for output. The standard Triangular membership function is defined as

$$TF(x; a, b, c) = \begin{cases} 0 & x \leq a \text{ or } x > c \\ \frac{(x-a)}{(b-a)} & a < x < b \\ \frac{(c-x)}{(c-b)} & b < x \leq c \end{cases}$$

Fuzzy Sets

The input pixels are divided into two fuzzy sets i.e. Black & White while the output pixel is divided into three fuzzy sets i.e. Black, Edge and White.

All the parameters for input and output fuzzy set is summarized in a Table I

Fuzzy Input	Linguistic variable for pixel	Range	Parameter	MF
P1	White	[0 255]	[0 255 255]	Triangular
	Black		[0 0 255]	Triangular
P2	White	[0 255]	[0 255 255]	Triangular
	Black		[0 0 255]	Triangular
P3	White	[0 255]	[0 255 255]	Triangular
	Black		[0 0 255]	Triangular
P4	White	[0 255]	[0 255 255]	Triangular
	Black		[0 0 255]	Triangular
Fuzzy Output	Pixel Name		Range	MF
P4 _{output}	Black	[0 255]	[0 4 8]	Triangular
	Edge		[130 133 136]	Triangular
	White		[247 251 255]	Triangular

Proposed Algorithm

The algorithm begins with sliding 2x2 window on whole image pixel by pixel row wise from left to right and top to bottom. After this these 4-pixel undergoes different fuzzy condition as shown in Fig. 5.2.1 and change the value of P4.

Following are the steps of algorithm-

1. Input the P1, P2, P3, P4 pixel from the scanned window to FIS system and fuzzified it into different degree of Black and White.
2. Then apply Fuzzy t-norms operator (MIN) for calculating firing strength.
3. Fire the fuzzy rules for each crisp input.

4. Apply the MAX operator(s-norm) to get the aggregate resultant output.
5. Apply the Defuzzification step using centroid method.
6. Get the crisp P4out pixel which may come under White, Black or Edge category.
7. Compute the first derivative and threshold it to get the edge of the image.

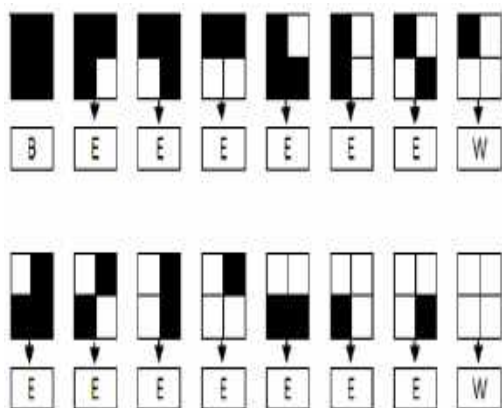


Figure 5.2.1 Fuzzy Conditions

Result and Discussion

It was observed from the result that the performance of proposed edge detection algorithm is better than Sobel and prewitt operator in finding distinct edges from the image and thus able to provide better visual appearance of edges which is not possible in case of Sobel and prewitt operator. Moreover, since this method uses 2×2 window for mask operation and has 16 rule base, therefore it has less computational complexity as well. Now the result in Matlab program. This dissertation has given an efficient fuzzy inference system for edge detection, The proposed fuzzy edge detection algorithm was simulated using MATLAB .The performance of proposed method is compared with the sobel and prewitt operator. One set comprises of standard grayscale images and the result of sobeloperator,prewitt operator and proposed edge Comparison of sobel, prewitt and proposed algorithm concludes that the more efficient edge detection is possible with the proposed algorithm. The computational complexity is also reduced. The same method can be applied using 3×3 window or the higher dimension window.



Figure 5-8 Original image



Figure 5-9 Edge detection

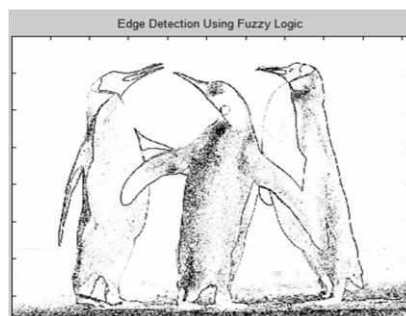


Figure 5-10 Edge detection using fuzzy logic

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A TRANSPORT MODEL FOR MAGNETIC DRUG TARGETING USING CARBON NANO TUBES

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Abstract

Mathematical modelling of targeted drug delivery system provides a quantitative description of the drug transportation in the biological system. Drugs are chemically bound to magnetic nano particles injected into the body and steered to the site of the diseased tissue using external magnetic fields. The carrier particle is non magnetic and is embedded with magnetic nanoparticles and therapeutic agents. It is coated on the surface with suitable molecules to promote binding. The magnetic targeting system proposed here would use carbon nanotubes synthesized with a layer of magnetite (Fe_3O_4) nanoparticles on the inner surface of the nanotubes with diameters 1 to 10 nm, and length as low as 150 nm. The particle movement is analysed knowing the local flow condition and using appropriate field magnets. The equations governing the motion of the carrier particle are solved and an analytical expression for predicting its trajectory in a microvessel, volume fraction to ensure capture of nanoparticles at the tumor is derived and the velocity components are found. The calculation of the particle trajectories is done accurately using scilab 5.4.1. This work provides a numerical proof of principle of the magnetic drug-targeting approach using carbon nanotubes.

Keywords: carbon nanotubes, magnetic drug targeting, magnetic nano particles, magnetic field, mathematical models.

Introduction

Mathematical modelling of targeted drug delivery system provides a quantitative description of the drug transportation in the biological system. Modelling of magnetic particle therapy involves interaction among electromagnetic fields, fluid mechanics and therapeutic phenomena. In Ferro hydro dynamics there need not be electric current flowing in the fluid and the body force is due to the polarization force. The present work deals exclusively with FHD. The greatest challenge in treating Cancer and other localised diseases is getting medication to the affected tissue. Since every vessel in the circulatory system is linked, drugs taken orally or injected into the blood stream spread throughout the body damaging the healthy tissues.

Magnetic drug delivery is a method to target medicine to a diseased area in the body. In an ideal drug targeting, drugs are chemically bound to magnetic nano particles injected into the body and steered to the site of the diseased tissue using external magnetic fields. Here it is important to note that magnetic particle steering and trapping will not always have 100% success rate and some particles will always be lost between the injection site and the target. The problem now is to increase the number of

particles reaching the target and also to make them adhere for a longer time.

Mathematical models are required for dynamic control of magnets to precisely direct magnetic carriers to deep targets. When a mathematical description is available, then there is a possibility to decide how to actuate the external magnets to direct the carriers to where they need to go in the patient [7]. Nanotechnology is a field that applies engineering and manufacturing principles to the design synthesis of materials and devices on a nanoscale. It has gained increasing importance in the last few decades and the unique feature of magnetic nanoparticles makes it useful in drug targeting [1, 2].

Nano particles are solid sub micron colloidal polymeric carrier system ranging in size from 1 – 100 nm and are used as drug delivery agents [3] The use of magnetic nanoparticles for this purpose is called **magnetic drug targeting**.

Drug targeting can be active or passive. In passive targeting, therapeutic particles leak out of the vascular system and accumulate at the tumour due to the permeable vasculature. In active targeting, magnetic particles are functionalised with molecules which are capable of binding the target tissue. The prospect that nano capsules may be considered as magic bullet was first

proposed by the Nobel prize winner Paul Ehrlich in the 20th century. This ideal drug carrier is envisaged as transporter of drugs to the specific site which is then unloaded in a controlled manner [11]. Even though the field of carbon nanotubes is prominent in the field of nanotechnology it is still in infancy in biotechnology.. **Advantages of using carbon nano tubes as carrier particle [13]** include– Larger inner volume,– Distinct inner/outer surfaces with open ends – Readily taken up for filling with therapeutic substances [10] which enter cell nuclei [4] and give the required result. The Filling techniques: include – Immersing in solution, attaching drugs to tube walls and filling with particles[10]. Since reactions occur at the interface of two substances, when a large percentage of the particles are located on the surface, we get maximum exposed surface area, which means maximum reactivity. The advantages and disadvantages of magnetic drug targeting has been reviewed [14]. Many reported results, including those obtained from invitro and invivo experiments, have demonstrated that CNTs can increase the treatment effects while decrease the side and toxic effects of the drugs loaded on them, indicating a considerably bright future for them to be used as drug carriers. However, there is a long way to go for CNTs to get into practical use [17].

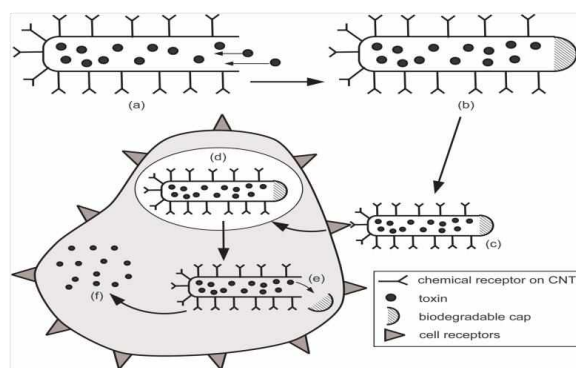


Figure 1.1

The Process

The carrier particle is non magnetic and is embedded with magnetic nanoparticles and therapeutic agents. Carbon nanotubes (CNTs) are allotropes of carbon with a cylindrical nanostructure fig 1.1. The structure of CNTs can be imagined as the cylindrical roll-up of one or more graphene sheets containing only sp² hybridized carbon atoms in a honeycomb arrangement. Mathematical modelling of interaction energies has been described by [16] and an analytical formula has been derived. A number

of studies have already reported successful delivery of anti-cancer drugs to human cancer cells or tumor xenografts by means of carbon nanotubes [8, 11, 12, 15]. The risks posed by nanomaterials, can be minimized by developing new highly biocompatible nanomaterials with low toxicity namely PLGA and silica nanoparticles and surface modification of nanoparticles with biocompatible chemicals, such as polyethylene glycol and chitosan [13]. Mathematical model for targeting in microvasculature was described by Furlani and Furlani [5]. The transport of magnetic nanoparticle and its capture was discussed by Furlani and Ng [6].

Motivation

Many of the existing models designed with a carrier particle being spherical and non magnetic predicting magnetic targeting of nanoparticles invivo utilize numerical methods to solve for particle transport. Analytical model would be ideal for parametric analysis of magnetic targeting invivo. A detailed knowledge about the particle trajectories and influencing parameters is needed to design an appropriate magnetic field. The magnetic targeting system proposed here would use carbon nanotubes synthesized with a layer of magnetite (Fe₃ O₄) nanoparticles on the inner surface of the nanotubes with diameters 1 to 10 nm, and length as low as 150 nm for effective targeting.

Objectives for this Study

To predict particle trajectories using numerical field calculations. To study all the influential parameters with the help of trajectories. To help optimise the performance of targeted magnetic particle delivery and expedite medical application by using the mathematical model. To implement the model by solving stiff differential equations using mathematical software Scilab 5.4 .1 version and also to trace the trajectories accurately [9].

Mathematical Formulation

The models described in this work are developed to predict the transport and capture of magnetic nanoparticles under the influence of magnetic field. The magnetic nanoparticles are injected into the blood vessel and their flow within blood (in the direction of z axis along the axis of blood vessel) is targeted by applying an external magnetic field. The magnetic field is applied by a rare-earth cylindrical magnet positioned outside the body. The magnet is assumed to be infinite extent and oriented to the perpendicular direction of the blood flow (x direction). The

magnetic particle transport in a blood vessel is depicted in **Figure 3.1**. The blood vessel is assumed to be a cylindrical tube with laminar flow of magnetic particles within blood parallel to its axis. Since the magnetic force is confined to the x-z plane, it suffices to consider motion in this plane only, thereby reducing the analysis to two dimensions

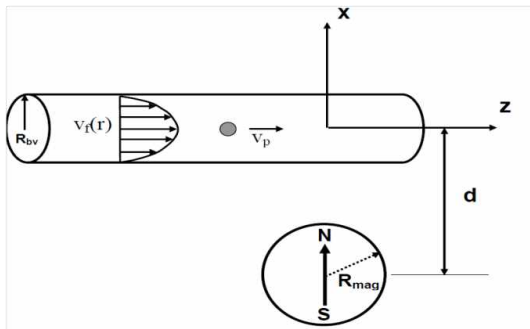


Figure 3.1 Reference for mathematical Analysis

Solution

Magnetic transport of a carrier particle in the vascular system is governed by several factors. They are magnetic force, viscous drag, particle cell interaction, Inertia, buoyancy, gravity, Thermal kinetics and particle/fluid interaction. We take into account the dominant magnetic and viscous force. Balancing the magnetic and fluidic forces F_m and F_f we have Newton's equation of motion to be

$$F_m + F_f = m_p dv_p / (3.1)$$

The most important force on particles in an MDT treatment is the externally-applied magnetic force. All the magnetic particles that have been medically approved for magnetic targeting are paramagnetic. Magnetite, also known as black iron oxide (Fe_3O_4), is widely considered to be the best material for magnetic targeting particles. It is magnetically linear, which means its magnetization is approximately proportional to the magnitude of an applied external magnetic field up to a certain field strength called the saturation field. We assume all the particles in this study are magnetically saturated at their maximum magnetization of $4.8 \times 10^5 \text{ N/m}^2$.

In order to predict the model, it was assumed that there are N_{mp} identical, non-interacting magnetic nanoparticles embedded in the carrier particle (CNT). Each particle has a radius R_p and volume $v_{mp} = (4\pi/3) R_p^3$.

The force on the magnetic particle is predicted using an effective dipole moment approach in which the particle is replaced by an equivalent point dipole which is located

at its center. This force depends on the magnetic force at the location of the dipole.

$$F_m = \mu (m_{p,eff} \cdot \nabla) H_a \text{ where } m_{p,eff} = v_p f(H_a) H_a \quad (3.2)$$

H_a is the applied magnetic field intensity at the center of the carrier particle, μ is the permeability of the fluid environment. We see that the magnetic force is therefore function of external magnetic field gradient and the magnetisation of the particle. Resolving the magnetic force along the X axis and Y axis we have F_{mx} and F_{my} to be the components.

$\chi_{mp} = \frac{\mu_{mp}}{\mu_0} - 1$ and μ_{mp} are the susceptibility and permeability of the particles.

Also $\mu_0 = 4\pi \times 10^{-7}$ is the permeability of air. Before saturation, particles are linearly magnetised with their magnetic moment increasing in the direction of H_a . After saturation point, the same value tends to a constant. Hence, in this model it is assumed that the function $f(H_a)$ is

$$\text{given by } f(H_a) = \begin{cases} \frac{3(\chi_p - \chi_f)}{(\chi_p - \chi_f) + 3}, & H_a < \frac{(\chi_p - \chi_f) + 3}{3\chi_p} M_{sp} \\ \frac{M_{sp}}{H_a}, & H_a \geq \frac{(\chi_p - \chi_f) + 3}{3\chi_p} M_{sp} \end{cases} \quad |x| < 1 \quad (3.3)$$

If we assume nonmagnetic fluid ($\chi_f = 0$) and magnetic particles with high susceptibility ($\chi_p \gg 1$), then in the case of water environment and magnetite (Fe_3O_4) we have $f(H_a)$ or

$$f(B) = \begin{cases} 3, & \frac{B}{\mu} < \frac{M_{sp}}{3} \\ \frac{M_{sp}}{B}, & \frac{B}{\mu} \geq \frac{M_{sp}}{3} \end{cases} \quad (3.4)$$

where B is the magnetic flux density of the external magnet, where $H_a = B/\mu$. [5.6]

$$H_x(x,z) = M_s R_{mag}^2 \frac{(x+d)^2 - z^2}{2((x+d)^2 - z^2)^2} \quad (3.5)$$

Using the above two equations in (1.8) the magnetic force components are

$$F_{mx}(x,z) = \mu_0 N_{mp} V_{mp} \{ 3\chi_{mp} / (\chi_{mp} + 3) \} [H_x \frac{\partial H_x}{\partial x} + H_z \frac{\partial H_x}{\partial z}]$$

$$F_{mz}(x,z) = \mu_0 N_{mp} V_{mp} \{ 3\chi_{mp} / (\chi_{mp} + 3) \} [H_x \frac{\partial H_z}{\partial x} + H_z \frac{\partial H_z}{\partial z}] \quad (3.6)$$

Simplifying further

$$F_{mx} = \frac{-3\mu_0 N_{mp} V_{mp} \chi_{mp} M_s^2 R_{mag}^4}{2} \frac{x+d}{(\chi_{mp} + 3)((x+d)^2 + z^2)^3} F_{mz}$$

$$= \frac{-3\mu_0 N_{mp} V_{mp} \chi_{mp} M_s^2 R_{mag}^4}{2} \frac{z}{(\chi_{mp} + 3)((x+d)^2 + z^2)^3} \quad (3.7)$$

In noninvasive magnetic targeting the distance from the magnet to the blood vessel is much larger than the diameter of the blood vessel. Therefore $x/d \ll 1$.

Also, the magnetic nanoparticles used in bioapplications are usually made from biocompatible materials such as magnetite (Fe_3O_4) for which $\chi_{\text{mp}} \gg 1$. Based on these assumptions, the magnetic force components can be simplified as

$$\begin{aligned} F_{mx} &= \frac{-3\mu_0 N_{\text{mp}} V_{\text{mp}} M_s^2 R_{\text{mag}}^4}{2} \frac{d}{(d^2 + z^2)^3} \\ F_{mz} &= \frac{-3\mu_0 N_{\text{mp}} V_{\text{mp}} M_s^2 R_{\text{mag}}^4}{2} \frac{z}{(d^2 + z^2)^3} \end{aligned} \quad (3.8)$$

The fluidic force components are determined substituting equation (3.5) into equation (3.4) considering the motion in the x-z plane,

$$\begin{aligned} F_{fx} &= -6\pi\eta R_p v_{p,x} \\ F_{fz} &= -6\pi\eta R_p \left(v_{p,z} - 2\bar{v}_f \left[1 - \left(\frac{x}{R_{bv}} \right)^2 \right] \right) \end{aligned} \quad (3.9)$$

The blood viscosity in the microvasculature is found using [1].

$$\eta = \eta_{\text{plasma}} \left[1 + \eta_{0.45-11-HDC-11-0.45C-1DD-1.12DD-1.12} \right] \quad (3.10)$$

Where $\eta_{\text{plasma}} = 1.2 \times 10^{-3} \text{ N.s/m}^2$ is the viscosity of the blood plasma (without the cells and platelets).

D is the diameter of the blood vessel in microns, H_D is the hematocrit (normally 0.45) and

$$\eta_{0.45} = 6 \cdot e^{-0.085D} + 3.2 - 2.44e^{-0.06D^{0.645}} \quad (3.11)$$

$$C = (0.8 + e^{-0.075D}) \left(\frac{1}{1 + 10^{-11} \cdot D^{12}} - 1 \right) + \frac{1}{1 + 10^{-11} \cdot D^{12}} \quad (3.12)$$

The equation of motion for a carrier particle travelling through a microvessel can be written in component form by substituting equations (3.6) - (3.9) in equation (3.2)

$$F_{mx} + F_{fx} = 0$$

$$F_{mz} + F_{fz} = 0 \quad (3.13)$$

$$\begin{aligned} V_{p,x} &= \{-\mu_0 N_{\text{mp}} V_{\text{mp}} M_s^2 R_{\text{mag}}^4 d\} / [4\pi\eta R_{\text{cp}} (d^2 + z^2)^3] \\ V_{p,z} &= \{-\mu_0 N_{\text{mp}} V_{\text{mp}} M_s^2 R_{\text{mag}}^4 z\} / [4\pi\eta R_{\text{cp}} (d^2 + z^2)^3 + 2V_f [1 - (x/R_{bv})^2]] \end{aligned} \quad (3.14)$$

Simplifying the analysis by assuming that the average axial velocity of the carrier particle equals the average blood flow velocity [3,5]

$$V_{p,z} = V_f \quad (3.15)$$

The axial position of the particle is given by

$$z = z_0 + v_f t \quad (3.16)$$

$$dx/dt = \{-\mu_0 N_{\text{mp}} V_{\text{mp}} M_s^2 R_{\text{mag}}^4 d\} / [4\pi\eta R_{\text{cp}} (d^2 + (z_0 + v_f t)^2)^3] \quad (3.17)$$

Expressing the total volume of the nano particles as a volume fraction of the carrier particle itself,

$$N_{\text{mp}} V_{\text{mp}} = \beta_{\text{vf}} V_p \quad (0 < \beta_{\text{vf}} < 1) \quad (3.18)$$

$$dx/dt = -\mu_0 \beta_{\text{vf}} R_{\text{cp}} h M_s^2 R_{\text{mag}}^4 d / 4\eta (d^2 + (z_0 + v_f t)^2)^3 \quad (3.19)$$

To predict the volume fraction of magnetic particles required to ensure capture of carrier particle we assume that the motion starts from the top of the microvessel. The particle is assumed to be captured if its trajectory reaches inner wall of the blood vessel we consider the motion of a carrier particle that starts out at the top of the microvessel (i.e. at $x_0 = R_{bv}$). If this particle is to be captured above the center of the magnet (i.e., at $z = 0$) then its terminal position is $x(t) = R_{bv}$ at $z = 0$,

Results and discussions

A magnetization model Fe_3O_4 is used to study the capture of carrier particles.[5,6] which is consistent with our model. Radius of the magnet $R_{\text{mag}} = 3.0 \text{ cm}$, with magnetization $M_s = 1 \times 10^6 \text{ A/m}$. The surface of the magnet is positioned 2.5 cm from the axis of the microvessel. The distance of the magnet from the axis of the vessel $d = 5.5 \text{ cm}$. The radius of the microvessel $R_{bv} = 50 \mu\text{m}$, Average flow velocity $v_f = 10 \text{ mm/s}$, $\eta_{\text{plasma}} = .0012 \text{ N.s/m}^2$ and a hematocrit 45%; $h = 150 \text{ nm}$; $R_{\text{cp}} = 5 \text{ nm}$

$x_0 = R_{bv}$ $z = 0$, $x(t) = -R_{bv}$ with the above conditions the differential equations (3.14) & (3.17) are solved using scilab 5.4.1 and trajectories are traced. To check the analysis done the trajectories of nine identical carrier particles with $R_{\text{cp}} = 5 \text{ nm}$, for a range of initial positions along the x-axis: $X_0 = -0.8R_{bv}$, $-0.6R_{bv}$, ..., $1.0R_{bv}$ and all other parameters as above are traced.. Two sets of trajectories are computed. The first set is computed using a magnetic particle volume fraction of 76%, which should ensure the capture of all the carrier particles. The predicted trajectories are shown in **Figure 4.1**

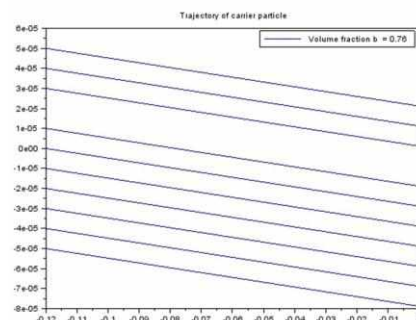


Fig.4.1 Analysis with variations in initial positions along the x.axis

Notice that all of the particles are captured after and at the center of the magnet, i.e. $z \geq 0$, The second set of

trajectories is computed using a magnetic particle volume fraction of 24%, which from **Figure 3.4** result in partial carrier particle capture.

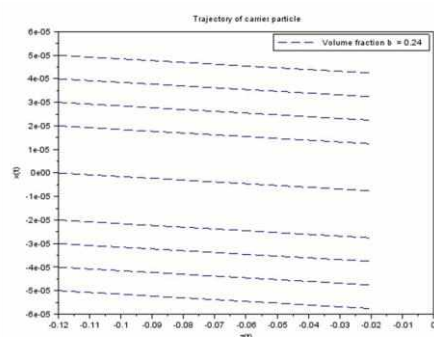


Fig. 3.4 Analysis with variations in initial positions along the X-axis Volume fraction 24%

Specifically, carrier particles that start at $x_0 = -0.4 R_{bv}$ escape capture.

Conclusion

The model presented here is ideal for parametric analysis of magnetic targeting in vivo. Here, the mathematical model is used to study magnetic targeting in different aspects and the results thus obtained indicate that Larger carrier particles require smaller magnetic volume fractions for capture and smaller carrier particles require larger magnetic volume fractions for capture. (i.e.) when the magnetic volume fraction is larger, the capture of the particles is maximum. Hence, it is concluded that the maximum capture of the carrier particles occur when the tumor is within a few centimeters from the surface of the body. The theory developed herein can be used to determine the optimum magnet parameters and particle size for treating a tumor, given its size and location within the body. Thus, this work should be useful in the development of new drug targeting apparatus and treatments.

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A PRELIMINARY STUDY ON AVIFAUNAL SPECIES DIVERSITY OF THE AMERICAN COLLEGE, MADURAI, TAMILNADU, INDIA

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Abstract

Indian subcontinent is known for diverse and rich bird species whose taxonomy, distribution and their general habitat characteristics are well documented in India. Bird community evaluation has become an important tool in biodiversity conservation and for identifying conservation actions in areas of high human pressure. Birds are of great economic importance to the human society. They play an important role in controlling population of different insects and pests. They play the role of scavengers and pollinating agents and also help in dispersal of seeds of different vegetations. They are helpful and help to provide rich food for mankind and are known to man since ages. Salim Ali laid the foundation of economic ornithology which promoted the scientific study of avian species. As a result of one year (June 2015 to May 2016) observation at The American college, Madurai, Tamilnadu 35 bird species were recorded, belonging to 12 orders and 28 families. Birds species recorded in the campus (35 species) come under least concern category only. Out of 35 species sighted in the college campus, 40% species are common. Passeriformes order represented by 16 species belonging to 14 families contribute to about 46% of total avifaunal species richness. Among the foraging group, insectivores (40%) dominated the bird community.

Keywords: ornithology, Passeriformes, insectivores, Bird.

Introduction

The earth is the only living sphere out of all the nine planets. The presence of air and water makes life possible on earth. Biodiversity at global level is estimated that there exists 40 - 150 million species of living forms on our earth. Of these only 1.7 million have been identified (Herzberger and Futehally, 1998).

Indian subcontinent is known for diverse and rich bird species whose taxonomy, distribution and their general habitat characteristics are well documented in India (Jerdon, 1862-1964; Bates and Lowther, 1952; Ali and Ripley, 1983). Bird community evaluation has become an important tool in biodiversity conservation and for identifying conservation actions in areas of high human pressure (Kremen, 1992; Safiq *et al.*, 1997).

India harbours 1200 species of birds among 13% of the 9600 bird's species of the world (Ali and Ripley, 1987). However, with the new classification coming in to force, the number of species may well be 1300 (Javed and Kaul, 2000). Taxonomically, it covers 23 orders, 107 families, and 498 genera, representing the global avian diversity by

about 64%, 45%, and 21% respectively. Predictably, passerines (Order Passeriformes) form the most predominant group (c.54%), followed by the orders Charadriiformes (c. 10%), and Accipitriformes (c. 5%). India stands at 7th position with 88 threatened bird species over the world. (BirdLife International, 2010).

Humans have invented a variety of instruments to monitor the health of ecosystems. For example, to examine water quality in a wetland, an environmental scientist may use a sensor to measure dissolved oxygen in the water or perform chemical assays in the lab to examine heavy metals in the soil. However, in some cases we can examine change in the habitat without instruments because studying the presence and behavior of birds can inform us about changing ecosystems (Hill, 2017).

The avifaunal spectrum of Tamilnadu is quite wide, netting elements from 74 families accommodated in 254 genera and distributed in 493 species. There is no thumb rule on the number of families as far as India is concerned, never the less, it varies from 48 families (Islam & Rahmani, 2004) to 75 families (Manakadan and Pittie, 2002) and

1300 species to 1400 species. Islam & Rahmani (2004) have estimated the occurrence of birds in Tamilnadu around 450 species. BirdLife International (2010) lists 15 species as Vulnerable in Tamilnadu (out of 57 species of India). Information available on these 493 species indicates that 14 species are vulnerable, 18 are nearly threatened, 2 are critical (*Gyps bengaiensis* & *Gyps indicus*) and 2 are endangered (*Garruiax cachinensis* & *Tringa guttifer*).

Ecologically, birds are of tremendous importance to the human society. Birds act as a good medium for dispersing seeds, pollinating plants, biological control and they are important to continue the ecological cycle. Birds occupy almost all habitat types and diversity of birds often serves as a good indicator of overall diversity of a given area. Birds are also known to be responsive to any kind of changes to their ambient conditions hence can be used as bioindicator (Schwartz and Schwartz, 1951; Padoa-Schioppa *et al.*, 2006). Different anthropogenic activities and change in climate can cause severe loss of avifaunal diversity (Chen *et al.*, 2011). Moreover, progressive urbanization often leads to biotic homogenization whereby a few widespread and successful species replace a diverse avifauna (McKinney and Lockwood, 2001). Therefore, assessment of the avifaunal diversity is essential to delineate the importance of local landscapes for avian conservation and creating a scientific database for proper management of the ecosystem to ensure better conservation, both of the habitat as well as the avian diversity.

Materials and Methods

Study Area

The American College, often referred to as American College, is one of the oldest colleges present in India. It is in Madurai, Tamil Nadu state, south of India. It was founded in 1881 by American Christian missionaries. The red-brick buildings, in the Saracenic style, blend with the natural surroundings constructed by British architect Henry Irwin. The American college (Fig:1-3) located in the northern part of Madurai near the river Vaigai. The latitude of American College, Madurai, Tamil Nadu, India is 9.929740, and the longitude is 78.132103. American College, Madurai, Tamil Nadu, India is located with the GPS coordinates of 9° 55' 47.0640" N and 78° 7' 55.5708" E.

The total area of the college is 48 acres. The college campus is nestled with academic buildings, chapel, sports ground, beautiful garden, barren lands, residential quarters

and lot of native trees. The college is having more than 1500 trees in its location. The predominant tree species were Neem, Palm, and Tamarind; these trees are used by the birds for nesting, resting and roosting. The college campus is nestled with academic buildings, chapel, beautiful gardens, artificial pond, sports ground, residential area and barren lands. The neighboring areas of the campus are Tamukkam grounds on the side, Government Hospital on the back, National Highways 7 on the front, Government quarters on the right. The lands include Trees, Bushes, Climbers, Small Trees and various types of Grasses. The dominant types of tree species are *Azadirachta indica*, *Delonix regia*, *Tamarindus indicus*, *Eucalyptus sp.*

The study was carried out for a period of one year from June 2015 to May 2016. The bird survey was conducted every Saturday within the campus. The birds were observed most active period of the day, i.e., early morning from 06:00 to 09:00 hours and in the evening from 16:00 to 18:00 hours. However the observation was made throughout the day also. The observation of birds were made by using Olympus (8*40) binocular, Photographs were taken with the help of Canon digital SLR EOS 700 D with 55-250 mm zoom lens.

The birds were identified and classified on the basis of standard field guides by Ali and Ripley (1987), Ali (2002). The bird's checklist was prepared using standardized common and scientific names by Manakadan and Pittie (2001). Birds were counted by using direct count methods from walking within the college campus. A special effort was made to identify the birds that breed inside the college campus. Each and every tree and building was searched individually for the nest. The behavior of birds is carefully observed to identify the breeding place. Care was taken, not to disturb the activity on nest. Based on the frequency of field observation, abundance of birds was categorized as very common (VC), common (C), occasional (O) and rare (R). The birds were also classified into 6 categories on the basis of their food habits such as carnivores (CV), omnivores (OM), insectivores (I), frugivores (F), granivores (G) and nectarivores (N).

Results and Discussion

As a result of one year (June 2015 to May 2016) observation, 35 bird species were recorded (Table: 1), belonging to 12 orders and 28 families. Birds species recorded in the campus (35 species) comes under least concern (IUCN 2014) category only (Table:1).

Out of 35 species sighted in the college campus, 40% species are common. Black drongo, Red vented bulbul, Oriole, Tailorbird, Indian roller etc are coming under common bird species available in the college campus. In the very common category 37% bird species were sighted. Common myna, House crow, parakeets, pigeon, spotted owl, Rufous treepie, Yellow billed babbler are some of the species under very common category. The bird species like paradise flycatcher, Asian Brown flycatcher, Brown Breasted flycatcher, Barn swallow and Blyth's reed warbler documented as 17% which comes under occasional. Rare bird species recorded in the college campus are only 6% (Fig. 3). The bird species Indian pitta, Peafowl and Forest wagtail are very less in number and regarded as rare species, because their presence in the college campus is limited.

Out of 35 bird species, 16 species of birds belonged to the order Passeriformes; 3 species each to, Coraciiformes, and Pelecaniformes; 2 species to Cuculiformes, Strigiformes, Accipitriformes, Columbiformes and one species each to Ciconiiformes, Psittaciformes, Accipitriformes, Pisciformes and Apodiformes (Table:1;Fig.2).

In the present study of bird's community structure of American college campus revealed the presence of 35 species of birds belonging to 12 orders (Fig:2) and 28 families (Table:1). Order Passeriformes represented by 16 species belonging to 14 families contribute to about 46% of total avifaunal species richness. Among the nonpasserines, maximum richness was represented by the order coraciiformes (8%) with 3 families and 3 species, strigiformes (6%) with 2 families and 2 species, pelecaniformes (8%) with one family and 3 species.

Among the 28 families of birds identified in the study area the Ardeidae family was highest followed by Accipitridae, Muscicapidae, Columbidae, Cuculidae and Corvidae. The remaining belonging to the family Coraciidae, Sturnidae, Pycnonotidae, Leiothrichidae, Strigidae, Orioliidae, Nectariniidae and Psittacidae.

Spotted owl, Asian koel, Roseringed Parakeets, Blue rock pigeon, house crow and purple rumped sunbird were found in high frequencies in the campus and found throughout the year. Out of 35 species, 16 species have their nest and breed in the college campus. To our surprise barn owl is having its nest in the James Hall which is a 100 years old building.

Among the foraging group, insectivores (40%) dominated the bird community followed by carnivore, omnivore, frugivore, granivore and nectarivore (Fig: 4).

Such trend was also observed in other studies on avifauna (Dey *et al.*, 2013; Acharya *et al.*, 2010). Species richness of the birds in the campus is maximum during the wet season due to greater availability of insects and favourable weather conditions.

Similar findings were recorded in the Institution campus like 104 bird species in Annamalai University Campus (Jayapal, 1995), 93 species of birds in Pondicherry University Campus (Sundar, 1998). Nameer *et al.*, (2000) recorded 135 species of birds in Kerala Agricultural University Campus, Balasundaram and Rathi (2004) recorded 46 species of birds in Bharathidasan University. Subramanean and Davidar (2004) recorded 92 species of birds in Pondicherry University, Reginald *et al.*, (2005) recorded 72 species of birds in PSG Arts and Science College Campus, Kulkarni (2005) recorded 46 species of birds in Science College Campus, Jain *et al.*, (2005) recorded 85 species of birds in Gujarat University Campus, Gupta *et al.*, (2009) observed 92 birds species in Kurukshetra University Campus, Asokan *et al.*, (2010) recorded 34 species of birds in A.V.C. College Campus, Kanaujia *et al.*, (2012) found 47 species of birds in Lucknow University, Devi *et al.*, (2012) identified 109 birds species in Gauhati University Campus, Dey (2013) recorded 76 species of birds in Maharaja Bir Bikram College Campus, Sidra *et al.*, (2013) recorded 76 species of birds in new campus of Punjab University, Hiragond (2014) recorded 63 species of birds in Kakatiya University Campus, Chowdhury *et al.*, (2014) identified 78 species of birds in Dhaka University, Anthal *et al.*, (2014) recorded 57 birds species in Jammu University Campus, Aggarwal *et al.*, (2015) observed 106 species of birds in Indian Institute of Forest Management Campus, Dapke *et al.*, (2015) found out 62 birds species in Laxminarayan Institute of Technology Campus, Tandan *et al.*, (2015) identified 32 species of birds in Pt. Ravishankar Shukla University Campus, Sethy *et al.*, (2015) observed 130 birds species in north Orissa University Campus.

It is evident from this study, that insectivorous and omnivorous birds constitute majority of the bird community in the study area. The area showed the highest species richness, which comprises good mix of native vegetation that provides the sufficient food in the form of flowers and insects. This indicates that there was more richness and diversity in the undisturbed habitats rather than the disturbed habitat. The species distribution in the other study areas will also be higher, unless the area is not disturbed due to anthropogenic activities.

In the present study it was found that college campus provide ground for feeding, breeding and nesting for avifauna which was similar to the findings of Dey *et al.* 2013, Lila *et al.* 2009, Sethy *et al.* 2015. These findings suggest that The American college campus, a prominent green space in Madurai is abode for various local and few migratory birds. It appears that this area can be considered for conservation and research programmes in future.

Conclusion

The findings of the present study underline the importance of institutional campuses as a preferred habitat for birds. If the landscaping and vegetation pattern are well maintained, the diversity of birds may increase in our college campus providing a rich ground for avifauna conservation as well as for research. Further, human interference should not increase in the area over a period of time to maintain diverse species composition. The study depicted that the maximum bird diversity is directly linked with maximum plant diversity. To conclude it can be said that the study area has a potential as a habitat for avian species. The need is to enlist the data and manage the habitat in consideration with various requirements of avian fauna. Our understanding of avifauna diversity is still insufficient to guarantee proper conservational strategies and only scientific research can throw light on the improved methods of management and conservation. This study will also add to our future attempts in understanding the complex nature of mutualistic interaction between birds and flowering plants that is essential for continuity of ecosystem services. This is the first effort in exploring the avifaunal wealth of The American College. The present list of bird species is not conclusive and exhaustive and future exploration will be continued to update this checklist.

Acknowledgement

The authors are grateful to the Principal, The American College, Madurai for providing facilities and encouragement to carry out the survey in the college campus.



Spotted owllet



Indian pitta



Barn owl



Greater coucal



Indian Roller



Paradise flycatcher

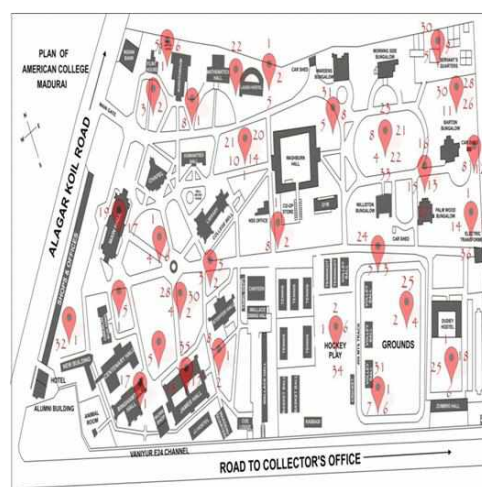


Fig.1 Location of birds in The American college

Sl. No	Birds Common Name
1	House Crow
2	Rufous Treepie
3	Common Myna
4	Black Drongo
5	Red Vented Bulbul
6	Brown breasted flycatcher
7	Asian Brown Flycatcher
8	Yellow-billed babbler
9	Indian paradise flycatcher
10	Indian Golden Oriole
11	Purple Rumped Sunbird
12	Barn swallow
13	Indian Pitta
14	Forest Wagtail
15	Coppersmith Barbet
16	Shikra

17	Black Kite	27	White Throated Kingfisher
18	Blue Rock Pigeon	28	Blue Tailed Bee eater
19	Spotted Dove	29	Black-rumped Flameback
20	Rose Ringed Parakeet	30	Indian pond heron
21	Asian koel	31	Night Heron
22	Greater coucal	32	Cattle Egret
23	Spotted owl	33	Indian Peafowl
24	Barn owl	34	Blyth's Reed Wabblers
25	Asian palm swift	35	Tailor Bird
26	Indian Roller		

Table: 1 Abundance, Feeding habit and Breeding status of terrestrial birds observed in American College campus

Order	Family	Birds Common Name	Scientific name	Abundance	Feeding habitat	IUCN	Breeding Status
Passeriformes	Corvidae	House Crow	<i>Corvus splendens</i>	VC	OM	LC	Breeding
		Rufous Treepie	<i>Dendrocitta vagabunda</i>	VC	OM	LC	Not Breeding
	Sturnidae	Common Myna	<i>Acridotheres tristis</i>	VC	OM	LC	Breeding
	Dicruridae	Black Drongo	<i>Dicurus macrocercus</i>	C	I	LC	Not Breeding
	Pycnonotidae	Red Vented Bulbul	<i>Pycnonotus cafer</i>	C	OM	LC	Breeding
	Muscicapidae	Brown breasted flycatcher	<i>Muscicapa muttui</i>	O	I	LC	Not Breeding
		Asian Brown Flycatcher	<i>Muscicapa dauurica</i>	O	I	LC	Not Breeding
	Leiothrichidae	Yellow-billed babbler	<i>Turdoides affinis</i>	VC	OM	LC	Breeding
	Monarchidae	Indian paradise flycatcher	<i>Terpsiphone paradisi</i>	O	I	LC	Not Breeding
	Oriolidae	Indian Golden Oriole	<i>Oriolus kundoo</i>	C	F	LC	Not Breeding
	Nectariniidae	Purple Rumped Sunbird	<i>Leptocoma zeylonica</i>	VC	N	LC	Breeding
	Hirundinidae	Barn swallow	<i>Hirundo rustica</i>	O	I	LC	Not Breeding
	Pittidae	Indian Pitta	<i>Pitta brachyura</i>	R	CV	LC	Not Breeding
	Motacillidae	Forest Wagtail	<i>Dendronanthus indicus</i>	R	I	LC	Not Breeding
	Acrocephalidae	Blyth's reed warbler	<i>Acrocephalus dumetorum</i>	O	I	LC	Not Breeding
	Cisticolidae	Tailorbird	<i>Orthotomus sutorius</i>	C	I, F	LC	Breeding
Pisciformes	Megalaimidae	Coppersmith Barbet	<i>Psilopogon haemacephalus</i>	C	F	LC	Breeding
Accipitriformes	Accipitridae	Shikra	<i>Accipiter badius</i>	VC	CV	LC	Breeding
		Black Kite	<i>Milvus migrans</i>	VC	CV	LC	Not Breeding
Columbiformes	Columbidae	Blue Rock Pigeon	<i>Columba livia</i>	VC	G	LC	Breeding
		Spotted Dove	<i>Spilopelia chinensis</i>	VC	G	LC	Not Breeding
Psittaciformes	Psittacidae	Rose Ringed Parakeet	<i>Psittacula krameri</i>	VC	F	LC	Breeding
Cuculiformes	Cuculidae	Asian koel	<i>Eudynamis scolopaceus</i>	VC	F	LC	Breeding
		Greater coucal	<i>Centropus sinensis</i>	C	I	LC	Breeding
Strigiformes	Strigidae	Spotted owl	<i>Athene brama</i>	VC	I	LC	Breeding
	Tytonidae	Barn owl	<i>Tyto alba</i>	C	CV	LC	Breeding
Apodiformes	Apodidae	Asian palm swift	<i>Cypsiurus balasiensis</i>	C	I	LC	Not Breeding
Coraciiformes	Coraciidae	Indian Roller	<i>Coracias benghalensis</i>	C	I	LC	Breeding
	Alcedinidae	White Throated Kingfisher	<i>Halcyon smymensis</i>	C	CV	LC	Not Breeding

	Meropidae	Blue Tailed Bee eater	<i>Merops philippinus</i>	C	I	LC	Not Breeding
Piciformes	Picidae	black-rumped Flameback	<i>Dinopium benghalense</i>	VC	I	LC	Breeding
Pelecaniformes	Ardeidae	Indian pond heron	<i>Ardeola grayii</i>	C	CV	LC	Not Breeding
		Night Heron	<i>Nycticorax nycticorax</i>	C	CV	LC	Not Breeding
		Cattle Egret	<i>Bulbulcus ibis</i>	C	CV	LC	Not Breeding
Galliformes	Phasianidae	Indian Peafowl	<i>Pavo cristatus</i>	R	OM	LC	Not Breeding

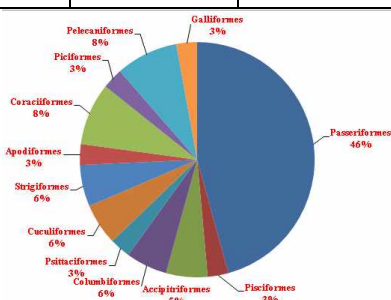


Fig.2 Number of birds order-wise in The American College campus

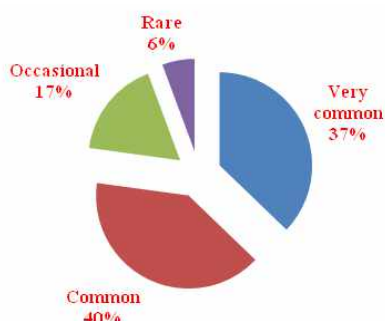


Fig. 3 Abundance of terrestrial avifauna recorded in The American College campus

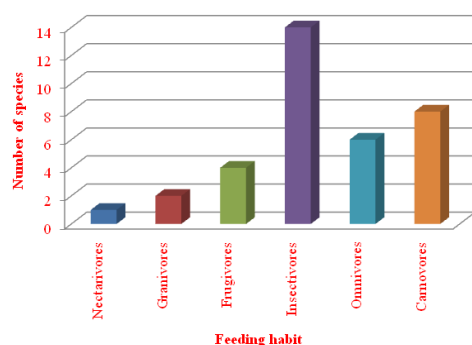


Fig. 4 Feeding Habit of terrestrial avifauna recorded in The American College campus

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MIXTURE TOXICITY OF THE HEAVY METALS, NICKEL AND HEXAVALENT CHROMIUM TO THE FRESH WATER FISH, CYPRINUS CARPIO COMMUNIS

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Abstract

Heavy metals, the major constituents of industrial effluents are of primary concern as they are not usually eliminated from the aquatic systems by natural processes in contrast to most organic substances. They tend to accumulate in bottom sediments from which they may be released by various processes of remobilization and can move up the biologic chain, there by reaching human beings, where they cause chronic and acute ailments, Nickel and chromium are employed in several industries including electroplating and tanning industries. Mixture toxicity studies are often referred to as interaction studies. Many interactions are so complex, obscure or trivial that they remain undetected. Fish are very useful indices of the real state of purity of water. Hence the present study has been designed to determine the acute toxicity of nickel, hexavalent chromium and their combinations to the fingerlings of the common carp, *Cyprinus carpio communis* using static bioassays. Nickel was more toxic to the fish than hexavalent chromium and among the combinations Ni + Cr (75:25) was the most toxic and the results are discussed.

Keywords: Nickel, Hexavalent chromium, *Cyprinus carpio communis*, Mixture toxicity.

Introduction

Fish are aquatic and their survival is influenced by water quality (Bakde and Poddar, 2011). Most of the aquatic resources are contaminated with water discharged from agriculture and industrial operations. Heavy metals present in these wastes pose severe threat to ecological balance and result in environmental deterioration, affecting flora and fauna including fish (Palanisamy *et al.*, 2011). Heavy metals, the major constituents of industrial effluents build up in the food chain and cause deleterious effects in higher trophic levels. Hence their evaluation is necessary to determine their impact on fish. Toxicity evaluation is a cost effective tool in waste water quality monitoring. It helps to predict the acceptable levels of toxicants in the environment to the biota.

Static acute toxicity tests provide rapid and reproducible concentration response curves for estimating toxic effects of chemicals on aquatic organisms. These tests provide a database for determining relative toxicity of a large number of chemicals to a variety of species and for determining priority and design of additional toxicity studies (Johnson and Finley, 1980).

Mixture toxicity studies are often referred to as interaction studies. The interactions are generally between the chemicals and physiological systems within

the body rather than between the chemicals. Many interactions are so complex, obscure or trivial that they remain undetected (Marking, 1985). Most of the industrial effluents contain a mixture of heavy metals. Much work has not been carried out in fresh water fish especially in common carp with reference to common carp. Hence the present study has been undertaken to study the mixture toxicity of the heavy metals, nickel and chromium to the common carp, *C. carpio communis*.

Materials and Methods

The metals selected for the laboratory study were nickel and chromium and *C. carpio communis* was selected as the test fish. Common carp fingerlings weighing 5 \pm 0.2 g were procured from the nearby fish farm and first observed for any pathological symptom and washed with 0.1 % KMnO₄ solution and then rinsed with water and acclimatized to the laboratory conditions as per the methods of APHA (2005). The stock solutions of nickel, chromium and the combinations were prepared separately and the desired degree of concentration was prepared by adopting the dilution techniques. Based on the progressive bisection of intervals on a logarithmic scale, log concentrations were selected as the experimental concentrations. These concentrations were fixed after

conducting the range finding tests. Feeding was stopped two days before the fish were subjected to experiment to avoid any change in the toxicity of metals to excretory products. After the addition of toxicant into the test tank having twenty fish fingerlings, mortality was recorded after 24, 48, 72 and 96 hours. The fish were considered dead when they gave no response on probing with a glass rod. Since dead fish in the static bioassay may deplete the dissolved oxygen, they were removed immediately at first glance.

The mortality data were subjected to weighted probit analysis as suggested by Finney (1971) and the median lethal concentration (LC_{50}) values of 24, 48, 72 and 96 hours were calculated with the 95% confidence limits. Goodness of fit was evaluated with Chi-square tests.

Results

Table 1 reveals the results of weighted probit analysis for nickel from percent response of *C. carpio communis* after 24, 48, 72 and 96 hours. LC_{50} value, 95 confidence limits, slope, and intercept for each hour have been given. The Chi-square test shows that all the values are well fit at 0.05 levels. Decrease in LC_{50} value is noted with the increase in exposure period (Fig.1). The difference between the LC_{50} values of 24 and 48 hr is high and the difference between 72 and 96 hr is low. The 24 LC_{50} value is about one and a half times greater than the 96 hr LC_{50} value. The range within which the LC_{50} values for 24 to 96 hr would fall statistically is 42.01 to 142.60 ppm. LC_{50} values and their 95 % confidence limits for chromium from percent response of the fish after 24, 48, 72 and 96 hr are given in Table 2. There is a decline in LC_{50} value from 24 to 96 hr as the upper confidence limit of 72 hr falls within the 95 % confidence limits of 48 hr. The difference between the LC_{50} values of 72 and 96 hr is high whereas it is low in the case of 48 and 72 hr. Decrease in the LC_{50} value was noted with the increase in exposure period. The range within which the LC_{50} values would fall is 294.59 to 489.38

ppm statistically. The Chi-square test reveals that all the values are well fit at 0.05 level. Table 3 divulges the results of weighted probit analysis for Ni + Cr (25:75) combination from percent response of the fish. The LC_{50} value showed a decline with the increase in exposure period. The range within which the LC_{50} values would fall statistically is 112.18 to 315.18 ppm. The calculated Chi-square values are well below the table Chi-Square values indicating the goodness of fit. The LC_{50} values for 24, 48, 72 and 96 hr were 286.95, 199.80, 182.10 and 142.87 ppm respectively. The difference between the LC_{50} values of 24 and 48 hr was high whereas it was low between 48 and 72 hr. The difference between 24 and 48 hr was about four orders of magnitude higher than the difference between 48 and 72 hr.

LC_{50} values and their 95 % confidence limits for Ni + Cr (50:50) combination from percent response of the fish after 24, 48, 72 and 96 hr are given in Table 4. The LC_{50} values for 24, 48, 72, and 96 hr were 150.89, 124.13, 94.52, and 83.96 ppm respectively. The statistical range within which LC_{50} values for 24, 48, 72 and 96 hr would fall is 60.66 to 198.13 ppm. Increase in exposure period caused decrease in the LC_{50} values. The difference between 72 and 96 hr LC_{50} was low while it was high between 48 and 72 hr LC_{50} values. The Chi-square test shows that all the values are well fit at 0.05 level. Table 5 shows the results of the weighted probit analysis for Ni + Cr (75:25) combination from percent response of the fish after 24, 48, 72 and 96 hr. Increase in exposure period caused a decline in LC_{50} values. The calculated Chi-square values are well below the table Chi-square values indicating the good fit. The difference between LC_{50} values of 24 and 48 hr is high whereas it is low between 72 and 96 hr. The statistical range within which the LC_{50} values for 24, 48, 72 and 96 hr would fall is 8.28 to 47.14 ppm.

Table 1 Acute toxicity test results of nickel to *Cyprinus carpio communis*

Hours of Exposure	Lethal Concentration Values (ppm)								95% confidence limits of LC_{50} (ppm)		Slope	Intercept	Chi-Square Values	
	LC_5	LC_{10}	LC_{15}	LC_{50}	LC_{85}	LC_{90}	LC_{95}	LC_{99}	Lower	Upper			Calculated	Table (5% level)
24	111.6	116.21	119.43	134.06	150.49	154.7	161.1	173.76	126.40	142.60	20.65	-38.93	0.90	5.99
48	45.84	51.15	55.07	75.28	102.91	110.8	123.6	151.85	66.63	83.49	7.63	-9.33	0.75	11.07
72	44.84	47.96	50.18	60.79	73.65	77.07	82.42	93.50	55.37	65.81	12.44	-17.20	0.38	7.82
96	31.38	34.41	36.62	47.63	61.95	65.92	72.29	85.92	42.01	56.02	9.08	-10.23	3.07	5.99

All the Chi-square values are not significant at 5% level

Table 2. Acute toxicity test results of chromium to *Cyprinus carpio communis*

Hours of Exposure	Lethal Concentration Values (ppm)								95% confidence limits of LC_{50} (ppm)		Slope	Intercept	Chi-Square Values	
	LC_5	LC_{10}	LC_{15}	LC_{50}	LC_{85}	LC_{90}	LC_{95}	LC_{99}	Lower	Upper			Calculated	Table (5% level)
24	399.11	413.08	422.79	466.42	514.54	526.60	545.10	581.44	450.20	489.38	24.30	-59.86	2.47	9.49
48	347.68	365.23	377.58	434.54	500.10	517.00	543.10	595.67	408.37	454.95	16.98	-39.80	4.68	11.07
72	294.70	317.52	333.91	413.09	511.03	537.40	579.00	665.98	381.22	444.34	11.22	-24.34	3.32	11.07
96	198.40	224.47	243.97	346.95	493.40	536.30	606.70	764.78	294.59	394.47	6.78	-12.22	2.95	9.49

Table 3 Acute toxicity test results of Ni+Cr (25:75) to *Cyprinus carpio communis*

Hours of Exposure	Lethal Concentration Values (ppm)								95% confidence limits of LC 50 (ppm)		Slope	Intercept	Chi-Square Values	
	LC ₅	LC ₁₀	LC ₁₅	LC ₅₀	LC ₈₅	LC ₉₀	LC ₉₅	LC ₉₉	Lower	Upper			Calculated	Table (5% level)
24	197.89	214.82	227.06	286.95	362.65	383.3	416.1	485.33	261.91	315.18	10.19	-20.05	0.99	9.49
48	124.83	138.49	148.55	199.8	268.73	288.3	319.8	388.61	159.6	227.85	8.05	-13.52	1.03	5.99
72	111.59	124.34	133.75	182.1	247.91	266.7	297.1	363.97	154.77	215.27	7.73	-12.48	1.49	5.99
96	74.57	86.08	94.84	142.87	215.22	237.1	273.7	358.37	112.18	167.34	5.82	-7.55	0.48	7.82

All the Chi-square values are not significant at 5% level

Table 4 Acute toxicity test results of Ni+Cr (50:50) to *Cyprinus carpio communis*

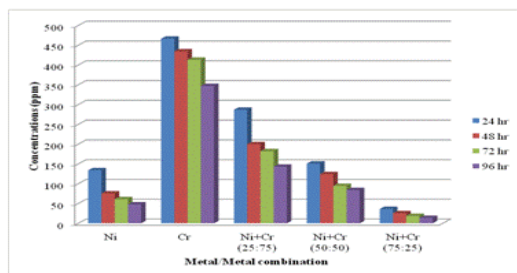
Hours of Exposure	Lethal Concentration Values (ppm)								95% confidence limits of LC 50 (ppm)		Slope	Intercept	Chi-Square Values	
	LC ₅	LC ₁₀	LC ₁₅	LC ₅₀	LC ₈₅	LC ₉₀	LC ₉₅	LC ₉₉	Lower	Upper			Calculated	Table (5% level)
24	79.5	91.59	100.77	150.89	225.94	248.6	286.4	373.42	127.25	198.13	5.91	-7.88	1.78	7.82
48	90.85	97.34	101.97	124.13	151.1	158.3	169.6	192.99	113.59	135.2	12.14	-20.41	0.44	7.82
72	50.94	58.39	64.03	94.52	139.53	153	175.4	226.58	79.05	108.47	6.13	-7.1	1.59	9.49
96	42.46	49.36	54.64	83.96	129.02	142.8	166	220.23	60.66	105.91	5.56	-5.69	2.51	5.99

All the Chi-square values are not significant at 5% level

Table 5 Acute toxicity test results of Ni+Cr (75:25) to *Cyprinus carpio communis*

Hours of Exposure	Lethal Concentration Values (ppm)								95% confidence limits of LC 50 (ppm)		Slope	Intercept	Chi-Square Values	
	LC ₅	LC ₁₀	LC ₁₅	LC ₅₀	LC ₈₅	LC ₉₀	LC ₉₅	LC ₉₉	Lower	Upper			Calculated	Table (5% level)
24	10.53	13.82	16.61	36.09	78.43	94.23	123.7	206.03	23.52	47.14	3.08	0.21	1.39	9.49
48	8.81	11.12	13.02	25.36	49.38	57.81	73.02	113.15	18.02	31.99	3.58	-0.03	0.87	9.49
72	7.70	9.34	10.63	18.42	31.92	36.35	44.08	63.27	14.11	23.18	4.34	-0.49	1.09	7.82
96	5.60	6.78	7.72	13.34	23.04	26.22	31.76	45.49	8.28	16.92	4.37	0.09	1.42	5.99

All the Chi-square values are not significant at 5% level



Figurer 1. LC₅₀ values of Metals/metal combinations to *Cyprinus carpio communis*

Discussion

Acute lethality tests have been useful in providing rapid estimates of the concentrations of test materials that caused direct, irreversible harm to the test organism (Parrish, 1985). The test fish selected for the present study *C. carpio communis* is a standard test organism and distributed throughout the world. Based on the static bioassay results from the present work nickel is more toxic to scale carp than chromium. Among the combinations of nickel and chromium the order of toxicity is Ni + Cr (75:25) > Ni + Cr (50:50) > Ni + Cr (25:75). The 96 hr LC₅₀ values to *C. carpio communis* for, Ni, Cr, Ni + Cr (25:75) Ni + Cr (50:50) and Ni + Cr (75:25) were 47.63, 346.95, 142.87,

83.96, and 13.34 ppm respectively. 96 hr LC₅₀ values of nickel to striped bass, rainbow trout (Palawskiet al., 1985), fathead minnow and bluegill (Pickering and Henderson, 1966) were 3.9, 15, 0.458 and 5.18 ppm. The above mentioned LC₅₀ values were less than the LC₅₀ value of the present study. Hence it can be deduced that *C. carpio communis* is more resistant to nickel when compared to other fish. Muramoto (1983) reported 20 % mortality of carp after 48 hr exposure to 30 ppm of nickel. The high value observed by Muramoto (1983) might be due to the large fish with 11.5 to 12.5 g weight. Higher median lethal concentration values of Ni to other fish were also reported. Sastry and Dasgupta (1987) observed it as 400 mg/l to *Channapunctatus* and Verma et al., (1982) noted it as 255 ppm to *Mystus vittatus*. 50.1 ppm of Ni was sublethal to *Notopterus notopterus* (Verma et al., 1985). Eisler and Hennekey (1977) observed the 96 hr LC₅₀ values of Ni to *Nassarius obsoletus*, *Mya arenaria* and *Asterias forbesias* 72, 320 and 50 ppm. Even 48 hr LC₅₀ values of *Pandalus montagui*, *Crangon crangon*, *Carcinus maenas* and *Cardium edule* exceeded 100 ppm (Portmann, 1968). Hence common carp is not so sensitive to Ni as other freshwater fish but lesser resistant to Ni than marine

crustaceans and it may be due to the high content of free nickel in soft than saltwater (Palawskiet *al.*, 1985). The median lethal concentration of Cr to common carp after 96 hr was 346.95ppm.. Excellent literature is available concerned with the acute toxicity of hexavalent chromium to freshwater and marine fish. Fish that show their 96 hr LC₅₀ value below 50 ppm include *Alburnus alburnus* (Legnani and Bianucci, 1975), *Carassius auratus* (Adelman and Smith 1976), *Lebistes reticulatus* (Pickering and Henderson 1966), *Morone saxatilis* (Hughes, 1971), *Pimephales promelas*, *Salmogairdneri* (Hogen-doorn - Roozemonde *al.*, 1977), *Citharichthys stigmmaeus* (Sherwood, 1975) and *Fundulus heteroclitus* (Eisler and Hennekey 1977). The list of fish that show their 96 hr median lethal concentrations between 50 and 100 mg/l include *Aldrichetta fosteri* (Negilski, 1976), *Salvelinus fontinalis*, *Salmogairdneri* (Benoit, 1976) and *Fundulus heteroclitus* (Dorfman, 1977). Hence common carp is more resistant to hexavalent chromium than all other fish already mentioned.

Assessment of mixture toxicity began as an art, but it has developed into a science used in many disciplines: pharmacology, toxicology, physiology, human and veterinary medicine, agriculture and especially pest control. However, some chemical mixtures pose a greater hazard to non-target organisms and to the environment (Marking, 1985). Most of the industrial effluents that are discharged into the aquatic systems are mostly the blend of heavy metals and other chemicals.

Regarding the acute lethality of metal combinations in the present study, decline in LC₅₀ values was noted with the increase in the ratio of nickel and viz. for chromium. All the three combinations tested were synergistic and the combination found to be the most toxic is Ni + Cr (75:25). In studies with fathead minnows and rainbow trout, Broderius and Smith (1979) reported greater than additive toxicity for mixtures of zinc and hydrogen cyanide, but less than additive toxicity for chromium and hydrogen cyanide. Chronic exposure of flag fish, *Jordanella floridae* to cadmium and zinc mixtures resulted in additive toxicity (Speharet *al.*, 1978). Vermaet *al.* (1982) reported the order of synergism of the following metal combinations Ni/Zn > Cr/Zn > Cr/Ni > Ni/Cr > Zn/Ni. Black (1974) reported the binding of organic substances with copper and its reducing toxicity. But so far there is no such experimental evidence for metal to metal binding to be responsible for the antagonistic or synergistic effects of the metals in combination (Vermaet *al.*, 1982). According to the above authors and Macgregor and Clarkson (1974), synergistic effects of metals in combination may be due to intrinsic affinity of the individual metal for the critical sites, or the

relative concentration and distribution of the metals within the target organ sites and antagonism due to the partial occupation of receptor sites with lesser toxic metal which leads to the blocking of higher toxic metal. The critical sites in most cases are – SH groups (Goyer and Moore, 1974).

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BASIS AND STRATEGIES FOR TAPPING USEFUL PHYTOCHEMICALS FOR HEALTH CARE

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Abstract

Having been placed amidst specialized tissues and differentiated cell types in various organs, phytochemicals exert specific metabolic functions that provide for plant growth and survival in accordance with the developmental plan. The feasibility of using plant metabolites in health care has been in practice for long even before the advent of analytical techniques. Though scientific extraction and the detection of active ingredient have added credibility and opened new vistas in pharmaceutical sciences, the search for novel phytotherapeutics appears to be unceasing. Growing realization on the need to develop Complementary Alternate Medicine (CAM) has propelled numerous investigations on Traditional Medicine (TM) which in turn has renewed interest in searching for herbal remedies and crude drugs. This paper explores the rationale behind these investigations and attempts to present the scheme with which phytotherapeutic studies are undertaken.

Introduction

Several metabolites formed in the mill of both primary and secondary metabolism in plants have found utility as therapeutics and have served to cure several trivial and chronic diseases. Medicinal plant research is the subject of attraction to many. Studies have been undertaken from diverse quarters of biomedical research (Logan, 1986; Casper and Koenig, 1996; Hall *et al.*, 2000; Kubinyi, 2003; Pickersgill *et al.*, 2013; Bennett and Balick, 2014). While basic metabolic pathways termed primary metabolism is necessary for the survival of cells, secondary plant chemicals carry special significance to the organism that produces it. Their importance is unique. Secondary plant metabolites are exclusive in terms of their site of synthesis, action and use (Dewick, 2002; Rao and Ravishankar, 2002; Hartmann, 2007).

Significance *in Situ*

Secondary chemicals usually occur at special regions of the plant, many times specifically in only certain localized cells or tissues that they are not considered mandatory to determine the basic survival capabilities. However they are desirable and essential in their contribution to the competing and defending abilities of the

organism. They may be useful to the plant as a whole for some reason or the other. Within a cell, they are stored mostly in vesicles or vacuoles and take up functions offering to detoxification processes or exert an useful influence in equipping plants against biotic and abiotic stresses (Gershenzon, 1984; Razmjoo *et al.*, 2008). Some secondary metabolites provide for defense mechanisms and offer an edge to the organism concerned in its struggle for survival (Pedrol *et al.*, 2006; Iriti and Faoro, 2009).

Attributes of Therapeutic Phytochemicals

In contrast to secondary chemicals of animal origin, plant borne metabolites are usually not excreted or exuded without any stimuli. Sometimes they are not even synthesized in the absence of a physical or physiological trigger. As nitrogen containing organic substances that end up as exit compounds of specific pathways, secondary chemicals do not find themselves reversibly degraded or get fed into the basic metabolism again. Secondary metabolic pathways operative at specific locations in vegetative tissues and reproductive organs are at times epigenetically regulated. The availability of a particular secondary metabolite in plants is mostly site specific and can be correlated to the physiological, ecological and

cytogenetic states at which the cell is able to synthesize it. In certain cases the production falls within the ambit of the clock which is temporally and seasonally phased and regulated.

Biosynthesis of the given metabolite is governed by tissue specific factors and a number of other inherent and extraneous variables that would determine the *in situ* state. Accumulation of unique metabolites occur at many instances in reproductive organs such as flowers, fruits and seeds, signaling the change of the physiological state which may not be generally conducive any more for rejuvenation activities or somatic growth under the specified set of conditions. This in a way implies that the prerequisites for vegetative and reproductive functions are distinct and different. Processes which facilitate the onset of reproductive events are usually juxtaposed to the routine molecular behavior of the shoot meristem and this indicates that the physico-chemical profile is being altered. The potential for *de novo* differentiation of somatic shoots and their subsequent growth calls for active primary metabolism which is perhaps hampered temporarily or permanently giving way for reproductive functions.

Although it is only the vegetative shoot meristem which gets modified into mantle by altered signals that regulate flower development, the space and time cues needed to elicit reproductive behavior provide for the orderly progression of events leading to the synthesis and accumulation of new compounds. It is generally considered that physical and functional changes associated with events starting from flowering, to pollination, syngamy and post-fertilization changes help the organism to tide over unfavorable and adverse environmental conditions. For several years, plants have been used as sources of both primary and secondary chemicals. Accumulation of unique substances recorded in flowers, fruits and seeds, and also in somatic tissues under the specified conditions have provided for the production of phytochemicals of pharmaceutical and industrial interest.

Medicinally, specific plant organs supposedly rich in a particular metabolite of interest have been used as home remedies and crude drugs. Plant borne chemicals are in the form of organic complexes that have the ability to cure diseases and disorders and invoke useful changes in the targeted system. The presence of such chemicals can be tested and detected by standardized qualitative and quantitative procedures (Harborne, 1998; Wu *et al.*, 2013). Extracted in its crude natural form, phytochemicals of many different plants have been shown to provide the expected relief. Pharmacognostic and pharmacological

approaches have offered to the isolation and identification of active ingredients. It is based on these active principles that many modern day drugs were constructed.

Pharmaceutical products built over the basic skeletal chemical frame work of ingredients recognized in natural extracts provide safe and effective health care than synthetic preparations

(Bode *et al.*, 2002). Bérdy (2005) estimated that there could be as much as 200,000 natural metabolites with bioactive properties. Around 52% of the new chemicals introduced into the market worldwide between the years 1981-2002 belong to this class and the trend to tap hitherto unknown natural substances is on the rise. Since elaboration of the chemical profile is an early and stable strategy to adapt and deal with competition and stress, one can expect that more new bioactive substances can be produced by elicitation of specific metabolic pathways. Being sedentary, a plant relies more on chemical means of defense and endurance for its survival and hence offers the feasibility to yield a variety of phytochemicals that would fight against its own germs, diseases and disorders and hence when intelligently tapped and manipulated may eventually help human healthcare.

Chemical Milieu: Scope for Extraction, Quantification and Use

Endowed with an array of primary and secondary metabolites, various types of plants have been put to use in treating diverse health disorders. Diseases and ailments of manifold type have been cured by the use of fresh and dry herbal preparations. Plant metabolites identified chemically as sugars, carbohydrates, amino acids, proteins, lipids, alkaloids, terpenoids, quinines, flavonoids, sterols, lipid substances, glycosides, phenolics, tannins, saponins, fixed oils, gums and mucilage have shown to be isolated and extracted from plants to be used for therapeutic purposes. With the cell wall serving as an inert interface and a fundamental component in all plant cells, most of these chemicals are collected through solvent extraction on maceration from the cytosolic phase. Plants vested with elaborate chemical milieu ensure that their biochemical profile is mediated through specific signal transduction pathways. Many metabolites emerging from the secondary metabolism have been used individually or in conjunction with known drugs to treat many different diseases.

Phytotherapeutics screened from varied species are used with success to cure ailments of different kinds (Inamdar *et al.*, 2008). As end products of specific gene

expression, plant cells accumulate many medicinally active substances as their natural ingredients or produce them on being subjected to specific space and time conditions. Therefore plants can be regarded as a trusted repository of specific compounds. Preliminary phytochemical tests aimed at recognizing the presence of useful compounds can be tested default by standard procedures (Krishnamurthy, 1988; Adams *et al.*, 2013). Various forms of analytical methods have been evolved to extract phytotherapeutics from diverse plant sources. Different forms of extraction procedures and analytical techniques are documented in literature (Pandey and Tripathi, 2014; Azwanida, 2015).

Conventional procedures such as hot percolation and cold maceration processes are reported adequate in many smaller research labs and these simple procedures serve well for quicker extractions (Conn, 1981). For bulk preparation, extraction procedures involving larger extraction equipments and automated distillation and dispensation units are used (Wang and Weller, 2006; Vilku *et al.*, 2008). Substances extracted using appropriate solvents are usually subjected to preclinical test like antimicrobial assays (Parek and Chanda, 2007; Ncube *et al.*, 2008; Sasidharan *et al.*, 2011) and studies involving animal models (Henderson *et al.*, 2013) before being subjected to clinical evaluation.

Alternate Methods for Triggering Production

It must be mentioned that the efforts taken in developing procedures to streamline herbal medicine and popularize TM has paid good dividends. Efforts taken to boost up Ayurvedha and Siddha drugs have fetched admirable results (Nadkarni, 1996; Patwardhan, and Mashelkar, 2009). Several new drugs and formulations of plant origin have been introduced with success and wider public acceptance (Patwardhan *et al.*, 2004; Vaidya, and Devasagayam, 2007). Interestingly enough, this positive trend itself has built up pressure and put the crude drug industry in a fix. The mismatch between supply and demand of the source material often results in acute shortage of target tissues containing active ingredients. The relatively lower yield of the targeted compound is considered as a constraint for large scale extractions and drug development. Demand for raw material confounded with the lack of efficient procedures for drying and solvent extractions is a serious bottleneck. Higher investment of time, energy, money and manpower needed to ensure higher yield turn commercialization of TM a daunting task.

Therefore it is imperative that special drives be conducted to search for alternate procedures.

Though herbal healers and native medical practitioners insist upon field collection of plants for the ideal extraction of therapeutic principles, procedures for *in vitro* production (Bourgau *et al.*, 2001; Rao and Ravishanker, 2002; Krishnaiah *et al.*, 2007; Karruppusamy, 2009) and biotransformation (Hamada and Furuya, 1996) and other biotechnological strategies such as inducing the foreign DNA assisted synthesis of useful metabolites (Oksman-Caldentey and Saito, 2005; Srivastava *et al.*, 2016), development of transgenic plant vaccines (Streitfield and Howard, 2003; Rybicki, 2010), production of plantibodies and medically useful curative compounds (Jain *et al.*, 2011; Nair, 2017) and preposition of metabolic engineering (Trethewey, 2004; Verpoorte and Alfermann, 2013) have been reported in literature.

Instances where herbal medical practitioners were unable to cope with the pressures of drawing enough raw materials to extract and meet the annual requirement of bioactive plant chemicals have driven researchers to look for alternatives. The longer span of time involved in spotting and screening herbal remedies, efforts channeled in conducting preliminary phytochemical evaluation, and the testing time spent on preclinical trials and clinical R&D to assess drug action make the cycle of drug development longer and tedious. It is in this context that a proposal to speed up the process growing and harvesting the desired medical plant and the research taken up on enhanced and accelerated synthesis of known and established phytotherapeutics gains prominence. Use of biotechnology, bio and chem informatics, and tools of designing new drugs and the efforts directed towards special bioactive principles for personalized medicine stirs special interests (Trethewey, 2004; Verpoorte and Alfermann, 2013).

Tissue Culture as an Option

Elite plants screened as donor of raw drugs can be subjected to mass multiplication by vegetative propagation methods (Thorpe *et al.*, 1991; Mehrotra *et al.*, 2007). Though vegetative propagation is a routine practice in horticulture and forestry, measure taken to bulk medicinal plants remains to be streamlined in many cases. Traditional nursery technique as well as plant tissue culture resulting in the cloning of valuable genetic stocks is seen as a major support. Rapid clonal propagation through tissue culture ensures genetic uniformity (Yasodha *et al.*, 2004). Bud culture techniques involving the use of shoot

apices and nodal regions serve well in micropropagation. Unlike the aseptic regenerants raised from the callus mediated organogenesis and embryogenesis, plants produced through meristem and bud cultures can be true to type (Chaturvedi *et al.*, 2007). Thus plant material recognized as remedies cloned this way are bulked without any compromise in quality. Besides this, crude drug industry is helped by cryopreservation procedures (Engelmann, 2004).

Meristem preserved in liquid nitrogen at -192°C and mericlone initiated with an intent of eliminating disease have favored the preservation of rare, elite and promising plant stocks (Wang *et al.*, 2008; Ramgareeb *et al.*, 2010). In addition to safe and effective storage of stocks for use in posterity, protocols developed in the domain have been helpful in supporting national and international exchange of germplasm. Medicinal plant material fostered via cryopreserved plant tissues have provided for new accessions to the plant repositories functioning around the world (Salih *et al.*, 2001; Bretting *et al.*, 2006). With its own nitty-gritty and novelties, plant tissue culture has assisted the production of haploids, triploids, somatic hybrids, cybrids, soma and gameteoclonal variants (Thrope *et al.*, 1991; Priti *et al.*, 2001). In addition, the procedures of aseptic culture has been reported to lend support to augment conventional horticultural and plant breeding procedures (Rout *et al.*, 2006; Vose and Blixt, 2012).

In vitro production of rare and valuable plant metabolites has a direct connotation to the pharmaceutical industry. Considering that the space and time variables are extraneously controlled and can be adjusted according to the need, *in vitro* techniques have been improvised for an uninterrupted supply of metabolites (Coste *et al.*, 2011; Srivastava *et al.*, 2016). It has been demonstrated that production *per se* of certain valuable life saving chemicals and therapeutics can be streamlined and optimized (Dixon and Paiva, 1995; Jeong and Park, 2006). Documented literature shows that both batch and continuous culture systems can be hired for metabolite synthesis in cultures. Chemostats and turbidostats have been used as apparatus for secondary metabolite synthesis (Lee *et al.*, 2011). Bioreactors with provisions for finer controls of biosynthesis have also been designed for exclusive applications (Evers, 1991; Chandra and Chandra, 2011).

Elicitors and Elicitation

Based on the premise that plants thriving under adverse and harsh environment could be richer and diverse in terms of secondary metabolite content, culture

systems can be developed and fabricated with externally imposed stresses (Oksman-Caldentey and Inze, 2004; Namdeo, 2007). It has been shown that changes physicochemical variables, spatial and time condition can alter biosynthetic pathways (Evers, 1991; Zaho *et al.*, 2005). Since therapeutic chemicals are mostly products of secondary metabolism, use of biostatic substances curbing primary metabolism have stimulated for secondary metabolite synthesis (Roses, 2000; Shilpa *et al.*, 2010). It has been shown that through controls available in the *in vitro* equipment, conditions helpful in simulating and thereby enhancing metabolite production in cultures can be altered (Bajpai and Reuss, 1981; Chou and Keasling, 2013).

Besides extremes of physical and chemical factors, natural and artificially induced biotic stresses have paved way for increase in the amount of production of secondary metabolites (Ola *et al.*, 2013). Plants challenged by such stresses in field form, accumulate and exude specific defense and allelochemicals which deal with pathogens and pathotoxins (Kusari and Spiteller, 2011). This sparks the idea that the molecular switches of secondary metabolite production can be manipulated for targeted synthesis of any desired biochemical (Naoumkina *et al.*, 2008). Though the entire *in vitro* process spins around strict adherence to asepsis, the template shown for dual culture and co-culture opens up the possibility for biostimulation of the metabolic grid (Guo *et al.*, 2008; Kusari *et al.*, 2013). It is in this context endophyte and medicinal plant interaction deserves a special mention. Endophytic microorganisms are found almost in all plants on earth. Organisms placed in this category have residing microflora that engage the host in a variety of relationships. Ranging from symbiotic interactions, the influence of the microbes on host may extend up to pathogenesis.

The interfacing of the endophyte and its host results in the formation of a plethora of substances eliciting potential to be used in modern medicine, agriculture and industry (Gutierrez *et al.*, 2011). Co culture procedures stabilized to support good endophyte-host interactions therefore opens up an opportunity to tap chemical compounds of academic and applied significance (Wu *et al.*, 2007; Joseph and Priya, 2011). Novel antibiotics, antimycotics, immunosuppressants, and anticancer compounds have been synthesized based on what appears to be an interaction between the host plant and the co-inhabiting microbe (Uma Shanker, 2009). Literature on isolation, culture, purification, and characterization of

preferred endophytes have been documented at regular intervals (Guo, 2008; Joseph, and Priya, 2011).

Taking into account the metagenomic influences exerted by the endophytes the prospects of finding new drugs stand brightened. One may envisage studying the relationship for generating novel hitherto unknown plant chemicals. Apart from these methods where the approach is not invasive on genomes, direct and indirect gene delivery techniques have also been developed to directly alter the production capabilities. Research on recombinant DNA technology has been a success in substantially good number of medicinal plants. It is reported that genetic engineering can cater to a higher production threshold. Gene manipulation techniques involving the insertion of foreign DNA through direct and indirect means have also offered new options (Holmes *et al.*, 2009). Since *in vitro* stabilized cell system can be slated for limitless production of metabolites, plant tissue culture can certainly stir the interests and imagination of the researchers further.

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HIDING FINGER PRINT IN IMAGES USING INTERPOLATIVE ABSOLUTE MOMENT BLOCK TRUNCATION CODING

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Abstract

This Absolute Moment Block Truncation Coding (AMBTC) is an efficient and fast lossy compression technique for still images. It is easy to implement compared to transform coding. Interpolative AMBTC is a modified method of AMBTC compression. Interpolative AMBTC is a low complexity method of image compression. A fingerprint is an individual characteristic and it does not change throughout his lifetime and so the fingerprint matching is considered one of the most reliable techniques of people identification. This property also makes fingerprints a very attractive biometric identifier. So security of finger print images has become inevitable during transmission. Image hiding in another image is a possible technique to achieve this. In this paper fingerprint hiding in images using Interpolative AMBTC is proposed. In this method the finger print image is stored in the bit plane of the compressed cover image. In this technique interpolative AMBTC method is used for compression. The finger print image is recovered during decompression process. The experimental results show that the finger print image hiding is not affecting the quality of decompressed image. This method has a low computational complexity.

Keywords: image hiding, compression, block truncation coding, AMBTC, bit plane.

Introduction

Data security has become inevitable during communication in this internet era. Data encryption and data hiding are two different methods for data protection during transmission of sensitive information. Data encryption refers to mathematical calculations and algorithmic schemes that transform plaintext into non-readable form to unauthorized parties. The recipient of an encrypted message uses a key which triggers the algorithm mechanism to decrypt the data, transforming it to the original plaintext version. Data hiding in images is process of embedding a secret data into a digital image which is called as cover image [1]. Data hiding can be used in different applications like e-commerce, confidential communication, authentication military data transmission and copyright protection. Hence in the internet data hiding in images is becoming a necessary technique. A large number of techniques have been proposed to embed data into images [2][6][3].

Biometric techniques have more advantages over conventional personal identification technique. Among various biometric techniques such as face, fingerprint, iris etc., fingerprint-based techniques are the most accepted recognition system. A fingerprint is an individual characteristic and it does not change throughout his

lifetime and so the fingerprint matching is considered one of the most reliable techniques of people identification. Fingerprints are fully formed at about seven months of fetus development and finger ridge configurations do not change throughout the life of an individual except due to accidents such as bruises and cuts on the fingertips. This property makes fingerprints a very attractive biometric identifier [4]. Finger print images are sensitive data in applications like criminal identification. So security of finger print images has become inevitable during transmission. Image hiding in another image is a possible technique to achieve this. Block Truncation Coding (BTC) is a simple image compression technique, introduced by Delp and Mitchell [5]. BTC is based on the conservation of statistical properties. Although it is a simple technique,

BTC has played an important role in the history of image compression. Many image compression techniques have been developed based on BTC [7]. Block truncation coding is a lossy compression method. It achieves 2 bits per pixel (bpp) with low computational complexity. Lema and Mitchell[8] presented a variant of BTC called Absolute Moment Block Truncation Coding (AMBTC). It preserves the higher mean and lower mean of the sub image blocks before and after compression. However the bit rate achieved by both BTC and AMBTC is 2 bpp. Ramana and

Eswaran [9] proposed a simple predictive scheme for BTC bit plane coding. The idea of this scheme is based on the observation that a high correlation exists among neighboring pixels in most digital images. K.Somasundaram and I.Kaspar Raj [10] proposed another modified version of the BTC. In this method eight bits in the bit plane are transmitted to the decoder while the other eight bits in the bit plane are dropped. The dropped bits are recovered by performing interpolation. The interpolation is done by taking the arithmetic mean of the adjacent gray values. So it is named as Interpolative AMBTC method.

In this paper fingerprint hiding in images using Interpolative AMBTC is proposed. In this method the finger print image is stored in the bit plane of the compressed cover image. In this technique interpolative AMBTC method is used for compression. The finger print image is recovered during decompression process. The experimental results show that the finger print image hiding is not affecting the quality of decompressed image. This method has a low computational complexity.

Block Truncation Coding

Absolute Moment Block Truncation Coding

The basic concept of BTC is to perform moment preserving quantization for blocks of pixels of an image so that the quality of the image will remain acceptable and at the same time the image file size decreases. Even though the bit rate of the original BTC is relatively high when compared to other still image compression techniques such as JPEG or Vector Quantization, BTC has gained popularity due to its practical usefulness.

In the BTC method, the image is divided into non-overlapping small blocks (normally 4 x 4 pixels). The moments are calculated for each block, i.e., the sample mean \bar{x} and standard deviation σ . The mean \bar{x} and standard deviation σ are computed using

$$\bar{x} = \frac{1}{n} \sum_{i=1}^n x_i \quad (1)$$

$$\sigma = \sqrt{\frac{1}{n} \sum_{i=1}^n (x_i - \bar{x})^2} \quad (2)$$

Where x_i represent the i^{th} pixel value of the image block and n is the total number of pixels in the block. The two values \bar{x} and σ are termed as quantizers of BTC.

Taking \bar{x} as the threshold value a two-level bit plane is obtained by comparing each pixel value x_i with the

threshold. If $x_i < \bar{x}$ then the pixel is represented by '0', otherwise by '1'. By this process each block is reduced as a bit plane. The bit plane along with \bar{x} and σ forms the compressed data. For example a block of 4 x 4 pixels will give a 32 bit compressed data, amounting to 2 bpp.

In the decoder an image block is reconstructed by replacing by '1' s with H and the '0's by L , which are given by

$$H = \bar{x} + \sigma \sqrt{\frac{p}{q}} \quad (3)$$

$$L = \bar{x} - \sigma \sqrt{\frac{q}{p}} \quad (4)$$

where p and q are the number of 0's and 1's in the compressed bit plane respectively.

Lema and Mitchell [4] presented a simple and fast variant of BTC, named Absolute Moment BTC (AMBTC) that preserves the higher mean and lower mean of a block. However the bit rate achieved with the AMBTC algorithm is also 2 bpp. The original AMBTC algorithm involves the following steps:

An image is divided into non-overlapping blocks. The size of a block could be (4 x 4) or (8 x 8), etc. Calculate the average gray level of the block (4x4) as :

$$\bar{x} = \frac{1}{16} \sum_{i=1}^{16} x_i \quad (5)$$

where x_i represents pixels in the block. Pixels in the image block are then classified into two ranges of values. The upper range is those gray levels which are greater than the block average gray level (\bar{x}) and the remaining brought into the lower range. The mean of higher range x_H and the lower range x_L are calculated as

$$x_H = \frac{1}{k} \sum_{x_i \geq \bar{x}} x_i \quad (6)$$

$$x_L = \frac{1}{16 - k} \sum_{x_i < \bar{x}} x_i \quad (7)$$

where k is the number of pixels whose gray level is greater than \bar{x} .

A binary block, denoted by b , is also used to represent the pixels. We can use "1" to represent a pixel whose gray level is greater than or equal to \bar{x} and "0" to represent a pixel whose gray level is less than \bar{x} . The encoder writes x_H , x_L and b to a file. Assume that we

use 8 bits to represent x_H , x_L respectively. Then the total number of bits required for a block is $8+8+16=32$ bits. Thus, the bit rate for the AMBTC algorithm is 2 bpp. In the decoder, an image block is reconstructed by replacing the '1's with x_H and the '0's by x_L . In the AMBTC, we need 16 bits to code the bit plane which is same as in the BTC. But, AMBTC requires less computation than BTC.

Interpolative AMBTC Method (IBTC)

In this technique half (8 bits) of the bits in the bit plane of AMBTC is dropped at the time of encoding as in Fig. 1. In decoding the dropped bits are recovered by taking the arithmetic mean of the adjacent values as in eqn.(8).

Fig. 1: the pattern of dropping bits. The bold faced bits are dropped

1	5	9	13
2	6	10	14
3	7	11	15
4	8	12	16

$$\begin{aligned}
 \hat{x}_i &= \frac{1}{3}(x_{i-1} + x_{i+1} + x_{i+4}) \text{ for } i = 2 \\
 \hat{x}_i &= \frac{1}{2}(x_{i-1} + x_{i+4}) \text{ for } i = 4 \\
 \hat{x}_i &= \frac{1}{3}(x_{i-4} + x_{i+1} + x_{i+4}) \text{ for } \\
 i &= 5 \\
 \hat{x}_i &= \frac{1}{4}(x_{i-4} + x_{i-1} + x_{i+1} + x_{i+4}) \\
 \text{for } i &= 7, 10 \\
 \hat{x}_i &= \frac{1}{3}(x_{i-4} + x_{i-1} + x_{i+4}) \text{ for } \\
 i &= 12 \\
 \hat{x}_i &= \frac{1}{2}(x_{i-4} + x_{i+1}) \text{ for } i = 13 \\
 \hat{x}_i &= \frac{1}{3}(x_{i-1} + x_{i+1} + x_{i+4}) \text{ for } \\
 i &= 15
 \end{aligned} \tag{8}$$

Proposed Image Hiding Method

The proposed fingerprint hiding method makes use of AMBTC and interpolative technique. In this method the cover image is compressed using the Interpolative AMBTC technique. In the Interpolative AMBTC, in the place of dropped bits the finger print image will be stored. If the size of the cover image is $M \times M$ then the size of the secret image can be stored is $N \times N$ where N is $M/4$.

Here finger print image is the secret image. The finger print image can be recovered during image decompression. The steps involved in the finger print hiding is as follows.

Step 1: Divide the cover image X into blocks of size $n = 4 \times 4$ pixel and convert the pixel values of finger print image into binary values.

Step 2: Input a block x and compute the mean as in eqn. 1 and compute the lower mean \bar{x}_L and higher mean \bar{x}_H of the block as in equation 6 and 7 respectively

Step 3 : Construct the bit plane by taking '1' for the pixels with values larger than the mean \bar{x} and the rest of the pixels by '0'.

Step 4: Drop a pattern of bits and store the remaining bits as shown in Fig 1. Store the higher mean \bar{x}_H , the lower mean \bar{x}_L and with the bit plane after dropping eight bits.

Step 5: Store the eight bits of a pixel of finger print image in the dropped places of the bit plane of the cover image.

Step 6: Repeat step 2 to 5 for all blocks in the image.

In the decoder, an image block is reconstructed using the bit plane transmitted by replacing the 1s with \bar{x}_H and the 0s by \bar{x}_L . The pixels corresponding to the dropped bits of the cover image are estimated by computing the mean of the adjacent values by the eqn. 8 then by converting the binary values stored in the dropped places of the bit plane we can recover the finger print image.

Results and Discussion

In order to evaluate the performance of our method, experiments were carried out on six standard monochrome images of size 512×512 as cover images "Couple", "Lena", "Jet", "Peppers", "Girl" and "Zelda" which are given in Fig 2.

Each digital image was partitioned into a set of non-overlapping image blocks of 4×4 pixels. Since the size of the cover image is 512×512 , the maximum size of the secret image can be 128×128 as per the proposed method. Hence a finger print image of size 128×128 is taken as secret image which is given in fig 3.



(a) Couple



(b) Lena



(c) Jet



(d) Peppers

(e) Girl

(f) Zelda

Fig 2. Standard Images used as cover images for Experiment

Fig 3. Finger print image used for experiment



For comparison, experiments using the AMBTC method and the method proposed by Ramana and Eswaran (RE Method) were also carried out. The PSNR values were computed for each of the reconstructed images and are given in Table 1

Table 1: PSNR and BPP values for different methods on standard images

Image	AMBTC bpp=2.0	RE Method bpp=1.5	Interpolative AMBTC bpp=1.5
ouple	35.01	32.79	34.12
Lena	30.07	26.99	28.33
Jet	31.42	28.42	30.28
Peppers	33.44	30.33	31.27
Girl	33.95	31.45	32.35
Zelda	36.74	34.28	35.52

From Table 1 it can be seen that Interpolative AMBTC has better PSNR values than that of RE method. Hence one can obtain better quality of reconstructed image and with the same the compression when compared to the RE method. It is also observed that interpolative AMBTC has closer PSNR value to the AMBTC method but with less bpp. Here we can observe that data hiding in the compressed image is not affecting the quality of the decompressed image. So we can take the secret image separately at the time of decompression.



(a) Couple

(b) Lena

(c) Jet



(d) Peppers

(e) Girl

(f) Zelda

Figure 4: The reconstructed Standard Images using IBTC Conclusion

In this paper finger print image hiding in images using Interpolative AMBTC is proposed. In this method the finger print image is stored in the bit plane of the AMBTC compressed image and is recovered during decompression process without much affecting the quality of the cover image. Experimental results show that the proposed method achieves quality of the image as per the decompression technique. This method has a low computational complexity.

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COLLABORATIVE RECOMMENDER SYSTEM FOR ONLINE USERS USING MAP REDUCE ALGORITHM IN BIG DATA

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Abstract

Information is overloaded in the Internet and getting the required information from the Internet is difficult job of the customers. In the framework of Web search, it is difficult to identify the user's anticipation and requirements. Web recommender systems play a vital role to satisfy the above addressable issues in the web search. Recommendation system provides the facility to understand a person's needs and find desirable content for them automatically based on the pattern between their likes and rating of different items. The conventional collaborative filtering based recommender system generates high quality recommendations by influencing the behavior of similar users. The recommender system behind the problems of sparsity and scalability. It is very difficult to process the large volume of data using traditional database tools and mining techniques. The world is digital and the information is also in digital form. The information related to personal, organization, institution, medical, social, history, etc., are maintained on the servers in the form of digital. The enormous digital volume of data, namely big data is characterized as volume, velocity, variety and veracity (4Vs). Big data deals with storage, compute capacity, accuracy, time and decision-making. This research shows how MapReduce can be used to parallelize Collaborative Filtering approach for efficient recommendation in the Bigdata era. This paper proposes, a new recommender system is proposed for the large amount of data available on the web in the form of ratings, reviews, opinions, complaints, remarks, feedback, and comments about any item (websites, web pages, products, events, individuals and services) using Map Reduce Algorithm in Hadoop Framework. This work is implemented in Mahout Interfaces for analyzing the data provided by review and rating for the web pages.

Keywords: Bigdata, MapReduce, Hadoop Framework, Recommendation, Collaborative Filtering.

Introduction

The development of information technology has generated a voluminous amount of data with every passing minute. The data is securely maintained in information repositories, files, databases, data warehouses and other information storage areas for future analysis and also for decision making purpose. This data growth is continuously rapid so getting useful information from mass data is challenging and onerous. To handle these enormous volumes of data and extract meaningful knowledge and information, there is a need to develop some new techniques and tools. Big data and recommendation techniques are good combination for big corporations. The research in big data becomes popular and important for the research communities to find useful information from such large volume of web based repositories and make clever decisions [4, 12].

The volume of information available on the internet is increasing rapidly with the explosive growth of the WWW and the advent of e-commerce applications. So, it is difficult for the users to access the right information from the web. People from different fields access the

information from the web to satisfy their requirements. Web based applications play a major role in people's day to day activities. Monitoring the user's actions are really an interesting and necessary job of the website forecaster to familiarize about their performance, classify the likeminded users, understand the website visitor's browsing history, reconstruct the website, web recommendation and web personalization [12, 15].

The research in web recommendation becomes a mandatory application in the big data world. Many users navigating the web pages and spend lot of time to get desirable information. Web recommendation system recognizes the users and recommends the web pages based on their expectation. Many researchers developed recommendation techniques by applying the pattern discovery algorithms at various levels in web logs. The recommendation techniques namely collaborative filtering approach, content based approach and hybrid recommendation techniques are used along with web usage mining to provide better web recommendation technique [5]. Big data analysis tool is used to improve the accuracy of web recommendation technique in petabyte of

information [1]. Web recommendation [6,7,13] is habitually related with web personalization to carry out the needs of the customers. Web personalization is defined as the task of building web based information systems suitable for the significance and outlook of the user. A personalized website recognizes its users and gathers the information based on their anticipation and attempt to modify or streamline the website contents. Web recommendation is one of the techniques of web personalization, which refers to the recommendation of a set of hyperlinks that are coupled to the interests and preferences of the user. The management of the recommended links is done either in a separate frame of the Web page or in a pop-up window.

Web recommendation systems help the website visitors for easy navigation of web pages, quickly reaching their destination and to obtain relevant information. There are two types of approaches [9,10,14] to develop recommendation systems: (i) Content based filtering method, (ii) Collaborative filtering method, some cases combination of both the approaches are preferred by the researchers.

Content-based filtering technique [11] is based on content learn from the target items. In content-based filtering technique, the web pages are recommended for a user exclusively on a profile built up by analyzing the content of items that the user has rated in the ancient times and/or user's personal information and preferences. By conclusion, in this method, recommendation can be done mainly from the past experience of the website visitor. In collaborative filtering approach, [7] web pages are recommended to a particular user when other similar kind of users also prefers those web pages. The definition of 'similarity' between users depends on applications which use the web recommendation system.

A collaborative filtering system collects all information about users' activities on the web site from the web servers and calculates the similarity among the users. Users have similar characteristics will be categorized to the same group. This method had two disadvantages: 1. Sparsity [13] 2. Scalability [13]. In sparsity, the amount of ratings previously obtained is very miniature compared to the number of ratings that need to be predicted. Collaborative filtering requires explicit non-binary user ratings for similar products. With this problem, collaborative filtering based recommendations cannot accurately compute the future expectations (neighborhood) of the product or web pages for recommendation. The second problem is related to scalability. Recommendation systems using collaborative filtering approach to find the

neighborhood generally necessitate very long computation instance that grows linearly with both the number of customers and the number of products or web pages.

The author [10] found that, the worth of the recommendation system has a significant outcome on the customer's future shopping behavior. Poor recommendations can cause two types of characteristic errors: false negatives, which are products that are not recommended to the customers, though the customer would like them, and false positives, which are products that are recommended to the customers, though the customer does not like them. In an e-commerce environment, the false positives are avoided strictly, otherwise these types of mistakes will lead to irritated customers and thus they will be unlikely to revisit the site.

Hadoop is the most popular open source cloud computing platform inspired by MapReduce and Google File System papers [1,2], which supports MapReduce programming framework and mass data storage with good fault tolerance. MapReduce is a popular distributed implementation model proposed by Google, which is inspired by map and reduce operations in the Lisp programming language. The above tools can be used to improve the scalability and efficiency of service recommendation methods in the "Big Data" environment.

This paper is organized as follows. Chapter 2 deals with Literature Survey and chapter 3 describes the Proposed Methodology, Chapter 4 explains the Result and Experimentation and finally Chapter 5 discusses the Conclusion and Future Direction.

Literature Survey

[1,3] To improve the scalability and efficiency in big data environment, KASR is implemented on Hadoop, a widely-adopted distributed computing platform using the MapReduce parallel processing paradigm.

Finally, extensive experiments are conducted on real-world data sets, and results demonstrate that KASR significantly improves the accuracy and scalability of service recommender systems over existing approaches. Authors [1] have improved the efficiency of the collaborative filtering approach based recommendation which overcomes the problem of sparsity and scalability by using web usage mining, decision tree induction method, association rule mining algorithms and data warehousing technologies. They have used web logs as a source to find the frequent patterns using Apriori algorithm and built product taxonomy. Decision tree induction method is used to classify the customers, finally a recommendation system

with five levels have introduced to recommend the items to the customer.

This research [5] has taken effort to expose the role of web usage mining in the area of web personalization. They have classified the personalization process into four major areas: (i) Memorization, which the system record user's browsing details, and will returns the past browsing history when the user log on to the system, (ii) Guidance, which returns the couple of web pages based on user's preferences, also termed as recommendation systems, (iii) Customization, which modify the content, structure etc., based on the user's preference and (iv) Task performance support, which executes the action on behalf of the user.

A novel recommendation method [16] which combines web content semantics with users' navigational behavior is proposed by the researchers. Semantically coherent clusters are formed by extracting the keywords from the web contents based on user navigation. Domain ontology is formed based on the keywords extracted from the web contents. The resultant clusters and ontology mapping are then used to produce recommendations to the end user that are semantically relevant to his current navigational behavior.

Researchers [8] have developed a novel recommendation system for the students who are all themselves learning technologies through e-learning environment using web usage mining. Their recommendation system will automatically suggest the educational resources for the students based on their browsing history. Learner and Content module is built in offline then recommendations are suggested based on the above built model.

Web usage mining techniques [15] is used by the researchers for determining the interest of "similar" Users. The complete process for recommendation broadly consists of two components: offline component and online component. The offline component involves Data Preprocessing, Pattern Discovery and Pattern Analysis. The outcome of the offline component is the derivation of aggregate usage profiles using web usage mining techniques. The online component is responsible for matching the current user's profile to the aggregate usage profiles. The scope of this paper is to match an online user's navigational activity with the aggregate usage profiles obtained through mining tasks and provide suitable page recommendations which may be of interest to the user.

In this paper, [3] a recommendation system was proposed to the large amount of data available on the web

in the form of ratings, reviews, opinions, complaints, remarks, feedback, and comments about any item (product, event, individual and services) using Hadoop Framework. The work was implemented in Mahout Interfaces for analyzing the data provided by review and rating site for movies.

Here [1] user-based Collaborative Filtering algorithm on a cloud computing platform was implemented to speed up the recommendation process. Hadoop framework was used to solve the scalability problem of CF. Experimental results shown the improved speed than standalone unit.

Proposed System

In this paper, a quality rate and reviews based service recommendation method are proposed, namely QRRS (Quality and Review based Recommender System). In this method, quality rates and review comments are used to indicate both of users preferences and the quality of candidate services. A user based CF (Collaborative Filtering) algorithm is adopted to generate appropriate recommendations. QRRS aims at calculating a personalized Rating and reviews of each candidate service for a user, and then presenting a personalized service recommendation list and recommending the most appropriate services to him/her. Moreover, to improve the scalability and efficiency of the recommendation method in "Big Data" environment. The proposed method is implemented in a MapReduce framework on Hadoop by splitting the proposed algorithm into multiple MapReduce phases.

In this paper, a recommendation is made effectively using the web usage mining as follows:

1. Web logs are preprocessed to eliminate the inconsistency.
2. Users are grouped using Cosine Similarity Measure
3. Collaborative Filtering Approach and Map Reduce Algorithm in Hadoop are used to speed up the process of recommendation.

Data Preparation

Whenever the user interact the website, the interaction details are recorded in the web server in the form of web log files. Web log files [1] are maintained in the web servers in the form of plain text files. It is too difficult to use the web log files directly.

Preprocessing techniques are necessary for the web logs to discover the knowledge from them. The proposed system performs the following preprocessing steps on the data: (i) **Data Collection** (ii) **Data Cleaning** (iii) **User**

Identification (iv) Session Identification and (v) Path Completion.

The web logs are preprocessed and the fields are extracted as follows:

$$L = \langle ip, user, url, qr, reviews \rangle$$

Where, L is web logs which have "ip" the ip address, "user" user name, "url" web address, "qr" quality rate and "review" review comments by the user.

User Grouping using Cosine Similarity

The users who have similar behavior are grouped by using the Pearson correlation coefficient. The Pearson correlation coefficient is the most widely used and served as a benchmark for Collaborative Filtering. Here, Cosine similarity measure method is used for user grouping:

Pearson Correlation Coefficient

$$Pearson(x, y) = \frac{\sum xy - \frac{\sum x \sum y}{N}}{\sqrt{(\sum x^2 - \frac{(\sum x)^2}{N})(\sum y^2 - \frac{(\sum y)^2}{N})}}$$

X, Y refers data objects and n refers total number of attributes

Therefore, the proposed is implemented by using Collaborative Filtering algorithm on Hadoop platform with respect to the quality rate and review comments of the website, webpage or any product in the similar user group.

MapReduce Overview

The proposed system is implemented in a distributed Hadoop environment. The works are distributed across the nodes to speed up the recommendation process. MapReduce model has two phases (i) Map Phase and (ii) Reduce Phase. Map Phase groups all intermediate values associated with the same intermediate key and passes them to the Reduce phase. Reduce Phase: It accept the intermediate key and a set of values for the key. It merges together these values and produces only one value per reduce invocation. In the Hadoop platform, the default input dataset size of one mapper is less than 64MB file. If the file size is larger than 64MB, the platform would split it into a number of small files which size less than 64MB automatically. For every input file, the Hadoop platform initialize a mapper to deal with it where the file's line no. as the key and the content of the line as the value. In map phase, the user can define process to deal with the input key/value and pass the intermediate key/value to the reduce phase. Finally Hadoop platform would kill the corresponding mapper. In the map stage, the userdefined

process deal with the input key/value and pass the intermediate key/value to the reduce phase, so the reduce phase would implement them. When the files block are computed completely, The Hadoop platform would kill the corresponding mapper, if the documents are not finish, the platform would chooses one file and initializes a new mapper to deal with it. The Hadoop platform should be circulate the above process until the map task is completed.

Implementation of Collaborative Filtering in MapReduce

This section presents the implementation of the Collaborative-Filtering algorithm within the MapReduce framework. MapReduce model is applied to the user group. Then the recommendation process is encapsulated in the Map function in each user in a user group. The user ID and the corresponding quality rate and review is preprocessed and stored in a text files, then these files as the input of the Map function. The MapReduce framework initializes mapper to deal with these user ID files. The steps are as follows:

1. Calculate the users interest based on the quality rate and reviews given by the users to the webpage, website or product. (Map I and Reduce I)
2. Compute the similarity between the users group and current active user. (Map II and Reduce II)
3. Recommendation will be done based on the computed rating and reviews to the current active users. (Map III and Reduce III)

Result and Discussion

The proposed system is implemented for CF algorithm on Java platform. In Hadoop framework clusters are created in five computers. Here, one of the computers as MainNode and remaining four computers are acted as Data Set Nodes. Each computer is having 4 GB RAM & Intel(R)core(TM) i5 CPU with 2.5GHz speed & Operating System Ubuntu 10.10. The software used for the experiments are Hadoop MapReduce framework, Java JDK 1.6. The dataset is created by Netflix data set. The list of different movies is maintained in the dataset and more than 50,000 users. The users will define different ratings and review comments for each movie. The role of our CF algorithm is to compare the runtime between standalone & Hadoop platform. The data sets are created in three sub datasets with 200 users, 500 users and 1000 users. The Data Set Node is also divided into 2 nodes, 3 nodes, and 5

nodes. The comparative study and analysis is undertaken in standalone and Hadoop platform.

Performance Metrics

The performance metrics are time and speed. The average time is considered for as the Hadoop platform at current DataSetNode and the data set running time. Here the speedup is an important criterion to measure the efficiency of the algorithm.

$$\text{Speed} = T_a / T_s \quad (2)$$

Where T_a is average time and T_s is running time.

Comparative Analysis

The comparative analysis in standalone computer and Hadoop platform is detailed as follows with respect to speed.

Table 4.1 Comparative Analysis in Standalone and Hadoop Platform

Standalone Unit				Hadoop Platform		
No of Uses	200	500	1000	200	500	1000
No of node	1	1	1	2	2	2
Speedup	3.5	4.5	4.8	2.5	2.6	2.6

Table 4.2 Comparative Analysis in Standalone and Hadoop Platform

Standalone Unit				Hadoop Platform		
No of Uses	200	500	1000	200	500	1000
No of node	1	1	1	3	3	3
Speedup	3.5	4.5	4.8	1.8	1.9	1.9

Table 4.3 Comparative Analysis in Standalone and Hadoop Platform

Standalone Unit				Hadoop Platform		
No of Uses	200	500	1000	200	500	1000
No of node	1	1	1	5	5	5
Speedup	3.5	4.5	4.8	0.5	0.7	0.7

Figure 4.1 shows the comparative result of the proposed system. From the result, it is found that the proposed system gives better performance when the number of nodes is increased. The standalone computer is used for recommendation, it workload is increased and it takes 4.8 seconds for recommendation in 1000 users. But when the workload is distributed across the nodes, it takes only 0.7 seconds for recommendation. Recommendation is done with respect to collaborative filtering and quality rate, review of the website or product.

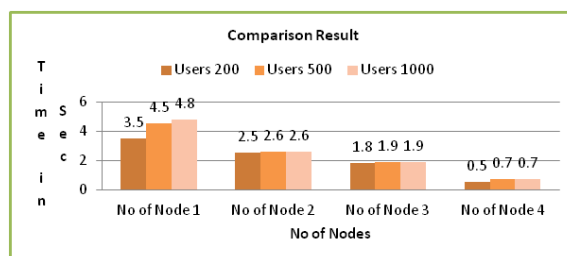


Fig. 4.1 Comparison Result

Conclusion and Future Work

This paper, addresses the challenge of using the MapReduce model to parallelize Collaborative Filtering. As a stateless programming model, MapReduce cannot directly express Collaborative Filtering. To achieve the result, the work is divided into three parts. Initial work is preprocessing the web logs, secondly user grouping using cosine similarity measure and finally collaborative based recommendation process using MapReduce in Hadoop. The recommendation processes of the user are encapsulated in the Map function. The experiment result also shows that the proposed algorithms enable Collaborative Filtering algorithm in Hadoop platform to take the good performance. In future works, the proposed algorithm will be implemented in online transactions.

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CONCEPT ATTAINMENT THROUGH COMPUTER ADAPTIVE TESTING (CAT) CAN OVERCOME THE BARRIERS LIKE LOCALITY OF THE INSTITUTION

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Abstract

Concept attainment is a great strategy to encourage critical thinking skill in learners. It is a backward conceptualizing approach to make sense of new ideas. It is characterized in terms of thinking patterns of the learners by the pattern of decisions in the acquisition, retention and utilization of the information that serves to meet certain objects (Bruner, 1956). It is designed to clarify ideas and to introduce the aspects of the content. The students who understand the concepts are able to resolve the concepts. The basics of physics are important for everyone. Knowing the basic physics concepts make you to understand the nature clearly. It is felt that in spite of strenuous efforts of physics teacher, students fail to grasp the concepts, which leads disinterest among students towards physics. Hence teaching physics needs special teaching strategies and there is a need to study the effectiveness of the innovative teaching methods emerging; to find their concept attainment in physics. Computer Adaptive Testing (CAT) is an innovative learning and testing strategy, which is very much needed for Physics concept learning and testing their attainment in learning the basics concepts of physics. Physics is a subject which is build up of concepts. The main aim of this study is to find the effectiveness of the CAT package and its influence on different locality (Rural and Urban) of the institutions. The study reveals that this strategy improves concept attainment and can break the important external barrier which can influence much in learning ie. locality of the institution. In this article the author explains how this computer mediated interactive tool improves concept attainment and there by increases the achievement of the learners by overcoming the locality barrier in learning.

Keywords: Computer Adaptive Testing, Innovative Interactive testing Tool, Higher order thinking skills, Locality barrier.

Introduction

Teaching is an intriguing, important and complex process. It takes place in a complicated social institution which is filled with diverse people. There is need to direct efforts towards transformation of teaching methods right up to development of science and technology, curriculum and material research along with teacher orientation to receive attention. The ultimate responsibility of information processing has been enshrined by the society in teachers. Thus the theory of teaching must attempt to set forth the means of maximizing learning on the part of children. Cognitive studies show that conceptual clarity and thinking ability is the key to successful learning (Henderson, 2008). The Interactive testing tool explained here proves to be an efficient tool for concept learning and develops thinking skill in learners.

Need for the Study

Physics is a subject, which acts as a primary tool to gain an insight in understanding the behaviour of physical

phenomena and daily occurrences. It is the general analysis of nature, conducted in order to understand how the universe behaves (H.D. Young, R.A. Freedman, 2004). Locality of the Institution indicates the two important demographic parameters such as rural and urban situation of the school atmosphere. The institutional Environment (Rural /Urban) discriminates the learners from providing different activities though the same syllabus and course materials are delivered for the same subject. This factor will have their influence on understanding and retention of the basic concepts, thus the students from different locality of schools will differ in their opportunities to learn the subject over and again. The academic performance rate differs because of the different methodology and the hand on experience provided to the learners. The author is curious to find out the influence of these two parameters because there may be difference in the learning potentials and internal attitudes of the learners of these two situations.

Significance of CAT in learning Physics

Computer Adaptive Testing (CAT) provides instant feedback to the teachers as well as the individuals. In this, the examinee is free from subjective influence and was given opportunity to utilize, his true potential and are free from fear and tension. It encourages active interaction and develops high level thinking skills, such as and problem solving, which are very much useful in science education. It is a handy tool and an assistive device with build in provisions for monitoring and routing various associated functions like scoring automatically, providing unbiased evaluation and replaces the monotony assessment. Effective self assessment is only useful if, after the self assessment there is an opportunity for revision for further improvement. CAT- report conveys to students about their performance, they can use the result of their self assessment for further improvement (Moss & Brookhart 2009). It also help the teacher to guide the learners by identifying the ability, experience and background of their students, monitoring their learning and providing feedback to them. It helps in identifying whether an individual has met the specific objectives of a course.

CAT aims at diagnosis and to provide information about specific content areas in which an examinee needs additional information for concept clarity. It draws out the best available potentials that are buried in an individual. It helps to develop inquiry skills, scientific knowledge and scientific reasoning skills. It clears misconceptions and enhances the learners self esteem. It is very useful for the lower achieving students and develops interest in Physics. It is essential for evaluating large groups of relatively homogeneous individuals and for administering diagnostic testing. Students learn the material faster and this helps for longer retention. It also has the potential to create a conducive atmosphere to active evaluation. It develops motivation and self esteems by allowing students to take more responsibility for their learning, because of the immediate feedback they receive.

CAT can thus be effectively implemented to all schools for enhancing the academic performance, indicating an individual's level of achievement in attaining the concepts in physics.

Objectives of the Study

The objectives of the present study are;

- To find out the physics concept understanding of students through traditional method of teaching in different locality of Institution in terms of a pre test score.

- To find out the effectiveness of the prepared Computerized Adaptive Test package in terms of Achievement (post -test score) of the students of different locality of institutions.
- To study the comparative effectiveness in achievement through CAT on different locality of institutions, by comparing the pre and post mean scores of physics concept understanding.

Hypotheses of the Study

Ho. 1: There is no significant difference between the mean achievement scores in the pre - test and post- test of the samples

Ho. 2: When the learners interact with the Computerized Adaptive Test material the mean CAT Scores is not significantly different in terms of external variable like Locality of the institution

Ho.3: There is no significant difference in the mean achievement post test scores between the different categories of learners in terms of external variable like Locality of the institution

Methodology of the Study

A Computer Adaptive Test (CAT) package was developed on Physics concepts scientifically. The package of test items like Question bank was created at three levels (Below average, Average and Above Average) on Physics concepts and administrated through a software programme, that selects the level of the learners' by previous item and administer the next item based on the nature and level of response. The Pre Test, the Computer Adaptive Test, and the Post Test were administrated and data was collected. Finally, the analyses were carried out based on the hypotheses by using suitable statistical techniques.

Design of the Study: Quasi Experimental design.

Sample Selection:

Homogenous sample was selected based on their understanding of concepts in physics (pre-test scores) from different Locality of institution (Rural and Urban), and different Gender, using Randomized sampling technique. The samples were selected purposively to suit the design of the study. A field test was conducted in schools of different locality. Based on the field test results conducted in these schools; the student samples were selected. The Post- Test was also conducted to the same set of student samples for further analysis.

Table 1 Profile of the samples studied

Profile		Students sampled	
		N	%
Locality of Institution	Urban	28	43.1
	Rural	37	56.9
	Total	65	100.0
Gender	Male	34	52.3
	Female	31	47.7
	Total	65	100.0

Collection of Data

Pre-test was conducted for the samples, in basic Physics concepts before the process of CAT. A Computer Adaptive Test Package developed in basic Physics concepts was administered individually. The scores are automatically recorded in the package for further analysis and interpretation. A post- test was conducted to the same set of samples after an hour gap of completing the CAT. The data thus collected was statistically analyzed to find out the effects of Computer Adaptive test (CAT) in physics concepts in estimating the ability of the students.

Results & Discussion

The Effects of Computer Adaptive Test On Students of Different locality of Institution.

Ho. 1: When the learners interact with the Computerized Adaptive Test material, there will not be any significant difference between the mean Pre Test and Post Test scores of the Samples.

Table: 2. Significance of Difference between the Mean scores in pre Test & Post test of the Samples

Test	Range	Mean	SD	N	't' value	Level of significance
Pre test	7- 17	10.86	2.32	65	47.9276	0.01
Post test	25- 30	27.48	1.56	65		

Inference

The Achievement mean score (Post test) has been used as one of the indicators of the treatment effect as a dependent variable. The difference between the mean scores for each of the category in Pre and Post test situations shows significance at 0.01 level this may be due to the interaction effect of CAT on the learning ability of the samples, which make them to get a clear understanding on the basic concepts in physics.

The pre and post test scores infers that the developed CAT package is very effective in learning physics concepts through an interactive evaluation tool.

Ho. 2: When the learners interact with the Computerized Adaptive Test material there will be significant difference between the mean CAT Score of the students in terms of their Locality of the Institution, and Gender.

Table: 3. Significance of difference between CAT Scores for various categories of learners

External independent Variables		Total CAT score			Test	'p'	Sig.
		Range	Mean	SD			
Locality of the institution	Rural	576-971	744.7	107.4	't' value 1.606	0.113	NS
	Urban	604-1061	789.5	116.1			
Gender	Male	594-1013	762.8	121.0	't' value 0.091	0.928	NS
	Female	576-1061	765.3	104.7			

Inference

The CAT Score is the test score. To identify the ability estimate of the different categories of the learners, their score in the CAT material was analysed and given in Table 3. The result shows that these Categories of learners (Gender, Locality of the Institution) do not differ significantly in their achievement; when they are evaluated and learning the concepts through CAT. Hence this interactive evaluation tool can be used as a concept learning tool.

The Effects of Computer Adaptive Test on Achievement post test

Ho. 3: There will not be significant difference between the Mean scores in Post- test for different categories of learners in terms of their Locality, and Gender.

Table 4 Significance of difference between Mean Post test scores for different categories of learners

External Independent Variables		Post test scores			'test'	'p'	Sig
		Range	Mean	SD			
Locality of the Institution	Rural	25-30	27.4	1.5	t-value 0.582	0.5629	NS
	Urban	25-30	27.6	1.6			
Gender	Male	25-30	27.4	1.5	t-value 0.349	0.7277	NS
	Female	25-30	27.5	1.7			

Inference

The Post- Test is an Achievement test, which shows the influence of the CAT on the achievement of the learners When the mean Post Test scores for different categories of learners are taken into account, the different categories of learners in terms of Gender, Locality of the Institution does not show significant difference in their mean Post Test scores. All the categories of students show better performance in their Mean Post test scores as

compared to their mean pre test scores. It is obvious that, this high achievement is because of the interactivity effect given by the evaluative tool which also increases the Concept clarity, Hence the stated hypothesis in its null form, that there will not be any significant difference between the different categories of students in terms of their Averaged Post Test scores is accepted in all the cases

Findings

This computer based individualized approach provides a proper learning environment, which increases the speed of learning without misconception, which may manifest their learning ability as confirmed by the research conducted by Rast, Philippe (2011). Gender and Locality causes interaction among the learners; when they are observed in terms of post achievement scores. The nature of interaction differs for male and female students, their difference is distinct in terms of their Locality, especially, but when the gender difference was considered as a whole, there was no significant difference (Table-4) among the groups of Gender and Locality of the Institution with respect to their post test score. The study also proved that the performance of the rural female is comparatively high in terms of their CAT score. This shows that they are having high hidden potential to learn and achieve more, if technological assistance is provided or if proper learning environment is provided rural female can perform better. This study infers that if rural children are given opportunities by school and society and if they are given enough care, encouragement and technological supports in their education, then they can perform better and can compete with others in the competitive exams like NEET . Thus the innate potential of the learner can be improved using CAT in their learning strategy for concept attainment.

Implications

The present study reviews that, this Computer Adaptive Testing was effective in physics concept understanding of students. The nature of learning environment and the influence of technological mediated testing strategy; influences in the learners' achievement. Thus the implementation of proper curriculum in rural schools for concept clarity will help in overcoming the locality barriers. Strategies should be developed to implement it.

The refreshing experience on the content through CAT seems to show enhancement in all the different groups of learners in their achievement. This may be

because of the learners' concepts clarity in the subject with individualized, interactive approach of the CAT. Hence, this type of interactive evaluation tools can be used in schools for quality improvement. This shows that the external variables are not contributive factors for measuring interactivity with CAT (Guzel, Hatice 2011). Hence, the CAT tool, is one of the best individualized tool, which interacts according to the nature of the learners' internal nature.

Conclusion

Improving and sustaining quality in education cannot be achieved without explicitly focusing our educational systems and processes. The only way we can prepare students for the future is by creating an atmosphere, where they want to do the best for themselves, where they are guided by their natural instincts to excel and achieve, without terrible amount of stress and pressure. CAT can assess students without having undergone unnecessary stress as stated by Fredrick's, J. (2012).

However, computer adaptive testing as well as its advantages and possibilities go a step beyond that. This can be seen from the ever-increasing number of large-scale tests (e.g. GRE, TOEFL) that have become or are becoming adaptive (Papanastasiou, 2001). If computer adaptive testing complement the physics teaching and learning in our physics classes not only in urban environment but also in rural environment; then we can overcome the barriers and can provide equal opportunity to all learners irrespective of their locality . However, such steps always need to be taken slowly and wisely to ensure its maximum effectiveness. Thus CAT aims to modernize India's Assessment system Lina Ashar (2012) and it is more beneficial to produce quality students in them in terms of the mastery of tasks rather than their success or failure as a person.

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PRECISION AGRICULTURE SYSTEM USING WIRELESS SENSOR NETWORK: A STUDY

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Abstract

A country's economic development is determined mainly based on its agricultural growth. Recent environmental conditions pose many threats to farming like unfavorable weather conditions, scarcity of water resources, decreased crop yield, and unexpected plant diseases. Deploying sensors throughout the agricultural field and constantly monitoring the crops will help in developing techniques to improve the farming conditions. Plant monitoring, efficient water flow management, diagnosing and treating plant diseases, and managing uncertain weather conditions are some of the advantages of Precision agriculture system. This paper reviews several methods of using wireless sensor network to develop better agricultural practices along with analysis of various opportunities, challenges and limitations of Precision farming.

Keywords: Precision agriculture, Plant monitoring, Water flow management, Sensor network.

Introduction

Agricultural growth is considered to be the backbone of a country's economy. Conventional agriculture techniques suffer from several problems, of which a few are natural and a few are anthropogenic. Monitoring plant growth, controlling plant diseases, reducing the usage of pesticides, preventing excessive irrigation are some of the major challenges of traditional agricultural methods. Precision agriculture or precision farming is not a single technology but a group of technologies which aim mainly at increasing the crop yield and its quality along with ensuring protection of the environment. A wireless sensor network (WSN) is a system comprising of Radio Frequency (RF) transceivers, sensors, microcontrollers and power sources. Recent researches in Wireless Sensor networks have led to much advancement in military applications, Security systems, automation systems, forest fire prevention, and keeping track of animals. Likewise Wireless sensor technologies can be applied for agriculture also. Sensors are deployed in the field to be investigated and they can be used to monitor temperature, pressure, soil moisture, soil acidity, and humidity and so on. Wireless Sensor network ensures inexpensive and efficient Precision agriculture. Conventional methods require farmers to rely on satellite images or other map based technologies to monitor their plant growth, irrigation and application of fertilizers. But with the application of Wireless Sensor networks on Precision farming, site-specific crop management could be done very efficiently.

Potential Wireless Sensor Network Applications in Precision Agriculture

Smart Irrigation System

Automated irrigation systems could be developed using WSN to optimize water usage in the agricultural field. Gutierrez *et al.* proposed an automated irrigation system using WSN and GPRS module in which sensors are deployed throughout the field. These sensors determine the soil moisture, thereby scheduling the time and duration of irrigation in that field.¹ Not only for automating irrigation, WSN could also be used to inform the users about any abnormal conditions like less moisture content, rise in temperature and concentration of CO₂.²

Fertilizer Conservation

Wireless sensor technologies can help in obtaining the soil pH value at various points of the field, thereby helping the farmer to select the right amount of necessary fertilizer. This technique helps in controlling the usage of fertilizers in the field³ since excessive use of fertilizers can lead to contamination of ground water. So measuring the soil nutrients is also an important step in monitoring and controlling fertilizer usage. WSN provides various techniques to measure the soil nutrients and thus controlling fertilizer usage, thereby not only protecting the environment but also enhancing crop productivity.⁴

Crop Monitoring Systems

There are several types of agricultural plant monitoring systems using WSN, which can increase crop productivity without the need for manual monitoring of

crops at all the time. The sensors deployed in the field continuously monitor the levels of temperature, humidity and carbon-di-oxide which highly influence the productivity, growth and quality of crops. In case of any abnormality at these levels, the farmer will be notified to take necessary actions.⁵

Control of Pests and Plant Diseases

Acoustic sensors can be used to detect the noise level of pests in the field and notify the farmer when the noise level exceeds a particular threshold.⁶ Spreading of plant diseases could be monitored by placing sensors on the stems and shoots of plants. Then air temperature readings are taken which are used to detect the probability of spread of the disease.⁷

Monitoring of Ground Water Quality

Water Quality parameters like EC (Electrical Conductivity), DO (Dissolved Oxygen), pH, temperature, turbidity and nitrate level could be monitored using wireless sensors. Sensors mounted on buoys monitor the water quality parameters and transmit the data to remote computers, thus determining the water quality at regular time intervals. Ground water quality can also be easily monitored by using WUSN (Wireless Underground Sensor Network). WUSN devices are deployed completely under the ground and do not require any wired connections.⁸

Monitoring of Farm Animals

Wireless sensor networks can help in continuous monitoring, assessing and reporting the health of farm animals (e.g. Cattle) to farm manager.⁹ The location of animals can also be tracked using low battery powered sensors on them.¹⁰

Greenhouse Monitoring

Greenhouse gases pose a serious threat to agriculture. Monitoring of these gases is essential to protect the agricultural environment. Sensors can assist in collecting the details of temperature, humidity and carbon di-oxide concentration, which are the major parameters of greenhouse effect.¹¹

Variants of Wireless Sensor Networks

Terrestrial Wireless Sensor Network (TWSN)

TWSN consists of hundreds to thousands of low battery powered sensor nodes which are deployed either in an unstructured or structured manner. Since the battery power is limited, secondary power source like solar cells can be used. This type of sensor network proves to be very useful in precision agriculture since it monitors the amount of irrigation delivered, soil properties, and plant diseases.¹² This network consists of a large number of sensor nodes deployed under the ground to monitor

underground conditions. These sensors are buried inside the soil and they collect information about the nutrients available in the soil as well as the needed information about soil properties. This helps in improving crop productivity as the quality of soil plays a major role in agriculture.¹³

Underwater Wireless Sensor Networks

This network consists of many sensor nodes deployed in water bodies. Autonomous under water vehicles are used to gather data from these sensor nodes. In precision agriculture, underwater wireless sensor network can be used to check the quality of ground water. Contamination of groundwater could easily be detected to take the necessary measures earlier to solve the issue. However, underwater sensors have only limited battery power which cannot be easily recharged or replaced. Implementing communication and networking techniques under water is also a challenge.¹⁴

Multi-media Wireless Sensor networks

Multi-media WSN is mainly used to track and monitor plant behaviour in the form of multimedia such as imaging, audio and video. Low cost sensor nodes equipped with microphones and camera are used to monitor the growth and behaviour of plants under various climatic conditions.¹⁵

Mobile Wireless Sensor Networks

These sensor networks consist of a large number of sensor nodes which have the capability to move on their own. The sensors travel throughout the agricultural field to collect data about plant growth, soil properties, water management and many other information regarding crop productivity. The collected information is reported back to a mobile sink which communicates it to the farm manager. Thus the data which is collected dynamically proves to be of much use to increase the crop yield.¹⁶

Wireless Sensor Technologies for Precision Agriculture

Wireless sensors are used in Precision agriculture to collect data about plant growth, plant diseases, leaf temperature, climate data, irrigation scheduling and analyzing soil properties. Soil properties include availability of soil nutrients, soil compaction, and soil fertility.

There are various technologies in wireless sensor networks which assist in Precision farming. The limitations of adapting conventional methods of farming could be overcome by applying wireless sensor technologies.

ZigBee Technology

ZigBee is a low cost and low powered network deployed for controlling and monitoring applications

covering a range of 10 to 100 meters. This system is less expensive and simpler when compared to other wireless technologies like Bluetooth and Wi-Fi.¹⁷

The ZigBee architecture consists of three types of devices namely ZigBee coordinator, router and End device. All the three devices together help in monitoring and controlling information from the agricultural field. ZigBee protocol could be used to monitor cattle in grazing fields. Also it achieves cattle localization at a low power consumption and minimum cost. In addition to that, ZigBee technology allows identification of pests in the crops, drought and increased moisture content in the field.¹⁸

Tag Based Systems

RFID (Radio Frequency Identification) is based on a wireless system that uses radio frequency electromagnetic fields to transfer data to and from sensors. These RFID devices are able to measure temperature, humidity and concentration of greenhouse gases in the agricultural field.¹⁹ RFID is mainly used in animal detection and tracking, environmental monitoring, locating farm machinery and irrigation management. RFID tags are mounted on animals and the data can be read from a remote computer.

Systems based on Smart Phones

Farm Management Information System (FMIS), is generally used to store information about the agricultural field, the crops grown, the animals used, irrigation facilities, and asset management. Through smart phones, the farmers can gain access to this database and to the wireless sensor network deployed in the field. Different wireless technologies like GSM, Bluetooth and Wi-Fi are used to transfer the collected data to the farmers.

Bluetooth Wireless Protocol

Bluetooth is a wireless technology utilized to establish communication links between devices like laptops covering a range of ten meters. Since Bluetooth is available in almost all mobile devices it can be utilized for many agricultural requirements. Site-specific irrigation scheduling is done by interfacing the communication signals from the sensor network and irrigation controller to the base station by using low cost wireless Bluetooth radio communication. This ensures site specific irrigation management thereby guaranteeing maximum productivity and conservation of water.

Wi-Fi Technology

Wireless Fidelity (Wi-Fi) technology has a communication distance of about 20 to 100 meters. It connects several types of devices through an ad-hoc network. Wi-Fi based Wireless sensor networks are widely used for monitoring temperature, air pressure, humidity,

light, water level and soil properties.²⁰ Wi-Fi prevents data losses by adopting data redundancy techniques. However it cannot be used for multihop applications and is also affected by the number of users and signal intensity.

GPRS Technology

General Packet Radio Service is a packet based wireless communication service that provides data rates from 56 to 114 kbps. GPRS is based on GSM (Global System for Mobile communication). Different wireless nodes are equipped with GPRS connectivity. Commercial sensors for measuring soil parameters, plant growth and behavior and atmospheric conditions are connected to these nodes. The data observed by the sensors is sent to a remote server via a GPRS network that can be accessed and analyzed very easily on mobile phones or tablets or computers.²¹

Challenges of using Wireless Sensor Technologies for Precision Agriculture

- The cost associated with sensors and the related systems is quite high which acts as a hindrance to farmers in implementing Wireless technologies in their fields. Inexpensive wireless systems need to be developed, so that farmers and farm managers can improve their farming techniques.
- Temperature and soil types vary from field to field. So different parameters are required for different locations. Tuning the application parameters accordingly is a difficult task. In addition, the fields owned by farmers are mostly of very small size, thus requiring personalized wireless networks to be deployed.
- In many countries, the farming land is heavily partitioned which requires proper planning for WSN based irrigation.
- Design of a fault-tolerant system is a challenge in Precision Farming. Some faults that are probable to occur are node failure due to battery depletion, erroneous values due to sensor hardware faults, and communication failure.
- Sensors are low batterypowered devices; hence, conserving energy is a major challenge in implementing WSN in the field. Energy management issues need to be dealt with much care.
- The end users of this system are farmers who need to understand the technology deployed in their fields. So care must be taken to design the system in a user friendly and simple way.

Conclusion

Precision Farming is a blessing to agriculture, since the crops and the environment in which they grow can be closely monitored. This shall help in yielding good quality

crops as well as increase in crop productivity. Conservation of water and other raw materials also prove to be very advantageous. Designing low cost and efficient energy consuming systems will definitely bring about a change in today's agriculture.

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USE OF e-RESOURCES BY MEDIA STUDENTS AT THE AMERICAN COLLEGE, MADURAI: A CASE STUDY

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Abstract

This paper reports usage and experience of e-resources used by media students at the American college, Madurai. In this case study is to verify and evaluate the purpose, frequency, reasons of using of students access to e-learning resources such as videos and camera handling. The study also found that those dissatisfied with the use of e-resources tend to use general search engines and databases of other resources in order to meet their information needs. The paper concludes that the media students lack the necessary information literacy skills needed to meet their academic and research requirements. It is recommended that the librarian and faculty should come together and strengthen their efforts through proper information literacy programs in order to educate students how to use these resources effectively. A well-structured questionnaire was administered to 103 under graduate media studies.

Keywords: Internet, E-Resources, On-Line Search, Media Students, Social Media.

Introduction

The fame of electronic and online resources in this information era is a fact that is inevitable. Electronic and digital formats of information are interspersed in our day to day routines personally, academically and professionally. John Shaw Billings, librarian once famously mentioned, "The learning of the users which goes on after he has his degree is, after all, the most important part of his education". The above quote insists about the importance of continuing education to be a experts from other profession. For continuous learning, electronic resources play a vital supportive role to adopt. As it supports and enhances the output of the better media students in the society, it is fruitful to do research on the same.

In the present scenario, some of the media professionals prefer printed versions of resources, now the condition is changing as they need not come physically to the library premises to find the print formats, but can stay at their studio works and access online resources through networks at any time. The free availability of e-resources has changed what users actually read and use. The users, particularly media students now tend to use only what is easily accessible during their constrained time. Chance of getting authenticated and reliable resources is still an issue in the usage electronic and online e-resources. Hence, the necessity of analyses on the usage of e-resources among media students spontaneously rises to predict the supportive elements in their studio practices.

About the College

The American College, the foster and brain child of the Missionaries of the American – Madura Mission was born in the year 1842. In the past 134 years, having grown to be the mother of education the college nurtures and nourishes the students with quality higher education. In this present world, where the values vanish away, the College offers a value based education with a view to produce responsible graduates, who shall be of a great asset to themselves and to the nation.

The American College, which was originally affiliated to the University of Madras has been brought into the affiliation of the Madurai Kamaraj University. The College always being a pioneer institution in higher education introduced the semester system in 1970. Then with the impetus provided by the Kothari Commission the College became one of the first twelve colleges to be made Autonomous in the year 1977.

Exploiting the privilege of Autonomy, the College introduced the concept of choice – based courses both at undergraduate and postgraduate levels in the year 1978 itself and got the reputation of becoming the first institution to initiate such a bold innovation in the whole of the country. The same system was revamped in the year 2002-2003 as Choice Based Credit System (CBCS), a paradigm shift that helped students to make fruitful and responsible choices of their own in the learning process. The CBCS passed through its second and third phases in

2002 and 2008 respectively allowing horizontal mobility to the students.

The College, based on the norms stipulated by the UGC and the Madurai Kamaraj University offers 27 undergraduate programmes, 13 postgraduate programmes and 7 research programmes leading to M.Phil. Degree. Nine departments have been elevated as Research Centres for doing Ph.D. Programmes.

The American College with many academic laurels was accredited with Five Stars in 2000. The Autonomy Review Committee visited the College in the years 2002 and 2009 and extended the Autonomy of the College.

The College has been re-accredited by NAAC Provisionally this year, scoring Grade "A" CGPA of 3.46 on a 4-point scale to its credit and is now looking forward to a giant leap of achieving CPE status. Though the unsaid achievements and developments of the College are many, they are not certainly inferior to those said above.

The American College strives to fulfill its objective, "to give students of all creeds, primarily of Christian Community a liberal Christian higher education, to train them in the service of God and humanity and to do such other things as are in harmony with that object". The College built on the foundation laid with the mortar mixed with the sacrificial sweat of the American Missionaries marches towards its goal triumphantly.

About the Visual Communication Department

The Department of Visual communication (Media Studies) blossomed from the academic year 2007, after a prolonged deep study on visual media and its existence as an industry. This Department being the pioneer in Madurai, is conscious in creating media professionals and creators not just merely to be a part of the existing media, however to make a conscious effort to bring about a vital change in the existing Media Scenario, the students are enabled with the technological innovations along with strong literature knowledge, which will comprehend them to have an Alternative Perspective, enabling them to make aesthetic presentation of the reality using global strategies.

Review of Literature

Akporido (2005) in research carried out on Internet use in a Nigerian suburban setting-Abraka, Delta State, observes that in order to enable students at Delta State University, Abraka to use the Internet, users must pay for access in cybercafés. They are usually given a ticket password that is keyed into the system before getting

access. As soon as the access time paid for expires, the system automatically logs the user off.

Internet as affirmed by Awoleye, Siyanbola and Oladapo (2008) is used for information development, enhances easy communication, improves academic performance, used as a researched tool, provides solution to assignments, gives information on entertainment & education, and a source of scholarship.

Chandran (2000) conducted a study at S. V. University, Tirupathi, which indicated that a majority of the respondents used Web and e-mail services of Internet. The study further showed that more than 25% of the respondents used the Internet for 2 – 3 times a week, while the purposes of using the Internet were for communication and information gathering.

Nwokedi (2007) posits that lack of searching skills is still hindering good use of Internet. He asserts that acquisition of Internet skills can lead to discovery of valuable research and teaching resources, which would in turn cause the users to use the Internet to enhance their research and learning capabilities. Internet access ability would be expected to stimulate regular use of the Internet and minimize the perceived barriers to its use.

Oyedun (2007) conducted a study on the Internet use in the Library of Federal University of Technology, Minna, and observed that most of the respondents claimed that through the Internet services in the library, they have improved considerably in their academic performance.

Internet has a wide base that allows access to an enormous range of research information either as full publications, reports, summaries or abstracts (Penny, 2006).

Salaam and Adegbore (2010) discovered that Internet facilities are available in all private universities studies in Ogun State, Nigeria. No restriction is placed on students Internet access and use by the university administration as opposed to that of Salaam (2003) who noted from its findings that access where restricted to staff only in Nigerian universities libraries. In view of the above literature, the study sought to examine the use of Internet by students of faculty of science in Nigeria universities.

Salako and Tiarniyu (2007) surveyed the use of search engines for research by postgraduate students of the University of Ibadan, Nigeria. Copies of 327 questionnaire were analysed and it was found that most of the responding postgraduate students were aware of, and had become familiar with the Internet before the start of their postgraduate courses. On how they learnt to use search engine, more than half of the respondents were

taught by friends, less than half learnt to use it by trial and error while a few were taught at a computer school.

Yannis K Valtis et al. (2016) has discussed about an EBM programme providing free access to an online clinical resources to health workers in resource-limited settings. This study aimed to analyse UpToDate, a leading evidence based clinical resource and the cost barrier to access the same. The authors suggested to enhance the evidence based clinical resource access include removal of cost barriers as well as technological barriers, such as internet connectivity.

Wong, C. K. et al. (2012) has conducted a study on Chinese older adults' internet use for health information. The Technology Acceptance Model (TAM) was applied to examine the prediction of perceived ease of use, perceived usefulness, and attitudes toward Internet use on behavioural intention to search for health information online. Ninety-eight Chinese older adults were recruited from an academic institute for older people and community centres. Frequency of Internet use and physical and psychological health were also assessed. Results showed that perceived ease of use and attitudes significantly predicted behavioural intention of internet use.

Objectives

The primary objectives of the study are framed as follows:

- To analyse the information proficiency skills among media students on their information needs.
- To identify the awareness among media students on availability of e-resources in the field of media or visual communication.
- To study the accessibility skills of e-resources among the media experts.
- To know the purpose of the usage and advantages of e-resources.
- To find the frequency and mode of accessing e-resources by the media students.
- To identify the most satisfied e-resources for the media students.
- To analyse the level of problems facing by the media students while using e-resources.

Methodology

This study is aimed to find out the actual usage of e-resources among media students. For this purpose all under graduate visual communication students were selected. The population from which the sample is drawn belonged to the selected under graduate students only

from the American College, Madurai, Tamilnadu. The term 'media students' consists of under graduate students from visual communication department of the American College, Madurai like first, second and third year. The number of people from the target population where the students conducting survey is the sample size for the survey study. A systematic random sampling method was also used. For this present study, 130 questionnaires were distributed among all the media students; only 103 filled questionnaires (79.2%) were received.

Scope of the Study

The scope of this study is limited to the following:

- The study was restricted to all students studying under graduate visual communication department of the American College, Madurai, Tamil Nadu.

Results & Discussions

E-Resources usage Skills

It is found that the ophthalmologists have average level of skills in e-resources usage and its dimensions, as they scored more than 50% in all dimensions of e-resources usage skills.

- They are being aware of the 'advantages' of e-resources (83.49%), which is higher than other dimensions
- They encountered 'problems' while using e-resources at average level (55.62%) which is lower than all other dimensions of e-resources usage skills.

Frequency of Access

12.62% (13 out of 103 respondents) of media students use the e-resources for 6-8 hours per week whereas about 10.68% (11 out of 103 respondents) use it for about 8-10 hours per week and finally 76.70% (79 out of 103 respondents) of them use the e-resources for 3-6 hours per week.

E-Journal Access

Most of the respondents belong to III Year students of the UG media studies are aware of the use of e-journals, it was identified an average of 93.55% of the III Year students are effective users of e-journals. It was identified that students of II year closely equal to their seniors are aware of the use of e-journal access, and an average of 87.88% among the II year are using e-journals for their information needs. The I year students are less aware of the e-journal uses, the there is a very less average of 48.71% of users among the juniors of the media study

graduates. Few respondents have individual subscribed to e-journals according to their area of interests such as photography, cinematography, and script writing. It was found that few students have subscriptions to various other e-journals according to their social and public interests.

Usage of Devices to Access

Most of the respondent used device to access e-resources according to their flexibility and availability of device such as smart phones, tablet pc, laptop and also desktop. Smart phone is a modern gadgets in this century, it was identified that the average of respondents usage of smart phone to access e-resources is 86.41% of users. It was identified that respondent using laptop is less compared to that of the users of smart phones, an average of 6.80% of uses access e-journals in laptops; meanwhile some users who are accessing in laptops are also accessing it in smart phones as well. It was also identified that usage of desktop and tablet pc by the respondents are very less compared to smart phones and laptops, an average of 4.85% and 1.94% are using desktop and tablet pc respectively accessing e-resources.

Access to Online Resources and Search Techniques

It was found that all students were accessing e-resources by using Search engines. It was also identified that senior students of media studies uses search techniques to access e-resources. An average of 90.32% of senior students are using exact phase search. It was found that II year students have less searching skill when comparing to that of III year students, an average of 78.79% of II year students uses search engines with the exact phase and search techniques. It was also found that I year students are equally skilled in using search techniques comparing to that of II year students, average of 74.36% of students from I year .

Period of Awareness

It was found that most of the students are less aware of accessing e-resources, average of 69.90% of students aware of e-resources during the period of past 1 to 3 years. It was found that 20.39% of the students are aware of usage of e-resource during the period of past 3 to 5 years. And it was also found that only 9.71% of students are aware of usage of e-resource above 5years of time

Awareness and usage of Mobile Apps

It is identified that most of the media students with respect to the variables such as gender, class were using

mobile apps 'sometimes' (43.12%) whereas only few were using it always (8.41%). The proficiency of e-resources search and usage by male and female respondents is found to be at moderate level. Totally 13.60% of respondents only have extreme level of proficiency in e-resources search and usage. These findings reflect the lack of awareness on mobile applications and on other hand, lack of proper training in e-resources and usage.

Maximum Online Search Analyses

The media students maximum online search was performed to find e-journal articles (43.61%), followed by e-Books (28.68%). It is found that maximum online search was done by the III year students to find e-Books, which reflects their preference of e-resources related to their examination oriented academic needs.

Most Satisfied e-Resources

It is identified that media students were most satisfied with e-Journals, followed by e-Books. The respondents belonging to the younger generation mostly prefer e-Books for their examination focused academic needs. It is also known that most of the respondents belonging to all students were satisfied with e-Journals to update their professional skills.

Opinions and Expectations of Respondents

Most of the respondents, who are entering to the college opined that they unable to spend up to 3 hours in a working day for information seeking, which reveals that their tight class atmosphere and time constraints (Because of the fresh man to the college environment). Their opinion that some e-resources listed are new to them reflects their lack of awareness on the availability of some online and electronic resources. The respondents' expectations on the needs of more open access resources directly indicate the incessantly increasing costs of media subscriptions. It shows that the economic hindrance impedes their e-resource usage, particularly for the media students belonging to individual.

Conclusion

In the present study, the researcher derived data through a well-structured questionnaire focused on e-resources usage skills and its dimensions, to identify the actual usage of e-resources among media students in the American College, Madurai, Tamilnadu. The result of the study throws light on e-resources usage skills among media students, and found that they have average level of

usage skills. The study also brings the findings on awareness and usage of specific e-resources which are available online. It also identified the awareness and usage of latest technology to access e-resources such as smart phone applications /mobile applications.

The age has changed from 'providing e-resources at the client's desktop' to 'providing e-resources at the client's hand palm', as the smart phones and the devices like e-Book readers play an inevitable role in daily life. Also, now-a-days there are varied formats of e-resources not only in readable formats, but it is watchable and audible. The importance of ICT skilled library professionals is noteworthy to enrich the e-resources usage among the media students including media professionals.

Future Research

There is a scope for future research that should focus on the investigation of 1) e-resources seeking behaviour of students, especially comparative studies of the disciplines, 2) training needs analysis of media students and faculty, and d) investigating the impact of culture on the use of e-resources. It is anticipated that the results outlined in this paper, together with the recommendations, will be useful for those in decision making roles and provide some insights for the people responsible for the selection of e-resources at the American College.

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THE ROLE OF GROUP INSURANCE FOR STUDENTS IN EDUCATIONAL INSTITUTION IN INDIA

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Abstract

This article is focus on the study of "The Role of Group Insurance for Students in Educational Institution in India". Student Group Insurance is a welfare scheme offered by the Life Insurance Corporation of India exclusively for educational Institutions in India. The objectives of the study are to study the marketing mix of group insurance and to enhance understanding of group insurance mechanisms adopted to cover student's risks. The study highlights the need of group insurance among students who are pursuing School, College education and in Professional institutes. The present study is a descriptive research. The researchers have collected secondary data from websites, books and journals with regarding group insurance in today's today context in India. This study had been carried out for a period of two months.

Keywords: *Group Insurance, Students, Educational Institutions.*

Introduction

The term risk has a variety of meanings in everyday life. In commerce, risk is often used in a more specific sense, to indicate possible variability in outcomes, among some expected values. Personal risk is that risk faced by individuals and families, in the value of earners' productivity to longevity of lives. Personal risk management is done through professionals, such as insurance agents, financial planners and so on. Insurance is a co-operative device, where the insurance company enters into a contract to indemnify the loss, met by businessmen or individuals upon payment of a fixed sum of money called premium under the coverage called policy. Out of many schemes offered by life insurance companies, they are broadly classified as individual and group schemes. The LIC of India is the largest insurance company in India which offers various beneficial schemes to the public at large.

Group insurance for students in educational institutions is a scheme offered by Life Insurance Corporation of India, a State owned company established in the year 1956, which has its headquarters in Mumbai, India.

A typical characteristic of group insurance is that it serves only to cover life on the occurrence of death and not as an investment contract. This means that the money paid as premium will come back to the insured by way of claims only on the occurrence of some specified events resulting in loss of life to the insured. The Life Insurance Corporation of India has offered many numbers of such schemes to protect the lives of many due to unforeseen losses or damages to lives on those who insured their lives.

Statement of the Problem

Indian population has the highest number of 10-24 year olds, with 242 million young people. Constituting 20 per cent of the country's population, India is expected, to have 33.33 per cent of youth in total population by 2020.

Group insurance is availed generally by individuals in two dimensions, namely, the employees' group insurance through the place of work for taxation benefits and for financial management purposes. However the existence of group insurance for students is commonly not known. There are but a handful of educational institutions in India, who are availing this group insurance. Given this scenario and the underlying benefits of group insurance the present

study is aimed at understanding the marketing mix adopted by LIC towards group insurance for educational institutions, the accruing benefits of availing this group insurance, and the measures that can be adopted to make the policy more viable.

Objectives of the Study

The objectives to the present study are

1. To study the marketing mix of group insurance
2. To explore the mechanisms adopted to cover students' risk and
3. To offer suitable suggestions and recommendations to promote group insurance

Growth of Insurance

India's life insurance sector is the biggest in the world with about 360 million policies which are expected to increase at a Compound Annual Growth Rate (CAGR) of 12-15 per cent over the next five years. The Insurance industry plans to hike penetration levels to five percent by 2020. The country is the fifteen largest insurance markets in the world in terms of premium volume, and has the potential to grow exponentially in the coming years. Today one of the most vibrant global economies is considered as Banking and Insurance sectors. The relaxation of foreign investment rules and regulations has received a positive response from the insurance sector, with many companies announcing plans to increase their stakes in joint ventures with Indian companies.

As of now, the Insurance industry of India consists of 53 insurance companies of which 24 are in life insurance business and 29 are non-life insurers. Life Insurance Corporation of India offers a wide variety of products which fulfill the needs of different customer segments of the society. The Products available for sale by the LIC of India are 23 individual products, 12 group products and six riders as of at the end of the financial year 2015-16.

Importance of Group Insurance

Group insurance is generally considered a means of covering students' life against the unforeseeable circumstance of the death. The insurance company takes the risk of large and uncertain losses in exchange for small premiums. This gives a sense of confidence and security to the insured individual (Student) through the protection of insurance in the event of an unfortunate incident.

According to 'World Population Prospects: The 2015 revision' Population Database of United Nations Population Division, India has the world's highest number

of 10 to 24 year olds, with 242 million despite having a smaller population than China, which has 185 million young people. The regularity and efficiency of census operation in India add rigor to the measurement of Youth in India. The decennial enumeration through Population Census throws up consistent estimates of youth in India. As per India's Census 2011, Youth (15-24 years) in India constitutes one-fifth (19.1%) of India's total population. India is expected to have 34.33% share of youth in total population by 2020.*(Youth in India-2017, Central Statistics Office Ministry of Statistics and Programme Implementation Government of India).

Service Mix of Group Insurance

1. Product

The Group Insurance is a unique policy offered by the Life Insurance Corporation of India for students studying in School/College/Professional courses with cover parents whereby the educational institution will serve as a nodal agency and master policy holder. The minimum number of student membership is 100. This policy covers for the academic year and accommodates students from the age group of 8 years to 30 years.

The desirable and essential condition to be insured is that he /she must be actively attending the school/college in other words he/she must be regular in attending the educational institution for his/her studies during the year. There shall be a lien period of 45 days thereafter the risk shall insure. The policy will be terminated or lapsed on the event of the student leaving the institution and/or being expelled from the institution due to disciplinary ground and/or on the non-payment of fees to the institution in which he/she is enrolled for studies.

Apart for students, this insurance cover is also available for parents which may be exercised at the discretion of the educational institutions. The requisite number of membership is 50 parents and the age of the parents can be up to 59 years. If the policy option is exercised then the maximum insurance coverage is 5 lakhs based on the undertaking from parents about their truly good health conditions.

2. Price

Pricing policy is an important factor that influences usage of services. In Group Insurance business, pricing decisions are concerned with the premium charged against the policies for a year by a student.

The maximum insurable amount for the students who are studying in schools and Degree courses shall be 5 lakhs whereas for those students who are pursuing in

Professional courses shall be up to 10 lakhs. The amount of premium payable to the insurance sector is Rs.118 which includes GST (Goods and Services Tax of 18%) per student for a year and thereafter it should be renewed for the next year. Low premium becomes significant in influencing target prospects.

3. Promotion

In the formulation of marketing mix, the promotion occupies a place of outstanding significance. Awareness campaign about Group Insurance is conducted periodically in Schools, Colleges, Universities and Professional institutes in India.

4. Physical distribution

Distribution is a key determinant of success for students' group insurance whereby insurance companies have a large reach and presence. Building a distribution network is expensive and time consuming. In the Organizational setup of LIC of India, there are 8 Zonal offices, 113 Divisional offices, 20,148 Branch offices, 1,401 Satellite offices and 1,240 Mini offices as on 31.3.2016. Through these networks, group insurance is easily made available at all places.

5. People

People are considered to be the most important component in the service marketing mix of the Insurance sector. Group insurance marketing involves high level of people interaction with the educational institutions to promote and sell the policy at a large scale. LIC of India employs highly trained personnel for promotion and marketing of group insurance.

6. Process

The process involved in the group insurance industry should be student friendly. The speed and accuracy of payment is a vital importance. The processing methodology should be such that it provides ease and convenience to the students. Technology can complement or supplement distribution channels cost effectively. It can also help improve students' service levels considerably. Adherence to good Corporate Governance is an integral part of the philosophy of LIC's business conduct.

7. Physical Evidence

Physical evidence includes facility design, equipment, signage, employee dress code, tangibles, reports and statements. LIC's slogan *yogakshemamvahamyaha* is in Sanskrit language which translates in English as "Your welfare is our responsibility". The number of employees working in the LIC of India is 1,14,773 and the number of Agents is 10,61,560 as on 31.3.2016.

Findings of the Study

As per 2011 census Youth Population in India there were 21, 75, 72,000 Male population and 20, 43, 87,000 Female population under the age group between 15 and 34 years. The higher education system along with basic education system in India has grown at a fast pace to become one of the largest systems in the world. From the student enrollment statistics published by All India Survey on Higher Education (AISHE) 2014-15, the highest numbers of students were seen to be enrolled at Under Graduate level. Out of the total students enrolled, 79% students are enrolled in Under Graduate level. Second to the Under Graduate, 11% students (38.5 Lakh) are enrolled in Post Graduate level.

Thus by taking into account the enormous youth population and education system in India there appears increased prospect for life insurance business especially through group insurance product. Forward planning, promoting of group insurance for the students in the educational institutions will have a major break through in the insurance sector business. LIC during the financial year ended 2016-17 has had an increase in number of policies held from 74.72% to 76.09%. The latest news release also highlights a setback in group insurance product primarily for educational institutions. To make the sector witness better growth, the Government of India has to make implementation of this welfare scheme of group insurance to all educational institution as a mandatory one so that the students' lives are covered in event of an unforeseeable circumstance of death.

Suggestions and Recommendations

Some of the suggestions and recommendations have listed by the researchers to improve the quality of group insurance, based on the valuable information provided by the general public and experts. are,

1. Suggestions to the insurance company

- LIC of India should advertise about group insurance product in general.
- LIC of India should conduct more awareness campaigns for students in the educational institutions.

2. Suggestions to the educational institutions

- All Schools, Colleges, Universities and Professional Educations have to make use of the group insurance for the benefit of the student community.

- All educational institutions should join in the group insurance policy offered by the LIC of India.
- The Educational Institutions should collect the premium amount for the group insurance along with the tuition fees at the beginning of the year.

3. Suggestions to the Government

- The Government of India should emphasize on implementation of group insurance in all educational institutions in India, in a phase manner and gradually convert the same as a mandatory one

Conclusion

Group insurance policy is so uniquely designed to cover the risk of loss of students' lives for students

studying in Schools, Colleges, Universities and Professional Institutes. Thus group insurance is mainly beneficial for the family members in the event of an unfortunate incident of death of students and all causes of death are covered.

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SERVICE QUALITY IN E-BANKING – A STUDY OF STATE BANK OF INDIA IN MADURAI DISTRICT

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Abstract

Banks play a major role in all the economic and financial activities in modern society. A strong banking sector is a necessity for all economies to develop and expand. Banking in the present scenario demands continuous innovation in order to meet the aspirations of the demanding customers. Electronic banking is one of the most demanded and latest technologies in banking sector. One of the key challenges of e-banking as service channel is how they manage service quality which holds significant importance on customer satisfaction. The purpose of this research was to explore the opinion of respondents towards service quality and also examine the impact of service quality dimensions on customer satisfaction in e-banking of State Bank of India in Madurai. A structured interview schedule is administered to various target groups. Suitable statistical tools are used accordingly to compile the result. The result shows that customers are more satisfied with quality of service on reliability than the services of other dimensions. The study not only prioritises different parameters but also provides guidelines to bankers to focus on the parameters which they need to improve.

Keywords: E-banking, Service Quality and Customer Satisfaction.

Introduction

Tremendous progress in the field of information technology has reduced the world to a global village and it has caused unprecedented change in the banking industry. Huge developments in the technology of telecommunications and electronic data processing have further stimulated these changes, use of latest technology in business and finally one is short of time due to numerous engagements. The business who cope up with the above three matters will survive only. Competition requires less costly and more effective products and services, and common people want quick services. In the banking industry in the past, large queues could be observed for payment of utility bills or for cash withdrawals/deposits. The banks have succeeded in reducing this queue through the use of latest technology, but still common people are demanding less time-consuming methods for banking transactions. In this regard, banks are going to utilize internet facilities for customer's transactions; this method will reduce paper work, and will give a quick response to customers while they remain in their office or at home. The financial services industry was one of the first to recognize the potential of the Internet as a means of interacting with customers. However, current data compiled by the Web Marketing Association shows that banks are falling behind other

industries with respect to innovation within their Internet channel.

Profile of SBI

State Bank of India is the nation's largest and oldest bank. Tracing its roots back some 200 years to the British East India Company (and initially established as the Bank of Calcutta in 1806), the bank operates more than 15,000 branches within India, where it also owns majority stakes in six associate banks. State Bank of India (SBI) has more than 80 offices in nearly 35 other countries, including multiple locations in the US, Canada, and Nigeria. The Reserve Bank of India owns about 60% of State Bank of India. The corporate centre of SBI is located in Mumbai. In order to cater to different functions, there are several other establishments in and outside Mumbai, apart from the corporate centre. The bank boasts of having as many as 14 local head offices and 57 Zonal Offices, located at major cities throughout India. It is recorded that SBI has about 20,193 branches, well networked to cater to its customers throughout India. In Madurai District there are totally 92 branches of State Bank of India.

Statement of the Problem

The objective of the bankers is to satisfy the needs of the customers. The E-banking which is familiar today will

lead a definite path to success in the near future. The traditional bankers will not be able to compete in the years to come. So, developing E-banking operations in banks along with assured service quality to the customers is of vital importance for the success of the banking sector. At this juncture, an attempt has been made to study the service quality in E – banking.

Objectives

- To analyze the customer's opinion on services quality of E-banking in SBI.
- To analyze the impact of services quality on satisfaction of E-banking.

Methodology

The methodology part explains the nature of data sources and sampling technique used in the study.

Data Collection

Primary Data: Structured Questionnaire.

Secondary Data: Online Database, Journals, Surveys.

Sampling

The study's objective was accomplished through the collection and analysis of primary data obtained from a stratified random sampling technique. Likert scale questionnaire was used to measure the perception of customers about e-banking. A sample size of 390 SBI customers from comprising 13 taluk of Madurai District. From each taluk in order to have a balanced representation, 3 branches have been randomly selected and from each branch 10 customers have been selected.

Analysis and Findings

The following section explains results of the data analysis beginning with the respondents 'characteristics.

Respondents' Characteristics

The characteristics of the respondents, in terms of gender, 56.9% of the respondents were males and 43.1% were females. It is inferred that a majority of the sample respondents using E-banking facilities have been males. 37.4% of the respondents were below 25 years and 27.4% were between 25 and 45 years, and 21.3%, 13.8% were between 46 and 65 years and 65 above respectively. From the above analysis the researcher has concluded that majority of the sample respondents have been in the age group of below 25 years. All respondents were educated with majority of them, 32.3% having graduate, followed by

22.3% of post graduate, 17.7% with school level education, 15.6% with professional qualification and the remaining 12.1% of other categories in the study area. The majority of the respondents who were utilizing the E-banking services have been found to be businessmen with 41.5%, followed by government employees with 21.5%, private sector employees with 15.1%, other with 12.6% and the remaining 9.2% to student category. In terms of monthly income, majority of 51.5% of the sample respondents have been found to have earned 15,000 to 30,000 per month, followed by 22.1% with less than 15,000, 16.2% from 30,000 to 45,000 and the remaining 10.3% with more than 45,000 in the study area. 62.6% of the respondents were married, 37.4% were single. This is shown in Table – 1 below.

Table 1 Details of Demographic Variables

Variable	Frequency	Percent
Gender		
Male	222	56.9
Female	168	43.1
Total	390	100.0
Age		
Below 25	146	37.4
25 – 45	107	27.4
46 – 65	83	21.3
Over 65	54	13.8
Total	390	100.0
Education		
School Level	69	17.7
Graduate	126	32.3
Post Graduate	87	22.3
Professional	61	15.6
Others	47	12.1
Total	390	100.0
Occupation		
Student	36	9.2
Private Employee	59	15.1
Govt. Employee	84	21.5
Businessman	162	41.5
Others	49	12.6
Total	390	100.0
Monthly Income		
Less than 15000	86	22.1
15000 – 30000	201	51.5
30001 – 45000	63	16.2
More than 45000	40	10.3
Total	390	100.0
Marital status		
Married	244	62.6
Unmarried	146	37.4
Total	390	100.0

Source: Primary Data

Table – 2 Important Reasons of Using E - Banking

	1	2	3	4	5	6	7	Total	Weighted Score	Rank
Low service charge	52 (13.3%)	53 (13.6%)	51 (13.1%)	50 (12.8%)	70 (17.9%)	46 (11.8%)	68 (17.4%)	390 (100.0%)	1507	5
Curiosity	65 (16.7%)	66 (16.9%)	52 (13.3%)	59 (15.1%)	54 (13.8%)	66 (16.9%)	28 (7.2%)	390 (100.0%)	1669	2
Better rates	55 (14.1%)	55 (14.1%)	75 (19.2%)	66 (16.9%)	44 (11.3%)	65 (16.7%)	30 (7.7%)	390 (100.0%)	1646	3
Safe and secure	49 (12.6%)	49 (12.6%)	55 (14.1%)	50 (12.8%)	68 (17.4%)	45 (11.5%)	74 (19.0%)	390 (100.0%)	1480	6
Convenience	63 (16.2%)	79 (20.3%)	44 (11.3%)	55 (14.1%)	50 (12.8%)	89 (22.8%)	10 (2.6%)	390 (100.0%)	1693	1
Easy to maintain my banking transaction activity	57 (14.6%)	43 (11.0%)	83 (21.3%)	67 (17.2%)	55 (14.1%)	40 (10.3%)	45 (11.5%)	390 (100.0%)	1630	4
Online shopping	49 (12.6%)	45 (11.5%)	30 (7.7%)	43 (11.0%)	49 (12.6%)	39 (10.0%)	135 (34.6%)	390 (100.0%)	1295	7

Source: Primary Data

From Table 2, it is inferred that the important reason for using E-banking for sample respondents has been the highest for the aspect 'Convenience' with weighted score of 1693, followed by the aspects 'Curiosity', 'Better rates', 'Easy to maintain my banking transaction activity', 'Low service charge', 'Safe and Security' and 'Online shopping', with weighted scores 1669, 1643, 1630, 1507, 1480 and 1295 respectively.

Impact of Service Quality on Satisfaction

Table -3 Descriptive Statistics

	Mean	Std. Deviation
Reliability	10.91	1.934
Responsiveness	10.66	1.974
Efficiency	10.71	2.025
User-Friendliness	10.68	1.407
Product Portfolio	10.44	1.959
Privacy / Security	9.92	1.169
Overall Service Quality	7.90	1.303
Overall Satisfaction	10.32	1.160
Valid N (list wise)		

Source: Primary Data

Table 3 shows the mean value depicting the overall customers' satisfaction. As far as this descriptive statistics is concerned, customers' satisfaction on E -Banking is above satisfactory level (with a mean value of 10.32 on a 5 point Likert scale). The table also suggests that the main factors on which the customers of E-Banking are generally satisfied. As far as the mean values are concerned, customers are fairly satisfied on Reliability, Responsiveness, Efficiency, User Friendliness, and Product Portfolio. This satisfaction comes from quick services, Provide appropriate information, accurate information and Easy operation. The customers are less satisfied on privacy/ security and overall service quality.

However a regression analysis was applied to identify the impact of service quality variable on level of satisfaction and to explain the variables affecting the level of satisfaction in e-banking in SBI.

Table – 4 Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.842	0.709	0.704	0.631

Source: Primary Data

The overall predictability of the model is shown in the table 4 above. The R square value of 0 .704 indicates that the model explains 70.4 % variability in satisfaction is due to service quality factors. The value of R Square is greater than 0.3, so the model is good.

Table – 5 Anova

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	371.157	7	53.022	133.135	0.000
Residual	152.135	382	0.398		
Total	523.292	389			

Source: Primary Data

- Dependent Variable: Overall Satisfaction.
- Predictors: (Constant), Overall Service Quality, User-Friendliness, Reliability, Privacy / Security, Product Portfolio, Efficiency, Responsiveness.

From the ANOVA Test it shows the value of level of Significant(0.000) is less than 0.05, The null hypothesis is rejected. It means there was a significant correlation between dependent variable and independent variables. Therefore customer satisfaction level depends on service quality dimension in SBI. But it does not mean that all factors of service quality have significant correlation with customer satisfaction level.

Based on the data found in the table 6 below, it can be interpreted that the independent variables such as Reliability, Responsiveness, Efficiency, User –

Table -6 Regression Co-efficient Analysis of the model

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	St. Error	Beta		
(Constant)	1.911	.540		3.540	.000
Reliability	.136	.033	.227	4.090	.000
Responsiveness	1.391	.223	-2.367	6.245	.000
Efficiency	1.493	.201	2.606	7.409	.000
User-Friendliness	.271	.028	.329	9.707	.000
Product Portfolio	.159	.024	.269	6.668	.000
Privacy / Security	.309	2.037	.311	8.399	.000
Overall Service Quality	.253	.031	.285	8.287	.000

Source: Primary Data

- Dependent Variable: OVERALL SATISFACTION

From the above findings we can develop the following regression model:

$$Y = -1.911 + 0.136 - 1.391X_2 + 1.493X_3 + 0.271X_4 + 0.159X_5 + 0.309X_6 + 0.253X_7$$

Where,

- Y= Overall Satisfaction
- X₁ = Reliability
- X₂ = Responsiveness
- X₃ = Efficiency
- X₄ = User - Friendliness
- X₅ = Product Portfolio
- X₆ = Privacy / Security
- X₇ = Overall Service Quality

Coefficient analysis shows the relationship between dependent variable and each independent variable. All service quality variables have significant impact on satisfaction because the value of level of significance for all variables is less than 0.05

- Here, X₁ (Reliability) = 0.227 i.e, 100% change in reliability leads to 22.7% change(increase) in customer satisfaction level.
- X₂(Responsiveness) = -2.367% i.e, 100% change in responsiveness leads to 236.7% change(decrease) in customer satisfaction level.
- X₃(Efficiency) =2.606% i.e, 100% change in Efficiency leads to260.6 % change(increase) in customer satisfaction level.
- X₄(User – Friendliness) =0.329% i.e, 100% change in User-Friendliness leads to 32.9% change (increase)in customer satisfaction level.
- X₅(Product Portfolio,) =0.269% i.e, 100% change in Product portfolio leads to 26.9% change(increase) in customer satisfaction level.

Friendliness, Product Portfolio, Privacy / Security and Overall Service Quality have strong impact on customer satisfaction. (99% level of significance).

- X₆(Privacy and Security) =0.311% i.e, 100% change in Privacy and Security leads to 31.1% change(increase) in customer satisfaction level.
- X₇(Overall service quality) =0.285% i.e, 100% change in Overall Service quality leads to 28.5% change(increase) in customer satisfaction level.

Relationship between Demographic Variables and Opinion of Respondents towards Overall Service Quality and Satisfaction

In order to analyse the relationship between demographic variables and overall service quality, satisfaction the following null hypothesis has been framed.

“There is no significant difference in the opinion scores of service quality and overall satisfaction among the respondents based on Gender, Age, Education, Occupation, Monthly Income and Marital status”.

To test the above said hypothesis Kruskal wallis test has been applied. The result is as follows. Since for all variables the level of significant is greater than 0.05, the null hypothesis is accepted. Hence for all above said variables have no influence on opinion score of overall service quality and satisfaction.

Suggestions

The internet utilisation of technology has played a dominant role on banking activities. The threat from hackers and viruses pose security concerns for the users. Even though this technology enables and drastically improves the customer service, it strongly necessitates improved level of security. Thus, a well defined security policy, with clean specifications will play an ideal and important role in the success full implementation of E - Banking technology. The advantages in internet banking outnumber the disadvantages and criticisms leveled against it. So the bankers could look the technology adoption seriously and frame suitable policies regarding financial stability, market discipline and supervisory reviews.

Conclusions

The present study has critically examined the impact of service quality on satisfaction of the SBI customers in Madurai District. The result shows that customers are more satisfied with quality of service on Reliability and Efficiency than the services of other dimensions. The study showed that customers have positive opinion about e-banking. The positive impact of technology infusion is clearly visible now in almost all the areas of banking operations, especially in the retail and payment system in the country. Hence, e-banking is an inevitable tool of marketing that can be considered as critical responsibility of market with regard to banks in present context.

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Appendix

Service Quality Perception of the Customers on E – Banking

Reliability
Q14. Information that is provided in web pages are accurate.
Q15. Information content and texts are easy to understand.
Q16. The response e-mail from E - Banking is accurate.
Responsiveness
Q17. The bank is willing to help customers and provide prompt service.
Q18. The bank provides appropriate information to customers when a problem occurs.
Q19. The response from e-banking to their customer is faster.
Efficiency
Q20. It is easy to find policy and notice statement on the bank site.
Q21. The information that is presented by E - Banking is accurate.
Q22. It is easy to complete a transaction through the bank's website.
User-Friendliness
Q23. Learning to operate the system is easy.
Q24. Help messages on the screen is helpful.
Q25. E - Banking makes me feel comfortable.
Product Portfolio
Q26. The bank provides wide ranges of service packages
Q27. The bank provides services with the features I want
Q28. The bank provides most of the service functions that I need
Privacy / Security
Q29. The bank's website is secure for giving credit card information.
Q30. My bank can be relied upon to keep their promises and service pledge.
Q31. The bank does not misuse my personal information.
Overall Service Quality
Q32. Overall, the service quality of my E-banking
Q33. Overall, the services of E-banking comes up to my expectations of what makes a good online supplier
Overall Satisfaction
Q34. Overall, I am very satisfied with the bank
Q35. Overall, I am very satisfied with Internet-based transactions
Q36. Overall, I am very satisfied with the services offered by the bank

STARTUPS FOR SUSTAINABLE GROWTH-EASE OF DOING BUSINESS

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Abstract

India's phenomenal rise as one of the leading start up nation's shows how rapidly the country is embracing change and disruption. In the last 70 years of economic, social and political reforms in India, one thing that has remained constant is the country's entrepreneurial spirit. In the last decade, easy access to funds, growing domestic market and renewed impetus from the Government towards entrepreneurship has metamorphosed the startup ecosystem. Initiatives such as 'Make in India' and 'Start-up India' further boost the entrepreneurial spirit of every Indian. Also, the robust development of smart cities, and the vision of 'Digital India' will see rapid growth by 2020. The present paper examines the need for startups, challenges hindering the startups, ease of doing business in India, initiatives taken by the Government to encourage startups and the reason for failure of startups.

Keywords: Startups, Innovation, eco-system, entrepreneurship, transformation etc.

In his second Independence Day address Prime Minister Narendra Modi emphasized entrepreneurship and job creation through startups by launching a new campaign, "Start up India, stand up India". He anticipated 1.25 lakh branches of various banks to promote bank financing for start-ups by the underprivileged. When he rode to power in an unprecedented style, he promised two things:

Development and Minimum Government

Following the two promises, four 'new ideas' were announced:

- Pradhan Mantri Jan Dhan Yojana
- Swachh Bharat Abhiyan
- Make in India and
- Smart cities

Although these ideas are not really novel, he made it innovative by turning them into participatory movements involving government machinery, corporates, celebrities, non-profit organizations and the people.

Start –Ups

To accelerate the process of converting the 'make-in India' dream into a reality, 'Start-ups' were encouraged. A start – up is an entrepreneurial venture designed to search for a repeatable and manageable business model. The Government has assured full support to the young entrepreneurs who wish to launch start-ups. At present, India is home to around 4200 start-ups and by 2020, a

projected 11,500 start-ups would employ 2, 50,000 people across the country. Of the 4200 start-ups, 1200 were started in 2015 creating about 80,000 to 85,000 jobs during 2015. The current figure and the future projections are impressive and credible enough to predict a bright future for Indian start-ups.

Why the Start – ups?

The 'Make in India' programme aims to turn India into a major global manufacturing hub, with special focus on tapping the vast potential of the country's medium, small and micro enterprises. To create a more conducive investment climate, the Government is moving fast to ease doing business in India. India's rank of 134 is near the bottom of the 'World's' ease of doing Business list and the country continues to lag well behind other Asian economies in the share of GDP attributable to manufacturing. Hence a climate change is needed for moving India up in the 'ease of doing business' list from the current position of 134 to being in the top 100 within six months and in the top 50 within 12. This is not easy. But the Government has taken many positive measures towards this mission. One such step is start-up initiative which has come of age with booming enterprises.

Challenges Hindering the Start-Ups

In the last two decades, India's growth has taken place despite the lack of public infrastructure such as power and transport. The country still has poor infrastructure, unreliable roads, ports and airport facilities

which add cost to the logistics and require buffer stocks. Power outages are common. The regulatory burden is high. These are many different import/export rules, and the overall complexity of trade compliance is a notable problem. Two important obstacles to the rapid industrialization of India in the last couple of decades have been land acquisition and environmental clearances. It will be helpful to see some concrete indications that there is a change of mindset and will in pushing through the necessary changes. Successful start-ups require passionate and persuasive founders, great vision, innovative technology, strong team, patient capital, good market timing and little bit of luck. India has no dearth of entrepreneurs, innovation, talent and markets. The biggest challenge for India start-ups today is lack of access to risk capital especially early to pre-revenue stage. This must be addressed quickly if we want to create high value product growth engine. Start-ups need different kinds and levels of capital through its life cycle from conception to profitability. At the beginning they need seed capital typically provided by founders and the so called angel investors ranging from \$ 1, 00,000 to 1 million. The start-ups need early stage investment from venture capitalists and corporate investors, ranging from \$ 10 million to \$ 100 million through multiple rounds of equity financing. They need late stage capital from institutional investors, private equity firms and corporate investors.

Mainstreaming Sustainability in Indian Business

There are two broad aspects to the critical role that business enterprises will have play in implementing the sustainable development agenda :firstly, in terms of the resources necessary for implementation; and secondly, sustainable development requires that business enterprises realign their priorities and take the lead in implementation of the SDGs by adopting sustainable business practices. Some important elements of this dual role include:

1. Economic Growth

Stronger private sector engagement in the regional economy can harness opportunities for export-oriented production, and greater participation in global and regional value chains can create and expand economic opportunities. In India, the Government is promoting 'Make-in-India' to strengthen productive capacities and drive India's growth. Business enterprises have a key in this effort.

2. Employment Creation

Sufficient numbers of decent jobs, especially for women and youth, assist in lifting people out of poverty. In

this context, I applaud the priority that the Government of India is giving to the 'Skill India' programme and its creation of a new Ministry of Skills Development and Entrepreneurship. Business enterprises have a clear and important role to play in the programme and in generating decent work opportunities.

3. Low Carbon Development Paths

Future business models have to generate surpluses within the paradigms of sustainable development. The cost of compliance with environmental standards has to be borne, and businesses have to chart a course of low carbon growth. The need to go beyond business-as-usual models requires more creative use of technologies, and these practices can be incentivized. A good example is paper recycling in India. 'Wealth from waste' has already caught the imagination of entrepreneurs leading to several successful 'low-cost high-value' business models that use industrial residues and municipal wastes as inputs.

4. New Sources of Renewable Energy

Thermal energy generation is the source of 70 per cent of greenhouse gas emissions in India, and 25 per cent of households lack access to modern energy. Sustainable Energy for All (SE4All) can be advanced by raising ambition on harnessing renewable energy opportunities. There is enormous untapped hydroelectric potential as well as real potential for greater reliance on solar and wind energy. In this regard I learnt with great interest that India is now quintupling the target under the National Solar Mission to 100,000MW of solar power by 2022. Businesses can also bring down energy consumption by investing in co-generation and through enhancing energy efficiency. All these opportunities will pay rich dividends while shrinking our carbon footprint.

5. Sustainable Urbanization

Urban agglomeration is irreversible, and with it skyrocketing demand for urban infrastructure and services. This offers immense commercial opportunities and can be made to support sustainable development as well. By 2050 Indian cities are expected to house more than 50 per cent of the population, which is why India's 100 Smart Cities proposal is so interesting and timely. These new cities will be developed on the basis of public-private partnerships, with a role for business in evolving more sustainable patterns of urbanization.

6. Green Banking and Financial Services

Financial institutions should prioritize sustainable development in their lending. In this regard the very impressive Indian Government programme on financial

inclusion, "Jan Dhan", under which 115 million people now have bank accounts, is worth replicating.

7. Frugal Innovations

Indian companies are known the world over for their frugal engineering capabilities that have led them to the development of useful but affordable products including generic medicines, the world's cheapest car, water purifiers and many other products. Frugal innovation stands for generating more business and social value while optimizing available resources. It is about achieving 'more with less', and the future we want will require businesses to invest in these approaches.

8. Corporate Social Responsibility (CSR)

There is no doubt that CSR will remain an important aspect of the contribution of business enterprises to achieving the SDGs. But CSR should not be seen as a pay-off to continue unsustainable business practices. The primary delivery of sustainable development outputs must be through business practices themselves. With the new Indian law requiring 2 per cent of profits to be earmarked for CSR this will be most effective by channelled these resources into sustainable development priorities.

Ease of Doing Business in India

This Section summarizes *Doing Business 2016* data for India. The first section presents the Ease of Doing Business rank (out of 189 economies) and the distance to frontier (DTF) ** measure, overall and by topic. The second section summarizes the key indicators for each topic benchmarked against regional averages.

Economy Overview

Region	South Asia
Income Category	Lower middle income
Population	1,267,401,849
Gni Per Capita (US\$)	1,610
City Covered	Mumbai, Delhi

Doing Business 2016 Rank		Change in Rank
130	134	↑4

Doing Business 2016 DTF (% Points) X Distance to Frontier Score	Doing Business 2015 DTF (% Points) X Distance to Frontier Score	Change in DTF (% Points) X Distance to Frontier Score
54.68	52.67	↑2.01

Topics	DB 2016 Rank	DB 2015 Rank	Change in Rank
Starting a Business ✓	155	164	↑9
Dealing with Construction Permits	183	184	↑1
Getting Electricity ✓	70	99	↓29
Registering Property	138	138	No change
Getting Credit	42	36	↓6
Protecting Minority Investors	8	8	No change
Paying Taxes	157	156	↓1
Trading Across Borders	133	133	No change
Enforcing Contracts	178	178	No change
Resolving Insolvency	136	136	No change

✓=Doing Business reform making it easier to do business. ✗=Change making it more difficult to do business.

Starting a Business X

Starting a Business

The steps of launching a business are shown below. Included are: the number of procedures entrepreneurs can expect to go through to start up and formally operate an industrial or commercial business, as well as the time and cost to complete these procedures and the paid-in minimum capital requirement as a percentage of gross national income (GNI) per capita.

Initiatives taken by the Government to Encourage

Start-Ups

- Besides the creation of Rs.10, 000 crore start-up fund in the earlier budgets, the Government has announced Rs.1, 100 crore allocation to the scheme in January 2016.
- Start-ups launching during April 2016 to March 2016 can enjoy full tax exemption for first three years, however, MAT will apply, lowering of corporate income tax rate for small enterprises (with turnover below Rs. 5 crore) to 29 percent plus surcharge and cess will have a positive impact on MSMEs.
- Start-ups in the manufacturing sector are given additional benefits as new manufacturing companies incorporated on or after March 1, 2016 can be taxed at 25 percent (plus surcharge and cess), provided

- they do not claim other deductions or enjoy other benefits.
4. An equity capital of Rs.2,400 crore has been allocated to Mudra and credit Guarantee Fund under Pradhan Mantri Mudra Yojana which intends to improve the loan access for small entrepreneurs also has been announced.
 5. Under the 'Stand up India' scheme Rs.500 crore has been allocated to promote entrepreneurship among SC/ST and women which is expected to benefit 2-5 lakh entrepreneurs.
 6. Capital gains are also tax –exempted if the funds so received are invested in a notified fund and when invested by individuals in the notified start-ups.
 7. The increase in limit of businesses eligible for presumptive tax from Rs.1 crore to Rs.2 crore of annual turnover and bringing professionals with receipts upto Rs.50 lakh are welcome measures.
 8. Announcement of 100 per cent FDI for the Food Processing Industry would encourage new business opportunities.

No.	Procedure	Time to Complete	Associated Costs
1	Obtain a digital signature certificate	1-3 days	INR 700 to INR 2,500 per Digital Signature Certificate
2	Obtain director identification number (DIN) online	1 day	INR 500 per DIN
3	Reserve the company name with the Registrar of Companies (ROC) online	2-7 days	INR 1,000
4	Pay stamp duties online, file all incorporation forms and documents online and obtain the certificate of incorporation	5 days on average	see comments
* 5	Make a company seal and stamp	1 day (simultaneous with previous procedure)	INR 350-500
6	Obtain a Permanent Account Number (PAN) from an authorized franchise or agent appointed by National Securities Depository Services Limited (NSDL) or Unit Trust of India (UTI)	7-10 days	INR 93
7	Open a bank account	2-4 days	no charge
* 8	Register with Employees' Provident Fund Organization	12 days, simultaneous with previous procedure	no charge
* 9	Register for VAT online	10 days, simultaneous with previous procedure	INR 500 (Registration Fee) + INR 25 (Stamp Duty) for compulsory VAT registration
* 10	Register for medical insurance (ESIC)	9 days, simultaneous with previous procedure	no charge
* 11	Obtain a tax account number for income taxes deducted at source from the Assessing Office in the Mumbai Income Tax Department	7 days, simultaneous with previous procedure	INR 55 application fee
* 12	Register with Office of Inspector, Mumbai Shops and Establishment Act	2 days, simultaneous with previous procedure	INR 1,200 (registration fee) + 3 times registration fee for Trade Refuse Charges (INR 3,600)
* 13	Receive inspection and obtain the Shops and Establishments registration certificate	2-6 days, simultaneous with previous procedure	no charge
* 14	Register for profession tax	2 days, simultaneous with previous procedure	no charge

* Takes place simultaneously with another procedure.

Fall of the Start-Ups

The start up eco system in India is witnessing a major shakeup as around 50 percent of young entrepreneurs who went ahead and set up their own ventures in the last

two years have already closed down. According to the data collated by research firm Xeler 8, since June 2014 around 2,281 Indian start-ups had begun operations. However of these, 997 have already closed down- a failure rate of

close to 50 per cent. Companies opened by these entrepreneurs were across the range of sectors including e-commerce, health technology, robotics, logistics, business intelligence and analytics, food technology and on-line recruitment.

The average age of these failed ventures came out to be 11.5 months. They failed due to many reasons like managerial inefficiency, finances, operational issues among others. Although the ones, which got hold of investments lasted a little longer, only 32 companies out of these 997 start ups had raised funding from investors. A surprising fact is that 75 per cent of the founders of the failed start-ups did not try again, instead found jobs at other firms or start-ups, the remainder is likely to attempt again. The average age of the founders of these failed start-ups was only 27 years.

Conclusion

The failure of these start-ups should not be seen as a challenge as this was part of a natural process of evolution. It is not only passion but it requires a lot of commitment, dedication and determination to make a venture stand. Hard work and some luck also guides one to achieve his goal" Though the Government has come out

with a start up India initiative the labyrinth of guidelines are a major hindrance to these companies.

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A STUDY ON VISITORS' PERCEPTION TOWARDS ENVIRONMENTAL IMPACTS OF TOURISM WITH REFERENCE TO MADURAI CITY

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Abstract

Tourism is an activity which promises a profitable chain of economic opportunities to a country. The quality of the environment, both natural and man-made, is essential to tourism. The relationship of tourism with the environment is complex. However, this sector generates both positive and negative impacts. It involves many activities that can have adverse environmental effects. Many of these impacts are linked with the construction of general infrastructure such as roads and airports, and of tourism facilities, including resorts, hotels, restaurants, shops, golf courses and marinas. The negative impacts of tourism development can gradually destroy environmental resources on which it depends. On the other hand, tourism has the potential to create beneficial effects on the environment by contributing to environmental protection and conservation. It is a way to raise awareness of environmental values and it can serve as a tool to finance protection of natural areas and increase their economic importance. This study was conducted to identify factors that encourage visitors to return and visitors' perception towards environmental impacts of tourism. The study was conducted at the prominent tourist spots of Madurai like Meenakshi Sundareswarar temple and Thirumalai Nayagar Mahal. A total of 50 visitors were selected as respondents in the survey and questionnaires were used as instruments. The results showed that tourism activities do have an impact on the tourist spots of Madurai.

Keywords: Tourism, Environmental impacts and Perceptions

Introduction

Tourism is defined as temporary movement of people to destination outside of the workplace and the usual place of residence, the activities that they do while staying at the destination and the facilities provided to meet their needs. Tourism is one of the fastest growing areas within the world's largest industry. Yet despite increased awareness of the economic and environmental significance of tourism, it is only in recent years, researches have emerged. This paper focuses, on environmental impacts of tourism. Negative impacts from tourism occur when the level of visitor use is greater than the environment's ability to cope with this use within acceptable limits of change. Uncontrolled conventional tourism poses potential threats to many natural areas around the world. It can put enormous pressure on an area and lead to impacts such as soil erosion, increased pollution, discharges into the sea, natural habitat loss, increased pressure on endangered species and heightened vulnerability to forest fires. It often puts a strain on water resources, and it can force local populations to compete for the use of critical resources. Increasing tourist numbers worldwide have led to the recognition of an urgent need "to promote sustainable tourism development to minimize its

environmental impact and to maximize socio-economic benefits at tourist destinations".

Environmental Impacts of Tourism

An environmental impact is a change to the environment that is either partly or entirely by one or more environmental aspects. An environmental aspect can have either a direct and decisive impact on the environment or contribute only partially or indirectly to a larger environmental change. In addition, it can have either a beneficial environmental impact or an adverse environmental impact.

Tourism contributes both positively and negatively to the environment, and it's quite hard to figure its net effect on the environment. Negative effects of tourism include increased pollution, an increase carbon footprint and the stress placed on the native plants, animal and ecosystems. Positive benefits of tourism include increased awareness of the plight of many species and increase in capital that flows into conservation organizations.

Sustainable Tourism Development

Sustainable development defined as "development that meets the needs of the present without compromising

the ability of future generations to meet their own needs". It is a blue print to secure the concept of sustainability and to address environmental and development issues. Sustainable Tourism takes the full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities. As tourism as an industry grew more and more and its impacts on the environment emerged and were recognized by the industry's key stakeholders, sustainability in tourism gained in importance and resulted in the definition of the priorities of sustainable tourism. The growing awareness of sustainability paved the way for a more sustainable approach to development of tourism.

Statement of the Problem

Development of a tourism area has created a demand for facilities and services, including water, electricity, telecommunications, accommodation, transportation, retail business, support facilities, provision of sewerage and solid waste disposal. To meet these demands a lot of land had to be sacrificed. Infrastructure development involves uncontrolled land exploration, thus causes disruption to the ecology, such as destruction of habitat for flora and fauna, water pollution, air pollution and changes in soil nutrients.

Uncontrolled development can destroy areas which are rich in biodiversity. Increase in population and the increasing number of tourist arrivals also impacted the environmental sustainability.

"Tourism is like a fire; it can cook your food or burn your house down". If planning and development of tourism areas and tourism activities are planned properly and controlled carefully, it improves the quality of the environment. Thus, there is an increasing need for sustainable environmental preservation.

Review of Literature

In 2004, the UNWTO defined "sustainable tourism development guidelines and management practices [as being] applicable to all forms of tourism (...), including mass tourism and the various niche tourism segments" (UNEP & UNWTO, 2005, p. 11). The organization also highlighted that the principles of sustainable development in tourism must concern environmental, economic and socio-cultural issues in a suitable balance in order to ensure a long-term effect (UNEP & UNWTO, 2005). Finally, the UNWTO's concept of sustainable tourism in the context of sustainable development refers to tourist activities "leading to management of all resources in such

a way that economic, social and aesthetic need can be fulfilled while maintaining cultural integrity, essential ecological processes, and biological diversity and life support systems" (UN, 2001, p. 3).

According to Norasmah Othman, Suzana Mohamed, Farlizawati Khairi-(2012), the entry of large number of tourists to nature areas could damage the natural resources in the areas. The presence of tourists in an area of tourism, create demand for infrastructure such as water, electricity, telecommunications, accommodation, and so on. To meet these demands, a lot of lands have to be sacrificed. Constructions of these facilities involve uncontrolled exploration of land, resulting in ecological disruption, such as the destruction of flora and fauna habitats, water pollution and changes in soil nutrients.

According to Buckley (2012), in forecasting the future of sustainable tourism, the key consideration is that both tourism and sustainability are changing more rapidly than the tourism industry adopts sustainability improvements. The future of tourism depends largely on conflicting social and economic issues. Thus, tourism industry focuses strongly on economic aspects, with attention to social and environmental aspects confined to legal compliance, political maneuverings, and marketing and public relations.

Thus, the issue that can be observed here is, how the development can be balanced and what is the perception of tourists about the impact of tourism towards the environment. It is essential to find this information from tourists, as they are the users of facilities and infrastructure provided in such areas, and besides that, they are also demand for the tourist destination to be remain as natural as it can be. Conflicts arise in the reasons tourists choose a tourist destination, either the availability of infrastructure and facilities or the perseverance of the nature.

Objectives

- To find out the factors encouraging the visitors to the tourist spots of Madurai city.
- To identify visitors' perceptions towards environmental impacts of tourism with reference to Madurai city.

Methodology

The present study comprises both primary and secondary data collected from the visitors to the Madurai city.

Primary Data

The primary data were collected from the visitors at various tourists spots situated in Madurai city.

Secondary Data

The secondary data were also collected from various standard text books, magazines, journals, newspapers and internet, which constituted a supportive literature for the purpose of making analysis and suggestions.

Period of the Study

The study was undertaken during the months of September and October 2017.

Sampling Design

Convenience sampling technique was used.

Sample Size

A sample size of 50 respondents was selected for this purpose of the study.

Statistical Analysis

SPSS 23.0 software packages and Simple techniques such as percentage, mean, simple ranking and Likert's scaling, regression analysis, pie charts were used for the statistical analysis. The questionnaire was divided into three parts. Part A obtains information on respondents' profile. Part B is to identify the factors which lead visitors to visit, which consists of various aspects. Part C is to identify the perceptions of visitors to the current physical condition of tourist spots of Madurai.

Analysis and Interpretation

Demographic Profile of the Respondent-Percentage Analysis

Table 1.7.1 Distribution on overall result of Profile of respondents

Sl.no	Particulars	Variable	No. of respondents	Percentage
1	Age	21-40 years	24	48
2	Gender	Female	29	58
3	Marital Status	Unmarried	28	56
4	Educational Qualification	Post-Graduation	19	38
5	Occupation	Professional	12	24
6	Monthly Income	Above 50000	16	32

Source: Primary Data

Overall Findings

With regard to the finding on profile of respondents it is clear that under the category age majority of the respondents belong to the age group 21-40 years [48%], gender-women[58%], marital status- unmarried [56%], educational qualification- post graduate [38%], occupation-professional [24%] and monthly income- above 50,000 [32%].

Purpose of visit

R ²	Adjusted R Square	Std. Error of the Estimate
.353	.262	1.165

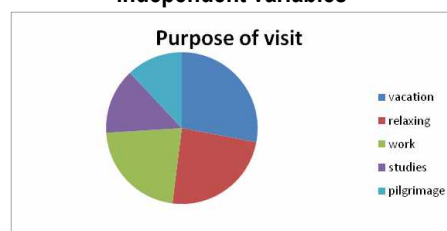
Table 1.7.2 Distribution on purpose of visit

Sl.no	Particulars	No. of respondents	Percentage
1	Vacation	14	28
2	Relaxing	12	24
3	Work	11	22
4	Studies	7	14
5	Pilgrimage	6	12
	Total	50	100

Source: Primary Data

From the above table for purpose of visit it is clear that out of 50 respondents majority of the respondents belong to vacation category [28%] followed by relaxation category 14[28%], work+ traders 60[14%] and conservatives 49[11%].

Fig 1.7.3 Pie diagram showing purpose of visit
Regression analysis for purpose of visit and independent variables



H₀: There is no significant association between independent variables and purpose of visit

Table 1.7.4 Regression analysis for independent variables and purpose of visit

Sl.No	Particulars	Standardized Coefficients	T	Sig.
1.	(Constant)	-	-.011	.991
	Age	.421	2.210	.032
	Gender	.045	.336	.739
	Marital Status	.237	1.429	.160
	Education	-.280	-1.593	.119
	Occupation	.474	3.484	.001
	Income	-.155	-1.001	.322

Source: Computed Data

Model:

Predictors: Independent Variable

Dependent Variable: Purpose of visit

The above table shows regression analysis for Kind of investor and independent variables, the R² value for this model is .353. Age has a standardized coefficient.421,

gender .045 marital status .237, educational qualification. 280, occupation .474 and monthly income -.155. Thus from the table it is very clear that the dependent and independent variables are positively associated with each other, therefore the null hypothesis is rejected and the alternative hypothesis [H_a : There is significant association between independent variables and purpose of visit] is accepted.

Factors influencing the visitors to visit- Likert's Scaling Technique

Table 1.7.5 Influencing Factors

Sl. no	Factors	SA	A	N	DA	SDA	Mean Score	Mean Rank
1	Safety Measures	17	21	7	3	2	3.96	4
2	Reasonable Cost	2	6	28	6	2	4.08	1
3	Availability of facilities	18	22	7	-	3	4.04	2
4	Climate/ Weather	15	19	11	-	5	3.78	5
5	Comfort aspects	15	25	5	5	-	4.00	3
6	Accessibility	11	25	7	6	1	3.78	5

Source: Computed Data

It could be observed from Table 2.1 that reasonable cost was ranked in the first place with a mean score of 4.08. It is followed by availability of facilities with a mean score of 4.04. Lastly, the climate and weather conditions as well as accessibility were placed in the sixth position with a mean score of 3.78. It was concluded reasonable cost was the major factor influencing the visitors to visit the tourist spots of Madurai.

Visitors' perceptions of the impact of tourism towards the environment sustainability –Simple Ranking Method

Table 1.7.6 Visitors' perception towards impacts

Sl.no	Impacts	Mean	S. D	Rank
1	Incentive for Heritage restoration	2.64	1.35	I
2	Public facilities at a better standard	3.48	1.79	III
3	Crowded public places	3.06	1.58	II
4	Destroys natural resources	3.88	1.96	V
5	Air pollution and Noise pollution	3.84	1.68	IV
6	Rubbish and Trash pollution	4.10	1.44	VI

Source: Computed Data

In the above table for the purpose of finding the visitors perception towards environmental impacts simple ranking technique was calculated. After calculating the mean and standard deviation ranks were allotted for the variables. It is clear that incentive for heritage restoration ranks first [I] with a mean and standard deviation of 2.64 and 1.35, followed by public facilities at a better standard ranks second [2] with a mean and standard deviation of

3.06 and 1.58. Lastly, rubbish and trash pollution ranks sixth [IV] with a mean and standard deviation of 4.10 and 1.44. It was concluded that visitors perception towards environmental impact had positive aspect of heritage restoration and negative aspect of crowded public places.

Suggestions

- Environmental protection should constitute an integral part of the tourism development process
- Nations should cooperate to promote an open economic system, in which international trade in travel and tourism services can take place on a sustainable basis.
- Tourism development issues should be handled with the participation of concerned citizens, with planning decisions being adopted at the local level.
- Cleaner production techniques can be important tools for planning and operating tourism facilities in a way that minimizes their environmental impacts.
- The tourism industry can play a key role in providing environmental information and raising awareness among tourists of the environmental consequences of their actions.
- Regulatory actions help to reduce the negative impacts on resources.
- Travel and tourism should contribute to the conservation, protection, and restoration of the earth's ecosystem.

Conclusion

Sustainable tourism development requires the informed participation of all relevant stakeholders, as well as strong political leadership to ensure wide participation and consensus building. Achieving sustainable tourism is a continuous process and it requires constant monitoring of impacts, introducing the necessary preventive and corrective measures whenever necessary. Visitors who visit the tourist spots of Madurai city emphasized on the aspects of safety and comfort, reasonable cost and availability of facilities. In this regard, and infrastructure facilities provided there meet the needs of the visitors, but to remain consistent with the increasing number of tourists arrivals, continuous maintenance needs to be done to ensure that the facilities remain in perfect condition. Visitors' perception towards environmental impacts had positive contribution towards heritage restoration and standard public facilities and also contributed to environmental degradation garbage waste pollution and noise and air pollution. Thus, to remain perfect and to be able to accommodate consistent increase of tourists, all

parties must cooperate to protect and conserve the environment for the interest of the present and future generations. Sustainable tourism should also maintain a high level of tourist satisfaction and ensure a meaningful experience to the tourist, raising their awareness about sustainability issues and promoting sustainable tourism practices amongst them.

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GREEN BANKING IN INDIA-INITIATIVES AND CHALLENGES

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Abstract

There is a paradigm shift the Indian Banking Sector in the digital era with a concern on ecology and environment. The revolution of information technology has brought unprecedented change in the banking environment. In this regard, there is an urgent need to promote awareness among the people about the environmental impact of modern banking services. One of the measures taken by the government is encouraging the banks to go green in their day to day activities to promote clean and green environment. Today, banks play a vital role in protecting environment through green banking initiatives. Some of the initiatives taken by the Indian banks in achieving cashless economy at part of Digital India Project are paperless transactions, internet usage, e-money transfers, green bonds, financing green technology and pollution reducing projects. The present paper examines the various green banking initiatives of Indian banks and the challenges in implementation. The green banking initiatives like Go online, use green checking accounts, use green loans for home improvements, power savings equipments, use green credit cards, save paper, use of solar and wind energy, mobile banking, e-banking services, etc. will save time, energy, money, forest products and avoid global warming. Foreign banks like Triodos Bank, The Cooperative Bank of UK, Bank of America, Royal Bank of Canada, HSBC Group, Industrial Bank of China, and Standard Chartered Bank are already committed to make their operations more environmentally sound and work towards climate change. In India, though there are no legislative measures to make the banks responsible for financing projects which are polluting the environment, many Public and Private sector banks have started adopting green banking policies. Union Bank of India was the first bank to implement Green Banking in India in 1996 followed by Yes Bank, Corporation Bank (2005), ICICI Bank, OBC, SBI (2007), Bank of Baroda (2009), Axis Bank, Bank of Baroda, HDFC and Canara Bank (2010), IDFC (2013). The Indian banks have taken pro-active steps to reduce the direct impact of their operations on the environment. The some of the steps taken by them are preparing the Core Banking Solution (CBS), Annual Reports in electronic form, financing Wind based power projects, Installing Solar powered biometric ATMs, Energy Audit, Installation of Self Service Passbook Printers, Installation of Bunch Note Acceptor, issue of Credit Cards and Debit Cards, EMV Chip Debit Card, implementation of web module to meet corporate requirement, IVR facility, SMS Banking facility, NACH facility for automated clearing, Internet banking, Telebanking, Mobile banking, e-lounges with hi-tech banking facilities, e-governance for human resources management and administrative areas, encouraging Green energy by financing solar, biogas and wind mill projects, denying finance to the units which are producing ozone depletion substances such as choloro-fluoro carbon, carbon tetrachloride, aerosol products, overdrive auto awards, issue of e-statements and e-transaction advices to prevent paper consumption, recycling of notepads, notebooks and envelopes, Car pooling, paper consumption.

Introduction

There is a paradigm shift in the Indian Banking Sector in the digital era with a concern on ecology and environment. The revolution of information technology has brought unprecedented change in the banking environment. In this regard, there is an urgent need to promote awareness among the people about the environmental impact of modern banking services. One of the measures taken by the government is encouraging the banks to go green in their day to day activities to promote clean and green environment. Today, banks play a vital role in protecting environment through green banking initiatives. Some of the initiatives taken by the Indian banks in achieving cashless economy as part of Digital India Project are paperless transactions, internet usage, e-

money transfers, green bonds, financing green technology and pollution reducing projects. The present paper examines the various green banking initiatives of Indian banks and the challenges in implementation.

Green Banking

Green banking is also called as ethical banking or sustainable banking. The objective of green banking is protection of environmental, social or natural resources. Green banking aims at avoiding carbon footprint through e-statement and utilization of cashless, faceless and paperless transactions. The green banking initiatives like Go online, use green checking accounts, use green loans for home improvements, power savings equipments, use green credit cards, save paper, use of solar and wind

energy, mobile banking, e-banking services, etc. will save time, energy, money, forest products and avoid global warming. The most important green banking initiatives are Real Time Gross Settlement (RTGS), Clearing Corporation of India Ltd (CCIL) Operated Systems, Paper Clearing, Retail Electronic Clearing, Debit and Credit Cards, Prepaid Payment Instruments (PPIs), Smart Phone or Mobile Banking, Point of Sale (POS), ATMs and Micro ATMs. .

Review of Literature

Vikas Nath et al. (2013) said that the world is very much concerned about the green issues such as Sustainable Banking, knowledge in Sustainable investment, Sustainable venture, Sustainable Investor, Successful Inclusive Business. Green banking system requires use of green technologies in the business process.

Ritu (2014) said that there is growing awareness among bank customers and bank employees about the banking transactions to be environmental and eco-friendly, use of green checking accounts, use of green credit card, saving of paper, mobile banking, direct deposits and online or net banking, conducting E-learning programmes, preparation of green banking annual environment reports, preparation of relevant skills among bank employees.

Malliga and Revathy (2016) observed that there is increasing need for utilizing online banking instead of branch banking, payment of bills online, opening online bank account by the people with the help of banking technology or connecting the environment sustainability.

Bibhu Prasad Sahoo et al. (2016) highlighted that the problems of global warming should not be limited to discussion only but necessary steps must be taken to going green. The awareness on environment protection is more among the youth rather than aged people. Hence, there is a need to create awareness among the middle and senior age groups individuals than young age people.

Jayabal and Soundarya (2016) observed that the recent development in Indian banking technology lead to a complete change in banking structure moving towards a more comprehensive one giving benefit to customers, bank and the environment. Banks have started introducing green channels such as Internet banking, mobile banking, Green channel counters, kiosk banking, credit & debit cards, online bills payment services etc.

Giridhar and Sudhakar. (2017) said that Banks and all other financial organizations have to focus on the green protection with the reason of satisfying the double functions. The first function of a bank is to work towards

ethically and generally accountable banking and second as a vital function of their corporate social responsibility. They should change their approaches towards green banking like going online banking, mobile banking, net banking, green cards, recycled paper, electronic pay cheque, green checking, green loans and power hoard kits, etc.

Jayadatta and Nitin (2017) said that environmental stability has been affected by worldwide green problems like pollution, problems of natural resources, population growth, greenhouse effect and other such effluents. Banks have the social responsibility to change their strategy and plans to ensure eco-clean and conserve the environment. Garima Sharma (2017) said that banking activities must be directed towards achieving earth's ecosystem, environmental, and natural resources with bio-diversity. Green banking must be implemented with hi-tech developments, operational enhancements and changing customer behavior in the banking system.

Objectives

The following are the objectives of the present paper:

- To examine the various green banking initiatives in India and their progress and
- To analyse the challenges in implementation of green banking in India

Methodology

The present paper is a conceptual as well as analytical. It is based on secondary data only which were collected from RBI sources and websites of banks in India. A study period of five years from 2012-13 to 2016-17 has been taken. Simple statistical tools have been applied to analyse the data using the software SPSS 20.0.

Green Banking Initiatives by Banks in India

Both public and private sector banks in India have taken several green banking initiatives in the past 5 years. The important green banking initiatives introduced by banks during the study period are discussed in the following paragraphs.

State Bank of India (SBI)

The State Bank of India, the largest public sector bank in India, was the first bank to take initiatives of go green banking system processes. It has introduced the first wind farm project in Coimbatore. The most important green banking initiatives of SBI are ATMs, paperless banking transactions for customers, construction of wind mills in rural India, Green Remit Card. Non-Home Cash Deposit

Transactions are routed through Green Channel Counter (GCC) / Cash Deposit Machine (CDM). Steps were taken to save ground water in the staff training college campuses during 2004-05. To save power, light sensors were installed at the entry of the restrooms where light switches will be on automatically once a person enters the wash room and Power switches will off after 15 min if the washrooms remain unused. The corridors of the staff college has the facility of LED lights consuming less power when these lights are switched on for approximately 12 hours in a day.

ICICI - Go Green: Each One for a Better Earth

ICICI Bank has a strong belief that every small GREEN step will lead to structure a greener prospect in the long run and work towards a enhanced worldwide environment. Go Green is its wide plan with a greater vision statement - touching ourselves, our procedures and our customers to change ordered usual channels to building awareness of our environment, our nation and our society. To save paper and 17 trees in every tone of paper, the bank buy recycled paper, print on reusable sheets, print multiple pages on single sheet of paper, set defaults to print double-sided and print on both sides, print only the pages required, preview documents before printing, increase margin width of the documents, change the default font size from 12 point to 10 which would shrink the document by about 10% and use e-mail statements. For every 38,000 bills paid online, 5,058 pounds of greenhouse gases are avoided and two tons of trees are conserved. Cell phone chargers, TVs, DVD players, stereos, microwaves and other electronics with transformers continue to draw power, even when they are off or not charging anything, as long as they are plugged in.

Punjab National Bank (PNB)

Punjab National Bank, one of the public sector banks, has been conducting electricity audit of offices as energy conservation initiative. The bank is also highlighting mostly on green buildings and sincerely encourages easy green practices such as choosing for energy well-organized lights, CFL bulbs, printing on all sides of paper, purchasing compound fax machines which do multiple functions, instant repair of water leakage, use of master censor master switches for light which decreases use of additional unit of energy powers. Some of the green banking initiatives of the bank are Aadhaar Pay, BHIM, PNB Kitty, PNB Yuva, Unified Payments Interface, Retail Internet

Banking, Corporate Internet Banking, Mobile Banking, SMS Banking, IMPS, Missed Call Services, E-Statement, PNB Cash Acceptor cum ATM, Cash Deposit Machine (CDM), Passbook Updation Machine (PUM), Electronic Cheque Deposit Machine (ECDM), RTGS/ NEFT/ ECS/ NACH, etc.

Bank of India (BOI)

To move towards Green Banking, Bank of India reduces paper works by using electronic devices like smart phones, encouraging mobile banking, internet banking, electronic cards and electronic transactions. Bank follows the practice of issuing e-transaction advices to reduce paper usage as well as encouraging e-statements with retail customers.

Canara Bank

Since 2013, Canara Bank has been implementing several green banking initiatives and eco-friendly measures such as internet banking, mobile banking, solar powered biometric process, etc. Canara bank has also set up e-lounges for hi-tech banking services like printing passbook, kiosk machine, internet banking, ATMs, online trading and cash or cheque acceptor. The bank also has executed e-governance for HR function and several other direction areas to reduce the paperwork in banking transactions.

IDBI Bank

The IDBI Bank has taken a number of steps in respect of green banking initiatives like e-corporate governance in which bank send meeting notices, annual reports, etc. to shareholders in e-form. It has an elite co-operative working process on clean development mechanism (CDM) and extra technical services. It has also applied a refinance scheme for most of the power energy saving projects particularly for micro, small and medium enterprises (MSMEs).

HDFC Bank Ltd

The HDFC Bank had launched a system which transfers the personal identification number (PIN) for debit card holders through SMS rather than sending it by post. Bank has also incorporated eco-friendly developing features into their communications which involves energy protection, air quality organization etc. The other green banking initiatives of the bank are replacing incompetent lighting options with LED lights in great offices, utilizing the services of Central Pollution Control Board (CPCB) in

replacing diesel generators and desktop virtualization for reducing power. Establishment of various alternate service points to make possible easy transactions in paperless environment system. It has also created awareness among its Customers and Employees about the eco-friendly practice.

YES Bank

The Yes Bank is the first Indian signatory to carbon disclosure project and also has recognized its carbon footprint. It is the first private sector Indian bank to become signatory to UNEP statements by financial institutions on green norms and sustainable development process. Yes bank has also supported the practical response to climate change from its peers in the banking industry.

Syndicate Bank

Syndicate Bank has taken steps towards successful implementation of 'Green Banking initiatives in corporate governance' by allowing paperless compliances through electronic transactions mode. Besides, all its transactions are effected through alternative green channel to reduce the uses of paper work based payment instruments are actively encouraged. Through e-lounge services, ATMs and internet banking and mobile banking transactions, the bank is encouraging its customers to make use of e-mode to a greater extent.

Progress of Green Banking in India

The payment and settlement systems in India are regulated by the Payment and Settlement Systems Act, 2007. Some of the measures taken by RBI for digital payment in India are NEFT, RTGS, CCIL Operation Systems, Paper Clearing, Pre-Paid Payment Instruments, Card Schemes and Mobile Banking.

National Electronic Funds Transfer (NEFT)

The National Electronic Fund Transfer (NEFT) is one of the most commonly used means of transferring money online from one bank account to another bank. At present, there are 12 settlements between 8 am and 7 pm on weekdays and six settlements between 8 am and 1 pm on Saturdays. There is no minimum or maximum limit on the amount that can be transferred through NEFT. However, individual banks can set the maximum amount to be transferred. State Bank of India, for example, has fixed the maximum amount to be transferred through NEFT as ₹ 10 lakh.

Real Time Gross Settlement (RTGS)

The Real Time Gross Settlement (RTGS) is one of the electronic fund transfer systems for transfer of money on a real time basis throughout the RTGS business hours. It is for high-value transactions. The minimum amount that can be transferred through RTGS is ₹ 2 lakh. There is no limit on maximum amount to be transferred through RTGS. The RTGS window will open from 9 am to 4.30 pm on weekdays and 9 am to 2 pm on Saturdays.

Clearing Corporation of India Limited (CCIL)

Clearing Corporation of India Limited (CCIL) was started in April 2001 by banks, financial institutions and most important traders, to act as an industry service organization for clearing and settlement of deals in money market, government securities and foreign exchange markets etc. In addition to the guaranteed settlements, it also effects non guaranteed settlement services for National Financial Switch Inter bank ATM transactions systems and for rupees derived such as Interest Rate Swaps.

Paper Clearing

Bank customers are also utilizing paper clearing instruments like cheques and drafts. Modern developments in paper-based instruments comprise Speed Clearing for local as well as outstation cheques drawn on core-banking through cheque truncation.

Pre-paid Payment Systems

Pre-paid instruments are payment instruments used for buying goods and services with the value stored on these instruments. The value stored on such instruments stand for the value rewarded to the holders through cash, via debit to a bank account, or through credit card. The pre-paid payment instruments issued by banks and merchants include smart cards, magnetic stripe cards, internet accounts process, internet wallets, mobile accounts, mobile wallets, paper vouchers, etc.

Mobile Banking System

Mobile banking is a kind of service offered by banks which allows the customers to conduct financial transactions with the help of mobile phones or personal digital assistants. Most of the banks in India have developed their own mobile apps which can be downloaded and used by the customers anytime and anywhere for all banking operations on 24 hours basis. The transactions that can be done through mobile banking

include obtaining account balance, list of latest transactions, electronic bill payments, funds transfer, bank statement, etc.

Automatic Teller Machine (ATM)

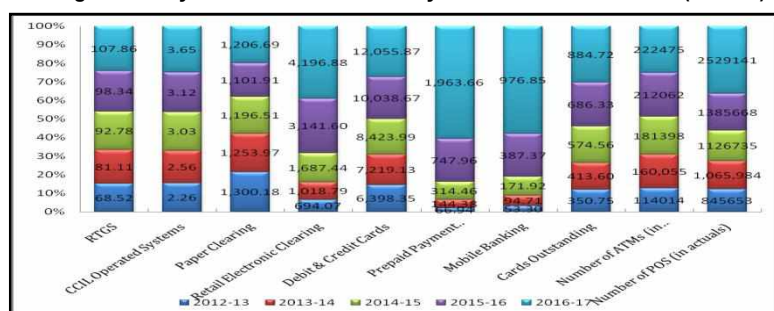
Automatic Teller Machines (ATMs) are electronic machines, which are operated by a customer himself to deposit or to withdraw cash from bank anytime and anywhere 24 X 7 days. For using an ATM, a customer has to obtain an ATM card from his bank. The ATM card is a plastic card, which is magnetically coded. It can easily be read by the machine. In addition to cash withdrawal, ATMs can be used for payment of utility bills, funds transfer

between accounts, deposit of cheques and cash into accounts, balance enquiry, change of PIN, mini statement, etc.

Point of Sale (POS)

Point of Sale is a computer terminal that is connected online to the hi-tech computerized customer information records in a bank and magnetically programmed plastic card transactions that recognize the customer to the online PC. It is a computerized replacement for a cash register. It is used in most of the industries and business establishments like shopping malls, restaurants, lodging, entertainment and museums.

Figure: 1 Payment and Settlement System in India – Volume (Million)



From the Figure 1, it is observed that there is a significant growth in the volume of digital transactions for making electronic payments through various channels during the study period.

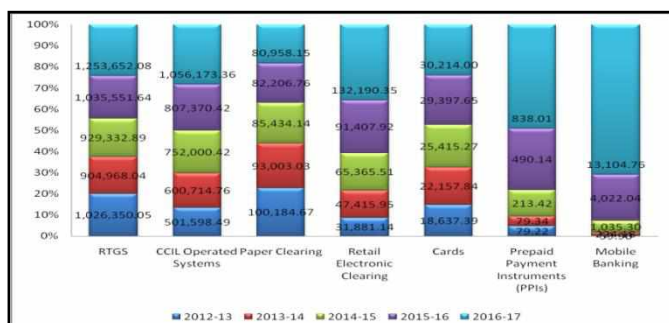
Table: 1 Payments and Settlement System in India (Volume (Million))

Source: Primary data ** Significant at 1% level.

One-Sample T-Test				
Variables	Mean	Std. Deviation	t-value	p-value
RTGS	1030000	137687	16.73	0.001**
CCIL Operated Systems	743571	212614.83	7.82	0.001**
Paper Clearing	88357	8102.33	24.38	0.001**
Retail Electronic Clearing	73652.2	39508.9	4.17	0.001**
Debit & Credit Cards	25164.4	4876.55	11.54	0.001**
Prepaid Payment Instruments (PPIs)	340.03	325.01	2.34	0.08
Mobile Banking	3689	5499.66	1.5	0.21

Based on the analysis using one sample t test, it is clearly evident from the table 1 that the difference in the average transactions in volume among the various payment and settlement systems except Prepaid Payment instruments and mobile banking is significant during the study period.

Figure: 2 Payments and Settlement System in India - Value (₹ Billion)



From the Figure 2, it is observed that there is a significant growth in the value of digital transactions for making electronic payments through various channels during the study period.

**Table: 2 Payments and Settlement System in India
Value (₹ Billion)**

Source: Primary data ** Significant at 1% level * Significant at 5% level

One-Sample T-Test				
Variables	Mean	Std. Deviation	t-value	p-value
RTGS	89.72	15.30	13.11	0.001**
CCIL Operated Systems	2.92	0.54	12.19	0.001**
Paper Clearing	1211.90	74.04	36.60	0.001**
Retail Electronic Clearing	2147.80	1482.08	3.24	0.032*
Cards	8827.20	2266.04	8.71	0.001**
Prepaid Payment Instruments (PPIs)	647.48	781.58	1.85	0.138
Mobile Banking	336.83	380.26	1.98	0.119
Cards Outstanding	581.99	214.72	6.06	0.004**
Number of ATMs (in actuals)	178000.00	43491.45	9.15	0.001**
Number of POS (in actuals)	1390000.00	664881.09	4.68	0.009**

Based on the analysis using one sample t test, it is clearly evident from the table 2 that the difference in the average transactions in value among the various payment and settlement systems except Prepaid Payment instruments and mobile banking is significant during the study period.

Challenges in Implementation of Green Banking in India

The following are the challenges faced by banks in India while implementing green banking initiatives.

Operating Cost is Very High

Besides technology, well knowledgeable persons are required to train up the bank employees to teach the customers for utilization of online banking transactions. As a result, the operating cost of online banking transactions are very high.

Startup face

The implementation of green banking by banks is at the initial stage and the concept is new to the banks. Therefore, the banks are in startup face. Usually it takes 3 to 4 years for a bank to start making money during recession.

Diversification Problem

Generally, in most of the cases, green banking limit their transaction to persons and business entities that succeed the in implementation of the projects with green banking objectives. This leads to several diversification problems for both banks and customers.

Credit Risk

Credit Risk is another challenge for the banks which are lending money for projects which are eco-friendly but do not general profit. Most of the projects suffer initially because of cost of pollution, change in ecological laws and system and also new necessities of emission stage.

Reputational Risk

If banks are connecting themselves in those projects which are damaging the environment then they establish to lose out on their standings. There are also instances of some cases where environmental organization system has resulted in cost saving, increase in bond value etc.

Cyber-crime

Cyber-crime is another challenge for banks if all the transactions are done online without proper security measure.

Computer Virus

Computer Virus poses threat to banks as well as customers when they do transactions online and affect their activities which lead to increase in the cost of operation also. It happens especially when there is transfer of files which are infected without proper protection.

Password Sniffers:

Password sniffers re-programme that proof the name and passwords of system users as they log in to accesses in your cards.

Email Spam

Email Spam is unwanted emails or junk news group reorganizations. Email Spam is sent without the approval of the beneficiary possible creating a wide variety of issues if they are not clean correctly to email uses.

ATM and Point of Sale Crimes

Sometimes, there will be crimes committed during transactions through ATM and Point of Sale terminals by criminals which will affect both banks and customers.

Conclusion

It is right time that the Indian banks are moving towards green banking to avoid global warming. There is awareness among the public regarding protection of environment and natural resources through day to day banking operations. Both public and private sector banks in India have taken several green banking initiatives for sustainable development. There is a significant growth in the digital transactions in banks in terms of volume as well as value during the study period from 2013 to 2017. Thus, the concept of green banking is gaining momentum and banks have started portraying themselves as green banks.

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GLOBAL STRATEGY FOR CUSTOMER SATISFACTION IN E-MARKETING SYSTEM

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Abstract

In the global world, any business to survive and be consistently successful, it is crucial that they have a strong understanding of their targeted customers. On a global scale number of companies are competing and offering the customers a plethora of products. The customers are demanding quick and better service from the service providers. For that companies have to upgrade the quality, transparency and integrity to acquire and retain customers in long range. They need a set of offers and value proposition to be delivered to the targeted potential customers, which needs a thorough market research to understand the needs of the customers and accordingly launching the products to match with the customer's expectation, for which organisations must continuously search for the development of its product and services through marketing innovation and creativity. This will play a very important role in achieving competitive advantage, especially in the e-marketing where competition is much stiff. This study is carried out to find out whether marketing innovation and creativity has an impact on achieving competitive advantage in the customer satisfaction. The study shows that marketing innovation and creativity are crucial in organisational success. It also concluded that through marketing innovation and creativity, the e-marketing can satisfy their customers which will improve their businesses and achieve a competitive advantage.

Keywords: Marketing strategy and innovation, competitive advantage, customer satisfaction.

E-Marketing Meaning

E-marketing is referred to those strategies and techniques which utilized online ways to reach target customers. There are millions of Internet users that daily access different websites using a variety of tools like computers, laptops, tablet and smart or android phone devices, and the number of internet users are increasing very rapidly. So every business seems to be jumping on the internet marketing bandwagon. The internet is most powerful tool that can put any business on solid footing with market leaders companies. There are many free as well as economical way on internet to promote your business. Successful companies must ask themselves some tough questions about how they will promote their business online? What is their company expectations are? And what will be their plan to meet those expectations? After answer all these questions a company should design an effective marketing plan. E marketing also known as online or internet advertising which uses the internet technology to promote online message to customer. E-marketing examples are email or social media advertising, web banners and mobile advertising

Customer Satisfaction is an Innovative Strategy

Customer satisfaction is a marketing term that measures how products or services supplied by a company meet or surpass a customer's expectation. Customer satisfaction is important because it provides marketers and business owners with a metric that they can use to manage and improve their businesses.

In a survey of nearly 200 senior marketing managers, 71 percent responded that they found a customer satisfaction metric very useful in managing and monitoring their businesses. It's a leading indicator of consumer repurchase intentions and loyalty. In a competitive marketplace where businesses compete for customers; customer satisfaction is seen as a key differentiator. Businesses who succeed in these cut-throat environments are the ones that make customer satisfaction a key element of their business strategy.

E-Marketing-An Overview

E-marketing, Internet marketing or digital marketing is the heart of E-business and getting closer to customers and understanding them better, adding value to product and widening distribution channels via search marketing, Social Media, and affiliate marketing are all a part of

strategies to see to it that the products sold via E-commerce are reaching the targeted audience to close them as perfect leads and then convert them into customer. Hence we can see that E-commerce and E-marketing will always go hand in hand because it's ultimately marketing that is needed to make a sale. E-marketing is a very integral part of E-commerce or E-business. Online shopping that glorious invention which allows people to buy things from the comfort of their homes. No more travelling to multiple stores to find the right product; no more having to deal with over-enthusiastic sales persons; no more standing in long lines at the checkout counter. The e-commerce boom has certainly changed the way we shop for the better. But, like everything else, the world of online shopping is not all roses. Despite all the efforts of e-commerce companies to alleviate them, there are a few problems that customers still have to face while shopping online.

Statement of the Problem

Customer satisfaction has become the top goal of many digital marketers, in large part because of digital technologies. When a comparably priced service or a product of similar quality is available within a few clicks, as it for many offerings, then keeping customers requires that they have positive feelings about their dealings with the brand. Customer satisfaction is derived from customer experience, which Salesforce defines as "all the interactions between a brand and its customers." Maintaining the quality of all those interactions requires marketers to track those experiences across a customer journey.

Objectives of the Study

- To find out the problem faced by the consumer while using the e-marketing system
- To study the E-marketing as a tool in building long term customer relationships through customer satisfaction.
- To know the recent trend of global E-Marketing system.
- To identify global strategy analysis for customer satisfaction in E-Marketing.

Research Methodology

This paper is prepared with the support of secondary sources such as magazines, newspapers, reports, dissertations and e-materials. Also used strategic tools like

SWOT and PESTLE analysis to explore the business environment in customer satisfaction

Problems Faced by Customers while Shopping Online Quality issues

- Delivery and logistics
- Digital payment failures
- Additional charges.
- Unclear return and guarantee policies.
- Lack of security

E-marketing in Recent Scenario

Cloud marketing is the process of an organisations efforts to market their goods and services online through integrated digital experiences, by which they are specialised for every single end user. The aim is to use advertising methods to target customers via online applications through social media websites such as Facebook, Twitter and various online portals to target consumers. Cloud marketing platforms are supported with third parties which maintain the platform. The marketers targeting clients need to ensure their material is compatible with all electronic media devices.

Cloud marketing helps to personalise customer experiences across every channel. The main functions of cloud marketing as explained below. Personalise email messages with data from Sales Cloud, Service Cloud, and any other source. Send promotional, transactional, and triggered messages. Take advantage of powerful segmentation, automation, and predictive capabilities. Use powerful reporting tools to understand performance.

Reach customers at the right moment with SMS, MMS, push messaging, and group messaging — based on events, location, proximity, and more.

Listen, publish, engage, and analyse conversations on social media to understand customers, brands, and competitors. Connect social to all areas of your business with the Customer Success Platform.

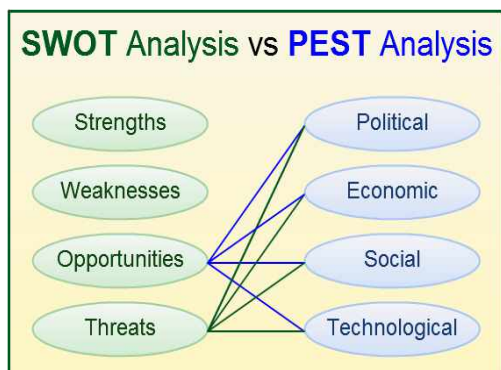
Activate your customer data to power digital advertising and manage ad campaigns. Enhance new customer acquisition with lookalikes, re-engage inactive customers, and optimise advertising along the customer journey. Create beautiful website and landing pages with personalised content. Track every action your customers take to analysis behaviour and gain insights.

PESTLE and SWOT Analysis

Every company in a business has certain frameworks that they follow in order to understand the market they are

catering to. They usually keep on checking the nerve of the market where they want to focus their products upon. Certain companies carry out field work in form of market research through which they conduct surveys or employ other techniques by which to gauge the market needs and trends.

From a strategic management's perspective, there are certain tools that permit the knowledge of the market and the surrounding environment in depth, but the most famous ones are **PEST and SWOT analysis**.



A PESTEL analysis is a framework or tool used by marketers to analyse and monitor the macro-environmental (external marketing environment) factors that have an impact on an organisation. The result of which is used to identify threats and weaknesses which is used in a SWOT analysis. All the external environmental factors (PESTEL factors)

Political Factors

These are all about how and to what degree a government intervenes in the economy. This can include – government policy, political stability or instability in overseas markets, foreign trade policy, tax policy, labour law, environmental law, trade restrictions and so on. It is clear from the list above that political factors often have an impact on organisations and how they do business. Organisations need to be able to respond to the current and anticipated future legislation, and adjust their marketing policy accordingly.

Economic Factors

Economic factors have a significant impact on how an organisation does business and also how profitable they are. Factors include – economic growth, interest rates, exchange rates, inflation, disposable income of consumers and businesses and so on. These factors can be further broken down into macro-economic and micro-economical factors. Macro-economic factors deal with the

management of demand in any given economy. Governments use interest rate control, taxation policy and government expenditure as their main mechanisms they use for this. Micro-economic factors are all about the way people spend their incomes. This has a large impact on B2C organisations in particular.

Social Factors

Also known as socio-cultural factors, are the areas that involve the shared belief and attitudes of the population. These factors include – population growth, age distribution, health consciousness, career attitudes and so on. These factors are of particular interest as they have a direct effect on how marketers understand customers and what drives them.

Technological Factors

We all know how fast the technological landscape changes and how this impacts the way we market our products. Technological factors affect marketing and the management thereof in three distinct ways:

- New ways of producing goods and services
- New ways of distributing goods and services
- New ways of communicating with target markets

Environmental Factors

These factors have only really come to the forefront in the last fifteen years or so. They have become important due to the increasing scarcity of raw materials, pollution targets, doing business as an ethical and sustainable company, carbon footprint targets set by governments (this is a good example where one factor could be classes as political and environmental at the same time). These are just some of the issues marketers are facing within this factor. More and more consumers are demanding that the products they buy are sourced ethically, and if possible from a sustainable source.

Legal Factors

Legal factors include - health and safety, equal opportunities, advertising standards, consumer rights and laws, product labelling and product safety. It is clear that companies need to know what is and what is not legal in order to trade successfully. If an organisation trades globally this becomes a very tricky area to get right as each country has its own set of rules and regulations.

After you have completed a PESTEL analysis you should be able to use this to help you identify the strengths and weaknesses for a SWOT analysis.

- Strength: Anything the business is currently good at, or that which could be described as its "strength".
- Weakness: Anything the business currently struggles with.
- Opportunities: Current opportunities in the market that the business could exploit with its existing resources or skills.
- Threats: Market forces, such as a competitor or external factors (such as a change in local laws) that could threaten the business.

Conclusion

In a business world where customer acquisition costs are sky-rocketing, small and medium businesses must focus on building a customer experience to increase customer satisfaction. Global strategies for increasing the customer satisfaction are treat your customers like they are your boss, Focus on measuring customer satisfaction, Build customer loyalty to increase customer satisfaction, Set customer expectations early, Learn how to survey your customers the right way, Email is the best channel to increase customer satisfaction, Tap into social media to track and monitor customer satisfaction so we can keep our customers happy, Understand the

importance of customer satisfaction.

For the above strategy we have to follow certain collaborate with the cloud marketing and then we can get high rank results are follows,

- Integrating email data with other data systems.
- Improving deliverability.
- Growing and retaining subscribers.
- Achieving measurable return on investment (ROI).
- Using email for funnel optimization

From the PESTLE and SWOT analysis to identify the opportunities of your business and then face the challenges of internal and external environment for the ways in which enhance customer satisfaction in e-marketing as follows.

- Make your company easy to find online
- Keep your site navigation simple and clear
- Apply customer relationship management strategies
- Give your customers a reason to visit your website
- Make your site visually appealing
- Offer a menu of communication options
- Answer your e-mail promptly and professionally
- Efficient delivery systems
- Payment security

WORK-LIFE BALANCE AMONG MARRIED WORKING MOTHERS IN AIDED AND NON – AIDED HIGHER EDUCATIONAL INSTITUTIONS: EMERGING HRM INTERVENTIONS

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Abstract

Purpose

Work life and personal life are two sides of the mint. Creating and managing a balance between the work and personal life is considered to be a work life balance issues. Indian women professionals are definitely on the rise and are paving the way for future generations, as they are becoming increasingly visible and successful in the professional and public sphere. Professional women especially working mothers has to perform multiple roles in balancing their work life and personal life. Each role has its own set of demands and when such role demand overlaps or interacts, an imbalance is created leading to stress, attrition, absenteeism etc in the work place. In addition, in India nuclear family system has replaced the Joint family system which had added stress to working mothers. The ever-increasing work pressure is taking a toll on the working women leaving them with less time for themselves. This affects the person's physical, emotional and social well-being. Thus, there is an increasing need for organizations to address these demands of working mothers by implementing innovative HR policies. Work-life balance is one such HR practice that enables the working mothers to give proper prioritization between work and life roles. Hence, work-life balance has become a growing concern in both Aided and Un – aided Educational Institutions. Both the sectors are evaluated on 6 sub scales viz: personal factors, balancing factors, organizational support, motivational factors, career advancement and psychological factors.

Research Methodology: This study is based on the responses of staff members both from aided and un- aided Higher Educational Institutions. A structured questionnaire was designed on six sub-scales measuring personal factors, balancing factors, organizational support, motivational factors, career advancement factors and psychological factors. Convenience sampling method is adopted. Mean and Standard Deviation are applied in this paper to check the authenticity of data given by the staff members.

Institutional implications: This study may give insight regarding the problem that staff members usually face. Balance should be established between workload distribution, time and extra-curricular activities so as to inculcate efficiency among staff members.

Research Limitations: The study is based on a limited sample size. There is a need to carry out studies with a larger sample size to make results more generalized.

Findings and Conclusion: Significant difference was found among staff members on the Work Life Balance dimensions. The results reveal the picture of difficulties faced in balancing the work demand and the life (family) responsibility. There was high correlation between the difficulties faced and the balancing act to be performed. The significant results reflected in the areas of career advancement factors, organizational support and Psychological factors. The study concluded that work life balance has become a quest for professionals of Educational institutions and also that women employee's work better when they do make time for family and personal interests.

Keywords: Married mothers, Aided and Non-Aided staff members, Personal Life, Professional Life, Work-life balance.

**"Balance is not a better time management, but better boundary management Balance
means making choices and enjoying those choices."**

- Betsy Jacobson

Work life and personal life are two sides of the mint. Creating and managing a balance between the work and personal life is considered to be a work life balance issues. Work life Balance of women employees has become an

important subject since the time in today's world where both men and women equally share the responsibility of earning for the betterment of their family life. Indian women professionals are definitely on the rise and are paving the

way for future generations, as they are becoming increasingly visible and successful in the professional and public sphere. Professional women especially working mothers has to perform multiple roles in balancing their work life and personal life. Each role has its own set of demands and when such role demand overlaps or interacts, an imbalance is created leading to stress, attrition, absenteeism etc in the work place. In addition, in India nuclear family system has replaced the Joint family system which had added stress to working mothers. The ever-increasing work pressure is taking a toll on the working women leaving them with less time for themselves. This affects the person's physical, emotional and social well-being. Thus, there is an increasing need for organizations to address these demands of working mothers by implementing innovative HR policies. Work-life balance is one such HR practice that enables the working mothers to give proper prioritization between work and life roles.

Work Life Balance

Times have changed. The expression "work-life balance" was first used in the United Kingdom in the late 1970s to describe the balance between an individual's work and personal life. Formal definitions of work-life balance vary, but generally converge around the idea that this balance is not about equivalent distribution of time between professional and personal activities, but rather general satisfaction with one's life (Berry, 2010). Others have offered the notion of work-life integration, since balance seems too simplistic and fails to reflect increasingly blurry boundaries in the digital age (Ashkenas, 2012). Regardless of the term used, achieving this elusive state of contentment can be challenging because of its dynamic, highly personal nature.

While academics may have more flexible schedules than other professions, this positive aspect of their positions can complicate efforts to achieve some resemblance of balance because of the seemingly fluid (or absent) boundaries between work and home, particularly when one adopts non-traditional schedules or telecommutes. Faculty members commonly work long hours, including nights and weekends, and desire greater separation between their work and personal lives (Kinman & Jones, 2008). Work Life Balance relates with the idea of lifestyle choice. A completely balanced work life means the ability of an individual to reach equilibrium between the primary responsibilities as an employee and their lifestyle. Most psychologists state that the demands of an

employee's career should not overwhelm the individual's ability to enjoy a satisfying personal life outside the business environment. Research suggests that the happiest faculties are those who have a sense of control over their work and schedules, and support within their institutions (Kinman & Jones, 2008). Work-life balance acts as a boon for working mothers which enables them to balance between work (career and ambition) and life (family, leisure, pleasure and personal development). The working women efficiently overcome many difficult situations by their commitment and perseverance. Working women prefer to work in Educational institutions than in other professions, as the working hour per day is comparatively less than other jobs. The growing needs in educational sector enabled the government to permit the private bodies to establish educational institutions to generate funds. The Tamil Nadu Government, to achieve the national goal of "Education to All", encouraged the private participation in educational sector. This led to the starting of self-financing institutions by private entrepreneurs in the 1980's. Today we have nine aided colleges, three unaided colleges and two Government colleges in Virudhunagar district.

Role of Working Mothers and WLB

Today faculty working mothers in colleges are working 6 to 7 hours per day and 6 days in a week minimum and are confronted by increasing workload every day. So, most of them carry work and responsibilities to home, but balancing between these two complex situations in the present day fast life requires talent, tact, skill and caution. Women have to cope up with high work targets, college commitments, tight meeting schedules and the duties and responsibilities of life and home. Employers should concentrate on framing various policies and schemes to facilitate Work life balance to encourage and attract women employees (Sayanti Ghosh, 2010). Women employees learn different kinds of behaviour from workplace life and private life. Since reciprocal interactions between both the life domains occur a Green Work Life Balance Concept is suggested to facilitate environmentally friendly behavior for them. (N.Gayathri, Dr.P.Karthikeyan, (2013). Susi S & Jawaharrani.K (2011) agrees that a strong institutional culture increases employees' intent to remain in the institution. Work life balance must be supported and encouraged at all levels of the organisation including top management, Principal, HOD and all other staff members. Louise Heslop (2005) have studied that the work and family outcomes such as role interference, stress

strain and life satisfaction are related to several strategies and orientation.

Strategic HR Initiatives for Achieving Work-Life Balance

Osterman, (1995) has stated work-life balance programs as, "institutionalized structural and procedural arrangements, as well as formal and informal practices that makes it easier for individuals to manage conflicting worlds of work and family lives". Employers can plan their work-life balance programs in three major categories: policies, benefits and services. **Policies** cover the formal and informal ways by which employee's work and leave schedules are handled, including part-time work, flexi-time and parental/family leave. **Benefits** cover forms of compensation that protect against loss of earnings, payment of medical expenses and sponsoring a vacation. **Services** include on-site or near-site childcare centers, medical facilities and counseling. Keeping the changing scenario in mind, present day organizations are just not only indulging themselves in mandatory welfare practices stipulated by law, but they are becoming more conscious towards the need and growth of their employees, their families and society as a whole. Analysis of interview with some of the Indian HR managers working in manufacturing and service sectors expressed the following statement. "The slow and differential HR policy response in India as compared to western countries can be attributed to the political ideologies, slow pace of change in socio-demographic structure, attitude of employers and lack of empirical studies showing the impact of such initiative in organizational performance". Nevertheless, the range of work-life balance programs varies across organizations and adoption and effective utilization of such provisions are contingent on many cultural, organizational and individual factors. There is still a long way to go when work-life balance programs will become strategic HR initiatives in most organizations.

Need and Significance of the Study

The potential benefits of the proposed study include the increasing burdens that exist in working women lives and the positive and negative aspects of the lives of working mothers in Educational institutions. Furthermore, given the increasing pressure and demands placed on working mothers, balancing a work and a personal life is very challenging and stressful for many women. This results in less productivity at workplace, giving way for absenteeism, high attrition, low morale, high employee turnover etc. This study is focused on the comparative

analysis of work-life balance among working mothers at various age levels. This study aimed to view the experiences of these working women mothers rather than through statistics and anecdotes. Women are more likely to feel empowered if they know what HR strategies are to be implemented by them in order to balance work and family life. By learning about these HR strategies from women who have succeeded, future generations of women may have an equal opportunity to achieve the same.

Statement of the Problem

Women work force is increasing in various fields. The job demands have increased, the responsibility and roles are diversified and so is the imbalance of work-life at various stages of life. Nan stone (1989) found that women with children, frequently live under great pressure. Women want work-life policies based on the pre-requisite demands that confer on them as 'the gift of time'. For organizations to attract and retain women in work force, HRM interventions can play a vital role in designing innovative work-life balance policies having knowledge of influencing factors at various age levels. Thus, the study is intended to find out the contributing factors that influence work-life balance among working mothers based on age factor in Aided and Un-aided educational institutions.

Objectives of the Study

1. To study work life schedule of the staff members of aided and un - aided institutions
2. Comparative analysis of work life balance of aided and un-aided women working mothers at various age levels.
3. To identify the influencing factors towards work-life balance of working mothers amongst various age levels.

Scope of the Study

This study is conducted in Aided and Un-aided educational institutions in Sivakasi town, Virudhunagar district. The respondents involved in the study were restricted only to working mothers. The staff members of 3 Aided colleges and 1 Un-aided college in Sivakasi were taken as samples. Data were collected through questionnaire from a sample of 80 working mothers. This study attempts to evaluate the quality of work life balance of women employees by implementing innovative HR policies. The results of the study revealed areas where the educational institutions need to concentrate to bring about better quality of work life and thereby satisfied women work force. The scope of the study is limited to only to 4

colleges in Sivakasi of Virudhunagar district, where the Divorcees and Widows are excluded in the study. The responses of Government college staff members are not taken for the analysis part.

Operational Definitions of the Study

In this research article, six variables are operationally defined with reference to work-life balance of working mothers. Work-life balance was measured by these variables, based on five point interval scale.

Personal Factors: This includes factors which are personal in nature like getting time for self, having healthy diet, sound sleep etc.

Balancing Factors: This refers to the factors that enable to balance work and life viz: time management, spending quality time with children, awareness of organization's policies etc.

Organizational Support: This includes the extent of support and the initiatives taken by the organization in implementing work-life balance among employees, which includes workshops related to work-life balance, effective communication system, internal medical check - ups, pranic healing programmes etc.

Motivational Factors

These are the factors which motivate the employees in balancing their work and life such as family support, child care provisions, passion about the work, occupational status etc.

Career Advancement

The factors affecting the career growth of an employee includes denial of deputation, maternal wall discrimination, updating with latest trends etc.

Psychological Factors

Findings of the Study

The factor which are psychological in nature such as handling domestic pressure, stress at work place, feeling as less valuable etc.

Research Methodology

Since the present study focused on the work life balance of working mothers in aided and unaided colleges, describing their demographics in detail, it can be appropriately referred to as **Descriptive research design**. The primary data for this study is collected from the staff members of aided and unaided colleges comprising of Assistant Professors, Associate Professors, and Heads of the Departments. A structured questionnaire was designed on six sub-scales measuring personal factors, balancing factors, organizational support, motivational factors, career advancement factors and psychological factors. A sample of 80 faculties from 4 colleges in Sivakasi was collected for the study. The primary data collection was done through questionnaire method. Secondary Data was collected from books, articles, journals and websites. Convenience sampling method was used in this research. Mean, Standard Deviation and Cumulative percentage methods are applied in this paper to check the authenticity of data given by the staff members.

Distribution of the Personal Profile of the Respondents

The demographic profiles of the respondents are presented in Table 1.

Table 1- Distribution of Cumulative percentage of the personal profile of Respondents

Descriptive Statistics	Particulars	No. of Respondents	Percentage	Valid percentage	Cumulative percentage
Age	Less than 30 years	8	10.0	10.0	10.0
	30 – 40 years	33	41.3	41.3	51.3
	40 – 50 years	23	28.8	28.8	80.0
	50 and above	16	20.0	20.0	100.0
	Total	80	100.0	100.0	
Occupation	HOD	11	13.8	13.8	13.8
	Associate Professor	26	32.5	32.5	46.3
	Assistant Professor	43	53.8	53.8	100.0
	Total	80	100.0	100.0	
Nature of College	Aided	30	37.5	37.5	37.5
	Un-Aided	39	48.8	48.8	86.3
	Government College	11	13.8	13.8	100.0
	Total	80	100.0	100.0	

Years of Experience	Less than 5 years	9	11.3	11.3	11.3
	5 years to 10 years	16	20.0	20.0	31.3
	10 to 15 years	22	27.5	27.5	58.8
	15 to 20 years	16	20.0	20.0	78.8
	Above 20 years	17	21.3	21.3	100.0
	Total	80	100.0	100.0	
Monthly Income	Less than Rs 20,000	14	17.5	17.5	17.5
	Rs 20,000 – Rs 40,000	20	25.0	25.0	42.5
	Rs 40,000 – Rs 60,000	24	30.0	30.0	72.5
	Rs 60,000 – Rs 80,000	11	13.8	13.8	86.3
	Rs 80,000- Rs1,00,000	8	10.0	10.0	96.3
	Rs 1,00,000- Rs1,20,000	2	2.5	2.5	98.8
	Rs 120,000-Rs 140,000	1	1.3	1.3	100.0
	Above Rs 1,40,000	-	-	-	-
	Total	80	100.0	100.0	
Type of Family	Nuclear Family	49	61.3	61.3	61.3
	Joint Family	30	37.5	37.5	98.8
	Total	1	1.3	1.3	100.0
No. of members in the family	Less than 4 members	19	23.8	23.8	23.8
	4 to 6 members	37	46.3	46.3	70.0
	6 to 8 members	13	16.3	16.3	86.3
	More than 8 members	11	13.8	13.8	100.0
	Total	80	100.0	100.0	
No. of Children	One	16	20.0	20.0	20.0
	Two	35	43.8	43.8	63.8
	Three	27	33.8	33.8	97.5
	Four	2	2.5	2.5	100.0
	Total	80	100.0	100.0	
Working Hours	5 hours	6	7.5	7.5	7.5
	6 hours	9	11.3	11.3	18.8
	7 hours	19	23.8	23.8	42.5
	8 hours	45	56.3	56.3	98.8
	9 hours	1	1.3	1.3	100.0
	Total	80	100.0	100.0	

Source: Primary data

It is seen from Table 1 that most of the sampled staff members belonged to the age group of below 30 - 40 years of age (with a valid percentage of 41.3%), while majority of the sampled respondents were Assistant professors (53.8%). It is also observed that majority of the respondents were employees of Unaided colleges (48.8%). 27.5% of the sampled staff members are having 10 to 15 years of experience. A majority of the 36% of the respondents are earning between Rs 40,000 to Rs 60,000 every month. A majority of the respondents belong to

nuclear family (61.3%), with 2 children (43.8%) and most of them are working for 8 hours a day (56.3%).

Descriptive Statistics for Different Age Groups among Private and Public Sectors

Mean and standard deviation for each variable has been listed in the following tables. Table 2 explains the response of sampled staff members who are between 30 to 40 years old belonging to Aided and Un-aided Educational institutions.

Table 2 Descriptive Statistics of staff members between 30 - 40 years old

Statements	Aided		Un-Aided	
	Mean	SD	Mean	SD
Balancing Factors				
1. Time management is important in balancing work and family life.	4.7727	0.42893	4.5000	0.53452
2. Family co-operates in performing the work.	4.4091	0.59033	4.3750	0.51755
3. Cretch facility in the work place reduces the mental stress	4.0455	0.57547	3.7500	0.88641
4. Work bothering even after working hours.	3.7273	0.63109	3.2500	1.38873
5. Being a mother makes you less valuable as an employee	2.5455	1.14340	3.5000	0.92582
Organisational Support				
6. Enjoy the work	4.1818	0.95799	3.8750	1.24642
7. Flexibility given by higher officials in fulfilling the parental responsibility at home.	3.9091	0.86790	4.0000	1.30931
8. Benefitted by any training on WLB conducted by organization	3.7273	0.70250	3.6250	1.30247
9. Work flow is effective and not monotonous	3.9091	0.52636	3.2500	1.38873
10. Paid well for satisfying the personal and family needs	4.1364	0.77432	3.2500	1.38873
Motivational Factors				
11. Satisfied with paid holiday programs of organization	3.7727	0.92231	3.3750	1.50594
12. Work for long or late hours	3.4091	1.05375	3.3750	1.30247
13. Occupational status gives pride and prestige	4.4091	4.4091	4.0000	1.30931
14. Miss quality time with your children	3.3636	1.09307	4.0000	1.60357
15. Work recognition	3.9091	1.01929	3.2500	1.38873
Career Advancement				
16. Enough time to get updated with latest trends of your job.	3.2727	0.82703	3.3750	1.50594
17. Denial of relocation affects promotion/career growth	3.5000	1.01183	3.8750	1.24642
18. Motherhood is hindering the career growth	3.1364	1.20694	3.8750	1.24642
19. Aware of organization's work-life balance policies	3.6364	0.95346	3.6250	1.50594
20. Self-appraisal is done at regular intervals	4.1364	0.63960	3.3750	3.3750
Psychological Factors				
21. Children showing the signs of distress due to lack of attention	3.5455	0.85786	3.3750	3.3750
22. Complete all work at work place itself	3.0455	1.04550	3.1250	1.64208
23. Work-life imbalance is one of the reasons in delaying of child birth.	3.1364	1.28343	3.5000	1.60357
24. Facing maternal wall discrimination at organization.	3.3182	0.89370	3.3750	1.30247
25. Frequent health problems in children	3.30247	1.03719	3.7500	1.58114

Source: Primary data

Mean and standard deviation has been calculated for every variable of Aided and Un-aided colleges. Working mothers of 30 to 40 years old of both Aided and Un-aided colleges had stated that time management is important in balancing work and family life (mean = 4.7727 & 4.5000). Being a mother makes less valuable as an employee in an

organization to some extent was the opinion of the staff members of Un - aided colleges (3.5000), while it was not so for the staff members of Aided colleges (2.5455). Hence, the working mothers of Aided colleges are not affected by the **balancing factors**, as that of working mothers of Un - aided colleges.

Under the **Organisational support variable**, working mothers of Aided colleges enjoy their work more (mean = 4.1818) than that of Un-aided college staff members (mean = 3.8750). Aided college working mothers are benefitted by training or any workshop on work-life balance conducted by their institution (mean = 3.7273), while the responses of working mothers of Un - aided colleges show that they are benefitted only to some extent by such programs (mean=3.3750). This clearly shows that the staff members of Un - aided college are affected by organizational factors. Hence measures have to be taken by the employers of Un - aided colleges to address this issue.

Under the **Motivational factors**, working mothers of both Aided and Un-aided colleges agreed that their occupational status gives them pride and prestige in the society to a great extent (mean=4.4091, mean=4.0000). Another factor that motivates the staff members of Aided colleges is that their work are being recognized by their employers (mean = 3.9091) which is not to that extent in

Un-aided colleges (mean = 3.2500). Hence the samples are affected by Motivational factors.

In the **Career advancement factor**, the staff members of Aided colleges agreed that their Self-appraisal is done at regular intervals in their college (mean = 4.1364), which is not so in Un-aided colleges (mean = 3.3750). The staff members of Un - aided college expressed that Motherhood is hindering the career growth to a great extent (mean = 3.8750), which affects the work life balance of Aided college working mothers only to some extent (mean = 3.1364).

In **Psychological factor**, working mothers of Aided colleges felt that their children show the signs of distress due to lack of attention (mean = 3.5455) and the children of Un-aided staff members were also affected to some extent (mean = 3.3750). Work-life imbalance among working mothers do affect their children by having frequent health problems. But this was disagreed by responses of the staff members of Un - aided colleges (mean=3.7500) while, it affected to some extent in the respondents of Aided colleges {mean=3.30247}.

Table 3 Descriptive Statistics for Responses of Overall Age Group

Age in years	Nature of college	Balancing facto		Organisational		Motivational fa		Career Advance		Psychological fac	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
< 30	Aided	4.2000	0.7111	3.1725	1.1000	3.5000	0.69993	3.7500	0.88941	4.4000	0.71132
	Un-Aided	3.2000	0.44721	3.2000	1.09545	3.4000	0.54772	3.4000	0.54772	4.28010	0.54772
30-40	Aided	3.9091	0.29424	3.9545	0.21320	3.7727	0.52841	3.5000	0.51177	3.1818	0.73266
	Un-Aided	3.1000	0.53452	3.7500	1.38873	3.3750	0.74402	3.75000	0.88641	3.5000	0.75593
40-50	Aided	4.4000	0.71132	4.000	0.70711	3.4000	0.54772	3.4000	0.54772	3.2000	0.83666
	Un-Aided	3.9333	0.25820	3.3333	1.11270	3.5333	0.63994	3.2667	0.59362	3.26670	0.79881
> 50	Aided	4.000	0.78711	3.5000	0.70711	3.5000	0.70711	3.4000	0.70711	4.27010	0.53662
	Un-Aided	3.7273	0.46710	3.5455	1.21356	3.3636	0.67420	3.2727	0.78625	3.1818	0.75076

Source: Primary data

Interpretation

Mean and standard deviation has been calculated for the five variables separately for the staff members of Aided and Un-aided colleges at various age levels in table 3. All age group of both colleges totally agree to the point that time management is important in balancing work and family life and the family of both aided and un-aided college staff members, co-operate with them in performing their work. Employees of both colleges accepted that their occupational status gives them pride and prestige. Work flow is effective and not monotonous has been disagreed by both college staff members.

Findings

Work-life balance is a subject which is concerned to almost all the employers in an organization. HR

profession's concern for better workplace is to address the work-life balance issues and create a great place to work. The study reveals that in the age group of less than 30 years, working mothers of both Aided colleges and Un-aided colleges enjoy their work and are happy working with/under their HODs. This means they are influenced by the motivational factors. On the other side working mothers of Un-aided colleges are not much benefitted by the workshops on work-life balance and they do not get sufficient time to get updated with latest trends in their job. This means organizational support factors affects their work-life balance. Un-aided colleges lag behind in terms of career advancement programs when compared to Aided colleges. At the age group of 30 to 40, employees of both Aided colleges and Un-Aided colleges are not affected by the balancing factors, psychological factors and Career

advancement factors. This age group of working mothers also enjoys their work. But they are affected by organisational support factors and Psychological factors to some extent.

Suggestions

Employers of Educational Institutions can facilitate WLB with many schemes that can attract women employees and satisfy their needs. Some of these are i. Financial planning services for employees who need them ii. Flexi-timings iii. Work sharing iv. Part time employment v. Leave plans - both paid and unpaid - to suit employee's needs vi. Subsidized food plans vii. Insurance plans viii. Counseling services for problems like managing work and the home ix. Rest rooms, food preparation services x. Jobs with autonomy and flexibility xi. Realistic workloads xii. Review of work processes to see if the burden on employees can be lightened xiii. Maintaining dialogue with the employees and considering their suggestions on a continuous basis.

Conclusion

Careful planning and personal effort is the advice from those who have found balance in both career and home life. As one respondent summarized, "Plan, prioritize and schedule as efficiently as possible... and don't be afraid of hard work". Work-life balance is a person's control over the conditions in their workplace. It is accomplished when an individual feels dually satisfied about their personal life and their paid occupation. In our increasingly hectic world, the work-life strategy seeks to find a balance between work and play. A sentence that brings the idea of work life balance to the point is: "Work to live. Don't live to work."

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BANKING ON INDIAN ECONOMY

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Introduction

Macro economics is the branch of economics concerned with the study of nation's total economic activity. In contrast to micro economics, which focuses on studying resource allocation and price determination, in individual markets for goods and services, macro economics seeks to understand the overall structure and performance of a nation's economy. The aggregation and a consideration of the role that money plays are the distinguishing features of macroeconomics. Macro economic variables, which are used to indicate a country's economic growth is broadly grouped as aggregate output and employment; money growth and inflation and measures of international trade.

Statement of the Problem

Given the indicators to identify the direction of economic growth, the current era of internationalisation of markets, demand, more inclusive measurements in order to trace market movements, given the crises factors such as speculative attack, self fulfilling anticipations and moral hazard problems. The present study aims at providing realistic solutions, in order to make a fair assessment of the economy, in addition to the already existing measurement variables.

Objectives of the Study

The following are the objectives to the study:

- To understand the challenges prevailing in measuring productivity, of employees
- To throw light on underground economy
- To understand the reasons behind engagement in underground economy
- To offer suggestions based on the findings of the study.

Scope of the Study

The present study is based on the prevailing bottlenecks in Indian economy. The result of the study will enable the policymakers to tap the hidden treasures and hence will enable in contributing to making an objective assessment of the economy

Framework of Analysis

The study primarily relies on reports in books, websites and those published by the Government of India.

Findings of the Study

Productivity is the number of units an individual produces in a given period of time. Unlike physical sciences where the background conditions to test theories is 'controlled', macroeconomists function in one sense, like astronomical researchers, who cannot act upon them but can observe. In this perceived world, data revealed on productivity, normally ignores the life style, climatic conditions and demographic variables of individual nations. Indians make global transition by being employed in places across the globe. There emerges elite class of Indians, who could function better in a western environment, in contrast to the same jobs performed in homeland. The economic Survey 2017 shows an increase in the number of Indians employed abroad and upward swing is expected in the years to come. What baffles economists is that what determines the long run output and employment performance of an economy and the year to year changes in the performance that results in changes in the productivity in a country.

The shadow economy – also known as underground economy, is the portion of a nation's economy devoted to hidden endeavours that are not included in official measures of the total economy. Many of these endeavours keep a number of people gainfully employed, and account for significant flows of income. Most of them are however

illegal. The recent demonetisation move has helped in retrieving money, thereby bringing into account what was hidden. There had been a slump in the economic activity, reflecting in a decreased economic growth of the nation beginning from November, 2016. The main reason for such shadow economy is to evade taxes. In India there is not a sector where shadow economics prevail.

The policies pronounced by the Government of India create havoc among ordinary and simple masses, like that of a sudden announcement of demonetisation move. A sense of security and trust is required to be established in the minds of people before any policy is announced. Perhaps, the move to demonetisation is laudable in terms of curbing money flow in underground economic areas. The change already begun will take a slow momentum, to steadily rise and make India move forward. What is more important is to see if the vulnerable in the economy stands benefitted. India is not a nation with only elite members, but is made of people with poor accessibility to food, clothing shelter and education. Many of them are quite unaware of the policies and benefits offered by the Government of India from time to time. It is also identified that many a times, actionable welfare schemes is not operated. Accountability and transparency remains opaque when it comes to implementation.

Suggestions

• To The Policy Makers

The following is recommended for adoption to bring about a balanced economic growth. Let the body corporate that makes huge profit(Huge Profit be defined by the Ministry of Economic and Corporate Affairs decide from time to time) be asked to fund out their profits, a certain sum, to the development of socially and economically backward areas, under the aegis of a district nodal officer. This can be made mandatory of all types of companies and all sorts of businesses. May an independent officer check if the funds are properly utilised, and the report of the same with proofs be submitted to the body corporate, and can be placed in the AGM of the company.

Any mal practice in this can be seriously viewed, even if the Central Government is interested in this disbursing of funds. The Indian Administrative Service may be more empowered in this regard. All prevailing tax concessions and holidays can be wiped off proactively. Let the employment of men and women into any sector be it private or public, be made on merit and without bribes. This calls for institutions to take a stand on their personal commitment to the cause of the country.

Let maintenance of books of accounts; be made compulsory for all industries, irrespective of their size and

nature of functioning. May they be audited by the Chartered Accountant, authorised in this behalf by the Institute, and the audit fees be provided by the Institute or the Government, based on the necessity and volume. This payment can be made after the production of necessary documents.

More accountability is to be on the part of managers, middle and higher level in order to have transparency and for checks and balances in the system. The proposed idea when implemented will set a stage for internal audit of each other, and thereby economic growth and in the long run economic development.

• To The Entrepreneurs

Brain rain is required to keep productivity up in India. This goes hand in hand with the motivation offered, both monetarily and non- monetarily. Let the employees be offered better benefits with the existing ones, especially in monetary forms, Employee Development Programmes are required to be offered at free of cost or at concessional rates to bring about a holistic development of an individual. This will nurture 'belongingness' among members, which will result in propelling productivity in India. Let there be not much botheration about the bases for measurement of performance indicators as of now, but let the significance of each individual to the organisation be stressed upon. This bond will improve performance in the long run.

Conclusion

All these call for a powerful role of education institutions, in creating educationists, economists, policy makers, policy implementers, entrepreneurs, scientists and such others. Classroom exercise can be made more enriching by the teachers, in only providing objective coaching but also in inculcating a sense of love and passion to learning. An arm's length distance with the students will help in nurturing good relationships, which will facilitate students to come out of their shell. Attitude and personality of the youth lies much in the hands of teachers, who need to walk that extra mile in making India a paradise to live and work for. The Indian economy which primarily is labour intensive can thus scale new heights when human resources are developed to perform better still. Thus the factors to production can be used synergic ally to develop, and pro create an economy where everything is for all and all are for everything.

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STUDENTS' SKILL IN THE USAGE OF COMPUTER (WITH SPECIAL REFERENCE TO THIRUPPATTUR TALUK OF SIVAGANGAI DISTRICT)

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Abstract

Computer is update mechanism for the education and it is not only for education but also in all global, cultural, economical life standards. The present generation of students' is being surrounded by high level of digital technology that motivates them to have a high level of confidence while searching for information on the Internet and electronic sources. Computers and the internet not only help students to explore creativity and imagination but also help to understand technologies. Therefore, the study handled the attitudes of students towards computer and its new trends. In order to be reflective skill in the usage of computer and its facilities, there will be examination of the thoughts, attitudes of students towards computer. Because based on the constructivist perspectives, students' have great role in the learning process and have obstacle in the acquisition of computer skill. The sample population for this study comprises of 130 both school level and graduate level selected on the basis of convenience sampling technique. The data have been analyzed to verify the hypotheses framed in line with the objectives of the study. The data collected have been grouped and classified and tabulated with the help of a computer for applying the statistical data, namely percentage analysis, chi-square test and Kolmogorov-Smirnov test etc., thereby facilitating fast analysis and easy interpretation. The study has been aimed to alert the young generation there should be a conscious effort by the institutions to improve the computer skills of its students since there is obstacle in acquisition of skill and their ability to use resources.

Keywords: Computer skills, attitude factors, obstacle in acquisition factors.

Introduction

Today Computer is the main support for the students learning developments. Computer based instruction and computers programs, tools as itself provides much facilities and supports to students' educational life. Computer is update mechanism for the education and it is not only for education, these developments affect all global, cultural, economical life standards as well. Therefore; the research based study handled the attitudes of students' towards computers and its new trends. By the way; required research reflects the consciousness about the use of computer in everyday life and educational cycle. Computers provide fast, easy research and analysis for the students' studying field. As a technological tool, it provides the equal standards, opportunities and easy path for the successful understanding and also meaningful learning for students'. In order to be reflective, recommend on the usage of computers and facilities, there should be examination of the thoughts, attitudes of students' towards computer. Today's children are the first generation of the "digital age." They are being raised in a society that is changing rapidly as a result of the influx of new computer-

based technologies that provide more pervasive and faster worldwide links to commerce, communication and culture. In order to be reflective on the usage of computers and facilities, there should be examination of the thoughts, attitudes of students towards computer. Because based on the constructivist perspectives, students' have great role in the learning process and much affected from the acquisition of computer skills.

Literature Review

The present generations of students are being surrounded by high level of digital technology that motivates them to have a high level of confidence while searching for information on the Internet and electronic sources. Therefore, the ability and knowledge of computer skills will enable them use the online resources effectively. It was observed that undergraduate students are looking for a convenient, time saving and fast response as they move from physical collections to the digital library (Lukersiwicz)¹. The increase use of computer and the level of online searching by students and academics alike is an important measure of technological development in an

academic environment. Thus, the computer is an electronic device that accepts data, process data, store data and disseminates data as meaningful output. Allison², pointed that, those without basic computer skill have difficult time finding job and stay connected with the local and global society. It has already been demonstrated that the demand for computer-related skills has moved from insignificant to critical for most academic library positions. The acquisition of computer and information technology skills presents universities with significant challenges. Computer literacy skill problems continued to be identified throughout the 1990's (Blyth and Royle)³. The teaching of computer literacy to students is of increasing importance as the dramatic increase in the use of the computer has come to the point that it is used for a range of learning task which is now a basic learning skill, as much as taking notes and reading texts (Reid)⁴.

Need for the study

Computers are used in various fields like business, pharmacy, music, education, engineering, defense, transportation, and cooking as they help to ease certain tasks, provide information faster, and speed up the work. Wherever you go whether it is a mechanic's shop or a fast food restaurant, some form of technology and computers are being used. It may be a computerized cash register or the machine that cleans out your engine but it is a computer and everyone needs basic computer skills to function in today's job market. By computer education, we mean learning how the basic concepts related to a computer works, gaining the basic knowledge of computer operation, knowing about the basic components of a computer, the basic concepts behind the use of computers and knowing how some of the elementary computer applications constitute computer education. Learning about the computer basics followed by a practical experience of using a computer is the key to computer education. As computers are widely used today, acquiring computer education is the need of the day today.

Purpose of the Study

The purpose of this study is to investigate factors that skill in the usage of computer and the obstacle in acquisition of computer skill among students' in Thiruppattur Taluk of Sivangangai District. It is also hoped to come up with factors that should be considered to improve skills acquisition among the students'.

Objectives of the Study

To establish the attitude of the students' their usage of computer skill and it's have great role in the learning process and have obstacle in the acquisition of computer skill.

Limitation of the Study

The study has been conducted only in Thiruppattur Taluk of Sivangangai District. It may not represent the students' skill in their usage of computer in India. The sample size of 130 is relatively small for the study to be comprehensive.

Hypotheses of the Study

Hypotheses are usually considered as the principal instrument in research. Its main function is to suggest new experiments and observations. According to Werkmeister⁵, "the guess, the researcher makes is the hypothesis which either solves the problem or guides the researcher for further investigation". The following hypotheses are formulated in order to test the stated objectives of the study.

- "There is no significant relationship between the Age of the students' and the level of opinion about their usage of knowledge in computer".
- "There is no significant relationship between the Gender of the students' and the level of opinion about their usage of knowledge in computer".
- "There is no relationship between the educational qualification and the opinion of students' about their usage of knowledge in computer".
- "There is no significance difference in their Opinion regarding the obstacle in acquisition of skill in students."

Methodology

The study is based on the survey method. In view of the above mentioned objectives, a survey was undertaken with the help of a well-structured questionnaire in Thiruppattur Taluk of Sivangangai District.

Sources of the Data

This empirical and exploratory study is based on both primary data and secondary data. Primary data has been used as the main source of the study and it was collected from 130 respondents. In the current study, it refers to the population of students' who are school level and graduate level studies in the study area of Thiruppattur Taluk of Sivangangai District. The primary data was collected

through a pre-structured interview scheduled. The secondary data has been collected from books, journals, published and unpublished materials and also from websites.

Sampling Design

The survey was conducted on the basis of convenience sampling method. For developing a sample design, totally 130 respondents were selected for this study.

Statistical Tools Used in the Study

The data have been analyzed by using appropriate statistical tools such as percentage analysis, Chi-square test and Kolmogorov-Smirnov Test (here after known as KS – Test) was applied.

Percentage Analysis

The percentage ratio is a simple arithmetical expression of the relationship of one number to another. It may be defined as the indicator of two mathematical expressions. The percentage analysis is mainly used to describe the percentage of the respondents falling under each category. Further, the percentage analysis is applied to all the questions mentioned in the questionnaire. The results are presented in the form of tables and suitable interpretations are also given.

Chi-square Test

For testing the relationship between socio-economic variable of the students and the usage of knowledge in computer, Chi-square Test has been employed. The formula for Chi-square Test is as follows.

$$\chi^2 = \sum \frac{(O - E)^2}{E}$$

With (r – 1) (c-1) degrees of freedom

where $E = \frac{\text{Row Total} \times \text{Column Total}}{\text{Grand Total}}$

O = Observed Frequency

E = Expected Frequency

r = Number of rows in a contingency table

c = Number of columns in a contingency table

The calculated value of Chi-square is tested with the Table value. The Chi-square for given level of significance is usually at 5 per cent level. If the calculated value (CV) is less than the table value (TV), the null hypothesis is accepted and otherwise is rejected. The following null

hypotheses have been framed for analysing the opinion of the respondents.

K.S Test

In K.S. test, the cumulative observed proportion is calculated on the basis of observed numbers. In each case, the observed proportions are calculated by dividing the respondents. For all graduations, the same method of calculation is followed. On the basis of observed proportion cumulative proportion is calculated on the basis of expected proportion. There are five graduations and each graduation (i.e. 20) is assigned as expected proportion on the basis of proportion and the cumulative expected proportion is calculated. For each graduation, the difference between cumulative observed proportion and cumulative expected proportion is calculated. The largest difference will be taken as calculated value.

The table value at both 95 per cent and 99 per cent

confidence level is $\frac{1.36}{\sqrt{n}}$, that is $\frac{1.36}{\sqrt{130}} = 0.12$. Since

the calculated value is greater than the Table value, the null hypothesis is rejected.

Formula

$D = O - E$

D – Refers to calculated value

O – Refers to cumulative observed proportion and

E – Refers to cumulative expected proportion.

Period of the Study

The study was carried out in the month of April 2017 to June 2017 in Thirupattur Taluk of Sivagangai District.

Analysis and Interpretation

Table 1 Percentage Analysis

Personal Factors	(%) age	Overall opinion	(%) age
1. Age		2. Knowledge of Computer	
10 To 15 Years	12.31	High	43.85
15 To 20 Years	39.23	Moderate	49.23
20 To 25 Years	35.38	Low	6.92
Above 25 Years	13.08	3. Owning Computer/Laptop/Tablet	
		Yes	79.23
4. Gender		No	20.77
Male	45.38	5. Computer's Use in their Life	
Female	54.62	High	60.00
		Moderate	28.46
Educational Qualification		Low	11.54

School Level	22.31	6. Computer Helpful in their Studies	
Under Graduate Level	42.31	High	59.23
Post-Graduate Level	18.46	Moderate	24.62
Other Level	16.92	Low	16.15

Source: Computed Data.

The present study is an attempt to examine the student's skill in their usage of computer in the study area. To assess all the aspects of the student's Age, Gender, and Educational Qualification of the respondents are taken into consideration. Hence, such a detailed analysis will elicit a clear picture of the respondents selected for the study. Age-wise distribution of the respondents will be one of the major elements in understanding profile of the respondents. Age of the respondents certainly has a strong influence to the computer knowledge. Age is an important factor to decide the nature and type of skill and usage of their computer knowledge. **Table 1** shows that 39.23 per cent of the respondents belongs to the age group of 15-20 years, whereas 35.38 per cent of the respondents belongs to the age group of 20-25 years, 13.08 per cent of the respondents belongs to the age group of above 20 years and 12.31 per cent of the respondents are 10-15 years. It is evident from the Table 1 that among the 130 respondents surveyed, 54.62 per cent is male and 45.38 per cent is female. The Educational status of the student's is a significant factor. The above table shows that 42.31 per cent of the respondents are Under Graduate Level, 22.31 per cent are School Level, 18.46 per cent are educated Post-Graduate Level and 16.92 per cent are Other Level respondents. Opinion of 49.23 per cent of the respondents express about the Knowledge of Computer as Moderate in the study area, followed by 43.85 per cent of the respondents express about the Knowledge of Computer as High in the study area and 6.92 per cent express about the Knowledge of Computer as low. The views of 79.23 per cent of the respondents confirm that have Computer/Laptop/Tablet, whereas 20.77 per cent of the respondents confirm that doesn't have Computer/Laptop/Tablet. Opinion of 60.00 per cent of the respondents express how computer is useful in their life as high, followed by 28.46 per cent of the respondents state as moderate and 11.54 per cent of the respondents state as low. Opinion of 59.23 per cent of the respondents say that computer help in their life as high,

followed by 24.62 per cent of the respondents say that computer help in their life as moderate and 11.54 per cent of the respondents say that low.

Respondent's Personal Factors and Opinion about their Usage of Knowledge in Computer

Chi-square test has been applied. For that purpose testing the relationship between personal factors of the students and their usage of knowledge in computer.

- Fundamentals of Hardware and software
- Fundamentals of Internet
- Using Microsoft Word, Excel, PowerPoint and etc.,
- Create/Save/Print Documents
- Insert Tables/Charts and Functions/Formulas in Spreadsheets
- Downloading the information from Internet
- To Sending email Attachments

Respondent's Age and Opinion about their Usage of Computer

In order to test whether there is any significant difference between the opinions of age of the students Chi-square test has been applied. For that purpose, the following null hypotheses have been framed. "*There is no significant relationship between the Age of the students and the level of opinion about their usage of knowledge in computer*". Table 2 shows the computed results of Chi-square test.

Table 2 Chi-square Test to Determine the Age and Opinion of Students' regarding their Usage of Knowledge in Computer

Particulars	Value	d.f.	P – value
Pearson's Chi-Square	2.948	6	0.815
Likelihood Ratio	3.085	6	0.798
No. of Valid Cases	130		

Source: Computed Data.

It is evident from **Table 2** that the P value is greater than 0.05. The null hypothesis that there is a relationship between the age of the respondents and their opinion on performance is accepted. Hence, it is concluded that there is no significant relationship between the age of the students and their opinion about the usage of knowledge in computer.

Respondent's Gender and Opinion about their Usage of Computer

In order to test whether there is any significant difference between the opinion of the male and female

students, Chi-square test has been applied. For that purpose, the following null hypothesis has been framed. *"There is no significant relationship between the Gender of the students and the level of opinion about their usage of knowledge in computer"*. Table 3 shows the computed results of Chi-square test.

Table 3 Chi-square Test to Determine the Gender and Opinion of Students' regarding their Usage of Knowledge in Computer

Particulars	Value	d.f.	P – value
Pearson's Chi-Square	1.693	2	0.429
Likelihood Ratio	1.690	2	.0430
No. of Valid Cases	130		

Source: Computed Data.

It is evident from Table 3 that the P value is greater than 0.05. The null hypothesis that there is a relationship between the gender of the students and their opinion on performance is accepted. Hence, it is concluded that there is no significant relationship between the gender of the students and their opinion about the usage of knowledge in computer.

Respondent's Educational Qualification and Opinion about their Usage of Computer

For finding out the relationship between the literacy level and the opinion of performance, the following null hypothesis is formulated. *"There is no relationship between the educational qualification and the opinion of students about their usage of knowledge in computer"*. To test the formulated hypothesis Chi-square test is applied. The computed results of Chi-square test are presented in Table 4.

Table 4 Chi-square Test to Determine the Educational Qualification and Opinion of Students' in Usage of Knowledge in Computer

Particulars	Value	d.f.	P – value
Pearson's Chi-Square	4.051	6	0.670
Likelihood Ratio	4.464	6	0.614
No. of Valid Cases	130		

Source: Computed Data.

Regarding the educational qualification and the opinion of students about the usage of knowledge in computer, P value is greater than 0.05 and so the null hypothesis is accepted. Hence, it is concluded that the opinion of students differ significantly with the educational qualification of the students.

Application of K.S. test

In order to study the opinion regarding the affecting acquisition of Computer skills in students, the K.S. Test

has been used. For the purpose of this study, the following null hypothesis is framed. *"There is no significance difference in their Opinion regarding the obstacle in acquisition of skill in students"*. The result of K.S. Test is given in Table 5.

Table 5 Result for K.S. Test about Opinion of the Students' with Regard to the obstacle in acquisition of skill in students

Sl. No.	Statement	Calculated Value of K.S. Test	Table Value of K.S. Test	Results
1.	Attitude of Learners	0.55	0.12	N.S.
2.	Learning Resources	0.38	0.12	N.S.
3.	Age of Learners	0.23	0.12	N.S.
4.	Indiscipline among Learners	0.23	0.12	N.S.
5.	Entertainment and other Reasons	0.19	0.12	N.S.
6.	Social Networking	0.14	0.12	N.S.

S. – Significant, N.S. – Not Significant

The result of K.S. test gives a clear idea about the opinion of students with regard to the computer skills of its students, since there is obstacle in acquisition of skill and their ability to use resources. According to K.S. Test, students have different opinion about the individual statements to prefer to go for affect acquisition of skills in students.

The result of K.S. test concludes that there is significant relationship between the opinion about the obstacle in acquisition of skill in students like Attitude of Learners, Learning Resources, Age of Learners, Indiscipline among Learners, Entertainment and other Reasons, Entertainment and Social Networking.

Suggestions and Conclusion

The basic computer skill that every person regardless of age should know includes common application programs such as Microsoft Word, Microsoft Excel, Power point and Notepad. They should know how to go online, check their email account, and send mail with an attachment and how to use simple email features. The use of email and familiarity with the internet are becoming basic requirements for almost every job. The point is this, no matter where you find employment, there is a good chance a computer will be a basic tool you will have to

use. It is in your best interests to start off computer literate. It will help you get a job and it will help you advance in your career. There should be a conscious effort by the institutions to improve the computer skills of its students since there is obstacle in acquisition of skill and their ability to use resources.

To be in the race, it is very important to take computer education. Computers, which have such a wide variety of applications, are indeed ruling society. To keep up the pace in this fast life of today, computer education is extremely important. Computers are an integral part of life and so is computer education. At least now let us understand the true need of computer education and support our children, youths as well as all regardless of age to pursue computer education.

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A STUDY ON FACTOR INFLUENCING THE CONSUMER IN CHOOSING E-TAILING

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Abstract

In the past couple of years, there has been a drastic change in the way consumers shopping. Even though consumers continue to purchase from a retail outlets, they feel very convenient to shop online since it helps the customer from not personally visiting the shops. Online shopping has its own advantages, it reduces the effort of travelling to a retail outlet. Purchase Decisions can be made from home looking into different Choices and prices can be easily compared with the competitor's products. This study has helped us to gather the views of online customers with respect to what they expect and what has made them remain satisfied. The objective of this research work is to measure the factor influences to choose customers on E-Tailing. A convenient sampling technique method has been used by selecting 200 respondents as a sample size. The questionnaire has been structured to collect 200 respondents' samples and statistical tools namely percentage analysis, Garrett Ranking technique, chi-square test and student 't' test were applied with the help of SPSS software to arrive appropriate result. The study is aimed at finding out how greater is the consumers' awareness about expectations, requirements, preferences and tastes about E-tailing services which are backbone of any successful business. The study has examined whether consumers' satisfaction are fulfilled in every way through different services of E-tailing. The study has also examined if the service providers see to it that the consumers are fully satisfied at different levels. The present study finally has concluded that the customers are fully satisfied with the (E-tailing) online method of shopping.

Keywords: Factors Influencing, E-tailing, effort, expect, requirement, preference, satisfied and online method of shopping.

Introduction

In the past couple of years, there has been a drastic change in the way consumers shopping. Even though consumers continue to purchase from a retail outlets, they feel very convenient to shop online since it helps the customer from not personally visiting the shops. Online shopping has its own advantages, it reduces the effort of travelling to a retail outlet. Purchase Decisions can be made from home, looking into different Choices and prices can be easily compared with the competitor's products. Online shopping offers the customer a wide variety of products and services where they are able to compare the price quoted by different suppliers and choose the best deal from it. Internet marketing is conceptually different from other marketing channels and internet promotes a one to one communication between the seller and the end user with round the clock customer service. Today, business internet marketing is the fastest growing segment of online commerce. The major difference between traditional and online selling is the extent of interaction between the consumer and the seller. There is much more electronic interactivity with the consumer in the form of

emails and FAQs. Through FAQs, the consumer's questions on shipment, payment, product, policies and other customer concerns can be addressed effectively. It is very important for businesses to understand the customer satisfaction and because some the customer satisfaction are required thing for the wellbeing, prophet and long term growth of the firms.

The internet has given birth to entirely new business models and opened completely more opportunities for global marketing. To survive in competition most of the companies are looking for unconventional forms of marketing. Internet is perhaps the best unconventional form of marketing that has been embraced by the companies. Since internet is attracted by big potential, thousands of dot com companies are born every day. Internet allows E-tailing to enter into global market at reasonable cost. It offers E-tailing inexpensive and sophisticated tools for advertising. The ever increasing mainstream activity on the internet has opened up a plethora of business opportunities for marketers. According to internet lives stats website 40% of the world population using internet connection today and 2,925,249,355 internet

users are there all over the world which is 7.9% higher than last year 2016, The number of consumer goods and service is still growing, however not only number of online shoppers grow the volume of their purchases also increasing proportionally. Influencing a customer is extremely crucial on the internet due to the lack of physical manifestation on the internet. In a digital world where physical interaction is more or less absent, and product qualities and benefits must be presented in a convincing way over the wired network, influence becomes increasingly important. Customers tend to choose provider that influence him more. If consumers trust e-tailing then they will feel comfortable in doing transactions and disclosing personal information to them. Influence a consumers is one of the challenges that online firms have to confront. So it is of utmost importance for the online merchants to understand the factors influencing online consumers in e-tailing.

In other words we could say that to measure how successful the businesses are it is considered in terms of how they influence their customers are and economic studies on customer satisfaction with regards to physical store shopping. This increases the importance of our research work and the need to study about E-Tailing. This study has helped us to gather the views of online customers with respect to what they expect and what has made them remain satisfied. The objective of this research work is to measure the factor influences to choose customers on E-Tailing. Better prices, Convenience, Variety, Fewer traps and Discreet shopping are the top five reasons to shop online. Many people browse through popular ecommerce stores and search engines to find whatever they are looking for. While there are some disadvantages to buying products online, there are many more advantages and benefits. These are the top five reasons to shop online.

- Reduces travel necessity, time and energy consumption
- Internet marketers comparatively offer products / services at a cheaper price and soft service as well.
- Customers can window shop a variety of products with utmost comfort from home
- The price and benefits offered by various product / service providers can be easily compared.
- The product quality can be analyzed in detail with the help of customer recommendation, ratings etc.
- Product information can be easily obtained from online catalogues, product description etc.
- Accessible any time of year or day

Review of Literature

Faisal Al-Madi, Abdelghafour Al-Zawahreh and Suha Al-Qawasmi, (2012)¹, In 1996, Amazon launched as an online bookstore. Once the company realized other goods were also at high demand, they expanded to offer a bigger selection of merchandise. The first online auction site was eBay auction; eBay, also began in 1996 and quickly grew in popularity. To this day, Amazon and eBay are the biggest online retailers. Today, most brick-and-mortar stores have an online counterpart with faster connections and better technology (Julie, 2012). Julie Knapp. (2012)², Suggests that consumers' attitude toward Internet shopping and intention to shop online depends primarily on the perceived features of online shopping and on the perceived risk associated with online purchase. These relationships are moderated by exogenous factors like "consumer traits", "situational factors", "product characteristics" and "previous online shopping experiences" (Faisal, 2012). Saba, T. and Rehman, A. (2012)³, The increasing dependence of firms on ecommerce activities and the recent failure of a large number of dot-com companies stress the challenges of operating through virtual channels and also highlight the need to better understand consumer behavior in online market channels in order to attract and retain consumers (Saba and Rehman, 2012). Ana, 2005; Saba and Rehman, (2012)⁴, While performing all the functions of a traditional consumer, in Internet shopping the consumer is simultaneously a computer use as he or she interacts with a system, i.e., a commercial Web site. On the other hand, the physical store has been transformed into Web-based stores that use networks and Internet technology for communications and transactions.

Company Profile

Flipkart, owned by a Singapore based holding company, is a E-Commerce company established in 2007 by Sachin Bansal and Binny Bansal. It operates exclusively in India, with headquarters at Bangalore, Karnataka.

Snapdeal is an e-commerce company based in India. It is a daily deals website that features discount offers across lifestyle segments such as dining, health & beauty, entertainment and travel. It also offers discounts on products like electronics, perfumes, watches, bags, sunglasses, coaching classes, apparels and mobile phones. Headquartered in Delhi, Snapdeal.com was launched in February 2010.

e-bay: Market capitalization: 36.68 billion Sales number/ revenue: 9.156 billion Number of employees approximately 17,700 Founder and Chairman of eBay is named Pierre Omidyar Founded on September 3, 1995.

Jabong.com is an Indian fashion and lifestyle e-commerce portal, selling apparel, footwear, fashion accessories, beauty products, fragrances, home accessories and other fashion and lifestyle products. The company is headquartered in Gurgaon, NCR. The site started operations in January 2012.

Amazon: Founded by Jeff Bezos in 1994 and went online in 1995. Named after the Amazon River: a place that is "exotic and different" it was almost called Cadabra as in Abracadabra. Started as an Online Bookstore that later diversified (CD's, DVD's, software, etc.). It went from a tiny startup operating on second-hand computers in a garage to a global company with 12 major retail websites.

Scope of the Study

1. It describes the level of usage internet with consumer satisfaction of what their expectation
2. It saves time and cost and level of better improvement of consumers.
3. Choosing of particular E-Tailing of what it provides with needs of consumer satisfaction.
4. It is the reason for consumer to prefer these off with all obligations with cost and time.

Importance of the Study

- E-Tailing important about the time consuming and easy of work with time and easy access of product with consumer satisfaction and needs of what expectation
- So, nowadays the E-Tailing is most and more usage among common people, for purchasing goods and needs of E-Tailing
- It is easy accessibility with time and way of purchasing products that the consumer expects.
- Trends are changing or moving day by day, e-tailing is also get improve in which it purchase of products are used through e-tailing

Objectives

1. To know the reason to choose the consumers tailing
2. To analysis the factors influence the consumers in choosing particular E-Tailing.
3. To measure the consumer Satisfaction Level of E-Tailing.

Hypothesis

Ho: There is no significant relationship between age, gender, educational qualification, occupation and monthly income of the consumers and their level of opinion about the factors influencing to choose E-tailing.

Ho: There is no significant difference between each segment and customers opinion towards the purchasing decision of goods from E-tailing business.

Limitation of the Study

The study has been conducted only in consumers influencing factors of E-tailing. It may not represent the problems faced by the consumers for choosing E-tailing. The sample size of 200 is relatively small for the study in the particular research topic.

Research Methodology

The present study is based on both primary and secondary data. The methodology followed under the study was descriptive research which includes survey and finding enquires. The main purpose of descriptive research is the description of state of affairs, as it exists at present.

Data Collection

Data refers to information or facts. It includes numerical figures, descriptive facts and qualitative information. The task of data collection begins after research problem has been defined and research plan has been decided.

Primary Data

In the study the primary data was collected from the consumers regarding their response of the people who purchase through online in various websites.

Secondary Data

Secondary data have been collected from published or unpublished sources. These have been obtained from various journals, research articles, seminar reports, newspapers, business firms, reference books and various operators' sites and others.

Sample Size

The sample size was decided on free consent by the researcher and the sample size is 200

Sampling Techniques

Convenience sampling technique has been used in this study. This method enables the researcher to complete the data collection within the stipulated time.

Tools for Analysis

The data which were collected from respondents was analyzed by using the following statistical tools: percentage analysis, Garrett Ranking Technique and chi-square test.

Percentage Analysis

It refers to a special kind of ratio, percentage comparison between two or more series of data. Percentages are used to determine relationships between the series of data. A finding the relative differences become easier through percentage. The percentage analysis technique has been used throughout the report to express the demographic profile and influencing factors of the respondents for choosing E-tailing.

Garrett's Ranking Technique

To find out the most significant factor which influences the respondent, Garrett's Ranking Technique is used. As per this method, respondents have been asked to assign the rank for all factors and the outcomes of such ranking have been converted into score value with the help of the following formula: An attempt has been made to analyze the various factors influencing the customers by using Garrett Ranking Method.

Percept position =	100 (Rij - 0.5)
	Nj

Where

Rij = Rank given for the i^{th} variable by the j^{th} respondent

Nj = Number of variables ranked by the j^{th} respondent.

With the help of Garrett's Table, the percentage estimated is converted into scores. Then for each factor, the scores of each individual are added and then total value of scores and mean values of score are calculated. The factors having highest mean value are considered to be the most important factor.

Chi-square Test

For testing the relationship between socio-economic factors and the overall opinion of the customers towards the factors influencing to choose E-tailing Chi-square Test has been employed. The formula for Chi-square Test is as follows.

$$\chi^2 = \sum \frac{(O - E)^2}{E}$$

With (r - 1) (c - 1) degrees of freedom

$$\text{where } E = \frac{\text{Row Total} \times \text{Column Total}}{\text{Grand Total}}$$

O = Observed Frequency E = Expected Frequency

r = Number of rows in a contingency table C = Number of columns in a contingency Table

The calculated value of Chi-square is tested with the Table value. The Chi-square for given level of significance is usually at 5 per cent level. If the calculated value (CV) is less than the table value (TV), the null hypothesis is accepted and otherwise is rejected. The following null hypotheses have been framed for analysing the opinion of the respondents.

$$\text{Percentage} = \frac{\text{No. of Respondents}}{\text{Total No. of respondents}}$$

Kendall's Co-efficient

Kendall's Co-efficient of Concordance Test is a non-parametric test. This test can be used to measure the ranking which is in the top position. It can be applied when there are more than two rankings to be measured. The ranks are given to statements based on the total scores. Hence the test has been applied to know the factors influencing the customers' opinion towards the purchasing decision of goods from E-tailing business. The factors influencing the customers' opinion towards the purchasing decision of goods from E-tailing business can be measured by using SPSS packages.

Table 1.1 Demographic Profile and Influencing Factors of Consumers

S. No	Factors	Classification	No. of Respondents	Percentage (%)
1	Gender	Male	143	71.5
2	Age	30-40	68	34.0
3	Educational Qualification	Bachelor Degree	78	39.0
4	Occupation	Employed	69	34.5
5	Income	₹10,000 – ₹30,000	72	36.0
6	Long you're Purchasing things in Online	Past 1year	84	42.0
7	Information about the Website	Friends	106	53.0
8	Whom do you Primarily Shop	Personal Consumption	130	65.0
9	Kinds of Products Purchased	Accessories	111	55.5
10	Need for Shopping Online	Easy home delivery	127	63.5

11	Attracts to Shop Online	Product Selection	130	65.0
12	Factors Influencing to Purchase from Online			
13	a) For Price	Strongly Agree	108	54.0
14	b) For Offers/Discount	Strongly Agree	106	53.0
	c) For Better Customer Services	Agree	61	30.5
	d) For Varieties of Product	Agree	90	45.0
	e) For Mode of Payment	Agree	111	55.5
	f) For Security	Agree	56	28.0
	g) For goods Description	Agree	123	61.5
	h) For guarantees/warrantees	Agree	134	67.0
	i) For reputation of the company	Agree	95	47.5
	j) For conveniences of delivery	Strongly Agree	102	51.0
	k) For privacy of the information	Agree	72	36.0
	l) For procedures of buying	Agree	127	63.5
15	Satisfied with the Products that Purchase in Online	Yes	189	94.5
16	Buy the Products Again if it is Satisfied	Yes	165	82.5
17	Returning of the Goods if Not Satisfied	Yes	123	61.5

Source: Computed Primary Data

Table 1.2 Garrett ranking in Preference of Website

Websites	Rank					Total
	1	2	3	4	5	
Flipkart	80	34	43	15	28	200
Snapdeal	31	47	65	25	32	200
Amazon	37	58	28	42	35	200
eBay	25	43	44	49	39	200
Others	27	18	20	69	66	200
Total	200	200	200	200	200	200
Garrett Value	75	60	50	40	25	

Source: Computed Primary Data

Table 1.3 Garrett ranking in Preference of Website

Personal Variables	Pearson's Chi-Square	Likelihood Ratio	No. of Valued Cases	D.F	P- Value
Age	16.636	16.622	200	6	0.11
					0.11
Gender	17.031	17.508	200	2	0.000
					0.000
Educational qualification	9.388	8.996	200	6	0.153
					0.174
Occupation	2.779	2.892	200	6	0.836
					0.822
Monthly Income	3.533	3.749	200	6	0.740
					0.711

Source: Computed Primary Data

Table 1.4 Association between Personal Factors and Opinion in Choose E-tailing

Sl. No.	Websites	Total Score	Average	Rank
1.	Flipkart	11490	57.45	I
2.	Snapdeal	10195	50.98	III
3.	Amazon	10210	51.05	II
4.	eBay	9590	47.95	IV
5.	Others	8515	42.58	V

Source: Computed Primary Data

Table 1.5 Factors Influencing the Customers' Opinion towards the Purchasing Decision of Goods from E-tailing Business– Kendall's Co-efficient of Concordance

Sl. No.	Customers' Opinion regarding the Factors Influencing towards the Purchase-decision of Goods	Mean Rank	Test of Statistics				
			No. of Respondents	Kendall	Chi-square Test	d.f.	Asym. Sig.
1.	Price	8.93	200	0.162	357.019	11	0.000
2.	Offers/Discounts	6.56	200				
3.	Better Customer Services	7.12	200				
4.	Varieties of Products	7.13	200				
5.	Mode of Payment	8.38	200				
6.	Security	5.29	200				
7.	Goods Descriptions	5.70	200				
8.	Guarantees and Warranties	3.84	200				
9.	Reputation of the Company	6.53	200				
10.	Conveniences of Delivery	6.88	200				
11.	Privacy of the Information	6.28	200				
12.	Procedures of Buying	5.38	200				

Source: Computed Primary Data.

Major Findings

- Table 1.1, proved that demographic profile and consumers influencing factors for choosing E-tailing, 71.5% respondents are male, 34% respondents are 30-40 years, 39.0% are Bachelor Degree, 34.5% are Employed, 36.0% are ₹10,000 – ₹30,000 are income group people, 42% respondents purchasing things in online past 1 year, 53% respondents receiving information through friends, 65% respondents Personal Consumption from Primarily Shop, 55.5% respondents purchased accessories products, 63.5% respondents need Easy home delivery, 65% respondents attracts to shop online for product selection, Factors Influencing to Purchase from Online for price 54% respondents are strongly agree, for office discount 53% are strongly agree, For Better Customer Services 30.5% are agree, For Varieties of Product 45% are agree, For Mode of Payment 55.5% are agree, For Security 28% are agree, For goods Description 61.5% are agree, For guarantees/warranties 67% are agree, For reputation of the company 47.5% are agree, For conveniences of delivery 51% are Strongly agree, For privacy of the information 36% are agree, For procedures of buying 63.5% are agree, 94.5% of the respondents are satisfied with products purchased in online, 82.5% respondents are satisfied with again buy the products and 61.5% respondents are returned goods for not satisfied.
- The percentage score for each rank from 1 to 5 are calculated. The percentage score thus obtained for all the five ranks are converted into scale values using Scale Conversion Table given by Henry Garrett. The scale values for first rank to fifth rank are 75, 60, 50, 40 and 25 respectively. It is seen from the Table 1.2 and 1.3 the result of Garrett's Ranking Technique test shows that the respondents give more importance to the factors that influencing them in the E-tailing like "Flipkart 57.45 per cent is considered as the first factor of influence of the respondents; "Amazon" 51.05 per cent is ranked as the second; "Snapdeal" 50.98 per cent occupies the third position, "eBay" 47.95 per cent comes in the fourth place and "Others" 42.58 per cent comes in the fifth place.
- Table 1.4 that the P value is greater than 0.05. The null hypothesis that there is a relationship between the age of the respondents and their level of opinion of customers towards the factor influencing to choose to choose e-tailing is accepted. Hence, it is concluded that there is no significant relationship between the age of the customers and their opinion about the factor influencing to choose E-tailing. And The null hypothesis that there is a relationship between the gender of the customers and their level opinion towards factor influencing to choose E-tailing is rejected. Hence, it is concluded that there is a significant relationship between the gender, educational qualification, occupation and monthly

income of the customers and their opinion towards the factor influencing to choose E-tailing

4. Table 1.5 elucidates that the factors influencing the customers' opinion towards the purchasing decision of goods from E-tailing business. Here, Kendall's test is used to measure the customer perception towards the purchasing decision of goods from E-tailing business. Since P value is less than 0.01, the null hypothesis is rejected at one percent level of significance. Hence, it is concluded that there is significant difference between each segment and customers for their decision to purchase of goods from E-tailing business. Based on the mean rank, the reason for a large number of customers towards the purchase decisions of goods from E-tailing is "Price" followed by the 'Mode of Payment' which gets the second rank. The statement 'Guarantees and Warrantees' gets the last rank. Based on the mean rank 'Price' is the primary factor inducing the customers towards the purchase decisions of goods from E-tailing Business.

Suggestions

- Based on their income of salary make focusing on buying of their products on online. People purchase more who falls in the range of salary between 10,000
- According to online purchasing people mainly focus on flipkart and Snapdeal in case of Amazon and Jabong are low level of purchase on product, so improvement is needed among those.
- Influence based on friends focus to overcome for the purchase online, rather than advertisement and newspaper.
- Mainly focusing on purchase of accessories and electronic goods in online makes much attraction of customers to focus.
- According to the lowest best price and offers make focus of attraction of customers to focus on to purchase on online.

Conclusion

The SURVEY was aimed to study about that factors influences the customers in E-Tailing. The study was done with an overview of current and past research Works done on related topics and with the help of qualitative and quantitative data collection. Through the online survey, the factors that assess and affect the customer satisfaction were evaluated. Keeping this in mind, we have come up with the following Conclusion. An analysis of the survey

results that 54% of the customers is price with the online method of shopping where as 53% is offers & discounts and 51% conveniences of delivery. There are few customers who are loyal to shop online in the same shop. An analysis of the survey results that 94.5% of the customers are satisfied with the online method of shopping where 5.5% are not satisfied. The present study finally has concluded that the customers are fully satisfied with the (E-tailing) online method of shopping.

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FUNCTIONAL ASPECTS OF UNORGANISED GROCERY BUSINESS IN MADURAI DISTRICT OF TAMILNADU

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Abstract

Retail marketing is a system in which the goods and services are bought and sold to ultimate consumers in small units. It is classified as organised and unorganised retailing. Unorganised retailing is the traditional retailing popularly known as kirana or mom-and-pop stores like street markets, owner manned general stores, convenience stores, kiosks and vendors where the ownership and management rest with one person only. Thus, grocery business is a traditional retailing deals with all necessities of consumers such as rice, dhals, atta, oil, pulses, spices, snacks, soap powder, cleaning materials, dairy products and the like. Different marketing strategies like merchandising, location strategy, risk-bearing strategy, strategy adopted for management of finance and human resources, pricing strategy, promotional strategy and distribution strategy are adopted by the unorganised grocery retailers to sell goods to the target customers, to achieve the maximum profit potential and to sustain their business. Hence, an attempt is made to analyse the functional aspects of unorganised grocery business. The Operational functions like socio-economic background of the grocery retailers and the profile of the business, Non-operational functions like awareness on grocery retail business and the Real-operational functions like merchandise buying and handling are analysed and presented in this paper.

Keywords: Retail Marketing, Retailers, Un-organised retailing, Grocery business, Merchandising.

Introduction

The word 'retail' is derived from the French word 'retailleur', which means 'to cut off a piece' or to 'break bulk'. It implies a firsthand transaction with the customer. Retailers are the last link in the channel of distribution from manufacturer to consumer. As they are working close to consumers, they are able to understand the changing taste and preferences of consumers.

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Different marketing strategies are adopted by the unorganised grocery retailers to sell goods to the target customers, to achieve the maximum profit potential and to sustain their business. Merchandising is an important

marketing function which means planning, buying, and selling of merchandise. Different retailers are following different procedures to purchase the products.

Historically, Madurai is known for its trade centre. In Tamil, it is named as 'Thoonganagaram'. It means the city is busy 24 hours a day as all petty shop meant for necessity being kept open. Further, it shows the active participation of businessmen in trading activities. The city plays a pivotal role in the retail trading activities of south Tamil Nadu. At present, it remains largely a traditional business run by families of different generations.

Materials and Methods

Statement of the Problem

In India after 1991, due to reforms, the nation entered into new phenomenon of LPG (Liberalisation, Privatisation and Globalisation). In this line of action, retail marketing gets a new outlook and vast changes have been attained. A group of non-working community likes to avail service at corner store due to their economic condition. In Madurai District, the unorganised retail outlets enjoy their own privileges in running their business. Most of the people do not buy anything in bulk as well as on monthly basis. Whenever, the necessity arises, they approach shops located nearby their residence and buy in small units, at

cheap prices for both cash and credit. In this context, an attempt is made to analyse the functional aspects of unorganised grocery business.

Objectives

1. To assess the Operational Functions like Socio-Economic Background of the Grocery Retailers and the Profile of the Business.
2. To analyse the Non-operational Functions like Awareness on Grocery Retail Business.
3. To study the Real-operational Functions like Merchandise Buying and Handling.

Methodology

This study was conducted in Madurai District of Tamil Nadu. A total of 500 retail units comprising 183 units in Rural area, 179 units in Semi-urban area and 138 units in Urban area of Madurai District were selected at proportionate random sampling method from different areas. The interview schedule consisting of a list of questions was administered for the respondents, to collect information covering the entire functions of the retail unit.

The information so collected was tabulated and analysed using different statistical tools like percentile analysis, Garret ranking technique, factor analysis, F-test and multiple regression analysis. The researcher referred various books, journals, magazines, reports of various research institutes, theses, dissertations and reports of Government kept in different libraries and research institutes.

Interpretation and Discussion

Operational Functions of Grocery Retail Business Perception on Acquiring Skills

Acquiring skill is a soft skill to get trained in a particular field and there by becoming experts. This skill could be acquired through, technical course, special training and previous experience. In this context, it is aimed to assess the perception of retailers on the method of acquiring skill by adopting one-way analysis of variance. The results of F test and other relevant values are presented in Table 1.

Table 1 Perception on Acquiring Skills

S.No	Method	Mean Score				F-Statistic
		Rural	Semi-urban	Urban	Overall	
1	Technical Course	2.6593	2.4157	2.6884	2.5803	2.007 ^{NS}
2	Special Training	2.6703	2.3989	2.6449	2.5663	2.339 ^{NS}
3	Previous Experience	3.2802	3.9944	3.9275	3.7154	15.991 ^{**}

Source: Primary data

0.0000 = 1% significant; 0.01 to 0.05 = 5% significant; > 0.05 = Not significant

* Significant @ 5 per cent level; ** Significant @ 1 per cent level; NS = Not Significant

The higher attitude towards previous experience is noticed among the retailers since the overall mean score is 3.7154.

Impact of Personal Factors on Profit of the Retail Business

The personal factors of the respondents might have impact on the profit of the retail business. Hence, an

attempt is made to examine the impact of personal factors on profit with the help of Multiple Regression analysis and the results are given in Table 2.

Table 2 Impact of Personal Factors on Profit of the Retail Business

S.No	Personal Profile	Regression Co-efficient			
		Rural	Semi-urban	Urban	Pooled
1	Constant	1.493 ^{**}	1.781 ^{**}	2.105 ^{**}	2.114 ^{**}
2	Gender	0.125 [*]	0.103 [*]	0.099 [*]	0.131 [*]
3	Religion	0.245 [*]	0.172 ^{**}	0.281 ^{**}	0.215 ^{**}
4	Community	0.312 ^{**}	0.286 ^{**}	0.355 ^{**}	0.307 ^{**}
5	Age	0.161 [*]	0.133 [*]	0.159 [*]	0.140 [*]
6	Literacy Level	0.254 ^{**}	0.201 ^{**}	0.316 ^{**}	0.247 ^{**}
7	Marital Status	0.017 ^{NS}	0.055 ^{NS}	0.073 ^{NS}	0.067 ^{NS}
8	Nature of Family	0.133 ^{NS}	0.073 ^{NS}	0.088 ^{NS}	0.103 ^{NS}
9	Family Size	0.035 [*]	0.051 [*]	0.066 [*]	0.050 [*]
10	Income	0.257 ^{**}	0.280 ^{**}	0.311 ^{**}	0.259 ^{**}
11	Experience in Retail Business	0.107 ^{**}	0.153 ^{**}	0.177 ^{**}	0.158 ^{**}
	R ²	0.638	0.695	0.716	0.685
	F-Statistics	30.313 ^{**}	38.281 ^{**}	92.018 ^{**}	106.338 ^{**}

Source: Primary data

* Significant @ 5 per cent level; ** Significant @ 1 per cent level; NS = Not Significant

It is revealed from Table 2 that the significantly influencing personal factors on profit are gender, religion, community, age, literacy level, family size, income and experience in retail business. The change in perception on personal factor explains the changes in profit of the business to the extent of 68.5 per cent.

Non-Operational Functions of Grocery Retail Business Sources of Awareness

To analyse the significant difference among the three categories of location of Retail Shop regarding their source of awareness, one-way analysis of variance has been administered. The resulted mean score and the respective F-statistics are shown in Table 3.

Table 3 Sources of Awareness about Retail Marketing

S.No	Sources of Awareness	Mean Score				F-Statistic
		Rural	Semi-urban	Urban	Overall	
1	Newspapers and Other Media	3.2732	3.0670	2.9067	3.0980	2.821*
2	Parents and Family members	3.8415	3.6816	3.9058	3.8020	1.518 ^{NS}
3	Friends and Relatives	3.5082	3.6648	3.8261	3.650	2.249 ^{NS}

Source: Primary data

* Significant @ 5 per cent level; ** Significant @ 1 per cent level; NS = Not Significant

It is observed from Table 3 that the motivation by Parents and Family Members is rated as the major source of awareness with a mean score of 3.8020. The significant source of awareness is Newspapers and Other Media. 3.2.2 Factors involved in starting Retail Business. A motive is a driving force that causes a person to take action to satisfy specific needs. The factors involved in starting the

grocery business extracted from the twenty three variables are classified into mission of smoothness, mission of self-esteem, mission of guidance, mission of compulsion, mission of hope and the mission of achievement. These motivating factors are analysed with the help of factor analysis and the results are presented in Table 4.

Table 4 Motivating Factors to Start Retail Business

S.No	Factors	Eigen Value	Percentage of Variance	Cum-percentage of Variance
1	Mission of Smoothness	5.075	22.064	22.064
2	Mission of Self-esteem	3.675	15.964	38.028
3	Mission of Guidance	2.758	11.991	50.019
4	Mission of Compulsion	1.784	7.756	57.775
5	Mission of Hope	1.128	4.904	62.679
6	Mission of Achievement	1.053	4.577	67.256

* Kaiser – Meyer – Olkin Measure of Sampling Adequacy: 0.812

* Bartlett's Test of Sphericity Chi-Square: 2722.990; Degrees of Freedom: 253; Significance: 0.000

Table 4 revealed that the factors account for about 67.256 per cent of variance in the data. Eigen value for the factor Mission of smoothness is 5.075. This indicates that the factor contains very high information than the other factors which provides the maximum insights of starting retail business. It is a very important factor, because the respondents prefer to start the retail business if there is less risk, less competition, need of limited investment,

need of less technical knowledge, easy to start and maintain and easy to get loan.

Real-Operational Functions of Grocery Retail Business Reasons for preferring vendors

The unorganised retail outlets prefer any one of the sources of purchases for regular uses. There are so many reasons for choosing multiple vendors and are presented in Table 5.

Table 5 Reasons For Preferring Vendor

S.No	Reasons	Garrett Mean Score	Rank
1	Total orders placed on the vendor in a year	48.806	IV
2	Total returns to the vendor	47.167	VII
3	Quality of the merchandise	55.788	I
4	Participation of the vendor in various schemes and promotions	47.170	VI
5	Transportation expenses if borne by the vendor	48.243	V
6	Cash discount offered by the vendor	52.545	II
7	Sales performance of the merchandise	50.281	III

Source: Primary data

Table 5 shows that the quality of the merchandise is attributed as the major reason for preferring a vendor with a mean score of 55.788.

Influencing Factors to Purchase the Product

Any business man before purchasing a product, tries to get as much information as possible about the product. Twenty factors have been identified to find out the most

important factor, which inspired to buy the product. In order to analyse the significant difference among the three categories of location of retail shop regarding the influencing factors to purchase the product, one-way analysis of variance has been administered. The resulted mean score and the respective F-Statistics are shown in Table 6.

Table 6 Influencing Factors to Purchase the Product

S.No	Factors	Mean Score				F-Statistic
		Rural	Semi-urban	Urban	Overall	
1	Price of the product	4.1038	4.3128	4.1594	4.1940	2.211 ^{NS}
2	Easy availability of the product	3.8962	3.9832	4.0435	3.9680	0.807 ^{NS}
3	Promotional support offered by the vendor	3.7978	3.9441	4.1087	3.9360	2.904 [*]
4	Availability of returns	3.6230	3.9721	4.0290	3.8600	9.225 ^{**}
5	Regular supply	3.7978	4.0447	4.1739	3.9900	4.881 [*]
6	Quality of the merchandise	3.6940	3.7430	3.8551	3.7560	0.840 ^{NS}
7	Demand for the product	3.6612	3.8715	4.0145	3.8340	3.694 [*]
8	Brand	3.6120	3.8827	4.0362	3.8260	5.511 ^{**}
9	Choice of customer	3.6776	3.8771	3.8406	3.7940	1.615 ^{NS}
10	Free door delivery by the seller	3.3169	3.6872	3.4275	3.4800	4.401 [*]
11	Delivered by a seller at concession rate	3.4754	3.3687	3.5290	3.4520	0.758 ^{NS}
12	Delivery of goods on time	3.4645	3.7989	3.7536	3.6640	4.400 [*]
13	Convenient package	3.3989	3.9330	3.6884	3.6700	9.558 ^{**}
14	Easy availability of transportation facilities	3.3880	3.6536	3.7826	3.5900	5.518 ^{**}
15	Trade discount	3.4426	3.7207	3.7754	3.6340	4.240 [*]
16	Cash discount	3.5027	3.3128	3.6739	3.4820	3.507 [*]
17	More discount	3.3880	3.3128	3.6087	3.4220	2.406 ^{NS}
18	Credit purchase	3.4372	3.6816	3.6884	3.5940	2.538 ^{NS}
19	Reasonable credit period	3.2240	3.7039	3.7246	3.5340	8.976 ^{**}
20	Competitors' product	3.4699	3.6369	3.5652	3.5560	0.789 ^{NS}

Source: Primary data

* Significant @ 5 per cent level; ** Significant @ 1 per cent level; NS = Not Significant

Table 6 reveals that the respondents belonging to all the three categories of location of retail shop, price of the product is rated as the major motivating factor with a mean score of 4.1940.

Findings and Results

With the help of the primary data, the researcher has presented the summary of findings of the study as under:

Operational Functions of Grocery Retail Business Socio-economic Profile of the Grocery Retailers

90.2 per cent of the respondents were male. 75.6 per cent of the respondents were Hindus.

Majority of the retailers belonged to Backward Community (BC) which accounted for 62.8 per cent. 45.6 per cent of the respondents were in the age group of 30 to 40. 23.4 per cent were with higher secondary level of education. As far as marital status was concerned, 71.8 per cent of the respondents were married. Majority of the retailers belonged to nuclear family which accounted for 73.0 per cent. 41.0 per cent of the respondents' family size was 4 members. 44.6 per cent of the respondents had their monthly income ranged between Rs. 30,000 and Rs. 40,000. As far as experience was concerned, 40.2 per cent of the respondents each had below 10 years and 10 to 15 years of experience.

Business Profile

42.4 per cent of the respondents' business had the age between 5 to 10 years. 55.2 per cent of the respondents had employees. 94.6 per cent of the respondents practiced as sole proprietorship. 58.6 per cent of the respondents founded their retail shops on their own self determinants. An examination regarding the nature of building revealed that, 53.4 per cent of the respondents had their shops in rented building. In case of capital size of the retailers it was found that, 65.0 per cent of the respondents had capital size ranged between Rs. 2,00,001 and Rs. 10,00,000. The overall turnover per month was Rs.1,50,352. The overall profitability per month per unit was Rs. 36,884.50. 45.6 per cent of the respondents spent 8 to 12 hours in their shop. 74.6 per cent of the respondents spared more than 20 days per month for their business. 55.2 per cent of the retailers were the members of the Trade Owner's Association.

Non-operational Functions of Grocery Retail Business

Motivation by parents and family members was rated first as the major source of awareness with the overall mean score of 3.8020. However, a high influence of 'Newspapers and other media' was apparent in getting awareness about retail outlets.

Real-Operational Functions of Grocery Retail Business Merchandise Buying and Handling

52.8 per cent of the respondents did not plan for their purchases. 83.2 per cent of the respondents did not appoint any specialist to purchase the products. 57.6 per cent of the respondents did not ask any quotation for purchases. 52.0 per cent of the respondents preferred to buy their products from the regional market. 57.2 per cent of the respondents bought from the wholesalers. 57.6 per cent of the respondents bought their requirements from multiple vendors. 43.0 per cent of the respondents got trade discount. 49.6 per cent of the respondents purchased on both cash and credit basis. 54.1 per cent of the respondents got 15 to 30 days as a credit period. 30.6 per cent of the respondents bought products in alternative days. 43.6 per cent of the respondents made own arrangement for taking the delivery of goods.

Both branded and unbranded products were dealt by 80.0 per cent of the respondents. 86.8 per cent of the respondents sold multiple brands. Regular supply was attributed as the major reason for dealing one brand with a mean score of 59.69. As far as mode of sales was concerned, 57.2 per cent of the respondents sold both in

cash and credit. 96.3 per cent of the respondents accepted cash payment alone. Thirty days credit period was allowed by 52.0 per cent of the respondents. 57.0 per cent of the respondents did not have the problem of bad debts. 40.5 per cent of the respondents had the bad debts below 5 per cent. 65.2 per cent of the respondents adopted manual billing method.

Suggestion

1. The Governments of both state and central should form a separate 'micro and small unorganised retail enterprises board (MSURE), consisting of a representative each from ministry of commerce, chamber of commerce and retail trade owners' association for monitoring, motivating and assisting all sections of people to establish more number of retail outlets in their residential areas.
2. A separate legislation should be passed to form a large sized sole-trading business in unorganised retail outlets with financial assistance from financial institutions to compete with large sized organised retail outlets.
3. A forum of 'educational circle for purchase' consisting of members of chamber of commerce, members of financial institutions, representative from consumers' forum and representative from unorganised retail owners' association should be created to educate the traders on purchase and sale procedures.

Conclusion

As the present study is concerned with an interesting valuable sector of the economies of the developing district it is meaningfully appropriate and relevant. This study highlighted the functional aspects like socio-economic profile, business profile, awareness about retail business and the merchandise buying and handling of unorganised grocery retailers in Madurai District. It is also noted that these retail units have wide scope to develop further. So, this retail unit is needed to be protected not only for promoting the enterprises but also to supply products to the low, middle and higher income group consumers. The findings of the study and a few constructive suggestions made there in will be of immense use to the retailers, workers, and the customers to flourish in this trade.

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PROSPECTS OF KERALA TOURISM AN ECONOMIC ANALYSIS

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Abstract

Kerala, a state situated on the tropical Malabar Coast of south western India, is one of the most popular tourist destinations in the country. Named as one of the ten paradises of the world by the National Geographic Channel, Kerala is famous especially for its ecotourism initiatives. Its unique culture and traditions, coupled with its varied demography, has made Kerala one of the most popular tourist destinations in the world. Tourism industry is a major contributor to the state's economy. Tourists can be divided based on their socio-economic status, geographic differences, demographics and psychographics. The marketing mix elements of tourism industry help in creating an image of the tourist destination, building awareness of the services. There are domestic and foreign tourists are coming to Kerala for spending their leisure time. The arrivals of these tourists' especially foreign tourists provide economic benefits to the exchequer of the state. The purpose of this article is to describe and evaluate the prospects of Kerala tourism. The data used for the study mainly based on Secondary data. For the purpose of analysis percentage, correlation etc. were used. The study found that there is great opportunity to Kerala state to exploit its tourism potential.

Keywords: Tourism, Domestic and Foreign Tourist, Foreign Exchange.

Introduction

The word tourism is related to tour which is derived from the Latin word 'Tornos' Tornos means a tool for describing a circle. The notion of a round tour or a package tour has come from the word 'tornos' which is very much of the essence of tourism. Tourism is a collection of activities services and industries that delivers a travel experience including transportation accommodations eating and drinking establishments, retail shops, entertainment businesses, activity facilities and other hospitality services provided for individuals or groups traveling away from home. Throughout the world, tourism brings money to cities and countries. Tourism also provides jobs for the local residents, further benefiting the destination. India has realized the profits available from this sector. Thanks to its growing economy and promoting itself as a culturally rich and diverse nation, India's tourism industry now brings billions of dollars into the economy each year. The growth in the tourism industry is due to the rise in the arrival of more and more foreign tourists and the increase in the number of domestic tourists.

Kerala, located on the south-western tip of India, enjoys unique geographical features that have made it one of the most sought-after tourist destinations in Asia. Fondly referred to as 'God's Own Country', Kerala was selected by the National Geographic Traveller as one of the 50 destinations of a lifetime and one of the thirteen paradises in the world. An equable climate, serene beaches, tranquil stretches of backwaters, lush hill stations and exotic wildlife are the major attractions of this land. A unique advantage of Kerala is that most of the destinations here are only a two - four hour drive from the other. Classical art forms, colourful festivals, exotic cuisine are some of the cultural marvels that await travellers. Ayurveda, the ancient Indian system of medicine and Panchakarma, the rejuvenation therapy in Ayurveda have also helped Kerala to gain a pan-global reputation as a worth-visit destination. Season never ends in Kerala, thanks to the year-long moderate climate and numerous festivals and events.

Review of Literature

Anbuselvan (2005) in his study argued that foreign tourist arrivals in terms of share in the national arrivals are

encouraging there is a scope for improvement matching the potential. Manoj Edward et.al (2008) describes the context and framework for assessing destination attractiveness of Kerala, an emerging tourism destination in a developing country. The study reveals its strengths and weaknesses from the demand side perspective and suggests a number of valuable implications for destination marketing efforts. Manoj (2010) in his study he identified the strength and weakness of Kerala tourism. The study found that Kerala tourism contributes 10% of the total tourism of India.

Objectives of the Study

1. To assess the prospects of Kerala Tourism
2. To check the relationship between arrival of foreign tourists and their contribution to foreign exchange earnings.

Hypothesis

H₀: There is no relationship between number of arrival of foreign tourist and foreign exchange earnings from tourism

H₁: There is relationship between number of arrival of foreign tourist and foreign exchange earnings from tourism

Methodology

The present study is based on the secondary data published by various agencies and organizations. The present study makes use of data and information provided by, Ministry of Tourism Department Kerala, Central Ministry of Tourism Department, Government of India, Newspapers, Magazines, Books, Economic journals and Internet etc. The collected data has been analysed by using percentage and correlation analysis and the same has been depicted through various graph and charts.

Analysis and Interpretation

Table 1:-Major airport wise arrival of foreign tourist availing e-tourist visas during 2016 and January- June, 2017

S.N o.	Name of Airport	2016	% of Share	Jan-June, 2017	(%) share
1	New Delhi	470354	43.6	309453	43.2
2	Mumbai	221315	20.5	140984	19.7
3	Dabolim (Goa)	103536	9.6	77027	10.7
4	Chennai	68937	6.4	47338	6.6
5	Bengaluru	65564	6.1	41391	5.8
6	Kochi	39909	3.7	25175	3.5
7	Kolkatta	26411	2.4	17488	2.4
8	Hyderabad	25960	2.4	15271	2.1

9	Trivandrum	16730	1.5	10928	1.5
10	Amritsar	14865	1.4	10408	1.5
Others		26115	2.4	21613	3.0
Total		1079696	100	717076	100

Source: Bureau of Immigration, Govt. of India

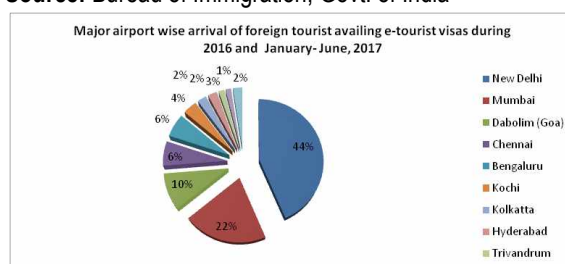


Figure 1 Major airport wise arrival of foreign tourist availing e-tourist visas during 2016 and January- June, 2017

Table 1 and figure 1 shows the Major airport wise arrival of foreign tourist availing e-tourist visas during 2016 and January- June, 2017. The table indicates that more number of foreigners is coming at New Delhi airport with 43.6 % and following Mumbai (20.5%), Dabolim (9.6%) and Chennai (6.4) respectively. The table also shows that among the top ten airport wise arrival Cochin (3.7%) got seventh position and Trivandrum got ninth position (1.5%). So it is inferences that Kerala have adequate transport facility to receive foreign tourist.

Table 2:- Share of top ten states/ UT of India in number of tourist visits in 2016

Rank	State/UT	Foreign tourist visit in 2016	
		Number	Percentage
1.	Tamil Nadu	4721978	19.1
2.	Maharashtra	4670048	18.9
3.	Uttar Pradesh	3156812	12.8
4.	Delhi	2520083	10.2
5.	West Bengal	1528700	6.2
6.	Rajasthan	1513729	6.1
7.	Kerala	1038419	4.2
8.	Bihar	1010531	4.1
9.	Goa	680683	2.8
10.	Punjab	659736	2.7
Total of top 10		21500719	87.00
Others		3207012	13.0
Total		24707732	100

Source: State/Union Tourism Departments.

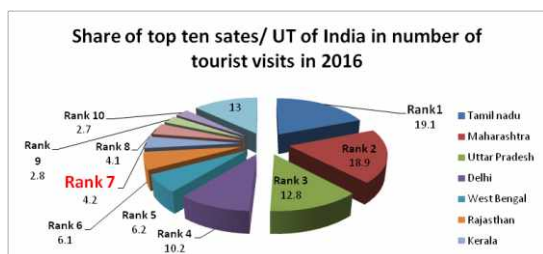


Figure 2 Share of top ten states/ UT of India in number of tourist visits in 2016

Table 2 and figure 2 shows Share of top ten states/ UT of India in number of tourist visits in 2016. The above table and figure shows that the top ten state/ union territories were ranked on the basis of number of tourist visits. Tamil Nadu is the rank 1 and followed by Maharashtra, Uttar Pradesh, and Delhi etc. Kerala got seventh rank with 1038419 numbers of visitors (4.2%). All these shows that Kerala tourism can contribute much more to the Indian tourism sector.

Table 3 Month wise Foreign and Domestic Tourist arrivals during the year 2016 are as shown below

Sl. No.	Month	Foreign	Domestic
1	January	136539	1077231
2	February	141143	1006111
3	March	107037	960467
4	April	78099	1012844
5	May	37994	1206350
6	June	37368	891614
7	July	56666	913886
8	August	81070	1043362
9	September	62599	1129260

Table: - 4 Kerala State- Earnings from Tourism

Year	Foreign Exchange Earnings (Rs. In Crores)	Percentage of Increase	Total revenue generated from Tourism (Direct & Indirect) Rs. In Crores	Percentage of Increase
2004	1266.77	28.82	6829.00	15.01
2005	1552.31	22.54	7738.00	13.31
2006	1988.40	28.09	9126.00	17.94
2007	2640.94	32.82	11433.00	25.28
2008	3066.52	16.11	13130.00	14.84
2009	2853.16	-6.96	13231.00	0.77
2010	3797.37	33.09	17348.00	31.12
2011	4221.99	11.18	19037.00	9.74
2012	4571.69	8.28	20430.00	7.32
2013	5560.77	21.63	22926.55	12.22
2014	6398.93	15.07	24885.44	12.11
2015	6949.88	8.61	26689.63	7.25
2016	7749.51	11.51	29658.56	11.12

Source: Statistics, Kerala Tourism Department

10	October	82551	1337191
11	November	96155	1187620
12	December	121198	1406599
13	Total	1038419	13172535

Source: Statistics, Kerala Tourism Department

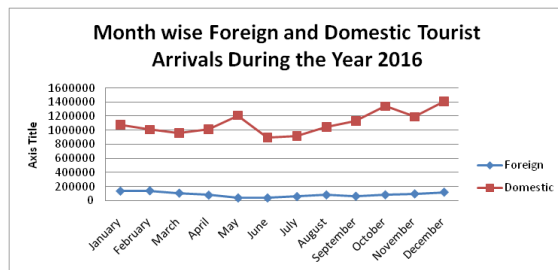


Figure 3 Month wise Foreign and Domestic Tourist arrivals during the year 2016

Table and figure 3 shows Month wise Foreign and Domestic Tourist arrivals during the year 2016. As far as concerned with foreign tourists they prefer to come on December to February period. The data shows that more number of foreign tourists arrived in February (141143) and followed by January (136539) and December (121198) respectively. Domestic tourists are following almost the same pattern, they are preferred to spend their leisure time in between October to December.

The data shows that more number of domestic tourists is coming in the month of December and followed by October and November. Both the trend shows that tourists preferred winter season for their travel and tourism in Kerala.



Figure 4 Kerala State- Earnings from Tourism

The table 4 and figure 4 shows the earnings from tourism. The table indicates an upward growth of earnings in foreign exchange and total revenue generated from direct and indirect tourism activities. There is a negative growth in foreign exchange earnings in 2009. In 2016 the foreign exchange earnings from tourism was 7749.51 crore and total revenue generated was 29658.56 crore.

Table-5 Trends In Domestic & Foreign Tourist Arrivals into Kerala

Year	Domestic Tourists	%Var.	Foreign Tourists	%Var.
2004	59,72,182	1.7	3,45,546	17.3
2005	59,46,423	-4.3	3,46,499	0.27
2006	62,71,724	5.47	4,28,534	23.7
2007	66,42,941	5.92	5,15,808	20.37
2008	75,91,250	14.28	5,98,929	16.11
2009	79,13,537	4.25	5,57,258	-6.96
2010	85,95,075	8.61	6,59,265	18.31
2011	93,81,455	9.15	7,32,985	11.18
2012	100,76,854	7.41	7,93,696	8.28
2013	108,57,811	7.75	8,58,143	8.12
2014	116,95,411	7.71	9,23,366	7.60
2015	124,65,571	6.59	9,77,479	5.86
2016	131,72,535	5.67	10,38,419	6.23

Source: Statistics, Kerala Tourism Department

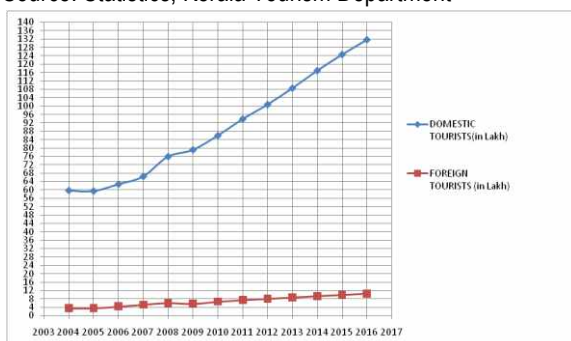


Figure 5 Trends in Domestic & Foreign Tourist Arrivals into Kerala

The table 5 and figure 5 shows trends in domestic & foreign tourist arrivals into Kerala. There is a steady growth trend in the arrival of tourists among both domestic and

foreign tourists. There is negative growth in foreign tourist arrival in 2005 and domestic tourist's arrival in 2009.

Table-6 Correlation between number of foreign tourist arrival and foreign exchange earnings

Variables	Foreign Exchange Earnings (Rs. In Crores)	Number of foreign tourist arrival
Foreign Exchange Earnings (Rs. In Crores)	1	.980**
Pearson Correlation	13	.000
Sig. (2-tailed)		13
N		
Number of foreign tourist arrival	.980**	1
Pearson Correlation	.000	13
Sig. (2-tailed)	13	
N		

** . Correlation is significant at the 0.01 level (2-tailed).

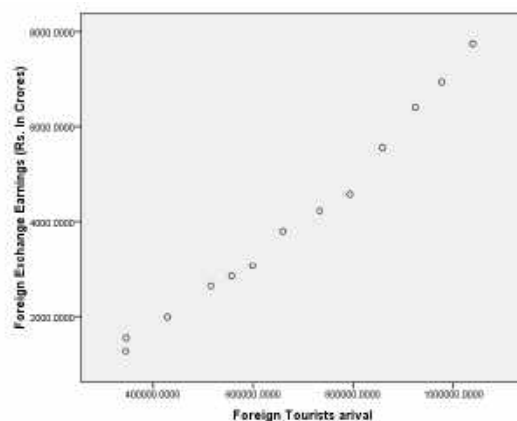


Figure 6 Correlation plot chart

The earning of foreign exchange from tourism is mainly based on the number of foreign tourist arrival. From this observation, the researcher took foreign exchange earnings as dependant variable and number of foreign tourist arrival as independent variable. While running the correlation, the result shows that there is higher correlation between number of arrival of foreign tourist and foreign exchange earning. There is a strong linear relation was observed between number of arrival of foreign tourist and foreign exchange earning, Pearson correlation = .980, $p = .000$ (2-sided). So the alternate hypothesis is accepted.

Discussion and Conclusion

Of late, there has been increased thrust on tourism development in India. While tourism has got excellent prospects for promotion of rapid economic development particularly in respect of the developing nations, as is

evident from the experiences of many a developing nation, it may be stated that the sustainability aspect of tourism has not often been given adequate consideration in designing tourism policies of government. Besides, often there are instances wherein the interests of tourists alone are protected in a bid to garner maximum tourism earnings, unmindful of the consequences of the same on the local people. Kerala is emerging as a promising tourist destination in the country for both domestic and foreign tourist and it needs aggressive marketing and support from the state government. District-wise tourist project should be undertaken and a distinct project implementation committee should be formed. The development of micro level database like a Management Information System to capture the number of domestic and foreigners visiting the site, number of people staying in the destination, duration of stay, places visited etc, should be maintained by district level. The main objective for developing various tourism facilities in Kerala is to promote our rich cultural heritage and environment. The Kerala tourism have number of strength points like (i) Excellent geographical features, extremely serene environments that attract tourists the world over – lakes, hillocks, vast coastal areas, network of 44 rivers, waterfalls, lush green paddy fields, sprawling plantations, exotic wildlife etc. Well known destination for medical tourism; both „Ayurvedic“ centres and world class health care (modern medicine) at cheap rates. Above all, the world famous brand, God“s own Country“also. (ii) Recognitions and awards, both from National and International agencies. Six times winner of Best Tourism state from Govt. of India.

(iii) Consistent increase in the number of tourist arrivals, both domestic and foreign. (iv) In respect of foreign tourist arrivals, Kerala in one among the best 10 states in India. (v) One of the highest growth rates in tourist arrivals.

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HEALTH TOURISM, A BREAKTHROUGH IN SERVICE INDUSTRY – WITH REFERENCE TO INDIA

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Article Particulars

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The first human being was created to grow, multiply, and rule the world. The prime work given unto him was to toil the earth! In the rock ages, the life was just to work for their daily requirements, i.e., food and nothing other than that like animals. Then iron age came; that also added hunting and fishing in addition to vegetation. The early human beings were well off and the entire world was their own land. All worked, ate and lived peacefully.

The eras rolled from iron to bronze and then to modern. The human beings are now more than animals. The civilization sprouted. All the knowledge and technology came into existence. As a result, the life is being led by not the requirements, but by the lifestyle. When lifestyle came, the people started losing their life. The painless life became painful and full of diseases and syndromes.

As people concern on elite lifestyle, the entire world now lives in stress. The life makes everyone now busy and tensed. The ancient civilization of India had explored the real art of living. When the life is simple and leisure, there is no chance of ill health. The ethnic food habits and habitats are the reasons for healthy life. Ancient Indian Vedic scriptures reveal thousands of ways for healthy living. The modern generation has lost their happiness and healthy living. They want to gain those things on an unimaginable compensation. What they earned are being spent on rejuvenating their health. The mushroom growth of medical centers are witnessing this fact.

Indian Medical Practices

Ironically, for a country with diverse healing traditions, the thrust is often skewed in favour of patronising Western imports such as new-fangled diets or five-star gyms. At the same time, some traditional health-enhancing routines are continued too. India is the most civilized nation since the ancient time. The great scholars and pandits contributed millions of things to the humankind.

By revisiting the ancient practices can make a healthy and happy world. People from East and West travel to India to undergo medical treatment.

"Prevention is better than curing." The art of living with nature like pranayama, yoga, walk, Suryanamaskar, fasting and vegetation attract the entire world towards India. Yes, our nation is having a rich cultural heritage over the millenniums. Indian medicines have the answer and remedy to all the diseases threatened the world either explored or unexplored. The Indian best practices can cure cancer or AIDS in an inexpensive way.

Medical Practices in India ^a

Ayurveda

Ayurveda began with accounts of the transmission of medical knowledge from the Gods to sages, and then to human. Ayurveda includes general medicine, medicine of the body, the treatment of children, pediatrics, surgical techniques and the extraction of foreign objects, treatment of ailments affecting ears, eyes, nose, mouth, etc. ("ENT"), pacification of possessing spirits, and the people whose minds are affected by such possession, toxicology, rejuvenation and tonics for increasing lifespan, intellect and strength and aphrodisiacs. As Ayurveda contains every aspect of medical fields, the whole world can be benefitted when our country encourages medical tourism.

Siddha

Siddha refers to a being who has achieved a high degree of physical as well as spiritual perfection or enlightenment. The ultimate demonstration of this is that siddhas allegedly attained physical immortality. In Tamil Nadu and Kerala, South India, the siddha tradition is still practiced, special individuals are recognized as and called who have taken special secret rasayanas to perfect their bodies, in order to be able to sustain prolonged meditation

along with a form of pranayama which considerably reduces the number of breaths they take. Siddha were said to have special powers including flight. These eight powers are collectively known as attamasiddhigal. Even medical degrees on Siddha and Ayurveda are being offered in India. The hospitals and health centers treating the patients on Siddha and Ayurveda are mostly located at the rural areas of these two states.

Unani

Unani is the term for Perso-Arabic traditional medicine as practiced in Mughal India. According to Unani medicine, management of any disease depends upon the diagnosis of disease. In the diagnosis, clinical features, i.e., signs, symptoms, laboratory features and temperament are important. Unani also includes every aspect of illness.

Homeopathy

Homeopathy is a system of alternative medicine created in 1796 by Samuel Hahnemann. According to homeopathic understanding, that which a substance is capable of causing, it is also capable of curing. The name homeopathy, coined by its originator Samuel Hahnemann, is derived from the Greek words for 'similar suffering' referring to the 'like cures like' principle of healing. *Based on his doctrine, a disease in healthy people would cure similar symptoms in sick people.*

Allopathic

Allopathy entered into India in 1500 by Portuguese in Goa. Allopathic treatment gets popular as it focuses on a specific case and condition. Later in India, specific some diseases were described and it gave a chance for the first official entry for allopathic treatment.

Indian Health Tourism Industry

Medical or Health tourism has become a common form of vacationing, and covers a broad spectrum of medical services. It mixes leisure, fun and relaxation together with wellness and healthcare.

As healthcare turns costlier in developed countries, India's medical tourism market is expected to grow. The cost is a major driver for nearly 80 per cent of medical tourists across the globe. The cost-consciousness factor and availability of accredited facilities have led to emergence of several global medical tourism corridors - Singapore, Thailand, India, Malaysia, Taiwan, Mexico and Costa Rica.

Amongst these corridors of health, India has the second largest number of accredited facilities following Thailand. *"The Indian Medical Tourism market is expected to grow from its current size of USD 3 billion to USD 7-8 billion by 2020,"*¹ Grant Thornton India's National Managing Partner Vishesh C Chandiok said. The business experts probe that it is growing at 30 per cent annually.

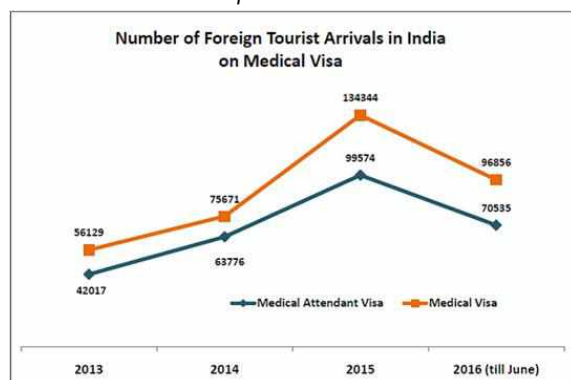
Tamilnadu, Maharashtra, Telangana and Kerala are the most favoured medical tourism destinations for the floating medical population who avail treatments in India. The Apollo group alone has so far treated 95,000 international patients², many of whom are of Indian origin. Apollo has been a forerunner in medical tourism in India and attracts patients from Southeast Asia, Africa, and the Middle East. The group has tied up with hospitals in Mauritius, Tanzania, Bangladesh and Yemen besides running a hospital in Sri Lanka, and managing a hospital in Dubai. Chennai has been called India's health capital because of its best quality hospitals and doctors and Chennai gets about 45% of the total foreign medical tourists coming to India for treatment.

"Cost effectiveness" is the key point of the medical tourism industry and its combination with the attractions of tourism, working a lot for the growth of industry. The strategy of selling the "exotica" of the countries involved as well as the packaging of health care with traditional therapies and treatment methods. Kerala Ayurveda centers have been established at multiple locations in various metro cities, thus highlighting the advantages of Ayurveda in health management.

The flow of medical tourists to India has benefitted the hotel Industry very much. Many hotels and resorts have tied –up with leading hospitals for providing accommodation for post treatment and also, they provide rejuvenation therapies. Some surgeries require check - up after one week and hence the patient is required to stay and the patients prefer to use this time to stay in resorts and also visit some tourist places leisurely at comfort.

The cost difference is huge; *open heart surgery costs up to \$ 70,000 in UK and \$ 1,50,000 in US, but in India in best hospitals it could cost between \$ 3000 to \$ 10,000. Knee surgery costs around Rs 3.6 lakhs in India (\$ 6000) in Britain it costs \$17,000.*³ Dental, eye and cosmetic surgeries cost three to four times more than in India. Medical tourist usually gets a package that includes flights, treatment, hotels and usually post – operative vacation and rejuvenation therapies. (Amit Sen Gupta 2008). India has the best hospitals in the world.

AV Guruva Reddy, managing director of the Hyderabad-based Sunshine Hospitals, said the general standard of hygiene and technology in Indian medical facilities had improved. The number of foreign tourists coming to the country for medical purposes increased 50 per cent to 200,000 in 2016 from 130,000 in 2015. This number is expected to double in 2017 with several new initiatives like easier visas for medical tourists. – Courtesy: Business Standard 22 April 2017.



Courtesy: International Journal of Pharmaceutical Sciences Review and Research, September – October 2015.

Opportunities for Health Tourism:

- Patients in USA, Britain, Canada and some other developed countries have to wait for the major surgery and sometime this waiting period is more than few months. In this respect India have almost zero waiting time for surgeries. This has resulted in attracting number of foreign patients from Britain, USA, Canada to India for their medical treatment.
- Even though India has many different languages, English is widely spoken. All hospitals have excellent large pool of good English speaking doctors, nurses and other hospital staff and even guides. This makes it easier for foreigners to communicate well to Indian doctors if English is not their native language; they are also arranging translators in most major international languages to be with patients during their Indian tour.
- Internet has made available all information related to hospitals available and treatment offered all over the world and people can select their destination based on the information and facilities offered.
- The Ministry of Tourism India (MoT) is planning to extend its Market Development Assistance (MDA) scheme to cover Joint Commission International (JCI) and the National Accreditation Board of Hospitals (NABH) certified hospitals.⁴

Challenges Faced by Medical Tourism in India

- Commercialization of the profession is one point which some doctors are not comfortable since the personal doctor - patient relationship will be missing.
- There is a recuperation for patients who avail of treatment abroad. While cosmetic or dental surgery might not require extensive aftercare, orthopedic or heart bypass surgery might require the patient to be under post - treatment observation for some time, this would be best under the doctor who has treated him and who is fully aware of his condition.
- There is also an issue of insurance cover, insurance companies in developed countries provide cover for treatment availed of in other countries only when the standard of services is the same as the patient's home country. Some countries provide insurance cover only for treatment taken in their country.
- Poor power supply in Tamilnadu and Telangana affects medical treatment and really a setback in medical tourism.
- No Industry Standards owed in many of the hospitals in India. This got a greater impact in this field.
- There are Inequalities in the medical services provided by Government and private hospitals. Hence, the chance of visiting government hospitals by the foreign patients is absolutely nil.
- Brain drain from government hospitals attracts more clients to private hospitals.

Medical Tourism & Wellness on the Government's Agenda

Based on the facts and figures, it can be definitely said that India has become a favorite destination for medical tourists from other countries. Medical tourism is a growing sector in India. India's medical tourism sector is expected to experience an annual growth rate of 30%, making it a Rs. 9,500-crore industry by 2015.⁵ An estimated 150,000 of these travel to India for low-priced healthcare procedures every year. Indian medical tourism industry to touch \$8 billion by 2020.⁶ Medical Tourism & promotion of Wellness are high on the agenda of the government. The National Medical and Wellness Tourism Board has been constituted to provide a dedicated institutional framework for the promotion of Medical Tourism. This Board works as an umbrella organization that governs and promotes this segment of tourism. It has representatives from AYUSH, Quality Council of India, National Accreditation Board for Hospitals and Healthcare Providers (NABH). For promoting quality in the healthcare sector, the

NABH provides accreditation to hospitals and wellness centers for adhering to quality standards. Under the Market Development Assistance (MDA) scheme, Ministry of Tourism also provides incentives to stakeholders accredited by NABH. The first meeting of this board was held in January 2017. Indian Medical Tourism has got the potential to achieve number one position in the numbers of foreign medical tourists' arrival (FMTA) and foreign exchange earnings by 2018, if the good standards of service are maintained. Thus, medical tourism can certainly contribute to the country's economic growth as well.

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A STUDY ON USE OF SOCIAL MEDIA AMONG COLLEGE STUDENTS IN MADURAI CITY

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Abstract

Social media is a good system of communication that spreads messages/information faster than any other medium and it is used at all levels irrespective of profession and status. Teens are at the forefront in technology and they are masters at keeping themselves occupied in the emerging technologies. They are faced with more opportunities and more traps than ever before after the advent of social media. Adolescents and early twenties in particular are the years in which they are acutely aware of the contrasts between who they are to be and who they think they are. A study conducted by Shweiki media comprising of 260 college students surveyed in fall of 2013 revealed that 95% of them use facebook. The result for the question when students claim to spend the biggest percentage of their time in social media, the results are the following: immediately after waking up-14%, morning-13%, afternoon 24%, Evening-33%, late at night-16%. It was also concluded that 40% of students check facebook 6+ times a day. Tamilnadu is in the 2nd position in India in internet usage as informed by Central Government. Social media needs to be controlled as excessive importance to it will surely result in lack of concentration on day to days work, poor relationship among family members etc. and it can be used at the leisure time of the individuals with out affecting the genuine relationship between parents and children. Imaginary urgency to comment for the messages/information should also felt to be controlled as it becomes a time waster. Living in the fast growing technological world is a challenge which may be faced with self-control and courage. In this context, this present study makes an attempt to bring out the use of social media among college students in Madurai city.

Keywords: Social Media, Facebook, Whatsapp

Introduction

Teens are at the forefront in technology and they are masters at keeping themselves occupied in the emerging technologies. They are faced with more opportunities and more traps than ever before, after the advent of social media. Adolescents and early twenties in particular are the years in which they are acutely aware of the contrasts between who they are to be and who they think they are. Infact many parents worry about how exposure to technology, social media in particular might affect college students developmentally. It is the same parents who sponsored smart phones to their beloved college goers will end up in worry about the excessive use of mobile through social media. They could neither put an end to it or just allow their children to go ahead with use of social media and this dilemma makes them end in poor relationship with their college going sons and daughters.

Dr.Steiner-Adair states that girls are socialised more to compare themselves to other people, girls in particular, to develop their identities, so it makes them more vulnerable by use of social media. Young adults have consistently been the heaviest users of social media. 90%

of the youngsters use social media, according to a 2015 Pew Research centre study. That is 78% increase from the 12% who were using social media back in 2005. Another Pew study found that 825 of young adults that are in facebook.

A study conducted for Shweiki media comprising of 260 college students surveyed in fall of 2013 revealed that 95% of them use facebook. The result for the question when students claim to spend the biggest percentage of their time in social media, the results are the following: immediately after waking up-14%, morning-13%, afternoon 24%, Evening-33%, late at night-16%. It was also concluded that 40% of students check facebook 6+ times a day.

Andrew Perrin conducted a survey on social media usage: 2005-2015 and concluded that young adults who are between 18-29 are the most likely to use social media. Also found that women and men use social media at similar rates.

Tamilnadu is in the 2nd position in India in internet usage as informed by Central Government and in this context; this present study makes an attempt to bring out

the use of social media among college students in Madurai city.

Objectives of the Study

1. To understand the socio economic status of college students studying in the select arts and science colleges in Madurai city,
2. To know the frequency and hours of usage by college students in social media,
3. To analyse the relationship between use of social media and family income,
4. To offer suggestions to student users of social media and their parents.

Research Design

This analytical study used both primary data as well as secondary data. Primary data was collected from college students from below mentioned colleges in Madurai city and details of samples are also found below. Only those colleges which cater to genders and which run aided as well as self-financed courses simultaneously in the same premises are taken for the purpose of the study.

Sl.No.	Colleges	Boys		Girls		Total
		Aided	SF	Aided	SF	
1.	Madura College	5	5	5	5	20
2.	Thiyagaraja College	5	5	5	5	20
3.	The American College	5	5	5	5	20
4.	Yadava College	5	5	5	5	20
5.	Sourashtra College	5	5	5	5	20
6.	Mannar Thirumalai Naicker College	5	5	5	5	20
	Total	30	30	30	30	120

The researcher has used random sampling method for the collection of primary data. Questionnaire had been prepared with utmost care, distributed and collected for further analysis and interpretation. Before collecting data from the sample respondents, a pilot study was undertaken with students of three colleges from the aforesaid colleges. Feedback given by them had been carefully incorporated and finalised the questionnaire to be distributed to the sample respondents. The secondary data had been collected mainly from internet for use of social media among college students.

The researcher used percentage analysis and correlation analysis for the purpose of establishing relationship between family income and amount spent for data recharge of the respondents and to project the results of the study with relevance to the objectives.

Operational Definitions

College: College refers to the select arts and science colleges by the researcher

College students: College students refer to those boys and girls currently undergoing courses in the select colleges by the researcher

Aided colleges: Colleges that get fund from University Grants Commission (UGC) for conduct of approved courses and duly affiliated to Madurai Kamaraj University (MKU).

Self-financed Stream: Those programmes which are conducted in the same premises simultaneously but managed to conduct out of tuition fees collected from the students.

Social media: Social media refers to facebook and whatsapp only for the purpose of this study and does not include twitter and any other forms of social sharing through media.

Scope of the Study

This study is attempted to reveal the use of social media among college students in general and it does not study the impact of social media on the day to-day life of those college students. The study does not concentrate on the behavioural and psychological problems encountered by them.

Analysis and Interpretation

Table 1 Age of the Respondents

Sl. No.	Age	Frequency	Percentage	Cumulative Percentage
1.	Less than 18	30	25	25
2.	18	30	25	50
3.	19	30	25	75
4.	20 & Above	30	25	100
	Total	120	100	

Source: Primary data

It is obvious that respondents belonging to the different age groups are equally divided which contributes to 25 per cent in each group which means that under graduate students of different classes are contribute to the data collected by the researcher.

Table 2 Stream of Education of the respondents

Sl.No.	Stream	Frequency	Percentage	Cumulative Percentage
1.	Aided	60	50	50
2.	Self-financed	60	50	100
	Total	120	100	

Source: Primary data

The Table points out that 50 per cent of respondents study in aided colleges and another 50 per cent study in

self-financed colleges funded by the concerned managements.

Table 3 Sex of the Respondents

Sl.No.	Sex	Frequency	Percentage	Cumulative Percentage
1.	Male	60	50	50
2.	Female	60	50	100
	Total	120	100	

Source: Primary data

It is interesting that 50 per cent of the respondents are male and another 50 per cent of the students are female and it is noted that female students who undergo studies also have contributed to the present study.

Table 4 Religion of the respondents

Sl. No.	Religion	Frequency	%	Cumulative Percentage
1.	Christian	15	12.5	12.5
2.	Hindu	79	65.8	78.3
3.	Muslim	23	19.2	97.5
4.	Jain	3	2.5	100
	Total	120	100	

Source: Primary data

It is understood that 65.8 per cent of the respondents belong to Hindu religion, 19.2 per cent belong to Muslim religion, 12.5 per cent belong to Christianity and the remaining 2.5 per cent are Jains. It is inferred that students irrespective of religion, use social media.

Table 5 Part time job Undertaken by Respondents

Sl.No.	Part time job	Frequency	Percentage	Cumulative Percentage
1.	Working	22	18.3	18.3
2.	Not working	98	81.7	100
	Total	120	100	

Source: Primary data

It is much noted that the greater majority of 81.7 per cent of the respondents do not prefer part time jobs and the remaining 18.3 per cent undertake part time jobs. It is understood that students who undertake part time jobs to fulfill their financial needs also use social media.

Table 6 Use of Gio by the Respondents

Sl.No.	Gio Net work	Frequency	Percentage	Cumulative Percentage
1.	Use	47	39.2	39.2
2.	Do not use	73	60.8	100
	Total	120	100	

Source: Primary data

It is observed from the Table that 60.8 per cent of the respondents do not use Gio network and the remaining 39.4per cent of the respondents do use Gio network to engage themselves in social media. It is inferred that Gio network plays an important role in encouraging college students in use of social media.

Table 7 Family Income of the respondents and Amount of data recharge done per month

Family Income of the respondents											
Amount for data recharge done per month		m	Less than Rs.5,000	Rs. 5,001 to Rs. 10,000	Rs.10,001 to Rs.15,000	Rs.15,001 to Rs.20,000	Above Rs.20,000	Total (f)	fdy	fdy ²	fdxdy
	Less than Rs.100	-2	-2	-1	0	1	2	15	-30	60	18
	Rs. 101 to Rs. 200	-1	4	7	14	10	2	37	-37	37	1
	Rs.201 to Rs.300	0	0	1	5	15	7	28	0	0	0
	Rs.301 to Rs.400	1	0	3	6	20	3	32	32	32	23
	Above Rs.400	2	0	0	2	2	4	8	16	32	20
	Total (f)		9	14	31	49	17	120	-19	161	62
	fdx		-18	-14	0	49	34	51			
	fdx ²		36	14	0	49	68	167			
	fdxdy		28	10	0	10	14	62			

Source: Primary data

$$\text{Correlation coefficient } r = \frac{N \sum fdxdy - (\sum fdx)(\sum fdy)}{\sqrt{N \sum fdx^2 - (\sum fdx)^2} \sqrt{N \sum fdy^2 - (\sum fdy)^2}} = 0.82$$

It is inferred that respondents belonging to different socio economic background use social media in Madurai city. It is also observed from the Table that, 30.8 per cent of the respondents spend Rs.101 to Rs.200 as Gio network scheme is available at Rs 399 for 84 days and 47 of the total respondents use Gio network, hence on an average per month data usage charges comes to Rs 142.5 per month to data recharge per month to use social media. It is inferred that data recharges are done by college students in Madurai to entertain themselves in social media. It is inferred from the correlation coefficient (0.82) that amount of data recharge done per month is highly positively correlated with family income of the respondents.

Table 8 Number of visits per day by the respondents

Sl.No.	Number of visits	Frequency	%	Cumulative Percentage
1.	Less than 10 times	15	12.5	12.5
2.	11 to 20 times	37	30.8	43.3
3.	21 to 30 times	45	37.5	80.8
4.	Above 30 times	23	19.2	100
	Total	120	100	

Source: Primary data

It is interesting that 37.5 per cent of the respondents visit 21 to 30 times, 30.8 per cent of students visit 11 to 20 times, 19.2 per cent of the respondents visit more that 30 times a day and the remaining 12.5 per cent visit less than 10 times a day to visit social media. It is inferred that 68.3 per cent of the respondents' visit 11 to 30 times a day which means social media is visited once in an hour on an average by the college students in Madurai.

Table 9 Hours of usage per day by the respondents

Sl.No.	Hours of usage	Frequency	%	Cumulative Percentage
1.	Less than 1 hour	11	9.2	9.2
2.	1 to 2 hours	38	31.7	40.9
3.	2 to 3 hours	49	40.8	81.7
4.	Above 3 hours	22	18.3	100
	Total	120	100	

Source: Primary data

It is observed from Table that 40.8 per cent of the respondents spend 2 to 3 hours a day, 31.7 per cent of the respondents spend 1 to 2 hours a day, 18.3 per cent of the respondents spend more than 3 hours a day and the remaining 9.2 per cent of the respondents spend less than an hour a day in social media. It is inferred that college

students in Madurai spend about 1/6th of their active time in spending at social media.

Table 10 Time of Use by the Respondents

Sl.No.	Time	Frequency	%	Cumulative Percentage
1.	6 am to 2 pm	31	25.8	25.8
2.	2 pm to 10 pm	39	32.5	58.3
3.	10 pm to 6 am	50	41.7	100
	Total	120	100	

Source: Primary data

The Table depicts that 41.7 per cent of the respondents use social media between 10 pm to 6 am, 32.5 per cent use between 2 pm to 10 pm and the remaining 25.8 per cent use social media between 6 am to 2 pm of the day. It is inferred that 74.2 per cent of the respondents use social media between 2 pm to 6 am and night is considered to be opt time to use social media by the college students in Madurai.

Table 11 Person introduced of the respondents

Sl.No.	Person Introduced	Frequency	Percentage	Cumulative Percentage
1.	Parents	2	1.7	1.7
2.	Cousins	19	15.8	17.5
3.	Friends	92	76.7	94.2
4.	Teachers	7	5.8	100
	Total	120	100	

Source: Primary data

It is enlightened that the greater majority of 76.7 per cent respondents are introduced to social media by their friends, 15.8 per cent are introduced by their cousins, 5.8 per cent are introduced by their teachers and the remaining 1.7 per cent are introduced by their parents. It is inferred that friends are the major source in introducing social media to college students in Madurai.

Table 12 Recipients of the Messages of the Respondents

Sl.No.	Recipients	Frequency	Percentage	Cumulative Percentage
1.	Family	13	10.8	10.8
2.	Friends	69	57.5	68.3
3.	Known people	30	25	93.3
4.	Unknown people	8	6.7	100
	Total	120	100	

Source: Primary data

It is revealed that 57.5 per cent of the respondents use social media to strengthen friendship, 25 per cent share messages to those who are known to them, 10.8 per cent share with their family members and the remaining 6.7 per cent share with unknown people who come into contact. It is inferred that messages/information is shared by college students in Madurai in social media to strengthen the friendship among them.

Table 13 Priority of the respondents

Sl.No.	Social Media	Frequency	Percentage	Cumulative Percentage
1.	Whatsapp	64	53.3	53.3
2.	Facebook	56	46.7	100
	Total	120	100	

Source: Primary data

Table reveals that 53.3 per cent of the respondents give priority to Whatsapp in social media and the remaining 46.7 per cent give priority to Facebook. It is only a difference of about 7 per cent in giving priorities between whatsapp and facebook among college students in Madurai.

Table 14 Reliability of messages on Whatsapp

Sl.No.	Reliability	Frequency	Percentage	Cumulative Percentage
1.	Reliable	58	48.3	48.3
2.	Not reliable	62	51.7	100
	Total	120	100	

Source: Primary data

It is interesting that 51.7 per cent of the respondents are of the opinion that the messages/information shared in whatsapp cannot be relied upon and the remaining 48.3 per cent opined that those messages/information in whatsapp can be relied upon. It is inferred that all the messages/information that is received by the college students are not reliable and not trust worthy.

Table 15 Reliability of messages on Facebook

Sl.No.	Reliability	Frequency	Percentage	Cumulative Percentage
1.	Reliable	67	55.8	55.8
2.	Not reliable	53	44.2	100
	Total	120	100	

Source: Primary data

It is obvious from the Table that 55.8 per cent of the respondents opine that the sharing of messages/information in facebook is reliable and the remaining 44.2 per cent states that those messages/information shared in facebook are not reliable. It is inferred that the messages/information shared in facebook is more reliable than messages/information shared in whatsapp.

Suggestions

Suggestions to student users of social media

1. Late night use of social media need to be avoided as it harms the health of students and reduces the

concentration level which may also result in lowering the academic performance,

2. Controlled use of social media will strengthen the friendship and relationship and uncontrolled use will result in addition to social media,
3. Excessive importance to messages/information that is shared through social media need to be reduced as it runs into the danger of twisted and misinterpreted communication.
4. Excessive importance to provide comments/expressions/reactions to social media posts may be reduced as there is tendency to view them in between the scheduled programme.

Suggestions to Parents of Student Users

1. Parents of student users of social media need to be observed and their behaviour is to be corrected with true love,
2. Provide space for children to use and grow amidst the modernised world in use of social media.

Areas for Further Research

1. Impact of social media on college students may be undertaken as a separately study.
2. Behavioural and psychological problems encountered by adolescents and teenagers could be done for creating better environment for leaders of tomorrow.

Conclusion

Social media is a good system of communication that spreads messages/information faster than any other medium and it is used irrespective of profession, status and at all levels. Social media needs to be controlled as excessive importance to it will surely result in lack of concentration on day to days work, poor relationship among family members etc. and it can be used at the leisure time of the individuals with out affecting the genuine relationship between parents and children. Imaginary urgency to comment for the messages/information should also felt to be controlled as it becomes a time waster. Living in the fast growing technological world is a challenge which may be faced with self-control and courage.

CONSUMER PERCEPTION TOWARDS ONLINE SHOPPING

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Abstract

Nowadays, the Internet is being widely used in our daily life. The existence of the Internet has brought many advantages to the individual in his daily life. With the help of the medium, people can communicate, learn, entertain, buy products and get services. Online shopping is a form of electronic commerce whereby consumers directly buy goods and services from a seller over the internet without an intermediary service. Consumers buy a variety of items from online stores. In fact, people can purchase just about anything from companies that provide their products online. Books, clothing, household appliances, toys, hardware, software, and health insurance are just some of the hundreds of products consumers can buy from an online store. Despite the convenience of online shopping, not everyone chooses to purchase items and services online. Some people like the idea of physically going to a store and experiencing the shopping process. They like to touch the merchandise, try on clothing, and be around other people. Online shopping doesn't permit shoppers to touch products or have any social interaction. It also doesn't allow them to take the merchandise home the same day they buy it. Consumer behavior of every individual is different from the other depending on buying choices which is influenced by buying habits and choices that are in turn tampered by psychological and social drives that affect purchase decision process.

Keywords: Online shopping, Consumer buying behavior, Attitude, Convenience

Introduction

Online shopping is the process of buying goods and services from merchants who sell on the internet. Since the emergence of the World Wide Web, merchants have sought to sell their products to people who surf the Internet. Shoppers can visit web stores from the comfort of their homes and shop as they sit in front of the computer. The need of this study was to predict the consumer's behavior with regards to online shopping. These predictions were based on the consumer's demographics and intentions. This study also identified individual demographic characteristics and other variables that distinguish those who have high intention from those who have low intention to utilize Internet shopping.

Due to the rapid development of the technologies surrounding the Internet, companies are interested to sell their products through their website even though buyers and sellers are thousands of miles apart, and may belong to different parts of world, or they might even speak different languages. Since Internet is a new virtual medium with many potential consumers, the online retailers must understand the wants and needs of such consumers. From this back ground the researcher's work is primarily to identify the consumer perception on online shopping in Madurai City.

Objectives of the Study

- To assess the attitude of the consumers towards online shopping.
- To analyze the consumers satisfaction towards online shopping.
- To study the problems faced by the consumers towards online shopping.

Research Methodology

The study concluded with an examination of the product categories and services that have a potential to be retailed online successfully. Moreover, it is also expected or needed to identify and analyse online buying habits of consumers in Madurai city. The survey method has been used in order to find out the online buying behaviour. I have decided to do my research as quantitative in nature because I would like to quantify my research findings and give some recommendation to the people who are involved with online shopping.

Survey method is selected for the present study. Survey is a procedure in which data are systematically collected from a population through some form of direct solicitation such as face-to-face interview, questionnaire or schedule. A total of 60 survey questionnaires are collected and used for data analysis. The respondents were asked to fill up the questionnaire and return in immediately. The

respondents are from Madurai. I have tried to collect data from all the divisional city of Madurai because I would like to make my sample representative. Before starting my survey I have tested my questionnaire by doing a test survey. After the test survey I have made some necessary correction and after doing this I have finally approved the questionnaire and go for survey. After collecting the data I have sorted this data and enter in the Microsoft excel software to articulate the output. I have tried best to collect the data most authentically and I am very much optimistic that my data is very much authentic and trustworthy. I have designed a structured questionnaire so that I get structured outcome as I am doing quantitative research. In this study, Simple average method is used to provide consumer perception on online shopping to meet the objective of the study. I analyse the data with selected theories. At last, the conclusion is drawn.

Interpretation and Discussion

Age: It is revealed that out of 60 respondents, 32% of the respondents belongs to the age of 25 – 35 years so that result shows that between all of them the respondents who has age limit between 25 to 35 years (32%) people are more familiar to shop online.

Gender: It is identified that out of 60 respondents, 54% respondents are female. So, according to the survey result it is clear that female respondents are more interested to shop online than male.

Educational Qualification: It is known that out of 60 respondents, 52% respondents have fallen in the post graduate group. So, according to the survey result it is clear that Post graduate respondents are more interested to shop.

Occupation: It is revealed that out of 60 respondents, 35% respondents are private employees. So, according to the survey result it is clear that private employee's respondents are more interested to shop.

Mode of Shopping

It is identified that out of 60 respondents, 85% of the respondents are shop personally and through online shopping. So, according to the survey most of the respondents shopped both personal shopping and online shopping.

Awareness on Online Shopping

Out of 60 respondents, from friends 37% of the respondents came to know about online shopping. So, according to the survey result it is clear that most of the

respondents came to know about online shopping from friends circle.

Table 1.1 Awareness on Online Shopping

	Number of Samples	Percentage
Family members	17	28%
Friends	22	37%
Advertisement	19	32%
Workplace	2	3%
Total	60	100%

Reasons for online Shopping

For understanding the need to shop online, the respondents were allowed to choose more than one and one an 'other' option has been put to see different responses. It is revealed that out of 60 respondents, it is interpreted that out of 37 respondents expected home delivery. So, according to the survey result it is clear that most of the respondents expect home delivery.

Table 1.2

S.No	Criteria	Number of Samples
1	When I need home delivery	37
2	When I don't have time to buy	26
3	Some of the products are available in online only	14
4	Less expensive	9
5	Collective decision	14
6	Good description of goods	7

Favorite Website

To understand the favourite online websites of the respondents they were allowed to choose more than one and one an 'other' option has been put to see different responses. It is revealed that out of 60 respondents, shows that 33 respondents have their favorite website in Amazon.com. So, according to the survey result it is clear that most of the respondents have Amazon.com as their favorite website.

Frequency of Online Shopping

It is known that out of 60 respondents, 40% of the respondent use online websites as and when required. So, according to the survey result it is clear that most of the respondents purchase from online websites as and when required.

Nature of Products

For understanding the nature of products bought by the respondents they were asked to choose 6 product types and they were also allowed to choose more than one and one an 'other' option has been put to see different responses. It is identified that out of 60 respondents, 26 respondents mostly bought items are goods on online. So, According to the survey result it is clear that most of the respondents purchase goods form online websites.

Security

It is identified that out of 60 respondents, 87% of the respondent feels secure while shopping on online. So, according to the survey result it is clear that most of the respondents feel secure on online shopping.

Payment Method

For understanding the method of payment of the respondents it is interpret that It is known that out of 60 respondents, 68% of the respondents prefer cash on delivery. So, and According to the survey result it is clear that most of the respondents refer cash on delivery. Internet users avert online shopping because of credit-card fraud, lack of privacy, non-delivery risk, lack of guarantee of quality of goods and services. Concerned authorities are devising policies to minimize the risk involved in e-business.

Nature of Problem

Customers experience many problems in online shopping. It is revealed that out of 60 respondents, 53% of the respondents have not experienced any problem in online shopping. So according to the survey result it is prove that most of the respondents have felt that they got good experience in online shopping. Customers experience problem in online shopping because of credit-card fraud, lack of privacy, non-delivery risk, lack of guarantee of quality of goods and services. 54% of the respondents experienced delay in delivery in online shopping. So according to the survey result it is proved that most of the respondents not able to get the products as promised.

Table 1.3 Kind of Problem Wise Distribution

	Number of Samples	%
Delay in delivery	15	54%
Quality is not described	7	25%
Product damage	6	21%
Non delivery	0	0%
Total	28	100%

Most of the respondents filed the complaints about the problem they faced. 89% of the respondents filed complaints about the problem they experienced. So, According to the survey result it is prove that most of the respondents filed their complaints to the particular online websites. There are some provisions provided by the online retailers to their customers for file their complaints. Most of the respondents send their complaint through E-Mail.

The problem was solved by various factors like money refund, product exchange, and purchase of another product for the same amount and repair. Out of 22 respondents, for the 55% of the respondents the shopping websites solved the problem through Product exchange. So, according to the survey result it is proved that the shopping websites allowed to the customers to exchange their products.

The Time Taken to Resolve Problem

The online shopping retailers have taken adequate time to solve their problem. 43% of the respondents say that the shopping websites took a Fortnightly to solve their problem. So, according to the survey result the shopping websites took Fortnight's time to solve the customer's problem.

The increasing purchasing power of the online customers the online websites offered special offer to their customer. It is identified that out of 60 respondents, 88% of the respondents did not receive any special offers for regular purchase. So, according to the survey result it is prove that most of the respondents did not get any special offer for their regular purchase.

Suggestions for the Improvement

Each and every online shopping websites should have branch office in all the area to delivery their products as they promised to avoid delay in delivery. The government has to regulate some restrictions over the online shopping to avoid Credit / debit card hackers. The online shopping website should give special discounts towards their regular customers to improve their sales volume. They suggested widening the online shopping to the unreached segments through advertisement.

Conclusion

Above discussion clearly indicate that online shopping has become a regular part of our lives, mainly because it is so convenient. Every day, millions of people go online to do research about products and make purchases from

thousands of different online merchants. Thus, online shopping is a fun and convenient way to locate hard-to-find items, to make purchases and discover bargains, but also with some level of risk. Online shopping can be easy and enjoyable with some precautions. India's online market is at an early stage but is expected to see huge growth over the next four to five years. Retailers have a sizeable opportunity as the online population starts to spend more and buy more frequently online. Online shoppers expect to see good deals online accompanied by free or very low-cost shipping. Consumers are looking for trust, Security and privacy of information, timeliness, availability, convenience, customer service, prices and wider selection during online shopping.

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INDIA SINGAPORE TRADE RELATIONS IN THE AFTERMATH OF COMPREHENSIVE ECONOMIC COOPERATION AGREEMENT – AN OVERVIEW

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Abstract

Singapore, located geographically near India, appears apt to be considered as part of Big India. In terms of migrants, also Indians large in numbers contribute to the prosperity of Singapore. Close proximity has created acceptable nexus between the two countries in terms of shared Culture, language and customs. Singapore happens to be the great way to the Western part of the World with Globally accredited Universities and Western like life styles.

Briefing on Relations between Republic of India and Republic of Singapore

Though both the countries differed in their political alignment, together they enjoyed high-level contacts during 1966 and 1971 (three visits of PM Singapore to India), during 1968 (Indian PMs visits to Singapore), Singapore support to India's bid to become Permanent Member in UN Security Council, in the War against Pakistan (1965) and in the Kashmir issue.

Comprehensive Economic Cooperation Agreement (CECA)- 2005

The Comprehensive Economic Cooperation Agreement emerged as the major phase in the bilateral trade relations between the two countries.

With the signing of the Comprehensive Economic Cooperation Agreement (CECA) in 2005 by the two countries- India and Singapore, the bilateral trade and economic co-operation is expected to reach the peak and cause betterment for the region.

Backtrack by Singapore (2016)

Though both the countries entered into, "strategic relationship" across sectors such as defence and military, security and intelligence cooperation, political exchanges, trade and investment, financial linkages, air connectivity and cooperation in multilateral forums (2016), it was observed that Singapore has backtracked from the CECA by blocking Indian IT professionals seeking work Visas. India, in response, has put on hold further trade liberalization of trade between the two countries. In these circumstances, academic curiosity led to the in-depth study of the bilateral trade relations between the two countries during the last decade- 2005-2015. The current paper focuses only on the trade, commerce and economic aspects between Indian Republic and Republic of Singapore.

Keywords: Bilateral trade; Comprehensive Economic Co-operation Agreement; Strategic Relation

Introduction

Countries have been searching for alliances in trade and peace keeping efforts. This has been the trend evident among the developed countries to keep secret efforts to retain supremacy, among the developing countries to strengthen the sanctity of their territories from the dominant forces in the world and among the least developed countries to share the technology and seek support for their upliftment. Regional trade agreements have been popular and playing effective role in the World trade. India has a special role in the Asian region because it is the World's largest democratic country since its independence and crusader of non alignment movement. It has been partner in BRICs and SAARC is its pioneering effort in this region. Singapore is small country in terms of its geographic area but crucial in terms of its economic development, trade relationships and geographic location.

Objectives

The objectives of the paper are

- To analyse the changes in India Singapore trade
- To identify the significance of association between India's exports to Singapore and India's total exports to the world
- To study significance of the association between total imports of India and imports from Singapore.

Review of Literature

Vibhanshu Shekhar (2007) traced out the bilateral trade relations, investment linkages, scientific & technological co-operation and cultural linkages between India and Singapore over the years. It observed the increasing political and security concerns shaping up the ties between the two nations. It also pointed out the

hiccups hindering the progress and the crucial role to be played by both the countries to bring peace and stability in the Southeast Asia. Amitendu Palit, (2008) examined the period wise growth in exports and import trade between India and Singapore during 1992- 2006-07. It also analysed commodity profile of the bilateral trade. It presented the regional perspectives emerging out of this trade relationship and analysed the impact of CECA on the bilateral trade with preliminary evidence. Wilson Wong and Lim Yi Ding (2016) traced the emergence of Singapore as service oriented economy and presented the trade in services by service category, by region and by trading partner. It concluded that the economic engagement of Singapore is expanding, broadening and deepening. Naveen Sood (2016) studied the statistical association between India's exports to Southeast Asia and India's exports to the world as well as the total imports of Southeast Asia and India's exports to Southeast Asia. It concluded that there is significant trade association between India and Southeast Asia.

List of trade agreements between India and Singapore

- Double Taxation Avoidance Agreement 1981
- Comprehensive Economic Cooperation Agreement 2005
- Free Trade Agreement, in goods and services, and investment;
- A bilateral agreement on investment promotion, protection, and cooperation;
- An improved Double Taxation Avoidance Agreement;
- A more liberal Air Services Agreement, and Open Skies for Charter Flights; and
- A work programme of cooperation in a number of areas including health care, education, media, tourism, and the creation of an India-Singapore Fund, with a target of US\$1 billion.
- India Singapore Bilateral Relations Retrieved from http://www.indianchamber.org/wp-content/uploads/2015/---/Singapore_Dec_2014.pdf Retrieved 17.10.2017
- Protocol amending agreement on avoidance of double taxation and prevention of fiscal evasion 2005
- Though the initiatives were originated in 1981, the momentum was gained in 2005 with the Comprehensive Economic Cooperation Agreement (CECA).

Research Methodology

The study is descriptive in nature and based upon secondary sources of data mainly from the Reserve Bank

of India. Simple percentages were used to bring out the voluminous numbers into meaningful relationship to the total figures. Data for various years was collected from Statistical tables on Indian economy by the Reserve Bank of India, department of Commerce and Singapore government websites. Share of Singapore in Total Exports of India to the world and Share of Singapore in India's total imports were used mainly to study the trade relations between the two countries during 2005- 06 to 2014 to 2015. This period was significant because of the CEA which facilitated the trade through multiple concessions and relaxation provisions. The statistical tools such as correlation coefficients, regression analysis and ANOVA have been used to achieve the objectives of the paper. Percentage method was used to find out the share of Singapore in India's total exports and total imports.

Data Analysis and Discussion

The absolute figures on exports, imports and trade balance revealed that there has been negative trade balance for the country throughout the ten year period of study. The data on total exports, imports and trade balance of India was analysed calculating the percentage change and results were presented in the table No.1 given below.

Table No. 1. Percentage Growth in India's Foreign Trade during 2005-2015 (Figs. In %)

Sl. No.	Year	Total Exports	Total Imports	Trade balance
1	2005-06	21.60	31.80	62.25
2	2006-07	25.28	27.27	31.74
3	2007-08	14.71	20.44	32.64
4	2008-09	29.19	35.77	49.72
5	2009-10	0.57	- 0.78	-2.90
6	2010-11	35.17	23.45	4.31
7	2011-12	28.26	39.32	62.71
8	2012-13	11.49	13.80	17.66
9	2013-14	16.56	1.73	-21.69
10	2014-15	-0.45	0.80	3.73

Source: Computed from Handbook of Statistics on Indian Economy

It was observed from the table 1 on percentage increase in India's exports, imports and trade balance that the total exports showed inconsistent growth increasing and decreasing in alternate years till 2011-12. The decrease in 2014-15 was a record in the sense the growth was negative. The growth in the imports of the country too did not record a consistent trend till 2011-12. But since then, imports into the country were continuously recording decreasing trend.

The rate of increase in imports was lower than that of the exports only during 2009-10, 2010-11 and 2013-14. Because of this, the trade deficit decreased in the years - 2009-10, 2013-14 & 2014-15. As a result of the above phenomena, the trade balance has been consistently in the negative but the rate of growth is inconsistent.

Table 2 India- Singapore Trade -2005-06 to 2014-15
(Figures in USD Million)

Sl. No.	Year	India's Total Exports to World	Exports to Singapore	India's Total Imports	Imports from Singapore
1.	2005-06	103,090.5 (23.4)	5425.3 (35.6)	149,165.7 (33.8)	3353.8 (26.5)
2.	2006-07	126,414.1 (22.6)	6053.8 (11.6)	185,735.2 (24.5)	5484.3 (63.5)
3.	2007-08	163,132.2 (29.1)	7379.2 (21.9)	251,654.0 (35.5)	8122.6 (48.1)
4.	2008-09	185,295.4 (13.6)	8444.9 (14.4)	303,696.3 (20.7)	7654.9 (-5.8)
5.	2009-10	178,751.4 (-3.5)	7592.2 (-10.1)	288,372.9 (-5.1)	6454.6 (-15.7)
6.	2010-11	251,136.2 (40.5)	9825.4 (29.4)	369,769.1 (28.2)	7139.3 (10.6)
7.	2011-12	305963.9 (21.8)	16857.7 (71.6)	489319.5 (32.3)	8600.3 (20.5)
8.	2012-13	300,400.7 (-1.8)	13,619.3 (-19.2)	490,736.6 (0.3)	7,486.4 (-10.2)
9.	2013-14	314,405.3 (4.7)	12,510.5 (-8.1)	450,199.8 (-8.3)	6,762.5 (-9.7)
10.	2014-15	310,338.5 (-1.3)	9,809.4 (-21.6)	448,033.4 (-0.5)	7,124.5 (5.4)

Source: <https://www.hcsingapore.gov.in/index.php>
Retrieved 17.10.2017

Note: Figures in parentheses indicate % growth in the respective variable.

The above table 2 reveals that the growth in India's exports to Singapore was similar to that in country's exports to the world. The decrease in exports to World saw similar decrease and increase followed by similar increase in exports to Singapore. However, in 2005, the year of CEA, witnessed a higher rate of increase in India's exports to Singapore.

The rate of growth in imports from Singapore initially recorded a higher growth than India's imports from the total world. Later it recorded a negative growth, picked up

for two years and again dipped lower than India's imports from the total world.

Table.3. Share of Singapore in Indian Exports during 2005-2015

Sl. No.	Year	India's Total Exports (USD Millions)	Exports to Singapore (USD Millions)	% share of Singapore in India's Exports (%)
1	2005-06	103,090.5	5425.3	5.26
2	2006-07	126,414.1	6053.8	4.79
3	2007-08	163,132.2	7379.2	4.52
4	2008-09	185,295.4	8444.9	4.56
5	2009-10	178,751.4	7592.2	4.25
6	2010-11	251,136.2	9825.4	3.91
7	2011-12	305963.9	16857.7	5.51
8	2012-13	300,400.7	13,619.3	4.53
9	2013-14	314,405.3	12,510.5	3.98
10	2014-15	310,338.5	9,809.4	3.16

Source: computed from the data retrieved from <https://www.hcsingapore.gov.in/index.php> Retrieved 17.10.2017

From the table 3, it was found that in 2005 caused take off of trade which was 5.26% in 2005-06 (due to the CECA) and the peak was 5.51% in 2011-12. But this did not persist in the later years. Exports to Singapore were 3.16% (2014-15) the lowest and 5.51% (2011-12) the highest percentage of the total exports of India to the World. The major items of export from India to Singapore were—Rice, Tobacco, Spices, oil meals, Gems & jewellery and Engineering goods.

Major Service categories in Singapore's exports:

Export of Transport, financial and travel and other business services (business management, advertising and market research, engineering and technical services) grew faster during the period 2005-2015, establishing Singapore as the regional business hub.²

Descriptive Statistics

		India's Exports to World (X)	India's Exports to Singapore (Y)	R square	ANOVA	Regression
India's Exports to World (X)	Pearson Correlation	1	0.868	.754	F= 24.500	Constant Regression Coefficient =
	Sig.(2tailed)		0.001			Sig.0.001
	N	10				
India's Exports to Singapore (Y)	Pearson Correlation	0.868	1			
	Sig.(2tailed)	0.001				
	N	10				

There is positive and high correlation (0.868) between India's exports to Singapore and India's exports to the world. The p-value 0.001 is less than level of significance 0.01 therefore it can be concluded that the association between India's exports to Singapore and India's exports to the world is statistically significant. R square is 0.754 which means around 75% changes in India's exports to Singapore are explained by the changes in total exports of India to the world. Since the value of R square is .754 which is greater than 60% the Thumb Rule, it can be concluded that model is reliable. The p-value 0.001 is less than level of significance 0.01. Hence it can be concluded that India's export to Singapore on total exports of India to the world is statistically significant. Hence, results show that the dependence of India's export to Southeast Asia on total exports of India to the world is statistically significant. ANOVA is one of the important applications of F –test and is used to test the overall strength of the model under study. Since p-value. Wilson Wong, Lim Yee Ding, Trends in Singapore's International Trade in Services, , Business Statistics Division, Singapore Department of Statistics. 0.001 is less than level of significance 0.01, therefore it may be concluded that regression equation of India's exports to Singapore on India's exports to the world is statistically significant.

Table 4. Share of Singapore in India's imports 2005-2015

Sl. No.	Year	India's Total Imports from the World (USD Millions)	Imports from Singapore (USD Millions)	Percentage share of Singapore in India's imports (%)
1	2005-06	149,165.7	3353.8	2.25
2	2006-07	185,735.2	5484.3	2.95
3	2007-08	251,654.0	8122.6	3.23
4	2008-09	303,696.3	7654.9	2.52

Descriptive Statistics

		India's Imports from World (X)	India's Imports from Singapore (Y)	R square	ANOVA	Regression
India's Imports from World (X)	Pearson Correlation	1	0.677	.458	F= 6.769	
	Sig.(2tailed)		0.032			Sig.0.032
	N	10				
India's Imports from Singapore (Y)	Pearson Correlation	0.677	1			
	Sig.(2tailed)	0.032				
	N	10				

*. Correlation is significant at the 0.05 level (2-tailed)

There is positive and high correlation (0.677) between total imports from Singapore and imports of India from the World. The p-value 0.032 is less than level of significance 0.05 therefore it can be concluded that the association between total imports of Southeast Asia and exports of India to Southeast Asia is statistically significant at 5%.

5	2009-10	288,372.9	6454.6	2.24
6	2010-11	369,769.1	7139.3	1.93
7	2011-12	489,319.5	8600.3	1.76
8	2012-13	490,736.6	7,486.4	1.53
9	2013-14	450,199.8	6,762.5	1.50
10	2014-15	448,033.4	7,124.5	1.59

Source: computed from the data retrieved from <https://www.hcisingapore.gov.in/index.php> Retrieved 17.10.2017

The table 4 on percentage share of Singapore in India's total world imports revealed that Imports from Singapore though increased initially for the first three years of the period of study, decreased continuously and reached 1.59 percent. The reason for this phenomenon can be attributed to the fact that Singapore has become a service oriented economy and its services mainly were transport, ICT

Imports of Singapore

Payments for transport, computer and information services, telecommunications, intellectual property rights usage dominated the imports of Singapore showing the emergence of the country as business hub.³ Wilson Wong, Lim Yee Ding Trends in Singapore's International Trade in Services, Business Statistics Division, Singapore Department of Statistics. Singapore's economic engagement with different geographical regions in the World of late during 2004-2014, China and India emerged as the top services trading partners, though G3 countries still continue to be significant traders and increasing trade with other countries like Africa, America and Caribbean nations.⁴

R square is 0.458 which means around 46% changes in India's imports to Singapore are due to changes in the total imports of India from the World. Since the value of R square is more than 60% (thumb rule) therefore it can be concluded that model is more reliable.

The value of regression coefficient of India export to Southeast Asia on total imports of Southeast Asia is statistically significant as the p-value 0.032 is less than level of significance 0.05. F value indicates that the statistical association between India's imports from Singapore and India's imports from the World is significant at 5% level.

Wilson Wong, Lim Yee Ding, Trends in Singapore's International Trade in Services, , Business Statistics Division, Singapore Department of Statistics. Hence, it may be concluded that regression equation of India's imports from Singapore and imports from the World is statistically significant.

Table 5 Balance of Trade between India & Singapore during 2005-2015 (Figures in USD Million)

Sl. No.	Year	Exports to Singapore	Imports from Singapore	Net Balance of Trade between India & Singapore
1.	2005-06	5425.3 (35.6)	3353.8 (26.5)	2,071.5
2.	2006-07	6053.8 (11.6)	5484.3 (63.5)	569.5
3.	2007-08	7379.2 (21.9)	8122.6 (48.1)	-743.4
4.	2008-09	8444.9 (14.4)	7654.9 (-5.8)	790.0
5.	2009-10	7592.2 (-10.1)	6454.6 (-15.7)	1,137.6
6.	2010-11	9825.4 (29.4)	7139.3 (10.6)	2,686.1
7.	2011-12	16857.7 (71.6)	8600.3 (20.5)	8,257.4
8.	2012-13	13,619.3 (-19.2)	7,486.4 (-13.0)	6,132.9
9.	2013-14	12,510.5 (-8.1)	6,762.5 (-9.7)	5,748.0
10.	2014-15	9,809.4 (-21.6)	7,124.5 (5.4)	2,684.9

Source: Computed from data from <https://www.hcsingapore.gov.in/index.php> Retrieved 17.10.2017

Note: Figures in parentheses indicate % growth in the respective variable.

From the above table 5, the net difference between imports and exports between India and Singapore was positive except in the year 2007-08. The year 2011-12 witnessed the highest surplus in trade between the two countries while till 2014-15, this kept on decreasing. In spite of the CECA and many other trade facilitating agreements, the trade showed declining trend.

Conclusion

Thus the trade between the two countries is good sign of the regional cooperation trend emerging in the subcontinent. A lot needs to be done in terms of off campus training institutions, skill development programmes so that India can be made stronger in terms of its huge population. The immigration issues can be settled on soft terms and the second review of CECA can be completed on time. India too has to review its strengths and strategies to make a mark at the regional level.

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Annexure –I. Table 1.India's Foreign Trade during 200506 to 201415 (Rs. Billions)

Sl. No.	Year	Total Exports	Total Imports	Trade balance
1.	2004-05	3753.4	5010.65	-1257.25
2.	2005-06	4564.18	6604.09	-2039.91
3.	2006-07	5717.79	8405.06	-2687.27
4.	2007-08	6558.64	10123.12	-3564.48
5.	2008-09	8407.55	13744.36	-5336.80
6.	2009-10	8455.34	13637.36	-5182.02
7.	2010-11	11429.22	16834.67	-5405.45
8.	2011-12	14659.59	23454.63	-8795.04
9.	2012-13	16343.18	26691.62	-10348.44
10.	2013-14	19050.11	27154.34	-8104.23
11.	2014-15	18964.45	27370.87	-8406.41

Table 2. Percentage change in India's Foreign Trade during 2005-2015

Sl. No.	Year	Total Exports	Total Imports	Trade balance
1.	2005-06	121.60	131.80	162.25
2.	2006-07	125.28	127.27	131.74
3.	2007-08	114.71	120.44	132.64
4.	2008-09	129.19	135.77	149.72
5.	2009-10	100.57	99.22	97.10
6.	2010-11	135.17	123.45	104.31
7.	2011-12	128.26	139.32	162.71
8.	2012-13	111.49	113.80	117.66
9.	2013-14	116.56	101.73	78.31
10.	2014-15	99.55	100.80	103.73

**Table 3. India- Singapore Trade -2005-06 to 2014-15
(Figures in USD Million)**

Sl. No.	Year	India's Total Exports	Exports to Singapore	India's Total Imports	Imports from Singapore
1.	2004-05	83,535.9 (30.9)	4000.6 (88.3)	111,517.4 (42.7)	2651.4 (27.1)
2.	2005-06	103,090.5 (23.4)	5425.3 (35.6)	149,165.7 (33.8)	3353.8 (26.5)
3.	2006-07	126,414.1 (22.6)	6053.8 (11.6)	185,735.2 (24.5)	5484.3 (63.5)
4.	2007-08	163,132.2 (29.1)	7379.2 (21.9)	251,654.0 (35.5)	8122.6 (48.1)
5.	2008-09	185,295.4 (13.6)	8444.9 (14.4)	303,696.3 (20.7)	7654.9 (-5.8)
6.	2009-10	178,751.4 (-3.5)	7592.2 (-10.1)	288,372.9 (-5.1)	6454.6 (-15.7)
7.	2010-11	251,136.2 (40.5)	9825.4 (29.4)	369,769.1 (28.2)	7139.3 (10.6)
8.	2011-12	305,963.9 (21.8)	16857.7 (71.6)	489,319.5 (32.3)	8600.3 (20.5)
9.	2012-13	300,400.7 (-1.8)	13,619.3 (-19.2)	490,736.6 (0.3)	7,486.4 (-10.2)
10.	2013-14	314,405.3 (4.7)	12,510.5 (-8.1)	450,199.8 (-8.3)	6,762.5 (-9.7)
11.	2014-15	310,338.5 (-1.3)	9,809.4 (-21.6)	448,033.4 (-0.5)	7,124.5 (5.4)

Source: <https://www.hcsingapore.gov.in/index.php>
Retrieved 17.10.2017

Note: Figures in parentheses indicate percentage change in the respective variable.

Table 4. Balance of Trade between India & Singapore during 2005-2015 (Figures in USD Million)

Sl. No.	Year	Exports to Singapore	Imports from Singapore	Balance of Trade between India & Singapore
1	2004-05	4000.6 (88.3)	2651.4 (27.1)	1,349.2
2	2005-06	5425.3 (35.6)	3353.8 (26.5)	2,071.5
3	2006-07	6053.8 (11.6)	5484.3 (63.5)	569.5
4	2007-08	7379.2 (21.9)	8122.6 (48.1)	-743.4
5	2008-09	8444.9 (14.4)	7654.9 (-5.8)	790
6	2009-10	7592.2 (-10.1)	6454.6 (-15.7)	1,137.6
7	2010-11	9825.4 (29.4)	7139.3 (10.6)	2,686.1
8	2011-12	16857.7 (71.6)	8600.3 (20.5)	8,257.4
9	2012-13	13,619.3 (-19.2)	7,486.4 (-10.2)	6,132.9
10	2013-14	12,510.5 (-8.1)	6,762.5 (-9.7)	5,748.0
11	2014-15	9,809.4 (-21.6)	7,124.5 (5.4)	2,684.9

Source: computed from
<https://www.hcsingapore.gov.in/index.php> Retrieved
17.10.2017

A STUDY ON WASTE MANAGEMENT IN INDIA: CHALLENGES AND OPPORTUNITIES

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Abstract

India faces major environmental challenges associated with waste generation and inadequate waste collection, transport, treatment and disposal. Current systems in India cannot cope with the volumes of waste generated by an increasing urban population, and these impacts on the environment and public health. The challenges and barriers are significant, but so are the opportunities. A priority is to move from reliance on waste dumps that offer no environmental protection, to waste management systems that retain useful resources within the economy. Waste segregation at source and use of specialized waste processing facilities to separate recyclable materials has a key role. Disposal of residual waste after extraction of material resources needs engineered landfill sites and/or investment in waste-to-energy facilities. The potential for energy generation from landfill via methane extraction or thermal treatment is a major opportunity, but a key barrier is the shortage of qualified engineers and environmental professionals with the experience to deliver improved waste management systems in India. Though, there are many negative issues related to solid waste, it also provides many opportunities that not only mitigates its negative impact but also helps in meeting the demand for energy and employment generation as well as in soil health improvement. Keeping in mind the present situation the current review was planned with the objective to overlook the challenges and opportunities faced during urban solid waste management in developing countries like India.

Keywords: waste management, sustainable development, India, population growth, resource recovery, waste to energy, challenges and opportunities

Introduction

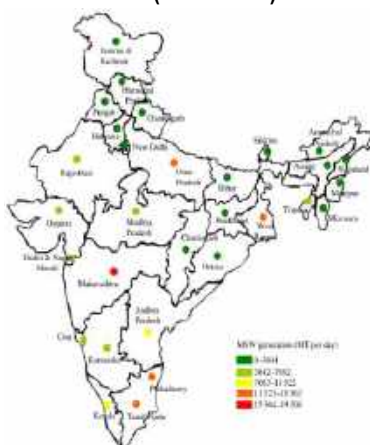
Solid waste management (SWM) is a major problem for many urban local bodies (ULBs) in India, where urbanization, industrialization and economic growth have resulted in increased municipal solid waste (MSW) generation per person. ⁸Effective SWM is a major challenge in cities with high population density. Achieving sustainable development within a country experiencing rapid population growth and improvements in living standards is made more difficult in India because it is a diverse country with many different religious groups, cultures and traditions. Despite significant development in social, economic and environmental areas, SWM systems in India have remained relatively unchanged. The informal sector has a key role in extracting value from waste, with approximately 90% of residual waste currently dumped rather than properly land filled. There is an urgent need to move to more sustainable SWM, and this requires new management systems and waste management facilities. Current SWM systems are inefficient, with waste having a negative impact on public health, the environment and the economy. The waste Management and Handling Rules in

India were introduced by the Ministry of Environment and Forests, although compliance is variable and limited.

With rapid urbanisation, the country is facing massive 'waste management challenge. Over 377 million urban people live in 7,935 towns and cities and generate 62 million tonnes of municipal solid waste per annum. Only 43 million tonnes (MT) of the waste is collected, 11.9 MT is treated and 31 MT is dumped in landfill sites. Solid Waste Management (SWM) is one among the basic essential services provided by municipal authorities in the country to keep urban centres clean. However, almost all municipal authorities deposit solid waste at a dump yard within or outside the city haphazardly. Experts believe that India is following a flawed system of waste disposal and management. A report by IIT Kanpur (2006) found the potential of recovering at least 15 per cent or 15,000 MT of waste generated every day in the country. According to the report, could also provide employment opportunities to about 500,000 rag-pickers. The report added that despite immense potential in big cities in this area, participation from non-profits or community is limited. In some urban centres, people working in the informal sector collect solid waste for each doorstep to get a collection fee and derive additional

income from sale of recyclables. The informal recycling industry plays a major role in waste management. It also ensures that less waste reaches landfills.

Figure-1. State-level statistics of MSW generation in India (2009–2012)



Source: Central Pollution Control Board, Govt. of India, 2012. Downloaded from <http://rsos.royalsocietypublishing.org/> on October 26, 2017

Figure-2 Existing municipal solid waste recycling system in India



Technologies for Processing & Treatment of Municipal Solid Waste

The main technological options available ³for processing and treatment of Municipal Solid Waste for Resource/Energy Recovery/ Disposal, are the following:

1. Composting
2. Vermi-composting
3. Anaerobic Digestion/Biomethanation
4. Incineration
5. Gasification/pyrolysis
6. Plasma Pyrolysis
7. Production of Refuse Derived Fuel (RDF)/Palletisation
8. Sanitary Landfilling/Landfill Gas Recovery

The first three technologies (S. No. 1-3) depend upon biological decomposition of the biodegradable organic fraction of MSW to produce compost/biogas/landfill gas. The technologies listed at S. No. 4-6 depend upon thermal

decomposition of the entire organic fraction of MSW (Biodegradable as well as no biodegradable fraction) to produce heat energy/fuel gas/fuel oil. The technology at S. No. 7 is only a waste processing method for producing RDF Fluff/Pellets, for subsequent energy recovery through the technologies listed at S. No. 4-6. The last technology at S. No. 8 is the ultimate means of disposal of residual wastes from all sources, including those from other waste processing/treatment plants.

Composition of Waste

The local economy impacts on waste composition, as ⁸high-income groups use more packaged products, resulting in higher volumes of plastics, paper, glass, metals and textiles. Changes in waste composition can have a significant impact on waste management practices. MSW may also contain hazardous wastes such as pesticides, paints, used medicine and batteries. Compostable organics include fruits, vegetables and food waste. Healthcare waste contains disposable syringes, sanitary materials and blood containing textiles and is governed by the Biomedical Waste (Management and Handling) Rules 1998 and the Amended Rules, 2003, and should not be mixed with MSW. The average composition of MSW produced by Indian cities is approximately 41 wt.% organic, approximately 40 wt.% inert, with approximately 19 wt.% potentially recyclable materials. Most organic waste is generated from households, and inert waste is generated from construction, demolition and road sweeping. Waste samples collected from Delhi, Ahmadabad and Bangalore indicate that MSW composition varies between cities.

Table-1 Average (% by weight) composition of MSW in Indian metro cities.

percentage (%) by weight							
compostable	inert	paper	plastic	glass	metals	textile	leather
41	40	6	4	2	2	4	1

Source: Sharholi *et al.* [16].

Waste Generation by Public

India's urban population of 429 million citizens produce a whopping 62 million tonnes of garbage every year. Out of this, 5.6 million tonnes is the plastic waste, 0.17 million tonnes is the biomedical waste, 7.90 million tonnes is hazardous waste and 15 lakh tonnes is e-waste. A staggering figure of forty-three million tonnes of Solid Waste is collected annually, out of which only 11.9 million that is 22-28% is treated, while about 31 million tonnes of waste is left untreated and dumped at the landfill sites.

Top Waste Generating Cities in India

Talking about solid waste, according to a Central Pollution Control Board (CPCB) report, Maharashtra tops in solid waste generation by generating over 26,820 tonnes of solid waste per day. In the e-waste sector, Mumbai comes first as it generates an estimated 1,20,000 tonnes of e-waste annually. Delhi and Bengaluru are ranked second and third, with 98,000 and 92,000 tonnes of e-waste generation respectively. The biggest threat to our environment comes from plastic. 60 major cities in India together churn out over 3,500 tonnes of plastic waste every day, with cities like New Delhi, Chennai, Kolkata, Mumbai, Bengaluru, Ahmedabad and Hyderabad being the biggest culprits.

Table-2 Waste Generation per Capita in Indian Cities

Population	Waste generation rate (kg per capita per day)
cities with a population <0.1 million (8 cities)	0.17–0.54
cities with a population of 0.1–0.5 million (11 cities)	0.22–0.59
Cities with a population 1–2 million (16 cities)	0.19–0.53
Cities with a population >2 million (13 cities)	0.22–0.62

Source: Kumar *et al.* [13,14].

India is experiencing rapid urbanization while remaining a country with physical, climatic, geographical, ecological, social, cultural and linguistic diversity, as shown in table-1. The population of India was 1252 million in 2013, compared with 1028 million in 2001. Population growth is a major contributor to increasing MSW in India.

Growth of Mega Cities in India

Megacities are a relatively recent phenomenon, associated with globalization of the economy, culture and technology. Megacities in India include Ahmedabad (6.3 million), Hyderabad (7.7 million), Bangalore (8.4 million), Chennai (8.6 million), Kolkata (14.1 million), Delhi (16.3 million) and Greater Mumbai (18.4 million). These have dynamic economic growth and high waste generation per capita, as shown in table 2.

Table-2 Major cities in India and per Capita Waste Generation Data (2010–2011)

City	Population (2011) × 10 ⁶	Total waste generated in tonnes per day	Waste generation (kg per capita per day)
Ahmedabad	6.3	2300	0.36
Hyderabad	7.7	4200	0.54
Bangalore	8.4	3700	0.44

Chennai	8.6	4500	0.52
Kolkata	14.1	3670	0.26
Delhi	16.3	5800	0.41
Mumbai	18.4	6500	0.35

Source: Census of India 2011, CPCB Report 2011.

Around the word – Where India Stands

Globally, there are around 2,200 waste-to-energy plants, of which the European Union has 445, China has 150 and USA has 86. Despite its burgeoning population, India just has 8. If India starts collecting and treating its waste effectively then it can be used to generate a lot of energy. Did you know that unused waste has the potential to generate 439 MW of power from 32,890 TPD of combustible waste. To put it in perspective, this much energy is enough to meet the power demand of a union territory like Pondicherry.

Table-3 Waste generation rates (kg/capita/day) of selected countries

Countries	Waste generation rates
Bangladesh	0.43
China	1.02
India	0.34
Malaysia	1.52
Nepal	0.12
Pakistan	0.84
Philippines	0.50
Thailand	1.76
Vietnam	1.46

Hoornweg and Bhada-Tada (2012)

Environmental and Health Impacts of Waste Dumping

Waste dumps have adverse impacts on the environment and public health. Open dumps release methane from decomposition of biodegradable waste under anaerobic conditions. Methane causes fires and explosions and is a major contributor to global warming. There are also problems associated with odour and migration of lactates to receiving waters. Odour is a serious problem, particularly during the summer when average temperatures in India can exceed 45°C. Discarded tyres at dumps collect water, allowing mosquitoes to breed, increasing the risk of diseases such as malaria, dengue and West Nile fever. Uncontrolled burning of waste at dump sites releases fine particles which are a major cause of respiratory disease and cause smog. Open burning of MSW and tyres emits 22 000 tonnes of pollutants into the atmosphere around Mumbai

every year. The impacts of poor waste management on public health are well documented, with increased incidences of nose and throat infections, breathing difficulties, inflammation, bacterial infections, anaemia, reduced immunity, allergies, asthma and other infections.

Challenges in Municipal Solid Waste Management

- Absence of segregation of waste at source⁶
- Lack of funds with ULBs for waste management
- Lack of technical expertise and appropriate institutional arrangement
- Unwillingness of ULBs to introduce proper collection, segregation, transportation and treatment / disposal systems perhaps because of incurring expenses in O&M.
- Unwillingness of ULBs to charge SWM charges
- Indifference of citizens towards waste management due to lack of awareness
- Lack of community participation towards waste management and hygienic conditions
- On social aspect, the presence of rag pickers is a blot on our society especially because of their involvement in picking up waste without using protective equipments.
- Lack of proper planning and indigenization of sophisticated waste processing facilities which result in closing down of plants thus shaking the confidence of others also.
- Lack of different models on Solid Waste Management suiting to different size of cities.
- Lack of enabling requirement for PPP in SWM
- Challenges to reduce land requirement in urban areas for sanitary landfill requirement.

Changes Required to Improve Waste Management in India

Core to the vision for waste management in India is the use of wastes as resources with increased value extraction, recycling, recovery and reuse. A strong and independent authority is needed to regulate waste management if SWM is to improve in India. Without clear regulation and enforcement, improvements will not happen. Strong waste regulations can drive innovation. The waste management sector needs to include attractive and profitable businesses with clear performance requirements imposed by the ULB, with financial penalties applied when waste management services are not working effectively. An average charge of 1 rupee per person per day would generate close to 50 000 cores annually, and

this level of funding would probably be sufficient to provide effective waste management throughout India.

Information on future quantities and characterization of wastes is essential as this determines the appropriateness of different waste management and treatment options. State-level procurement of equipment and vehicles is necessary for primary and secondary collection with effective systems for monitoring collection, transport and disposal. Littering and waste in streets is a major problem in India that has serious impacts on public health. Nagpur has introduced a system for sweeping roads in which every employee sweeps a fixed road length. The Swatchata Doot Aplya Dari (sanitary worker at your doorstep) scheme of the Centre for Development Communication was selected as an example of good practice by UN HABITAT in 2007. Waste management must involve waste segregation at source to allow much more efficient value extraction and recycling. Separating dry (inorganic) and wet (biodegradable) waste would have significant benefits and should be the responsibility of the waste producer.

Long-term waste management planning requires visionary project development by ULBs, the private sector and NGOs. The roles and responsibilities to deliver sustainable systems need to be defined, with monitoring and evaluation to monitor progress. Experiences should be shared between different regions of India and different social groups. There are a number of research institutes, organizations, NGOs and private sector companies working on a holistic approach to SWM, and future waste management in India must involve extensive involvement of the informal sector throughout the system. There is a need to develop training and capacity building at every level. All Indian school children should understand the importance of waste management, the effects of poor waste management on the environment and public health, and the role and responsibilities of each individual in the waste management system. This will develop responsible citizens who regard waste as a resource opportunity.

Conclusion

Population growth and particularly the development of 11 megacities is making SWM in India a major problem. The current situation is that India relies on inadequate waste infrastructure, the informal sector and waste dumping. There are major issues associated with public participation in waste management and there is generally a lack of responsibility towards waste in the community. There is a need to cultivate community awareness and change the

attitude of people towards waste, as this is fundamental to developing proper and sustainable waste management systems. Sustainable and economically viable waste management must ensure maximum resource extraction from waste, combined with safe disposal of residual waste through the development of engineered landfill and waste-to-energy facilities. India faces challenges related to waste policy, waste technology selection and the availability of appropriately trained people in the waste management sector. Until these fundamental requirements are met, India will continue to suffer from poor waste management and the associated impacts on public health and the environment.

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IMPACT OF GLOBAL ECONOMIC CRISIS ON INDIAN ECONOMY

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Abstract

Global economy is facing diverse challenges and new strategies are needed to cope with the changing economic situation and boost universal economic development. Economists consider that the global financial crisis of 2007 was worst since 1930. It played a major role in the failure of key trades, declines in consumer assets in trillions of dollars resulted the 2008–2012 global collapse. It was clearly evidenced as a liquidity crisis when BNP Paribas terminated withdrawals. But the Indian economy looked to be comparatively protected from the global financial crisis. Economists predict that the real economic impact of this financial havoc is expected to be very large. This paper attempts to study the origin and causes of global financial crisis and the impact of the crisis on the Indian economy. India is one of the leading economic power, has been facing most important challenges due to the global financial crisis. The instant effects are dipping stock market prices, a net loss of foreign capital, a great reduction in foreign reserves and a sharp reduction of domestic liquidity. These caused a rapid decrease of the exchange rate, flow in temporary interest rates, slowdown in domestic demand and exports. Demand effects have been predominantly ruthless in housing, construction, consumer durables and the IT sector. Consequently, manufacturing production has taken a hit and activities in the organized services sector (housing, construction, IT) are down sharply. GDP growth rate in each year is down than projected. The fiscal and monetary stimulus package is expected to contain the downward slip. Definitely, there is potential for still higher growth on a continued basis of 9+ percent in the years ahead, but other things like revival and a strong quest of economic reforms at the center and in the states are required. Another major effort at raising the rate of domestic savings, reducing government disinvestments, and refocusing of open and hidden subsidies, control over non-developmental expenditures, improvements in the tax ratio through stronger tax enforcement and strengthening incentives for savings would be required to insulate the financial crisis. Besides, larger investments in infrastructural services both in the public and private sectors, attention to larger resources for agriculture, social sectors and rural development programs to increase employment and to reduce poverty are major economic reforms to combat the economic crisis.

Keywords: Global financial crisis, Indian economy, Reforms

Introduction

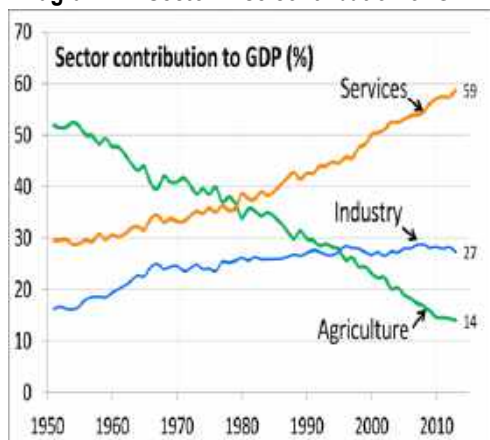
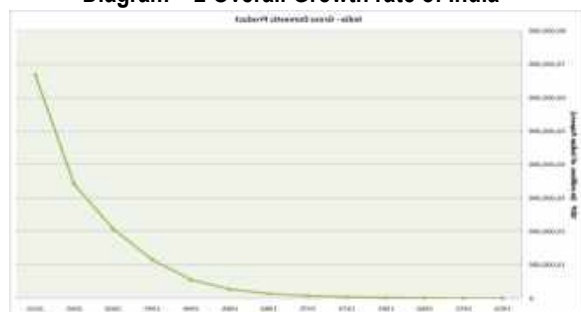
Economic crisis is and their spread are increasing with the increase in globalization. The origin may be different but the vibrations are being felt in different parts of the world. The crisis in Latin American nations in 1980s, Mexico in 1990s, Asia, Russia, American crisis of 2008 and the recent one in the series is Euro-zone crisis affected the world with different intensities. Earlier it was real estate bubble which burst in Thailand and now again in America which is also related to real estate. But economic problem affects the financial markets including stock market in India.

The Economy of India is the seventh-largest in the world by nominal GDP and the third-largest by purchasing power parity (PPP) (IMF, 2014). The country classified as newly industrialized country, one of the G-20 major economies, a member of BRICS and a developing economy with approximately 7% average growth rate for the last two decades (CIA, 2015). Therefore, the present

research paper is aimed to discuss the impact of financial crisis at the global scenario on different sectors of Indian economy. Finally we have come out with some suggestions and policy prescriptions to minimize adverse effects of crisis and capture the future opportunities. This research paper is based on information from the fact sheets from IMF survey, WHO, CIA, and periodical economic surveys conducted by OECD. Information was also obtained from blogs, web sites and articles addressing the impact of global financial crisis which can be found in the Appendices of the working document. Additionally, many press reports have been reviewed on a regular basis.

GDP Growth Rate in India

India's GDP growth rate of the different sectors such as agricultural sector, industrial sector and service sector has shown a drastic change from 1950 to 2010

Diagram – 1 Sector wise contribution of GDP**Diagram – 2 Overall Growth rate of India**

The GDP contribution of various sectors of Indian economy has evolved from 1951 to 2013, as its economy has diversified and developed. Economists consider that the global financial crisis of 2007 was worst since 1930. It played a major role in the failure of key trades, declines in consumer assets estimated in trillions of U.S. dollars, and a downturn in economic activity leading to the 2008–2012 global collapse which was evidenced as a liquidity crisis when BNP Paribas terminated withdrawals. But the Indian economy looked to be comparatively protected from the global financial crisis.

Impact of Global Economic Crisis on Indian Economy

The whole thing started with rising interest rates and falling home prices resulting in defaults and fore closures. This did not remain a mortgage crisis as these were scrutinized and packaged as investment products turning them illiquid. This resulted into failure of financial institutions dealing in those securities not just in USA but in Europe and to some extent to Asian countries also. This created an environment of doubt and froze many markets.

This financial system crisis then spread to the real sector as well affecting it adversely. The root of the crisis

originated in USA was the regulatory failure. Some part of the financial sector was not properly regulated and the role of rating agencies was also suspicious the surveillance system was not able to match innovations in financial sector. The bailout package was temporary and did nothing about the basic source of the problem. It is seen as a bailout for the culprits while ordinary person would be left to pay for their stupidity. Some of bailouts had also been accompanied with charges of hypocrisy due to the appearance of socializing the costs while privatizing the profits.

The official explanation of the crisis divides it into two parts, in the first half food and commodity prices started rising sharply, a rise in inflation after long moderation. In the later stage sharp swings in growth started which lowered the GDP growth rate. The developments of the present crisis exposed that irrespective of the degree of globalization and soundness of domestic policies no nation can escape. In Euro zone because of high fiscal deficits many nations are on the verge of default. Strong looking economies of Germany and France are also not performing up to expectation levels. The real economy crisis has penetrated Europe's core, pointing to further deepening of crisis. Japan is also experiencing long term stagnation and has been devastated by wholly unexpected shock.

With financial markets downturn and slowing global growth the implications for India are a matter of concern. 2011 also did not come for the rescue of the world and deepening of crisis is not good news for India as it is more integrated to the world now through flow of goods, services and finance. The global economy had contracted by 2.4% in 2009, got some of its bounce back in 2010, growing by 4% but in 2011 it is estimated to grow by another 2.8% only.

The Euro zone crisis already had adversely affected India. Its growth in the first half of the fiscal year 2011-2012 fell to 7.3% from a projected 9%. India's industrial output contracted by 4.74% in the third quarter, but rebounded in the fourth, growing by 5.9%. The rupee had slid against the dollar in the wake of credit rating cuts by rating agencies, and has only recently shown signs of firming up.

Impact on the Macro-economic Indicators of India

Initially it seemed that India is not going to be affected in a big manner but now the signs of the adverse effect are more visible. It affected our gross domestic product (GDP), wholesale price index (WPI), index of industrial

On an overseas acquisition spread over the past few years, Indian companies have suddenly become wary of making investments in foreign companies as a result of the current global economic crisis. When we look at the domestic savings and investment, although they did not reduce significantly but their levels are definitely affected.

Source: RBI handbook of statistics on Indian economy 2011 and own calculations.

cent of the increment in India's GDP. And revenues from software services amounted to 9.4 per cent of the GDP from services (excluding public administration and defense). The deceleration or decline in software export revenues is bound to affect GDP growth adversely. Exports and imports as a percentage of GDP are shown in table-3.

Table-3

Year	Trade		Im
	Exports/ GDP	Imports/ GDP	Net/ GDP
2001-02	9.4	11.8	3.1
2002-03	10.6	12.7	3.4
2003-04	11	13.3	4.6
2004-05	12.1	15.9	4.4
2005-06	13	19.4	5.2
2006-07	13.6	20.1	5.5
2007-08	13.4	20.8	6.1
2008-09	15.6	25.4	7.5
2009-10	13.2	21.8	5.8
2010-11	14.5	22	5

Source: RBI handbook of statistics on In

Impact on the monetary policy of India

As we know government responded on all fronts, RBI reduced all of its major rates i.e. repo rate, reverse repo rate, cash reserve ratio, statutory liquidity ratio to ease the liquidity conditions in the market and to maintain financial stability. But as the problem of inflation crept up and took devastating dimensions RBI again raised various rates but then rate hike adversely affected growth and RBI is signaling to reduce them in 2012 for growth impetus.

The chronology of rate change after the crisis is in table 4. India weathered the 2008 crisis well, but there are fears that this time round the country is not even ready for a crisis of much lesser magnitude, let alone a full blown debt default in Europe or a possible US recession. Weak finances, persistently high inflation and policy inertia have considerably weakened the position of the government. A domestic meltdown is expected and our resilience won't be as much as last time. Fiscal and monetary cushions are also exhausted. India needs to be more prepared. The shock waves produced by the financial crisis will have their own effect on the structure of capitalism. Acceptable capitalism would require more regulation. Future discussions must centre on the nature and scope of such regulation. Financial innovations that are dysfunctional do more harm than good. There are the lessons that we can draw from the current financial crisis.

Table-4

Rate changes by RBI

Effective Date	Bank Rate	Repo	Reverse	Cash Reserve Ratio	Marginal Standing Facility	Statutory Liquidity Ratio
10/06/2008	8.5	-	-	8.25	-	25
24/06/2008	8.5	-	-	8.25	-	-
12/09/2008	8.5	-	-	8.25	-	-
25/06/2008	8.5	-	-	8.25	-	-
05/07/2008	8.5	-	-	8.25	-	-
15/07/2008	8.5	-	-	8.25	-	-
30/07/2008	8.5	-	-	8.25	-	-
30/08/2008	8.5	-	-	8.25	-	-
11/09/2008	8.5	-	-	8.25	-	-
20/10/2008	8.5	-	-	8.25	-	-
25/10/2008	8.5	-	-	8.25	-	-
03/11/2008	8.5	-	-	8.25	-	-
04/11/2008	8.5	-	-	8.25	-	-
04/11/2008	8.5	-	-	8.25	-	-
04/11/2008	8.5	-	-	8.25	-	-
17/01/2009	8.5	-	-	8.25	-	-
05/03/2009	8.5	-	-	8.25	-	-
21/04/2009	8.5	-	-	8.25	-	-
07/11/2009	8.5	-	-	8.25	-	-
13/02/2010	8.5	-	-	8.25	-	-
27/03/2010	8.5	-	-	8.25	-	-
10/03/2010	8.5	-	-	8.25	-	-
20/04/2010	8.5	-	-	8.25	-	-
02/07/2010	8.5	-	-	8.25	-	-
27/07/2010	8.5	-	-	8.25	-	-
15/08/2010	8.5	-	-	8.25	-	-
02/11/2010	8.5	-	-	8.25	-	-
18/12/2010	8.5	-	-	8.25	-	-
25/01/2011	8.5	-	-	8.25	-	-
17/03/2011	8.5	-	-	8.25	-	-
03/06/2011	8.5	-	-	8.25	-	-
19/06/2011	8.5	-	-	8.25	-	-
29/07/2011	8.5	-	-	8.25	-	-
01/10/2011	8.5	-	-	8.25	-	-
Jan-12	8.5	-	-	8.25	-	-

Source: RBI handbook of statistics on Indian economy

Suggestions

The link between monetary policy and financial stability need to be understood and more autonomy to the central bank should be given to maintain the enviable reputation earned by RBI. Fiscal and monetary policy both should be co-ordinated for overall better performance of Indian economy. India has huge domestic demand which need to be tapped. There should be quick and consistent policy making which can transmit positive signals to the private sector for boosting the investment levels in the economy.

Black money should be brought back and corruption should be controlled. Ethical and moral standards should be enhanced. A transparent and credible Export oriented sectors are more adversely affected. Policy responses should be sector specific. Trade relations also need to be more diversified with more number of nations and commodities. Although to increase the private consumption is important India needs more emphasis on infrastructure investment. The fluctuations in currency need to be reduced and for that matter foreign investment will have to be promoted which is possible only when more reforms take place and there is consistency in policy actions.

Union Finance Minister ArunJaitley in a recent press meet claimed that the global environment with fall in global commodity prices and slowing down of China's economic growth is suitable for Indian economy. He also claimed that starting point of all economic activity is to increase all forms of investment, which is why the Indian government had been opening up sector after sector for private investment and creating India as a comfortable place for businesses. The Indian government is trying to withdraw

its carefulness in matters of contracts and resources by reducing human interaction, which should be replaced by computer-based bidding and market mechanism. Lastly, government is trying to make the taxation reasonable and globally competitive in a phased manner.

Conclusions

By concluding we can say that the global crisis has negatively affected Indian economy although at lower scale initially but then to a greater extent and it needs to make better strategies to take advantage of future challenges. Developed nations should fix their financial and fiscal system so that real sector can also be protected. Issues of leverage and interest rate regimes should be addressed on priority basis. Saving rates of household as well as government should be increased in USA and Euro zone. Fiscal stimulus cannot be unlimited as its effectiveness depends on some preconditions and is questionable due to diminishing returns. It usually involves additions to the public debt of the government. We need to take it back as soon as possible as fiscal deficit is becoming out of control and need to be curbed. Operational aspects of managing public debt also need to be managed.

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THE SOCIO-ECONOMIC BARRIERS OF AN ABORIGINAL COMMUNITY AND THEIR EMPOWERMENT IN AUSTRALIA

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Abstract

The present paper identifies the socio-economic barriers faced by indigenous people of Australia. Lack of entrepreneurial training and self-esteem are the major problem of an aboriginal community which de-motivate them for non-participation in business operation. To start the business should become as a community's culture to empower aboriginal and Torres Strait Islander people. The Australian government takes several steps to make economic participation of indigenous community. The Government funded for indigenous people of Australia to promote them economically and socially. The indigenous community have to make use of government assistance and attain social respectability in the nation.

Keywords: Indigenous, Aboriginal People, Torres Strait Islander, Socio-Economic Barriers, Empowerment.

Introduction

It is estimated there are more than 370 million Indigenous peoples spread across 70 countries worldwide, each practicing unique traditions, retaining social, cultural, economic and political characteristics that are distinct from those of the dominant societies. The term Indigenous is used to refer to Australian Aboriginal and Torres Strait Islander people. Australia's Indigenous peoples are two distinct cultural groups made up of Aboriginal and Torres Strait Islander peoples. Historically, Aboriginal peoples and Torres Strait Islander peoples have passed on knowledge and traditions through artwork, songs, dance and oral stories. Therefore, when researching the local histories of Aboriginal peoples and Torres Strait Islander peoples, it is important to show respect to this tradition and make connections with local Aboriginal peoples and/or Torres Strait Islander peoples to ensure authenticity of historical information.

But there is great diversity within these two broadly described groups exemplified by the over 250 different language groups spread across the nation. They also have their own laws and customs to determine the membership of their group. Aboriginal people have referred to themselves for example as Koori, Murri or Nunga, which is relevant to the greater region they are connected to. Aboriginal identities can also directly link to their language groups and traditional country (a specific geographic location), for example, Gunditjmarra people are the

traditional custodians of western Victoria, the Gadigal people of the Eora nation are from Sydney, and the Yawuru people are the traditional custodians of Broome in Western Australia.

Torres Strait Islander people prefer to use the name of their home Island to identify themselves to outsiders, for example a Saibai man or woman is from Saibai, or a Meriam person is from Mer. Many Torres Strait Islanders born and raised in mainland Australia still identify according to their Island homes.

In Australia, there are a range of specific grants, scholarships, university courses or government programs directly intended for Aboriginal and Torres Strait Islander people. To access these programs or services, which have generally been established to address the historical social, health and educational disadvantage of Indigenous people, Aboriginal and Torres Strait Islander peoples may be asked to confirm their Aboriginal or Torres Strait Islander heritage. This help ensures that the specific programs or grants or scholarships intended for Aboriginal and Torres Strait Islander people reach and are used by Aboriginal and Torres Strait Islander peoples.

Socio-Economic Barriers of Indigenous

The socio-economic circumstances of the vast majority of Indigenous people in Australia today, lack of capital and limited access to it are major barriers to the establishment, acquisition or development of Indigenous

controlled businesses or joint venture partnerships. Problems with access fall into two main categories:

- First, most Indigenous people do not have sufficient assets to offer as a deposit or security for loans
- Secondly, there can be mutual difficulties for many Indigenous people and lending institutions due to a lack of understanding and communication skills between the parties.

Inadequate skills levels and a lack of formal training in business also create barriers for participating in business. Good business ideas might not be pursued due to a lack of skills for fundamentals such as business planning and managing cash flow.

At a larger scale level, for example in a joint venture, Indigenous people might lack the skills to participate fully as directors and may not fully understand the legal obligations that attach to such positions.

For many Indigenous people, low self esteem caused by negative stereotyping over generations, has created a fear of failure that might override any excitement generated by business opportunities.

Furthermore, there is scope in both the public and private sectors to assist by facilitating the placement of suitably skilled and ambitious Indigenous people into major government and private-sector organisations at a level where, over time, they can progress to middle management and/or senior management. Experience gained from such placements might not be very relevant to small business aspirants but would be invaluable for Indigenous people wanting to be involved in larger businesses through directorships.

These approaches need to focus on the factors that support good social and emotional wellbeing including

- Cultural identity and connections to community, land and cultural practices
- Family connections
- Community connections and to land, spirituality
- Social inclusion and ability to participate in the broader community including in schools and workplaces
- Economic participation, employment and income levels
- The ability to access effective health and other support services such as housing and family support
- Unresolved grief and loss
- Racism and discrimination

Empowerment of Indigenous in Australia

The existing opportunities and arrangements for encouraging sound Aboriginal and Torres Strait Islander economic initiatives at the small and medium business level" with a focus on four areas briefly summarised as follows:

- Success of existing Commonwealth Indigenous commercially oriented programs;
- Possible future policy and administrative directions;
- Barriers to Indigenous participation in business; and
- Means of raising the profile of Indigenous business interests

ATSIC has a Business Development Programme with two elements:

- The Business Funding Scheme (BFS) which provides loans mainly to small businesses and operates within commercial parameters. Funding criteria are closely aligned with those applied by commercial lending institutions;
- The Indigenous Business Incentive Programme (IBIP), which started in 1997- 98, aims to assist Indigenous persons that might otherwise not be able to enter into business. The emphasis is on seed funding, training and other support to newly established businesses.

The Aboriginal and Torres Strait Islanders' Economic Participation Framework

1. It aims to increase the economic independence of Aboriginal and Torres Strait Islander people in island through employment and business ownership.
2. The Aboriginal and Torres Strait Islander Economic Participation Action Plan outlines the actions the State Government will take, in partnership with other stakeholders and all levels of government, to achieve the Framework's objectives under four areas for action:
 - **Individual Capacity:** providing education and vocational education and training, and addressing practical barriers to employment;
 - **Direct Employment:** linking Aboriginal and Torres Strait Islander people to employment opportunities;
 - **Government infrastructure, services and policy:** changing the way government delivers infrastructure and services, as well as policy changes to support employment and economic development; and

- **Private and other sector business and partnerships:** providing support for existing Aboriginal and Torres Strait Islander businesses through joint venture and collaboration with larger businesses and non-government organisations.

Social and emotional wellbeing influences the everyday lives of Aboriginal and Torres Strait Islander Queenslanders, their families and the community. It influences life outcomes in all areas including education, employment and economic participation, physical health and mental health.

Conclusion

Aboriginal and Torres Strait Islander peoples have a unique place in Australia as the original inhabitants of the land. More than 200 years of institutionalised dispossession, racism and discrimination have left Aboriginal and Torres Strait Islander People facing very difficult challenges, including low levels of education, high levels of unemployment, poor health and unacceptable housing and community conditions. The socio-economic status of indigenous should be developed in the country so as to achieve equality in the nation.

NEED FOR A STRONGER IPR REGIME TO BOOST INNOVATIONS

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Abstract

India is fast becoming a preferred R & D hub for MNCs across the world thanks to the macro-economic scenario and intellectual capital available in the country. Between 2007 and 2015, while imported R&D grew by 79 percent, in India the growth was as high as 116 percent with the major chunk coming from the US. India offers global talent at very competitive rates besides having a high growth local market in terms of consumption. The only way to encourage innovation is to have a strong IPR regime. IPR protection in India remains outside of international best practices and Indian law does not provide adequate enforcement mechanisms to effectively combat IPR violations. India's overall score has decreased to 7.05 in the fourth edition as compared to 7.23 in the third edition. The present paper examines the present state of IPR protection, areas which need improved enforcement, need for cohesive national policy and the benefits of stronger IPR protection.

Keywords: Patents, copy rights, trademarks, protection, enforcement, Innovation.

India is on its way to becoming the world's fastest growing economy in terms of purchasing power parity as projected both by IMF and the world Bank. With the R&D being the strong focus area of the Centre's 'Make in India' initiative and with raising the FDI caps in key sectors, this is the time to make the most of India's growth story and demographic dividend. According to a recent survey-based report brought out by strategy & PWC's Strategy Consulting Business, India along with china is fast emerging as a global hub for R&D driven largely by imported R&D from the US. While adoption of foreign technologies and products in India has paid off, the country currently lacks the resources to invest heavily in R&D, besides facing the capability and skill gaps required for a sustained industrial growth and IPR issues.

The Indian high technology market is assessed to be worth \$ 550-600 billion by 2020 in the areas of electronic system and design and manufacturing (ESDM), aerospace & defence (A&D) environmental technologies and renewable energy. This translates into investments of over \$140 billion into the hi-tech industry and creation of over 30 million high value jobs in the next five years. These technologies are a part of IPRs portfolio of global original equipment manufacturers (OEMS) that will be transplanted into PSUS, industries and R&D institutions.

India's tryst with Innovation

There is a lot of buzz about India having carved a niche as a global innovator of high tech services. If we are serious about achieving rapid inclusive growth and bringing about rapid economic and social transformation, we need to aggressively harness our national innovation potential. Innovation and R & D can become the focus of India's growth story. Innovation is not only about being creative but also being relevant at a global scale. It is important to embrace new and innovative techniques to achieve speed, scale and replicability, thus helping to capitalize on global market transitions by incubating new technologies. To drive sustained innovation, we need to kindle the innovation spirit and foster an innovation lifecycle.

Need for IPR Reforms

India is swiftly budding into a technology-led country, particularly in the arena of healthcare, pharmaceuticals, & biotechnology which necessitates an urgent need for capacity building of these sectors to reap benefits out of it. Nurturing I.P. culture and its implementation in pharmaceutical sector will exert positive inducements on healthcare technological innovation, promote equitable drug pricing, accessible healthcare, commercialisation of I.P. protect a firm's R & D investments, spur incentives for innovation and encourage diffusion of knowledge. There is an intricate link between IPR and pharmaceutical sector

and considering the intensification of globalised trade the implementation and harmonization of patent law worldwide has become an important goal of I.P. regime. India needs to strike a balance between IPR and healthcare sector to overcome the problems faced in affordable and accessible quality healthcare.

In recent years, acrimonious noises by foreign MNCs, especially pharma, against Sec.3(d) and compulsory licensing of Indian Patent Act, attempts by the World Intellectual Property Organisation (WIPO) to push the substantive Patent Law Treaty (SPLT) and initiatives such as the Anti-Counterfeiting Trade Agreement (ACTA) have brought the focus on Indian IPR policy. The EU and the US have been advocating stringent IPR laws and accountable regulations. Consistent diplomatic message have been sent to India, China and other developing countries to reform their IP systems.

IPR Policy

Adopted on 12th May 2016, the policy was formulated after intensive stakeholder consultation with nearly 300 stakeholders and individuals by an IPR Think Tank, as well as 31 departments of Government of India and 5 foreign Governments. Its aim is to make Indians recognize their own IPs, as also respect others' IPs.

The vision statement envisages an India where creativity and innovation are stimulated by IP for the benefit of all; an India where IP promotes advancement in science and technology, arts and culture, traditional knowledge and bio-diversity resources; an India where knowledge is the main driver of development, and knowledge owned is transformed into knowledge shared. Its Clarian call is "Creative India; Innovative India"

The Department of Industrial Policy and Promotion (DIPP) Ministry of Commerce, Government of India, has been appointed as the nodal department to coordinate, guide and oversee the implementation and future development of IPRs in India. The cell for IPR Promotion & Management' (CIPAM) setup under a professional body under the aegis of DIPP is to be the single point of reference for implementation of the objectives of the National IPR Policy.

Objectives of IPR Policy

The policy is a comprehensive document that lays down seven objectives which have been elaborated with actionable steps to be undertaken by the identified nodal ministry/department towards achieving the objectives.

1. IPR Awareness

2. Generation of IPRs
3. Legal and legislative framework
4. Administration and Management
5. Commercialization of IPRs
6. Enforcement and Adjudication
7. Human Capital development

In order to increase hi-tech industrial manufacturing, the centre has launched a slew of programmes and policies. A careful examination of these programmes and policies from an IPR perspective shows that India now recognises the changing paradigm of IPRs as the next generation tool of global trade and commerce, and is willing to adopt global best practices on IPR advocacy.

Need for India to align with International Standards

Weak patent protection and inadequate patent mechanism continued to weigh on India which remained at the 37th position amongst 38 countries in the International IP Index released by the US Chamber of Commerce. "Patent protection in India remains outside of international best practices and Indian law does not provide adequate enforcement mechanisms to effectively combat online piracy. India's overall score has decreased to 7.05 in the fourth edition as compared to 7.23 in the third edition" US Chamber of Commerce has said.

The country has remained at the bottom of the index for the fourth consecutive year. In 2015 it had moved one notch higher from the last position to the second list. In the 2016 index, the US bagged the top position followed by the UK, Germany, France and Sweden while Venezuela was at the bottom and ranked a poor 38. Although Shri Narendra Modi, the Indian Prime Minister has made various important announcements on IPR and the need for India to align with international standards the report, however, said that a number of concerns remain.

India's patentability requirements remain outside established international best practices with 2015 rulings confirming long standing interpretations and there is lack of specific IP rights for the life sciences sector. Further, the enforcement environment is challenging with high levels of physical and online piracy. Another issue highlighted by the report was that India is neither a contracting party to any of the international treaties included in the IP Index nor has it concluded a free-trade agreement with substantial IP provisions since acceding to the TRIPS agreement.

Section 3(d) of Patents Act and Innovation

In 1995, after years of negotiations when India became a signatory to the TRIPS agreement, it was

mandated to honour process and product patents on medicines and food from January 1 2005. The challenge was to comply with TRIPS and make sure that Indian generics could enter the market and compete, to keep drugs affordable. It was realised by early 2001 that a large number of patents in the US, Europe and Japan (about 76%) were granted for new forms of substances without any real improvement in the therapeutic benefit.

The new forms (a salt or crystal etc) did not change the active ingredient and its efficacy, but was perhaps better at say, handling of the drug. Despite this, new forms were granted patents in the developed world and the resultant medicines were exorbitantly priced. Therefore in 2005 Indian Parliament unanimously passed, cutting across party lines, Section 3(d)- so a new form of a known substance could not be patented unless it showed significant enhanced efficacy. Parliament did not define "enhanced efficacy" but left it to the courts.

This was the bone of contention in the Novartis case. The Supreme Court held that efficacy in Sec.3 (d) was therapeutic efficacy. Novartis argued that a crystalline form of the salt of imatinib, imatinib mesylate (gleevec) had better flow properties, was less hygroscopic, thermodynamically more stable. The Supreme Court rightly held that these were not elements for determining therapeutic efficacy. Novartis also argued that gleevec was 30% more bio-available which implied significantly enhanced efficacy. The court held that by itself bioavailability cannot imply higher therapeutic efficacy, which has to be shown by separate experiments.

The Supreme Court in Novartis case not only saw the significance of Section 3(d) but gave a fuller meaning to it. Had it not been for Section 3(d), gleevec and other new forms of existing medicines would be granted patents. In fact a recent study shows that Section 3(d) has been effective in preventing non-deserving patents on new forms from being patented.

Now as a decade has passed after the inclusion of Sec.3(d) and pressure from MNCs increases on India to change its IP laws, there is a reason enough to protect and celebrate Sec. 3(d) and not allow it to be dismantled. It is not just to keep medicines affordable for people in India and overseas, but to ensure only true innovations are rewarded with patent protection.

Strength of Indian IPR Regime

1. The IPR framework in India is stable and well established from a legal, judicial and administrative

point of view and is fully compliant with the agreement on Trade- Related Aspects of IPR.

2. India is committed to a number of international treaties and conventions relating to IPR.
3. A number of awareness programmes enumerating the types of IPR and its protection are being conducted by the Government, targeting audience from industry, Universities and Schools.
4. During the last few years, Indian IP officers have undergone major improvements in terms of upgradation of IP legislation, infrastructure facilities, human resources, processing of IP applications, computerization of the IP officers, IP data bases, quality services to stakeholders, transparency in functioning and free access to IP data through a dynamic website.
5. State of the art, integrated and IT enabled office buildings have been set up in the last few years in Delhi, Mumbai, Kolkatta, Chennai and Ahmadabad housing offices of Patents, designs, trademarks and GI.

S.No		Head Office	Branches
a.	Patent office	Kolkatta	Delhi, Chennai & Mumbai
b.	TradeMarks	Mumbai	Ahmedabad, Chennai, Delhi & Kolkatta
c.	Design office	Kolkatta	---
d.	GI	Chennai	---

1. The procedure for filing and processing IP applications has been simplified, e-filing facilities and incentives for SMEs and Startups are some of the other initiatives in the area of promoting IPR in India.

What Needs to be done?

What India needs right now is a clear and tough stance on IP both in domestic policy and at the multilateral land. At home, support for innovation has to be accompanied with instruments that guard against the misuse of market power, coercive bargaining and aggressive merger and acquisition strategies if local firms should survive and flourish. There are ongoing attempts by big business to push for new rules in areas such as e-commerce to slice-up profit making opportunities of the future. Other proposals being made will largely limit the ability of governments to constrain corporate behaviour in the public interest even if they succeed partially. In such an international context, we need to stop soft-peddling on

these issues in the pretence that we aspire to be a major IP player in the same vein as the US.

What we need is a return to old-fashioned pragmatism that clearly shows the west that India recognizes the fallacy of the current IP system and leads the way to broker a global new deal. This new deal should not only call for a return to business in the WTO by tackling the forgotten issues of the Doha Round but also firmly reopen the discussion on balancing the global IP system with development.

Conclusion

India not only needs a well articulated policy based but also a quasi-legal empowered body that synchronizes different ministries, brings together focused industry participation and an integrated legal environment. The IPR policy articulates these requirements effectively but does not provide mechanisms of synchronization and execution. India need to evolve a regulatory regime focused on national technological and IPR portfolios in the domains of Electronic system Design and Manufacturing (ESDM), entertainment, pharma and biotech and ICT.

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THE EFFECT OF OCCUPATIONAL STRESS ON MANAGERIAL SKILLS OF COLLEGE TEACHERS WORKING IN RAMNAD AND SIVAGANGA DISTRICTS IN TAMILNADU, INDIA

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Abstract

Managerial Skills refer to the ability of a person to get things done in a better way from the situation in which they work and from the people with whom they work. In the past, Managerial Skills were connoted only with corporate sector, and management studies. But recently the importance of management in each and every walk of life has been felt by everyone. This is all the more important for teachers also, since they are working with the future nation builders, namely students. To perform their duties, namely teaching and learning business, better than others our teachers should be in a position to discharge their duties successfully. But knowingly or unknowingly the things around us and the situation in which one works affects the individual and performance in the job. The Occupational Stress one experiences in the working place affects the individual in performing his/her duties satisfactorily. The present empirical study discusses the Managerial Skills possessed by college teachers working in Sivagangai District, Tamil Nadu, and the influence of Occupational Stress on Managerial Skills of teachers. Further the study reveals that though Occupational Stress and the dimensions of Occupational Stress namely (i) Home - Work Interface, and (ii) Environmental Factors, that the teachers experience is high, their Managerial Skills is not affected by Occupational Stress. Both Managerial Skills and Occupational Stress are present at a high level; but the performance of teachers is not affected by Occupational Stress they experience in their working places.

Keywords Managerial Skills, Occupational Stress, Home - Work Interface, and Environmental Factors

Introduction

Managerial Skill is the ability to make business decisions and lead subordinates within a company. Though a manager needs a number of skills to be successful, the important skills of a manager are classified as (i) technical skills, (ii) inter-personal skills, (iii) conceptual skills, and (iv) diagnostic skills (Ricky W.Griffin, 1990). For the effective functioning of organisations including educational institution, managerial skills are inevitable. The role of a teacher in educational institutions is to impart content-knowledge in classrooms, to design syllabi, and assess students ability. A teacher also fulfills many other roles. For this, a teacher should have command over certain skills, in addition to the basic skills, which are concerned with teaching-learning process, such as planning, time management, communication skills, student management, guidance and counseling, leading, delegation of tasks to others, coordinating, empathy, etc.

Therefore there is a need to promote such skills among teachers. In the past, managerial skills were thought of only in relation to the business and corporate sector; but now most of the successful gurus speak of managerial skills in every walk of professional and personal life. Today's work environment has become multifaceted and multidisciplinary and a teacher cannot restrict to academics only, but has to act out varied roles to justify his/her job and impart holistic education (Vithal Gore and Sameena Begum, 2012).

Vithal Gore and Sameena Begum have identified eight managerial skills that a teacher should possess - namely (i) organizational skills, (ii) teaching method (iii) planning, (iv) communication, (v) managing groups, (vi) guiding students, (vii) administrative work, and (viii) subject knowledge. Dr. A.Y. Abdul Kareem (2016) has cited nine managerial skills of a teacher, namely (i) planning, (ii) organizing, (iii) leading, (iv) coordinating, (v) directing, (vi)

supervising, (vii) controlling, (viii) evaluating, and (ix) reporting.

In spite of all the managerial skills promoted, modern life is full of stress because of rapid changes occurring in the environment. Stress has become a part of our life and it is very difficult to live without it. Stress is an adaptive response to an external factor that results in physical, psychological and behavioural deviations in an individual. Teachers who work with the future nation builders, namely students, are no exception to this. In spite of their stress, teachers have to develop their skills and personality to excel in their job and they have to perform their duties in a stressful world. Occupational stress for a teacher occurs when the requirements of the job do not match his/her capabilities, resources or needs. Occupational stress of a teacher is a response syndrome of negative effects (such as anger, depression), usually accompanied by potentially pathogenic, physiological, and biochemical changes, resulting from the aspects of the teachers job. According to Ricky W. Griffin (1990), the things that can cause occupational stress are task demands, physical demands, role demands, interpersonal demands and life stressors. For the purpose of this study, two dimensions of occupational stress namely, home work interface and environmental factors are taken into consideration.

Methodology

Since Managerial Skills form an important part of a teacher's equipment the study aimed to find out the level of managerial skills among college teachers working in Ramnad and Sivaganga districts, Tamil Nadu. Considering the present stressful situation in which teachers have to perform their duties, the study also aimed to finding out the level of occupational stress among the teachers and its relationship with managerial skills. The study was conducted to find out how each of the **two stressors** - work life balance and demographic pulls - affects managerial skills in their daily activities in their workplace. A questionnaire to measure managerial skills of college teachers, and another one to measure occupational stress of the college teachers, constructed and validated by the researcher were used to collect data from the teachers working in colleges of Arts and Science.

The sample for the study consisted of 90 college teachers of Ramnad and Sivaganga districts. There were 38 teachers from government colleges and 52 from aided/self financing colleges. The sample included 76 female teachers and 14 male teachers; there were 49 teachers teaching languages/humanities and 41 teachers

teaching science subjects; There were 45, having more than 15 years of service and 45 teachers having less than 15 years of service.

Findings and Results

The total mean value of managerial skills of the college teachers is 157.03. This value shows that the college teachers possess managerial skills at a high level (mean value above 124 is considered high). The total mean value of occupational stress of the teachers in the sample is 108.17. This value shows that the college teachers experience moderate levels of stress in their work places (mean value above 73 moderate).

Interpretation and Discussion

Verbal descriptions of r (Best and Kahn, 1992)

Coefficient r Relationship

- to 0.20 negligible
- 0.20 to 0.40 low
- 0.40 to 0.60 moderate
- 0.60 to 0.80 substantial
- 0.80 to 1.00 high to very high

Table showing r values and shared variance between managerial skills and each of the two dimensions of occupational stress of college teachers

	r	S.V.	Df	Critical value or r at 0.01 level	Remarks
Total Sample	0.0404	0.1637	88	0.270	NS
Managerial Skills and Home - Work Interface (Dimension 1)					
Male	0.3599	12.9528	17	0.537	NS
Female	0.1622	2.6308	74	0.305	NS
Arts subject teachers	0.1719	2.9580	47	0.402	NS
Science subject teachers	0.0635	0.4036	39	0.428	NS
More than 15 Yrs of service	0.0005	0.00003	43	0.428	NS
Less than 15 Yrs of service	0.0383	0.1471	43	0.428	NS
Managerial Skills and Demographic factors (Dimension 2)					
Male	0.2997	8.9850	12	0.537	NS
Female	0.0176	0.0310	74	0.305	NS
Arts subject teachers	0.0343	0.1182	47	0.402	NS
Science subject teachers	0.3818	14.5817	39	0.428	NS
More than 15 Yrs of service	0.1004	1.0092	43	0.428	NS
Less than 15 Yrs of service	0.0083	0.0069	43	0.428	NS

The coefficient of correlation r between managerial skills and occupational stress of the sample is 0.0404. The r value shows that the relationship between managerial skills and occupational stress is negligible. The shared variance is 0.16% which suggests that the impact of occupational stress on managerial skills is 0.16%. This means that only 0.16% of occupational stress could be attributed to the variation in managerial skills. The r value is 0.0404 'not statistically significant' at 0.01 level of significance. Hence it may be concluded that the relationship between managerial skills and occupational stress of college teachers is from negligible and not statistically significant. This means that the managerial skills of teachers are not affected by their occupational stress, though they experience stress in their working places.

The study aimed to find out the relationship between Managerial Skills and two dimensions of occupational stress and the impact of each of the two dimensions on Managerial Skills of college teachers.

Managerial Skills and Home - Work Interface (Dimension 1)

Since the calculated r values between managerial skills and home work interface regarding male college teachers, female college teachers, teachers teaching arts subjects, teachers teaching science subjects, more experienced teachers and less experienced teachers are 0.3599, 0.1622, 0.1719, 0.0635, 0.0005, and 0.0383 respectively and these r values show that the relationships are 'negligible to low'. Since all these r values are not statistically significant, it may be concluded that there is no significant relationship between managerial skills of college teachers and home work interface. The shared variance also suggests that only 12.962%, 2.630%, 2.958%, 0.403%, 0.00003% and 0.1471% of home work interface could be linked with the change in managerial skills.

Managerial Skills and Demographic Factors (Dimension 2)

Regarding the relationship between managerial skills and environmental factors of college teachers, the obtained r values with respect to male college teachers, female college teachers, teachers teaching arts subjects, teachers teaching science subjects, more experienced teachers and less experienced teachers are 0.2997, 0.0176, 0.0343, 0.3818, 0.1004 and 0.0083 respectively. All these r values show that the relationship between managerial skills and environmental factors is from

negligible to low. Further, all these r values are not statistically significant. Hence it may be concluded that there is no significant relationship between managerial skill of college teachers and environmental factors. The shared variance of the demographic factors suggests that only 8.985%, 0.0310%, 0.1182%, 14.581%, 1.009% and 0.0069% could be linked with changes in managerial skills of college teachers.

Conclusion

The aim of the study was to find out the possible links between the level of managerial skills possessed by college teachers and their occupational stress in their working places. The findings of the study clearly reveal that the college teachers possess managerial skills at a high level and they also experience occupational stress at a moderate level. The study aimed to find out whether there was any relationship between managerial skills and occupational stress college teachers. The dimensions of occupational stress were studied for the impact on the managerial skills of college teachers. The study revealed that there is no significant relationship between managerial skills and occupational stress of college teachers and there is no substantial impact of one on the other. The college teachers possess managerial skills at a high level; yet they experience stress in their work-places; but their managerial skills is not affected by their occupational stress.

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PERFORMANCE MANAGEMENT SYSTEM: A KEY FOR ORGANISATIONAL EFFECTIVENESS

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Abstract

The importance of performance management has increased in recent times due to several reasons like rapid advancements taking place in technology requiring continuous development of human resources; large size of the modern organizations in the age of liberalization and globalization. Performance Management System is a set of activities that can be used in any organization to effectively achieve business goals and objectives. The benefits from implementation of a performance management system include increased profits, a motivated workforce and improved management. This study is a modest attempt to know how far employees have understood of PMS and how they perceived the PMS features in their organization. Primary data have been collected with the help of a specially designed questionnaire from the sample respondents belong to four business entities two each from manufacturing and service sectors located in Chennai. The results indicate that the employees have understood the PMS as a system for developing employee skill, improve communication between higher-ups and subordinates, evaluate the performance of the employees, and identify excellent performer for incentives. The extent of understanding PMS is significantly higher among employees of manufacturing sector compared to their service sector counterparts.

Keywords: Performance Management System, Performance Appraisal, Cronbach Alpha, Eigen Value.

Background

Performance Management System (PMS) helps the human resource managers to link individual objectives with departmental targets in order to facilitate the attainment of departmental goals. In recent decades, the process of managing people had become more formalized and specialized. Many of the old performance appraisal and performance evaluation methods have been absorbed into the concept of Performance Management, which aims to be a more extensive and comprehensive process of managing people that will result in success for both the individual and the organization. Recent developments in the Human Resource Management have shaped performance management system as the modern scientific tool for the differentiation of employees or talent management, management by objectives and constant monitoring and review. The proper implementation of PMS in any organization helps to maximize the performance of every individual (employee) in turn enhancing overall effectiveness and productivity.

Concept of Performance Management System

Performance management is a strategic and integrated approach adopted in an organization for delivering sustained successes to the company by improving performance of every employee and employee group as well as for developing the capabilities of teams and individuals (Armstrong and Baron, 1998). It is an ongoing process where managers, supervisors, team leaders and employees work together to plan, review and monitor work objectives, goals or issues of employees that may arise during the working relationship and their overall contribution to the organization. Performance Management has evolved significantly over the last two decades, becoming an all-embracing management practice, or set of practices, and not the limited stand-alone appraisal with which it was often synonymous. The management of performance will increasingly become an organization focused rather than an individual-focused activity. The ability to demonstrate an active engagement with the corporate social responsibility agenda is growing rapidly. In

the future, performance management will be less about quantifying the output of individual employees and more about the effective performance of the organization in society (Beardwell and Claydon, 2010: 485). The importance of performance management has increased in recent times due to several reasons like rapid advancements taking place in technology requiring continuous development of human resources; large size of the modern organizations in the age of liberalization and globalization, long-range needs of manpower; high wage bills necessitating optimum use of manpower, and recognition of human aspect of organization (Armstrong ,2006).

Performance Management System is a set of activities that can be used in any organization to effectively achieve business goals and objectives. The benefits from implementation of a performance management system include increased profits, a motivated workforce and improved management. Businesses that use performance management systems are more competitive and profitable. While areas targeted in Performance Management Systems are individual to businesses and industries, there are some main features common to any system of performance management. Hence, here an attempt is made to empirically evaluate whether PMS in the selected manufacturing and service sectors has such features or not.

Objective

To identify the perception of employees working in manufacturing and service sectors on PMS.

Hypothesis

There is no significant difference in the perceived features of PMS between manufacturing and service sectors.

Methodology

A specially designed questionnaire, a 5 point Likert type scale comprising 10 statements relating to PMS with ranges of value from strongly disagree (1) to strongly agree (5) has been applied to collect the primary data from the sample respondents belong to four business entities two each from manufacturing (TVS and HUL) and service sectors (WIPRO and INFOSYS) located in Chennai.

The selection of the sample for the survey involves two stages. In the first stage, convenient sampling method is applied to choose the four organizations, two each from manufacturing and service sectors practicing PMS. In the second stage among the employees of the sample units,

225 employees (5% of the total population) were selected at random, comprising 134 (59.6%) from Manufacturing and 91 (40.4%) from Service sector.

The Cronbach Alpha Coefficient is calculated for testing the internal consistency of scale items included in the questionnaire. The underlying dimensionality of the PMS features is explored by principle component factor analysis. The status of PMS features is ascertained by descriptive statistics. The difference in status of PMS features between manufacturing and service sectors have been examined with t – test.

Findings

Table 1 provides the results of the reliability / item analysis for items in the scale measuring employees' views on PMS features in their organizations. As provided in the table, Cronbach alpha of 0.8805 for entire 10 items is in "good" internal consistency level (alpha value ≥ 0.80 and < 0.9 is for good level).

The item to total correlation ranges between 0.4040 (Item 7) and 0.6495 (Item 9) is well above the minimum acceptable value of 0.30 for all 10 items. This in turn envisages that the items in the scale used for measuring perception of the respondents about features of PMS are internally consistent. Further another condition for an item to be reliable in the measurement scale that alpha if deleted, value of the item should be less than overall Cronbach's Alpha is also satisfied here. Therefore the data obtained from employees of manufacturing and service sectors about features of PMS are reliable for further analysis.

Table 1 Reliability / Item Analysis Results Showing the Internal Consistency of Items Measuring Features of PMS

Item No	Details of Measurement Items	Item to Total Correlation	Alpha if Deleted
1	Sets clear targets and standards	0.4115	0.8779
2	Provides opportunities for supervisors to inform subordinates (employees) of their performance regularly	0.6451	0.8677
3	Allows the employees to have access to the entire report and review the appraisal before the appraisal interview	0.6350	0.8682
4	Under PMS competencies are tracked and monitored accurately	0.4973	0.8748
5	PMS helps to assess staff's potential and promotability to the next higher rank	0.5404	0.8729

6	PMS helps to identify the development needs of the staff	0.4906	0.8750
7	PMS enhances the objectivity and transparency of the performance assessment	0.4040	0.8787
8	Competencies are developed properly by aligning individual performance objectives with departmental ones	0.4551	0.8764
9	Competencies are developed by securing senior management commitment	0.6495	0.8675
10	Every staff are involved in the process of competency development under PMS	0.5236	0.8736
Overall Cronbach's Alpha		0.8805	

Source: Primary Data

Table 2 is reported with first part of the principle component factor analysis like eigen value and proportion of variance explained for each factor underlying the scale items measuring PMS features.

Table 2 Eigen Values of Factors Underlying PMS Features

Factors	Before Rotation			After Rotation		
	Eigenvalue	% of Total Variance	Cumulative % of Total Variance	Eigenvalue	% of Total Variance	Cumulative % of Total Variance
1	4.1637	41.64	41.64	2.9458	29.46	29.46
2	1.6562	16.56	58.20	2.5644	25.64	55.10
3	1.3137	13.14	71.34	1.6234	16.23	71.34
4	0.5493	5.49	76.83			
5	0.5118	5.12	81.95			
6	0.4398	4.40	86.34			
7	0.4008	4.01	90.35			
8	0.3848	3.85	94.20			
9	0.2917	2.92	97.12			
10	0.2882	2.88	100.00			

Source: Primary Data

As reported in the table 2, the eigen value for first three factors is more than one and they together possess the 71.34 per cent of the essence of original data. After varimax rotation, the variance explained in the actual data by first, second and third factor is 29.46 per cent, 25.64 per cent and 16.23 per cent respectively. Overall, from the

eigenvalue of the factors, it is found that there are three main features of PMS in manufacturing and service sectors as perceived by employees in the sample.

As per factor loadings exhibited in the table, the first factor is highly loaded with items 1, 4 and 5 followed by item 7. That is the first factor tends to possess the most of characteristics of items meant for measuring targets and standards, monitoring and tracking competencies of the employees and assessing the staff potential for promotion. Therefore, this factor is identified as "Setting Targets and Reviewing Performance". The loading of item 8 is high with second factor. Next to this item, the loadings of items 9, 6 and 10 with second factor is higher than that of those with other remaining factors. From the high loading of item 8, it is apparent that the second factor possesses the characteristics of competency development. Hence, this factor is labeled as "develop competencies". Similarly, the third factor is found to be representing the items 3 and 2 and therefore it is named as "provide feedback". In sum, it is found from the principle components factor analysis that there are three primary features of PMS, viz., "setting targets & reviewing performance" of the employee, "develop competencies" among them, and "providing feedback" to the employees about their performance". The score for each factor is obtained by averaging the scores of the items that are highly loaded.

The status of each feature of PMS is analyzed by descriptive analysis and one-sample t-test along with 95 per cent CI (Confidence Intervals). The results of the analysis are provided in Table 3.

Table 3 Employee Perceived Status of PMS Features

PMS Features	Mean	SD	95% Confidence Interval		t-Value
			Lower	Upper	
Set Targets & Review Performance	4.32	0.72	4.25	4.38	24.05**
Develop Competencies	4.22	0.68	4.16	4.28	22.47**
Provide Feedback	4.43	0.59	4.38	4.49	33.42**
Overall Features of PMS	4.30	0.52	4.25	4.35	32.57**

Source: Primary data; **Significant at 1% level

As provided in the table, mean perception scores, ranges between 4.22 and 4.43, is well above 3.50, the low bound value for 'agree' range for all three dimensions

underlying features of PMS. Further, the t-values for the differences between observed mean and hypothetical mean of 3.50 in respect of all three dimensions of PMS features and overall features of PMS are significantly at 1 per cent level. This has clearly revealed the fact that more number of cases in the sample have agreed that PMS has features to set targets & review performance of employees, develop competencies among employees and provide feedback to the employees of their performance. The perceived PMS features between manufacturing and service sectors are analyzed by using t-test and presented in Table 4.

Table 4 Perceived Status of PMS Features – Comparison between Manufacturing and Service Industry Employee Groups

H₀: There is no significant difference in the perceived features of PMS between manufacturing and service sectors.

PMS Features	Sector		t-Value
	Manufacturing	Service	
Set Targets & Review Performance	4.32 (0.75)	4.31 (0.68)	0.02
Develop Competencies	4.21 (0.70)	4.24 (0.65)	0.43
Provide Feedback	4.50 (0.59)	4.33 (0.58)	3.11**
Overall Features of PMS	4.31 (0.54)	4.29 (0.50)	0.49

Source: Primary Data; Figures in brackets are standard deviations **Significant at 1% level

H₀ is accepted. Hence, there is no significant difference in the perceived features of PMS between manufacturing and service sectors.

It can be seen from the table that the mean values, between 4.21 and 4.50 for manufacturing sector and between 4.24 and 4.33 for service sector differ only for PMS feature – providing feedback (t value = 3.11, p < 0.01). Regarding other aspects of PMS features and

overall features of PMS the perception level is same between employee groups of two sectors. In sum, it is found that the PMS features in providing feedback to employees of their performance is significantly better in manufacturing sectors than that of service sector. It is however found that the PMS features in setting targets and reviewing performance and developing competencies do not vary between manufacturing and service sectors.

Summary

As part of evaluating the Performance Management System (PMS) in manufacturing and service sectors, this study is a modest attempt to know how far employees have understood of PMS and how they perceived the PMS features in their organization. Likert type scales with 10 items for measuring PMS features is used in the questionnaire for survey. The results indicate that the employees have understood the PMS as a system for developing employee skill, improve communication between higher-ups and subordinates, evaluate the performance of the employees, and identify excellent performer for incentives.

The employees have well understood that PMS is meant for identifying excellent performer for incentives, improving communication and developing skill among employees while their understanding capacity of PMS as a system for performance evaluation has been substantial. The extent of understanding PMS is significantly higher among employees of manufacturing sector compared to their service sector counterparts.

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A STUDY ON WORK FAMILY CONFLICT AND STRESS AMONG DUAL CAREER COUPLES IN MADURAI

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Abstract

The last two decades have been marked by striking changes in the world of work and nature of the family. Market competition has increased pressure on organizations and employers to be more adaptable, flexible and responsive to change as long hours, increased workload, job insecurity, uncertainty and stress are characteristics of most jobs. These changes have important implications on the employees as well. One important change in the nature of the workforce is the ever increasing number of paid employment. This change has introduced new challenges for most of the families (Davidson & Burke, 2004) have indentified the implications of it on family structure, responsibilities, child and elderly care and everyday household chores. In India dual-earner dyads constitute 52% of couple families in the labour force (Indian bureau of Statistics, 1996) between 1979 and 1996, the number of dual-earner couples increased by 58% while in the same period (Indian Bureau of Statistics 1997) .The dual-career couples population has increased to 63.3 in 2016. According to Parasuraman and Greenhouse (1992), has identified a difficult effort to combine career and family. Work and family are two important domains in the life of dual career couples. In the work context of today, there is difficulty in balancing work and family role for dual career couples. As a result of globalization and competition there is increased pressure on employees of the organization to be more flexible and adoptable to change. This pressure and expectation have been increasing the stress among couples .This paper explains the work family conflict and stress among dual career couples in Madurai.

Keywords: Dual career couples, work family conflict, Organizational role stress and Stress.

Introduction

Work is an important aspect of man's life and behavior. Most active part of people's lives go in work and work-related activities. But in this modern world, stress and anxiety have become pervading features of one's work life. Dual earning couples are not exceptional to this. The dual-earning couple is a new prototype that reflects the increasing educational and career aspirations of women. Dual earner couples are now the norm and have increased the likelihood that both male and female employees will have substantial household obligations as well as family responsibilities. Technological advancement has blurred the boundaries between work and family life by making it easier for work to intrude into family and vice versa resulting in increased difficulty for most employees to maintain a balance between these two central life domains successfully. A significant proportion of the women in the workforce comprises of wives and mothers whose employment status demands a radical change in their pattern, activities, commitments and responsibilities,

requiring a reassessment of the family environment. In India, the work participation rate for women has increased in the recent decades. The proportion of women in the workforce was 22.73% in 1991, further rising to 25.68% to 63.3 during the year 2001 to 2016. Sources of stress in the lives of working women emerged from a lack of time to attend to multiple roles, presence of young children (6-12 years) in the family and additional responsibility at work in the form of promotions. The most common outcome of stress for the working couples was found to be poor mental and physical health resulting in depression, anxiety, asthma and colitis.

This study targets on the dual career couples in Madurai and examines their role stress and identifies their work-family conflict. The aim of the present research is undertaken to identify the variables which cause organizational role stress among dual career couples and Work-family conflict. This study might be helpful for the organizations to determine the factors of work family conflict and stress and coping strategies can be

implemented to resolve conflict and stress related problems at the work place and Family.

Statement of the problem

Dual career couples today are more likely than ever to be concerned with how to balance their work and family lives. There are many challenges have arisen in addressing the balance between work and family responsibilities. Nowadays Work-family conflict is unavoidable among modern dual career couples life. Work family conflict creates stress among couples and also stressful working environment. The stressful work environment can lead working couples to experience fatigue, exhaustion which can be mental and physical energy, hypertension, coronary heart disease, depression which can be fatal. The study attempt to identify critical dimensions of stress at work place and work family conflict .Madurai is second largest city in Tamil Nadu and also highest with trained working forces which made the researcher to select Madurai .Hence, this study attempts to study role stress among dual career couples and also work family conflict among them.

Objectives

1. To study the demographic profile of dual career couples in Madurai district.
2. To identify the major influencing factors of Organizational role stress of dual career couples.
3. To identify the major underlying factors of Work-Family Conflict of dual Career couples

Methodology

The study was conducted with samples of 286 dual career couples. The descriptive research design was adopted and mall survey. Mall intercept survey method was used as the sampling technique for the research. Udai pareek role stress questionnaire was used to collect the role stress among the respondents.

Limitations of the Study

- A sample size is restricted to 286 only. So the findings may not represent the whole population.
- The study is restricted to Madurai District only. So the findings and suggestions may not be generalized to any other places.

Data Analysis and Findings

Table 1

Demographic Variable		Total No of Respondents	Percentage
Working Couples Dual		286	100
Age	20-30	68	23.8
	31-40	156	54.6
	41-50	43	15.0
	50 & above	19	6.6
	Total	286	100
Gender	Male	104	36
	Female	182	64
	Total	286	100
Designation	Faculty		
	Doctors	157	54.9
	&Nurses	40	14.0
	Bank employees	40	14.0
	Manufacturing	49	17.1
	Total	286	100
Educational qualification	Upto +2	34	11.9
	UG	8	2.8
	PG	73	25.5
	Doctorate	129	45.1
	others	42	14.7
	Total	286	100
Marital Status	1-5	67	23.4
	5-10	80	28.0
	10-15	79	27.6
	More than 15	60	21.0
	Total	286	100
Experience	0-10	68	23.8
	11-20	155	54.2
	More than 20	63	22.0
	Total	286	100
Income	Below 10000	77	26.9
	11000-30000	96	33.6
	30000-50000	60	21.0
	Above 50000	53	18.5
	Total	286	100

From the above table it is inferred that the 100% of the respondents taken for study are Dual Career couples .54.6% of the respondents taken for study belong to the age group of 31-40 years of age. 64% percentage of respondents belongs to female category and 36% are Male category. 45.1% of the respondents are qualified with doctorate degree and 28% are married for about 5-10 years. 54.2% of the respondents are having an experience of 11-20 years and 54.9% of them are working faculty.34.6%are earning income of 11000-30000.

Table 2: Factor Analysis of Organizational Role Stress

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.726
Bartlett's Test of Sphericity	Approx. Chi-Square	5035.111
	df	276
	Sig.	.000

The following table shows the number of components extracted with Eigen values and cumulative variance

explained by them. There are seven factors resulting from the analysis explaining a total of about 76 per cent of the variations in the entire data set. The percentage of variation explained by the first seven factors is 19.220, 13.501, 12.000, 8.510, 8.180, 7.666 and 6.596 respectively after Varimax rotation is performed.

Table 3: Factor analysis of Organizational Role Stress

Factor	Variables	Component (Factor Loadings)						
		1	2	3	4	5	6	7
Resource Inadequacy and Role Conflict	There is no evidence of involvement of several roles in joint problem solving(or)collaboration in planning action	.800						
	I am rather worried that I lack the necessary facilities needed in my role	.778						
	My family and friends complain that I do not spend much time with them due to heavy demands of my work role	.737		.446				
	I wish I had prepared myself well for my role	.725						
	Even when I take initiative for discussion or help, there is not much response from other roles	.715						
	I experience conflict between my values and what I have to do in my role	.712						
	I am bothered with the contradictory expectation of different people from my role	.603		.467				
Role Erosion	I have various other interests (Social, religious, etc) which remain neglected because, I do not get the time to attend these		.833					
	I am too preoccupied with my present role responsibility and not able to take higher responsibility		.738	.398				
	I am not able to satisfy the conflicting demands of the various peer level people and my juniors		.741					
	A part of my role has been assigned to some other role		.661			.387		
	The amount of work I have to do interferes with the quality I want to maintain		.643				.455	
Role Clarity and Ambiguity	There is very little scope for my personal growth in my role			.823				

	Several aspects of my role are vague and unclear			.730				
	I do not have enough people to work with me in my role	.416		.699				
Role Expectation	I would like to take more responsibility than I am handling at present				.861			
	I wish I had been given Role Expectation tasks to do	.515			.754			
	I have to do the things in my role that are against my better judgment				.544			
Self Role Distance	I am not able to use my training and expertise in my role					.849		
	I do not know the people's expectation from my role					.754		
Role Overload	Other role occupants do not give enough attention and time to my role						.827	
	My workload is too heavy						.765	
Personal Resource Inadequacy	My role tends to interfere with my family life							.867
	I do not have adequate knowledge to handle the responsibilities in my role			.450				.659

The Above table represents the rotated component matrix using 0.35 as a cut-off point for factor loading for naming the factors. In this way, we get seven factors. Factor 1 will comprise of variables There is no evidence of involvement of several roles in joint problem solving(or)collaboration in planning action, I am rather worried that I lack the necessary facilities needed in my role, My family and friends complain that I do not spend much time with them due to heavy demands of my work role, I wish I had prepared myself well for my role, Even when I take initiative for discussion or help, there is not much response from other roles, I experience conflict between my values and what I have to do in my role, and I am bothered with the contradictory expectation of different people from my role. This factor is named as 'Resource Inadequacy and Role Conflict'.

Factor 2 comprises of the variables I have various other interests (Social, religious, etc.) which remain neglected because I do not get the time to attend these, I am too preoccupied with my present role responsibility and not able to take higher responsibility, I am not able to satisfy the conflicting demands of the various peer level people and my juniors, A part of my role has been assigned to some other role, and The amount of work I have to do interferes with the quality I want to maintain. This factor is named as 'Role Erosion'.

Factor 3 comprises of the variables, there is very little scope for my personal growth in my role, Several aspects

of my role are vague and unclear, I do not have enough people to work with me in my role. This factor is named as 'Role Clarity and Ambiguity'.

Factor 4 comprises of the variables I would like to take more responsibility than I am handling at present, I wish I had been given Role Expectation tasks to do and I have to do the things in my role that are against my better judgment. This factor is named as 'Role Expectation'. Factor 5 comprises of the variables I am not able to use my training and expertise in my role, and I do not know the people's expectation from my role. This factor is named as 'Self Role Distance'. Factor 6 comprises of the variables Other role occupants do not give enough attention and time to my role, and I do not get enough resources to be effective in my role. This factor is named as 'Role Overload'. Factor 7 comprises of the variables My role tends to interfere with my family life, and I do not have adequate knowledge to handle the responsibilities in my role. This factor is named as 'Personal Resource Inadequacy'.

Factor analysis of work family conflict

The results of KMO and Bartlett's Test indicate that a factor analysis can be applied to the data as the value of KMO statistics is greater than 0.7 and the Bartlett's Test of Sphericity is significant ($p < .001$). A value close to 1 indicates that patterns of correlations are relatively compact and so factor analysis should yield distinct and

reliable factors. Kaiser (1974) recommends accepting values greater than 0.5 as barely acceptable (values below this should lead you to either collect more data or rethink which variables to include). There are five factors resulting from the analysis explaining a total of about 72 per cent of

the variations in the entire data set. The percentage of variation explained by the first five factors is 20.072, 14.727, 13.669, 12.194 and 11.667 respectively after varimax rotation is performed.

Table 4: Factor Analysis of Work Family Conflict

Factor	Variables	Component (Factor Loadings)				
		1	2	3	4	5
Work Exhaust	There is no time left at the end of the day to do the things I'd like at home (e.g., chores and leisure activities)	.752				
	My home life interferes with my responsibilities at work such as getting to work on time, accomplishing daily tasks, and working overtime	.744				
	The amount of time my job takes up makes it difficult to fulfill my family responsibilities	.712				
	Things I want to do at home do not get done because of the demands my job puts on me.	.703				
	My job produces strain that makes it difficult to fulfill family duties	.674				
	Things in your life made you feel tired or "worn out" during a good part of the day	.598				
Family Exhaust	My family has a negative impact on my day to day work duties		.820			
	It is difficult to concentrate at work because I am so exhausted by family responsibilities		.798			
	If I did not have a family I'd be a better employee		.790			
Family Stress	I have to put off doing things at work because of demands on my time at home			.840		
	My work prevents me spending sufficient quality time with my family	.356		.799		
	Family-related strain interferes with my ability to perform job-related duties			.611		
Work Stress	My work performance suffers because of my personal and family commitments		.443		.750	
	My work has a negative impact on my family life				.746	
	The demands of my work interfere with my home and family life	.376			.675	
Balancing Work-Life	Invest in your job even when under heavy pressure due to family responsibilities					.909
	Fulfill your job responsibility without letting it interfere with your family responsibilities					.783
	Due to work-related duties, I have to make changes to my plans for family activities				.429	.595
	Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.					
	a. Rotation converged in 9 iterations.					

The following table represents the rotated component matrix using 0.35 as a cut-off point for factor loading for naming the factors. In this way we get five factors. Factor 1 will comprise of variables, There is no time left at the end of the day to do the things I'd like at home (e.g., chores and leisure activities), My home life interferes with my responsibilities at work such as getting to work on time, accomplishing daily tasks, and working overtime, The amount of time my job takes up makes it difficult to fulfill my family responsibilities, Things I want to do at home do not get done because of the demands my job puts on me, My job produces strain that makes it difficult to fulfill family duties, and Things in your life made you feel tired or "worn out" during a good part of the day. This factor is named as 'Work Exhaust'. Factor 2 comprises the variables My family has a negative impact on my day to day work duties, It is difficult to concentrate at work because I am so exhausted by family responsibilities, and If I did not have a family I'd be a better employee. This factor is named as 'Family Exhaust'. Factor 3 comprises of the variables I have to put off doing things at work because of demands on my time at home, My work prevents me spending sufficient quality time with my family, and Family-related strain interferes with my ability to perform job-related duties. This factor is named as 'Family stress'. Factor 4 comprises of the variables My work performance suffers because of my personal and family commitments, My work has a negative impact on my family life, and The demands of my work interfere with my home and family life. This factor is named as 'Work Stress'. Factor 5 comprises of the variables Invest in your job even when under heavy pressure due to family responsibilities, Fulfill your job responsibility without letting it interfere with your family responsibilities, and Due to work-related duties, I have to make changes to my plans for family activities. This factor is named as 'Balancing Work-Life'.

Conclusion and recommendation

It is inferred that the Organizational Role Stress of working couples is found to have seven main components – Resource inadequacy and Role Conflict, Engaging Role, Role Clarity and Ambiguity, Role Expectation, Self Role Distance, Unimportant Role and Personal Resource Inadequacy .From work family conflict of working couples is found to have five main components – Work Exhaust, Family Exhaust, Family Stress, Work Stress and Balance of work life. The study reveals that the dual career couple faces stress and conflict in their family as well in their working places. At this juncture, the organization has to

take enough measures like family counseling, family get together ,stress management programs ,health programs, flexible working hours can be introduced to reduce their stress and conflict among the dual career couples.

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RELATIONSHIP BETWEEN EMOTIONAL INTELLIGENCE, SELF EFFICACY AND PERFORMANCE AMONG COLLEGE STUDENTS

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Abstract

Education is playing an important role in shaping the lives of individuals by empowering them with various abilities, skills, competencies, and thus paving way for enhancing the quality of life. The college students come from various backgrounds undergo a lot of pressure to with stand today's competition, mainly at the moment of their establishment stage in career. The students generally feel lot of problems like lack of communication skills, stage fear, not able to cope up with the faculties, lack of participative nature etc. The level of Emotional Intelligence and Self-Efficacy that the students possess affect their performance to a large extent. Emotional intelligence (EI) is involved in the capacity to perceive emotions, assimilate emotion-related feelings, understand the information of those emotions, and manage them. Self-efficacy is one's confidence to grow and succeed in a particular task, and believe it to be able to do the job. It is the belief people have in their ability to perform in a certain way or engage in a specific behaviour to achieve their desired goals. Empirical research investigating the relationship between EI and self-efficacy suggests that EI is an important factor that contributes in the development of self-efficacy beliefs among individuals. The present study is an attempt to know about the relationship between Emotional Intelligence, Self-Efficacy and Performance of college students. For the purpose of the study, the performance of college students are assessed on the basis of their Academic performance, Commitment to study, Organizing ability, Leadership quality, Completion of works assigned, Receptiveness, Maintaining interpersonal relationship, Problem solving ability, Decision making ability and Versatility. The findings of the study will help the academicians to guide the students in the right path to perform well and motivate them to achieve more.

Keywords: Emotional Intelligence (EI), Self-Efficacy, Performance.

Introduction

In this highly complex world with frequent environmental changes at a fast pace, retaining successfulness is equally, or more important than being successful in one's life. The crucial factors behind such retention, success, improvised behavior are EI and Self-efficacy. Today most of the educational institutions focus towards these factors so as to enhance the quality of the major stake holders which are sent out every year. Research studies reveal that the basic parameter for effective learning is emotional health. National Center for Clinical Infant Programs has reported that the vital element of a successful student in school is to understand how to learn things. This understanding is an integration of confidence, curiosity, intentionality, self-control, relatedness, capacity to communicate and ability to cooperate. In fact these qualities of understanding are

nothing but the various traits of EI. Many research studies show that people with high EQ are more successful than people with high IQ. Previous studies reveal that a student's academic achievement is not dependant on his/her level of IQ alone (Craggs, 2005). One of the most famous and most cited sources is Daniel Goleman's popular book *Emotional Intelligence: Why It Can Matter More Than IQ*. In this book Goleman (1995) speaks that the contribution of IQ in a successful person is only 20% which means the rest 80% is contributed by other attributes. Hence researchers and academicians are trying to explore these 80% contribution which is highly significant in one's successful life. Low and Nelson (2006) reveal that EQ is the most important factor for student's success both in his studies and personal well being. They also suggest that those students who are emotionally strong can easily cope with the present challenging college

experiences. It is well understood from the above discussion that EQ is an inevitable factor for one's success in any walk of life – may be as a student, in career development or even in personal life. An emotionally strong student makes himself a versatile employee once he embarks into the working world.

Research studies investigating the relationship between EI and self-efficacy suggest that EI is an important factor that contributes in the development of self-efficacy beliefs among individuals. For example Bandura (1997) in his social cognitive theory argued that self-awareness, self-regulation, and self control of emotions which are considered as the various components of EI are crucial and vital in the development of self-efficacy perceptions. In a study, Gundlach, Martinko, and Douglas (2003) argued that emotions involved in reacting at workplaces and the influence of EI on the causal reasoning process have great impact in the development of self-efficacy among people. Educators have already realized that the beliefs about the academic capabilities of students act as a catalyst in their achievements.

Emotional Intelligence

The first description of EI was given by Salovey and Mayer (1990). They described it as a kind of social intelligence which involves the ability to observe the emotions and feelings of others and ourselves and based on this observation we will be able to differentiate the positive and negative emotions and feelings. Also this observation and differentiation acts as useful information to guide one's thinking and action. This concept of EI was popularized by Goleman (1995) who refers to it as the ability to sense, understand, value and effectively apply the power and acumen of emotions as a source of human energy, information, trust, creativity and influence. EI also refers to an ability to recognize the meanings of feelings and emotions and their relationships with the surrounding phenomena. This ability helps in not only visualizing the reason for such emotions and feelings but also to solve many problems because of them. Social scientists are trying to discover the relationship of EI with other phenomenon like leadership, performance, self-efficacy, stress management and managing change. (Ashforth and Humphrey, Goleman, 1995). The literature suggests that EI plays a vital role in determining success in one's life and it becomes more and more important as people compete to climb the career ladder (Kolb & Hanley-Maxwell, 2003; Richburg & Fletcher, 2002).

Emotional intelligence influences not only the physical human performance but also other parameters like psychological health, social interaction and performance at school and in work place (Bar-On, 1997). Bar-On (2005) further believes that an assessment of emotional intelligence levels among students can be significantly used to predict their scholastic performance. Unlike Intelligent Quotient (IQ), Emotional Quotient (EQ) is very closely associated with career and personal life success, including success in the academe (Mayer and Salovey, 1997; Goleman, 1995). Low, Lomax, Jackson and Nelson (2004) state that “emotional knowledge, skills, and intelligence are the key elements which helps improving education and helping students, teachers, faculty, and student development professionals to attain higher degrees of achievement, career success, leadership, and personal well-being”. Farooq (2003) reported that the academic performance of students with high EI is better than that with low EI. Similarly, Parker et al. (2004) found that EI can be used as an analyzing tool in identifying academically successful and unsuccessful students. A similar finding among Nigerian university students by Adeyemo (2007) also showed significant correlations between EI and academic self-efficacy with academic achievement. Nasir and Masur (2010) emphasize that effective learning takes place only when students develop an understanding of how to learn. This understanding requires certain attributes like confidence, self control, and ability to communicate and cooperate with others which are nothing but emotional skills. They found that EI significantly predicted academic achievement. All the above discussed research findings clearly denotes that EI plays a vital role in determining academic achievement among students. Hence it is the need of the hour to develop EI skills among students in order to help them in performing well in their studies.

Self-Efficacy

An individual believing in his/her own capability and ability in doing a task to achieve the desired goal is defined as self-efficacy by Bandura (1997). According to him, the concern of self-efficacy is associated with the judgment skill that one possesses to tackle the situations under various domains. Moreover, Pethe, Chaudhari, and Dhar (1999) suggest that self-efficacy consists of six underlying dimensions such as confidence, command, adaptability, personal effectiveness, positive attitude, and individuality. Personal effectiveness, one of the above mentioned dimensions is the positive outcome of individuals having

positive self concept, reality awareness and assertiveness which are also considered as dimensions of EI (Sinha and Jain, 2004). Further they state that self-efficacy focus on performance capabilities rather than personal qualities, such as one's physical or psychological characteristics. Self-efficacy beliefs have also shown inclination in influencing key indices of academic motivation as choice of activities, level of effort, persistence, and emotional reactions. According to Bandura, (1997) self-efficacious students are emotionally strong when they are exposed to difficult situations. This emotional strength will decrease their stress, anxiety, and depression. Also they are ready to work harder, participate more readily and hence their persistence is also longer. While choosing activities, self-efficacious students will readily come forward to take challenging and risky tasks than inefficacious students. Further it is found that there is significant correlation between self-efficacy and students' choice of majors in college, success in course work, and perseverance (Hackett & Betz, 1989; Lent, Brown, & Larkin, 1984). Self-efficacy beliefs are dependent on two parameters such as rate of performance and expenditure of energy when students' effort is considered. This dependency shows that perceived self-efficacy influences students' method of learning and the way they get motivated. A self-efficacy belief also helps students to motivate their learning process through self-regulatory processes of goal setting, self-monitoring and self-evaluation. During a study on concept learning (Bouffard-Bouchard, Parent, & Larivee, 1991) reveals that efficacious students were good in monitoring their working time, more persistent and finding solution at difficult situations than inefficacious students. These results validate the role of self-efficacy in motivating persistence and academic achievement.

Statement of the Problem

The findings of many researches have been proving that EI can help individuals excel through life transitions starting from school to college, and later into to the working world. Self-efficacy beliefs also provide students with a sense of agency to motivate their learning through use of such self-regulatory processes as goal setting, self-monitoring, self-evaluation, and strategy use. At the college level, EI and self-efficacy are seen as valuable skills that help students to manage and cope with the demanding nature of their studies. A number of studies have already proved the positive relationship between EI and higher academic achievement, citing reasons such as emotionally intelligent students have better interpersonal

and intrapersonal skills, are more adaptable, and are better at managing stress. Researches also showed a positive relation among self-efficacy and academic performance. In other words, emotionally intelligent and self-efficacious students are more successful in their college life and thus, are able to learn and perform well. In addition to that, being emotionally intelligent does not only help students to learn better but it also determines their career success, especially for those who want to embark into a profession that requires high level of emotion related competence. Therefore, due to the many claims on the influence of EI and self-efficacy on academic and occupational success, this study aims to find out the impact of EI, self-efficacy on the performance of college students.

Research Objectives and Questions

The study is guided by the following objectives:

1. To determine the difference in the emotional intelligence, self-efficacy and performance
2. level among the respondents studying in different disciplines.
3. To investigate the relationship between the respondents' emotional intelligence, self-efficacy and their performance.

Research questions for the study are as follows:

1. Do the college students in different disciplines differ significantly in their emotional intelligence, self-efficacy and performance?
2. What is the relationship between respondents' emotional intelligence, self-efficacy and their performance?

Hypotheses of the Study

1. College students in different disciplines may not differ significantly in their emotional intelligence, self-efficacy and performance level.
2. There is no significant relationship between emotional intelligence, self-efficacy and performance among the college students.

Methodology

Descriptive research design is adopted for the study. Questionnaire was the instrument used for collection of primary data. Population for the study consists of the college students doing their under graduate programmes in various disciplines like Arts, Science and Professional Courses in Madurai. Convenient sampling method is adopted. A total of 160 respondents were used for the

study. This comprises of 55 Arts students, 56 Science students and 49 students from Professional courses. For the purpose of the study, Self Emotion Appraisal, Others Emotion Appraisal, Understanding of Emotions and Regulations of Emotions are the variables considered for assessing Emotional Intelligence of college students. Self-efficacy is measured by using ten statements related to their confidence, adaptability, personal effectiveness, positive attitude, and individuality. The performance of college students are assessed on the basis of their Academic performance, Commitment to study, Organizing ability, Leadership quality, Completion of works assigned, Receptiveness, Maintaining interpersonal relationship, Problem solving ability, Decision making ability and Versatility. Cross Tabulation, Chi-square, Correlation and Regression Analysis are used to analyse the data.

Data Analysis and Interpretation

Data collected through questionnaire during the study has been analysed with the help of SPSS.

Hypothesis 1: College students in different disciplines may not differ significantly in their emotional intelligence, self-efficacy and performance level.

Table – 1 shows the cross tabulation of the Discipline of the respondents studying in college and their level of Emotional Intelligence, Self-Efficacy and Performance. The table reveals that majority of the Science students have a medium level of Emotional Intelligence (64.3 per cent), high level of Self-Efficacy (66.1 per cent) and show a high level of Performance (60.7 per cent) than other discipline students.

Table – 1 Cross Tabulation of Level of Emotional Intelligence, Self-Efficacy & Performance and Results of Chi-square test

Sl. No	Factor	Level	Discipline								df	Chi-square value	Sig.
			Arts		Science		Professional		Total				
			No.	%	No.	%	No.	%	No.	%			
1.	Emotional Intelligence	Low	11	20.0	3	5.4	2	4.1	16	10.0	4	13.001	.011
		Medium	28	50.9	36	64.3	38	77.6	102	63.8			
		High	16	29.1	17	30.4	9	18.4	42	26.2			
		Total	55	100	56	100	49	100	160	100			
2.	Self-Efficacy	Low	9	16.4	3	5.4	2	4.1	14	8.8	4	13.750	.008
		Medium	25	45.5	16	28.6	14	28.6	55	34.4			
		High	21	38.2	37	66.1	33	67.3	91	56.9			
		Total	55	100	56	100	49	100	160	100			
3.	Performance	Low	19	34.5	15	26.8	2	4.1	36	22.5	4	78.622	.000
		Medium	15	27.3	7	12.5	45	91.8	67	41.9			
		High	21	38.2	34	60.7	2	4.1	57	35.6			
		Total	55	100	56	100	49	100	160	100			

Source: Survey Data

The results of the Chi-square analysis show that the p values are less than 0.05 ($p < 0.05$). Thus the null hypothesis is to be rejected and it is clear that college

students in different disciplines differ significantly in their emotional intelligence, self-efficacy and performance level.

Hypothesis 2: There is no significant relationship between emotional intelligence, self-efficacy and performance among the college students. To determine the strength of relationship between EI, Self-efficacy and Performance among the respondents, Pearson correlation analysis was carried out. The result is presented in Table – 2 which shows that there is a strong positive relationship ($r = 0.719$, $p = 0.000$) between the respondents' EI and Self-efficacy. This means that higher their level of EI, higher will be the level of Self-efficacy also. The table also reveals that there is a positive relationship ($r = 0.626$, $p = 0.000$) between the respondents' EI and Performance. This explains that higher the level of EI, the higher will be the level of Performance also.

Table – 2 Correlation between the Emotional Intelligence, Self-efficacy and Performance

		Performance	Emotional Intelligence	Self Efficacy
Performance	Pearson Correlation	1	.626**	.765**
	Sig. (2-tailed)		.000	.000
	N	160	160	160
Emotional Intelligence	Pearson Correlation	.626**	1	.719**
	Sig. (2-tailed)	.000		.000
	N	160	160	160
Self Efficacy	Pearson Correlation	.765**	.719**	1
	Sig. (2-tailed)	.000	.000	
	N	160	160	160

** Correlation is significant at the 0.01 level (2-tailed).

It is also clear from the table that there is a strong positive relationship ($r = 0.765$, $p = 0.000$) between the respondents' level of Self-efficacy and level of Performance. This shows that higher the level of Self-efficacy, higher will be the level of Performance. These relationships are found to be statistically significant at 0.01 level. Thus the null hypothesis is to be rejected and it is clear that there is significant relationship between Emotional intelligence, Self-efficacy and Performance among the college students.

Model Development for Performance

To determine the impact of the Independent variables EI and Self Efficacy on dependent variable Performance and construct a model for this relationship, Linear Regression Analysis (ANOVA) was carried out. The value of *R* represents the multiple correlation co-efficient and considered to be the measure of prediction quality of the dependent variable; in this case, a value of $R = 0.773$

indicates a good level of prediction. The R^2 value (also called the coefficient of determination) represents the proportion of variance in the dependent variable that can be explained by the independent variables. R^2 value of 0.597 shows that the independent variables EI and Self Efficacy explain 59.7% of the variability on the dependent variable Performance.

Table – 3 Regression analysis (ANOVA)

Model	Sum of Squares	df	Mean Square	R	R Square	F	Sig.
Regression	53.861	2	26.931	.773	.597	116.211	.000
Residual	36.383	157	.232				
Total	90.244	159					
Coefficients							
	Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
		B	Std. Error	Beta			
(Constant)	-.172		.159			-1.081	.281
Emotional Intelligence	.202		.095	.156		2.142	.034
Self Efficacy	.752		.084	.652		8.942	.000

a. Predictors: (Constant), Emotional Intelligence, Self Efficacy

b. Dependent Variable: Performance

The *F*-ratio in the table tests whether the overall regression model is a good fit for the data. The table shows that the independent variables EI and Self Efficacy statistically and significantly predict the dependent variable Performance, $F(2, 157) = 116.211, p < .0005$ i.e., the regression model is a good fit of the data. The unstandardized coefficient for EI and Self Efficacy are equal to 0.202 and 0.752 respectively with $p < .05$. This shows both the independent variables EI and Self Efficacy have a positive and significant impact on the dependent variable Performance. The fitted model for the dependent variable Performance is expressed by the equation:

Performance = $(0.202 \times \text{Emotional Intelligence}) + (0.752 \times \text{Self Efficacy}) - 0.172$

Discussion of the Findings

In the present investigation it is found that the students studying in different disciplines at college level are found to differ significantly with respect to EI, self-efficacy and their performance. The science students are significantly better in their EI, self-efficacy and performance when compared to their counterparts studying in Arts and Professional stream. The result of the study shows that EI correlates with self-efficacy of the college students ($r = 0.719, p = 0.000$). This relationship indicates that students need to develop and express EI

competence to improve their ability in doing things. Self-efficacy influences the course of action people choose to pursue the challenges and goals they set for themselves and their commitment towards them. Thus, EI has been found to be predictive of efficacious behavior among college students.

The study also reveals that EI correlates with performance of the students ($r = 0.626, p = 0.000$). EI is the ability to perceive and express emotion, assimilate emotion in thought, understand and reason with emotion and regulate emotion in the self and others (Mayer et al., 2000). In this regard, Cherniss (2001) reported that emotionally intelligent people display cooperation, commitment and creativity which are important for organizational effectiveness. EI has been linked to job performance and emotional labour (Prati, 2003; Low et al., 2004). Understanding and regulation of one's emotions as well as understanding other's emotions are factors that affect intrapersonal well-being and interpersonal relations which also affect students' performance. As EI was positively correlated with performance, it is expected that students having high EI will also be highly committed to their study.

The study indicates that self-efficacy significantly correlates with performance of the students ($r = 0.765, p = 0.000$). This suggests the fact that when students are

self-efficacious, they tend to be more productive, result oriented and committed to their career. This is in line with Virginie's (2010) assertion that self-efficacy is highly significant, and is the main predictor of organizational commitment. Perceived efficacy plays a key role in human functioning because it affects behaviour not only directly, but by its impact on other determinants such as goals and aspirations, outcome expectations and perception of impediments and opportunities in the social environment (Bandura, 1995, 1997).

Furthermore, the findings of the study show that EI and Self Efficacy explain 59.7% of the variability on the dependent variable Performance. The analysis of data and the computed 'F' value of 116.211 and the significance level have evidently showed that EI and self-efficacy could significantly predict the performance of college students. It can be ascertained that EI determines to a great extent the efficacious nature and the performance of college going students. This finding is easily explainable bearing in mind that EI competencies, such as ability to regulate one's feelings, problem solving, intrapersonal and interpersonal skills are highly relevant to their academic success. For instance, a student who is expert in emotional management could use such skills to reduce stress and anxiety associated with test taking and examination. Moreover, ability to display interpersonal and intrapersonal skills may assist students to seek academic help from teachers, peers and resource persons. Also developing self-efficacy in students will help them to become committed and productive workforce in future.

Suggestions and Conclusion

It is an acknowledged fact that EI and self-efficacy play a vital role while analyzing performance. It would be better if colleges and schools come forward with cognitive skill oriented courses along with the curriculum. Also it would be better if there is a provision to check the self-efficacy, emotional strength and other cognitive skills before admitting them to the respective graduate programme or even other technical courses. On-campus recruiters also should incorporate the element of EI in their selection process rather than intellectual abilities. When these three things fall in line an individual will be successful in his/her academic life, work life and personal life. Real time projects and assignments in collaboration with business units help the students to improve their EI and self-efficacy. And it is highly suggested that B-schools should incorporate practical courses rather than theory which help the students to develop a higher level of EI and

self-efficacy which in turn boost employee presentation and communication at work place. Apart from these the other factors which encourages the students for a better development of EI, self-efficacy and overall performance in colleges are management, faculty, parents, college facilities and environment. The findings of the study may be useful to educators in higher education institutions in their attempts to improve the overall performance of students as well as preventing academic failures.

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STRATEGIC MARKETING INNOVATIONS FOR HOSPITALITY ENTREPRENEURS

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Abstract

The Primary objective of this paper is to adopt effective business management strategies in the hospitality industry. Before doing this, relevant literature and other sources are reviewed to explore the general importance of entrepreneurship, to briefly examine previous research on entrepreneurship and discuss the meaning of entrepreneurship. Interestingly, the number of entrepreneurs and establishment of small firms have dramatically and uniformly increased globally over the most recent 10 years. Reasons for this include globalization, liberalization of labour markets and enactment of entrepreneur-friendly government policies such as removal of barriers to competition and other trade restrictions. Most of the hotel industrialists viewed financial management as the most important challenge followed by interpersonal skills and problem solving. The main challenges facing the hospitality industry in the country include: shortage of competent manpower, financial constraints, high competition and problems with suppliers. This study analyse the Entrepreneurial practices such as having problem solving skills, networking skills, information technology and financial management will help them diminish those challenges. It is suggested that future research in entrepreneurial marketing investigate the relationships between the characteristics of hospitality industry and their managers and entrepreneurial marketing attributes in more detail in order to advance knowledge in this relatively new area of research. Finding of this research reveals that practical functions for hospitality industries that are trying to become more entrepreneurial and also help researchers to understand the cordial relationship of corporate strategic planning and entrepreneurship. This study concludes with a discussion of location of hospitality industry and competitive dynamics.

Keywords: Entrepreneurial Challenges & Practices, Entrepreneurial Skills, Hospitality

Introduction

The hospitality industry has undergone turbulent changes in the last five years. Technological advances, Competitive pressures, shifting consumer preferences and consumption patterns, new distribution channels, consolidation and price discounting are but a few of the changes in the business landscape. In this study, Innovation has been championed as a way to cope with these and other changes in the industry. But what exactly is innovation, how has it functioned in the hospitality industry and what are the key ideas to help foster innovation. The purpose of this study is to explore hospitality innovation and the related area of entrepreneurship. Innovation and entrepreneurship are connected because the entrepreneurial mindset is essential to founding new businesses as well as rejuvenating existing ones.

Overview of Hospitality Industry

Hospitality is about allocation to the guests by providing with "Feel-Good-Effect" "Athithi-Devo-Bhavha"

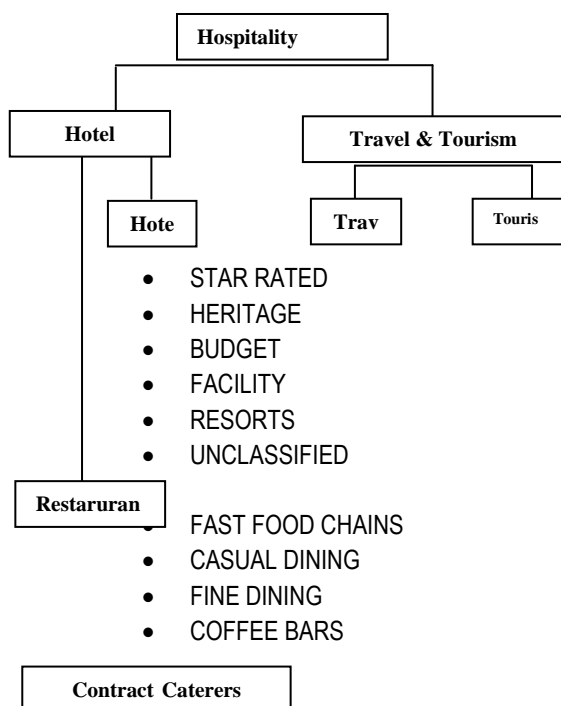
has been one of the central tenets of Indian culture since times immemorial. Today hospitality sector is one of the fastest increasing sectors in India and is expected to rise at the rate of 8% between the year 2007 - 2016. Nowadays the travel and tourism industry is also incorporated in hospitality sector. There is a boom in travel and tourism has led to the additional development of the hospitality industry.

Hospitality

Many people's definitions of hospitality extends only to restaurants and hotels. In realism, it goes far beyond and included by any organization providing food, shelter and other services to people away from home. When viewed in this light, the hospitality industry can be quite large and far reaching. Students are considered as entering into the field of hospitality should take into deliberation all of the types of businesses that hospitality encompass but also, the various career streams in practical areas across segments (such as accounting, finance, marketing, human resources etc.). In particularly

stimulating time to be linked with the industry given the plenty of career opportunities, the economy, new developments, emerging markets, internationalization of companies and concepts, etc.,

Segmentation – Hospitality Industry



Source: Primary Data

Hospitality Industry in India

Category	Typical Location	Target Customers
Five Star Deluxe and Five Star	Restricted to the four largest metropolitan areas and other major cities like Bangalore and Hyderabad	Foreign Business and leisure travellers, senior business executives and senior government officials
Three Star and Four Star	Located in all major cities as well as tourist destinations	Middle level business executives and leisure travelers
One Star & Two Star	Located in major cities and small cities and tourist destination	Domestic Tourists
Heritage	Heritage Hotels comprise Old Palaces, castles, forts and residences converted into hotels largely located in the leisure tourists destinations such as Rajasthan, Jaipur, Mysore	Primarily Foreign Leisure Travelers

Challenges Faced by Hospitality Entrepreneurs

- Shortage of skilled employees
- Retaining Quality Workforce
- Shortage of Rooms
- Intense Competition and Image of India
- Customer Expectations
- Manual Back - End
- Human Resource Development
- Managing Demand
- Optimising Customer Mix
- Optimising Channel Mix

Review of Literature

This chapter analyses different literature related to the thesis in accordance to the research objectives. It also reviews various research studied related to relationship marketing application in hospitality and hotel industry. For this study 163 research papers (periodicity:1983-2015) related to customer. Relationship Marketing approach and Hospitality & Hotel industry are exclusively reviewed. Furthermore, 10 Doctoral and 12 Master levels also referred for this study. Secondary Data Collected with help of Emerald insight, Proquest, Ebscohost and Google Search.

Maxham (2001) asserted that the service recovery strategy of an organization often leads to customer loyalty and Positive word of mouth. Hence, word of mouth has been a unique marketing tool for the hospitality industry since the emergence of the marketing concept. Kim and Lee (2001), investigated in luxury hotels in Seoul, and found that, higher the rate of guest confidence and communication, higher the relationship quality; and higher the relationship quality, greater will be the guest commitment and repeat purchase and positive word of mouth. With the advancement of technology, word of mouth has become easier and considered as word of mouse. Thus, hoteliers need to recognize the significance and influence of electronic word of mouth on guest's purchasing decisions of hospitality services (Tag-Eldeen et al. 2011).

Service quality management plays a significant role in measuring customers perceived experience during their stay. In tourism and hospitality perspective quality found as the consistent delivery of products and guest services in accordance with the expected standard" (Kapiki 2012). Therefore, understanding the customer expectations is a valuable affair for the hotel business (Hayes et al 2011). Lockwood (1999) considered service quality to be one of

the major success factors for the hotel sector. As it is directly proportional to loyalty and satisfaction (Heskett et al. 1994); is also crucial to establish strong customer relationships (Henning-Thurau and Hansen, 2000).

Bucak (2014) considered service quality as a critical component in the hotel sector as it is associated with customer satisfaction and revisiting. Many studies have found that service quality results customer loyalty and positive word-of-mouth (Rust et al., 1995; Boulding et al., 1993; Bolton and Drew, 1991). In other words, a superior service quality level result in higher levels of customer satisfaction that ultimately leads to form successful customer relationships which is highly profitable for the hotel sector. Thus hospitality services mainly depend on customer perceived service quality and satisfaction as well as customer value.

In hotel context, Knutson et al. (1990) developed LODGSERV designed to measure consumers' expectations for service quality in the hotel experience. Increasingly, relationship marketing is becoming the basis of marketing policy in the service sector. The hospitality sector is largely people based; hence relationship management is more significant for them.

Abbey (1999) proposes programsl industry is primarily a service sector where relationship marketing plays a vital role. In general, marketing programs of hotels usually focus on attracting new customers through different lucrative offers and services. Due to the hotels are associated with hospitality they often recognize the significance of developing a database that includes detailed information of characteristics, needs and preference of all the guests. Certainly, regular customers or repeat visitors also expect that they should be given extra privileges as loyal customers of the hotels.

Christopher, Payne and Ballantyne (1991) suggest the addition of people, processes, and customer services for relationship marketing. Customer service can also be seen as a process which provides time, place and form utilities to the customer which, involves pre-sale, sale and post-sale transactions. In hotel sector customer care services starts when the guest enters into the hotel premises. It ranges from the parking facility, check-in at front office, staff's attitude towards the guests, ambience, room services, food quality, service recovery, security, checkout and after sales services. Though the core of any service company is to create customers but they also have to find different ways to satisfy the customer to achieve long term retention and loyalty. Thus, customer care is a major facet in moving customers up the ladder of loyalty

(Kotler, 1998). Marketers now recognize that developing effective systems of customer care can provide major long-term benefits to the guests and the hotel as well.

Purpose of the Study

The sole purpose of this study is to understand the formats of relationship marketing programmes implemented by different hotels. The study conducted in all the Star hotels. Due to the heightened competition in the market, retaining and sustaining customers through relationship management is the strategic mantra for achieving global competitiveness. Hotel industries are investing huge amounts of money in the development of their customer relationships in order to improve their overall business performance. Therefore, it's a major area of research in hospitality sector to investigate on how to create and maintain "customer and organization" relationships. The study provides an extensive holistic exploration of strategic marketing innovations for hospitality entrepreneurs.

Research Gap

In the review of the literature, it is clear that the major constructs of strategic marketing innovations for hospitality entrepreneurs are trust, commitment, communication, bonding and conflict handling that influences loyalty and retention. However, previous research has not adequately investigated the proper linkage between service quality and relationship marketing especially in the hospitality service sector. In particular, very few studies have emphasized on the significance of service quality on relationship marketing approach. Thus, this study will fill this gap by investigating how service quality is practiced by the star hotels to influence their customer's satisfaction, trust, commitment and loyalty. It also recognizes that quality, customer service and relationship marketing need to be much more closely integrated. Furthermore, limited research has been done on strategic marketing innovations for hospitality entrepreneurs.

Significance of the Study

From a practical point of view, this study significantly contributes towards the hotel industry in several ways. The result of this study helps the hospitality entrepreneurs with innovative competitive strategies through strategic marketing innovations for hospitality entrepreneurs. Through this research hoteliers can recognize the role of service quality and relationship marketing to build customer loyalty. Hence, through recognizing the needs of

these aspects hoteliers can adapt appropriate and superlative marketing programmes to nurture potential customers. Furthermore, it will lead to revenue generation and brand endorsement of star hotels and Tourism in global context.

Objectives of the Study

1. To identify the causes of sickness, especially in small business sectors with reference to the small and medium hospitality sector.
2. To understand the strategies adopted by entrepreneurs in bringing about successful turnaround.
3. To study the awareness and perception on strategic marketing innovations for hospitality entrepreneurs strategies framed by star hotels.
4. To identify the main factors that are responsible for developing entrepreneurial qualities and also for managing ventures successfully in the hospitality industry.
5. To recommend an action plan for a successful turnaround in the hospitality sector.

Research Methodology

The first step in the research processes was to determine the issues that need to be addressed for the purpose of the study. Initial talks and discussion were held with entrepreneurs from the service sector as well as the hospitality industry in consultation with the guide. Review of various data and literature available regarding all issues connected with the research was extensively undertaken. Books from various libraries were perused and the relevant ones were studied in detailed. Various journals, magazines and research papers were referred to. Several web sites were browsed and relevant data was accumulated the descriptive survey helped in preparing the groundwork for the next step i.e. the field survey.

Historical Survey: The geographic area chosen for the survey for the purpose of convenience. There are no official published data available, giving the details of "Failed Restaurants". If any official or un-official study known to have been conducted in this area of the small and medium hospitality industry.

Findings

The findings from this study draw some similar and different conclusions. First, similar to the Hospitality industry, the results of this study show that environmental scanning intensity positively influences innovation for entrepreneurship. A hospitality firm in a turbulent

environment must be continually innovative to remain competitive, which requires extensive scanning to recognize and exploit environmental change. Scanning provides managers with information about events/trends and opportunities for new products and services. Scanning might also help managers reduce degrees of uncertainty and lower the perception of risk associated with a potential entrepreneurial venture, thus increasing the likelihood that the firm will engage in the venture. As a result, scanning should be a principal concern of the entrepreneurially minded industry. Second, the positive relationship between entrepreneurship intensity and planning flexibility suggests that entrepreneurial minded hospitality industry should adopt "flexible" planning systems to keep up with environmental change. In the hospitality industry, the emphasis on entrepreneurship is often not so much on technological breakthrough, but on innovative and creative ways of satisfying customers. Third, the negative relationship between planning horizon length and hospitality entrepreneurship intensity indicates that the adoption of a relatively long planning horizon is not tenable for entrepreneurial firms. Finally, the result of this study shows that financial controls significantly and positively influence StrategicMarketing Innovations for Hospitality Entrepreneurs in the hospitality industry.

Reasons for Sickness in Restaurant Business:

- Mismanagement
- Insensitivity to external factors
- Inability to update the business
- Losing sight of the basics

Swot Analysis in Hospitality Industry

Strength <ul style="list-style-type: none"> • India's Rich Culture heritage • Demand – supply gap • Government support 	Weaknesses <ul style="list-style-type: none"> • Poor support to infrastructure • Slow implementation • Susceptible to Political Events
Opportunities <ul style="list-style-type: none"> • Rising Income • New business opportunities • Open sky benefits 	Threats <ul style="list-style-type: none"> • Even risk • Increasing Competition

Suggestions

- Entrepreneurs may focus on the marketing strategies used by the various sectors of Hospitality industries in the area of satisfying and retaining the customer.
- Long term perspective of looking into the structural changes required to meet the challenges in demand in the hospitality industry.
- Labour needs to be viewed as human capital in which investments need to be made, both in terms of enhancing their technical capacities through training and also by enriching them through fair wage.
- The Indian hospitality industry needs to start thinking big, and make serious efforts for making high value acquisitions overseas.
- Hospitality industry may facilitate its infrastructure.
- Current levels of Productivity and efficiency should be enhanced through use of better technology, efficient manpower and economical channel of distribution.

Main Innovative Strategy Suggested to Adopt in Hospitality Industries

- Innovative offerings - Fruit beer, Introducers of Schezwan Dosa & Idli Chilli
- Innovative schemes for customers
- Exclusive seafood items - stuffed bombill, leaf wrapped fry fish
- Process innovations.
- Innovative stand-out Décor and Ambience
- Innovative Dishes - Chicken Idlis, Fish Dosa, Chicken wrapped prawns, Momos, Exotic Sauces.
- Category segregation
- Plush ambience at affordable
- Rates, with different sections in hotel
- Candle light dinners on certain days of the week.

The Suggestion that can be Adopted for Successful Turnaround can be listed as follows:

- Do a proper introspection and strategic analysis.
- Make a detailed survey of the prevailing business environment.
- Analyze the repercussions of the changes at the macro level on the business.
- Write down the lacunae, business sales marketing and operations plans.
- Meet key personnel and employees.
- Revise plans.
- Have discussions with vendors and customers.
- Contact the bank, tax authorities, and accountant.

- Keep only essential employees. Revamp.
- Cut unnecessary cost.
- Renovate and Innovate.
- Implement plans.
- Revise and reassess.
- Ongoing Innovation.

Conclusion

The restaurant business is one of the few industries which present an opportunity where you can start as a dishwasher and dream of owning your own restaurant and actually realize that dream. But it takes dedication and a willingness to work long and hard to accomplish your dream. One needs to keep thinking of new ideas and innovate if one needs to survive. Innovative Entrepreneurship is by far the most important tool in the hands of an entrepreneur to bring about a successful turnaround in the hospitality business. Innovative data and incomplete innovation are facilitating entrepreneurs to bring about the successful rotate in ailing businesses.

Recommendation for Future Research

- Growth in tourism will definitely lead to a boom in hotels and restaurants.
- The hospitality industries also expect a boom in religious and remedial tourism in the domestic sectors at a rate of 11% to 15% growth in next few years.

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INNOVATIONAL HR TECHNIQUES FOR BUSINESS EXCELLENCE IN BANKING SECTOR

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Abstract

Innovation drives the organization to grow, thrive and transform itself into synchronization with both internal and external environment changes. In fact, this sector has recently undergone a radical transformation based on many innovations in governance and regulation, products, processes, services, systems, business models and technology. A liberalized, globalized financial infrastructure has given new impetus to this enormous effort. This research focuses primarily on HR innovation for business excellence with different aspects such as technology, very challenging competition, margins, new entrants and new business models threaten established vendors, and requirements continue to grow. Banks that grow and thrive will be those that can profitably develop new products, services and marketing channels. Innovation will increasingly become the key to the success and improvement of excellence in the commercial banking sector. Key training will be provided to maintain alignment between competitiveness and technology management. Finally, the study proposed an HR innovation for the excellence of companies in the banking sector in order to ensure products and services of high quality.

Keywords: HR, innovation, Business Excellence

Introduction

Innovation calls for vision and conviction. Booming innovation is not about the ideas or inventions; it's about the human resource. Innovation can be defined as the key process by which products, processes and services are created, and by which businesses generate jobs and wealth for its excellence. The term Innovation is a chain that requires strength at every link to achieve something. The chain starts with idea generation, but then moves to prioritizing and funding ideas, to converting those ideas to products/services and finally to diffusing those products/services and business excellence across the Banking sector. In Today scenario, we are having a fairly well developed banking system with different classes of banks such as public sector banks, private sector banks – both old and new generation, foreign banks, regional rural banks and co-operative banks with the Reserve Bank of India as the fountain Head of the organization. In the banking field, there has been an unparalleled growth and diversification of banking sector has been so stupendous that it has no parallel in the annals of banking anywhere in the world. Extending beyond a traditional focus on HR administration yields measurable results, improves profits,

and enables a banking sector to flourish for the long term business excellence.

Review of Literature

A critical review of literature including various studies conducted in India and abroad related directly or indirectly to the topic of the study, has facilitated the identification and selection of various Innovative Human Resource practices contributing to Organizational Performance in banking sector. Various HR practices, which are perceived to affect the Organizational Performance have been identified and selected on the basis of their relevance to the banking sector.

In a nutshell, it is felt that, the changing environment, the forces of globalization and liberalization and the advances in information and communication technology have major HR implications for the RBI as well. In every organization, financial products are becoming increasingly diverse and complex, while the markets in which they trade get progressively deregulated.

The largest public sector bank State Bank of India, offered voluntary scheme (VRS) to trim its workforce as recommended that the banking sector was overstaffed. SBI implemented a VRS or the "Golden Handshake"

scheme. The enormous workforce that was once regarded as one of SBI's strongest assets became a liability following the computerization of the banking sector. At the initial stage of "Golden Handshake" scheme leads to strong protests and SBI faced with a prospect of losing its talented employees and be left with less efficient employees (2007).

HDFC bank employee's needs continued to increase particularly in the retail naming businesses in line with the business expansion. The main objective of HDFC Bank is to facilitate a combination of human resource and technology in disseminating their banking functions and practices (2002).

Importance of the Study

The purpose of this study has been to investigate the HR Innovations for business excellence in Banking Sector. Respondents of banking sector varied in their perception on four practices, which are significantly different in all banks as brought about by grievance redressal, quality of work life, compensation management and incentives. These are ought to vary as organizations change, their managements philosophy and priorities differ. In Banking Sector the HR processes needs to be seriously looked into to make it an effective innovative practice to enhance employee productivity.

Need for Innovative HR Practices in Banking Sector

The need of HRD for an organization's growth arises mainly due to the following reasons.

1. The dearth of capable managerial manpower and a greater need in the future increase the competition for available talent.
2. The continued growth and development of business coupled with increased complexities such as the problems of size, technology and competition, add further pressures.

Objectives of the Study

The following two objectives have been set for the present study:

1. To examine and compare the Innovative human resource practices followed by banking sector
2. To find Innovative human resource practices contributing to Business Excellence in Banking Sector.

Research Methodology

Innovational HR Techniques for business excellence in banking sector form the sample of the study. In order to

achieve the objective, both primary and secondary sources of information are collected. The primary data was collected through discussions and interviews with employees, managers of the Bank, union representatives and staff colleagues. Secondary sources of data in this research are collected from published reports and books. The researcher will seek opinions from human resource consultants and counselors and related persons who are actively involved for effective interpretation and to enhance the reliability of findings.

Population

The population selected for this particular study is all private and public banking sectors in Trichy Region

Sampling

The sampling population of this research includes 9 Nationalized Bank (SBI, Allahbad bank, Bank of Baroda, Bank of India, Indian Bank, Syndicate Bank, IOB, Dena Bank) & 8 Private Bank (Axis bank, HDFC Bank, ICICI Bank, Federal bank, HSBC, Centurion Bank of Punjab, Indus Ind Bank, KVB) in Trichy Region were surveyed and considered through the General Information Schedule, Life Event Inventory, and Innovative Work Behavior Scale.

Profile of Banking Sector in India

Banking in India began in the last decades of the 18th century. The first banks established in India is General Bank of India, which established in 1786, and Bank of Hindustan, which established in 1790; both are now deceased. The oldest bank existing in India is the State Bank of India, which is established in June 1806 as Bank of Calcutta, which almost immediately became the Bank of Bengal. The Different Banking Sector in India is discussed below:

Public Sector Banks

The public sector is the one whose working is in the hands of the government. In India, the government holds a majority of stake in public sector industries.

Private Banks

Are banks that are not integrated. An owner of the private banking sector is either an individual or a general partner(s) with limited partner(s).

Foreign Sector Banks

This Banking Sector have their head office outside India and different branch is established in India.

Co-Operative Sector

The co-operative sector is retail and commercial banking organized on a cooperative basis and this co-operative bank is very much useful for rural people.

Innovational HR Techniques for Business Excellence in Banking Sector

In the booming Indian economy all industries are well on the market and Indian banks also behave comparatively well. In a booming economy and the continuing expansion of most banks facing challenges towards performance and it is clear that, public perception is dissimilar. The secret towards the success of any business simply depends on how they satisfied and treat employees. Based on this, they designed their human resources processes such as performance evaluation, recruitment, selection, training and development and others from the perspective of employees to benefit them.

In India the banking industry becoming more competitive than ever, private and public sector banking are competing each other to perform well. The executives of the bank are now in the position to modify their traditional human resources techniques in to innovative human resources techniques in order to meet the challenges from other competitive banks. This paper tries to bring out those innovative and best human resource practices developed and found successful that made them more competitive in the present competitive banking environment in the various human resource areas where they want to gain competitive advantage over the competitor banks in order to attract and retain the talents and to differentiate their human resources practice and other services than the competitive banks.

In India, the banking industry is becoming more competitive than ever. Both private and public banks are competing to operate and perform well. Banking executives are now in a position to modify their traditional HR techniques in to innovative human resources techniques to overcome the challenges of other competing banks.

This article attempts to highlight innovative HR practices and best HR practices are developed to overcome the present competitive banking environment by implementing various human resource activities in order to attract and retain talented human resources to gain competitive advantage.

Analysis and Interpretation:

Table 1: characteristics of Sample

S.No	Variables	Categories	Average	No.	%
1.	Designation	Officers		180	72
		Clerks		70	28
		Total		250	100
2.	Gender	Male		140	56
		Female		110	44
		Total		250	100
3.	Marital Status	Married		114	45.6
		Unmarried		131	52.4
		No report		5	2
		Total		250	100
4.	Age		29.666 (SD 8.867)		
5.	Type of Bank	Public		90	36
		Private		148	59.2
		No report		12	4.80
		Total		100	100
6.	HRM Dept	Yes		210	84
		No		18	7.20
		No report		22	8.80
		Total		250	100
7.	Organizations Changed	First joiner		136	54.40
		Up to two change		60	24
		More than two change		47	18.80
		No report		7	2.80
		Total		250	100
8.	Employee union	Union exists		80	32
		Does not exists		170	68
		Total		250	

Analysis and Interpretation

The above table explains the characteristics of the total sample. This sample included 90 officers from Private Sector Banks and 160 officers from Public Sector Banks. Three types of designations were included in the survey Officers (72%) and clerks (28%). However both males and females in the sample, out of which 45.6% were married. The officers surveyed were comparatively younger ($x = 29.666$, $SD = \pm 8.867$)

Table2: Innovative Human Resource Practices Contributing To Business Excellence in Banking Sector.

Factors related to Innovative HR practices	Loadings	Value	% of Variance
F1 Job analysis and HR planning	0.521	8.636	39.256
	0.810		
Regular job analysis	0.713		
Regular human resource planning	0.570		
Emphasis on service	0.538		
	0.596		

employees in HR planning Use of human resource information system Conducting employee attitude surveys Lead with development and adoption of new HR practice			
F2 Training and performance appraisal Training and development programs Providing service orientation to managers Regular performance appraisal Due weight to service performance	0.622 0.669 0.800 0.646	1.734	7.880
F3 Hiring and compensation Well defined recruitment policy Attracting service oriented employees Selection on the basis of service attitude and competence Paying competitive salaries Benefits to employees Equal pay of majority or minority employees	0.711 0.496 0.631 0.641 0.536 0.501	1.456	6.616
F4 Facilitating workforce diversity Pay for performance (service) Equal say of majority or minority employees Flexible work hours Proper HR information system.	0.501 0.627 0.841 0.551	1.157	5.261
F5 Career development Socialization of employees Opportunities for career advancement	0.771 0.723	1.037	4.712

Analysis and Interpretation

These factors were further subjected to correlation and were found highly correlated. 22 HR statements were also subjected to correlation and except few, all variables were correlated. Mean scores indicate that the strongest factor was the training and performance appraisal ($x = 7.880$). Hiring and compensation ($x = 6.616$) and career development ($x = 4.712$) were again strong HR dimensions in software companies. Job analysis and HR planning ($x = 39.256$) was found as moderate HR practice. Practices regarding workforce diversity and flexi-work system ($x = 5.261$) were also prevalent in Banking sector but comparatively not as strong as other HR dimensions.

Findings

The results of this study strongly support significant relation of employee productivity with human resource practices including selection, employee benefits, compensation, training and staffing practices. Thus, through the use of innovative strategy-based HR policies and innovative practices, Banks create a more competent and committed workforce, which in turn provides a source of sustainable competitive advantage. Overall, the results indicate that innovative HR policies and practices help to sustain the level of competence that is created by banks. This implies that bank cannot simply improve the quality of its human resource by pumping in more training or recruiting employees when banking industry conditions shift or market demand changes. Building a firm's Human resources is a long-term commitment for managerial implication. The study also found that the banks with high disciplinary action were not able to reap a sustained performance advantage, as indicated by the significantly negative association with employee productivity.

Suggestions

Overall, the results suggest that innovative HR techniques configurations that are more difficult for competitors to imitate generally had positive relationships with bank performance for their business excellence. Talent hunter technique may be implemented in both private and public sector banks. This is a technique used for generating ideas and suggestions on relevant topics and also to provide alternate solutions to problems by simulative thinking and imaginative power of employees. Following suggestions are very essential to adhere for effective Banking Administration:

Job analysis and HR planning

- The HR Professionals have to introduce & improve the adaptability of their structure that will be able to absorb, draw and retain the best.
- HRD may be regularly reviewed against business outcomes as part of strategic and operational planning.

Training and Performance Appraisal

- HR Outsourcing may be initiated particularly in the areas of recruitment, training, performance management, and other related areas.
- Concept of Training and Development aims at self development of employees by kindling the desire to acquire/update knowledge, information and experience.

- Seminars/Guest lecturers/ Group Discussions, etc may be arranged on the topics of general interest by inviting experts specialized in the area and Industrial or Corporate topics are selected for each quarter and Seminar may be organized in administrative offices/ branches during every quarter.

Performance Management Feedback System (360 Degree Feedback System)

- Performance management feedback system, which requests feedback from boss, peers and direct reports and it, has been increasingly embraced as the most excellent of all available methods for collecting feedback for performance appraisal and Fair Evaluation System may be reviewed.

Hiring and compensation

- Hiring and compensation require head count flexibility due to the nature of the business and the long production cycle, the hiring of temporary workers is seen as the most creative, cost effective method to increase efficiencies around the ebb and flow of the production sequence.
- Hiring managers may be processed with the clear idea of what they are exactly looking for.

Facilitating Workforce Diversity

- Banking sector may provide market Competitive salaries and Create a safe, healthy and happy workplace.
- Frequent Mandatory meetings with producers and department managers may be arranged, Knowledge Sharing, Reward Ceremonies - Simply recognizing talent does not work and you need to connect it with formal procedure where recognition is broadcast.
- Every month Staff meeting may be organized and discuss about the Goals/Targets set for the unit/Bank and action plan is drawn in achieving them. Main aim of organizing Staff Meeting is to improve team building, group synergy, open culture, family feeling and talent recognition which individually and cumulatively benefit to the organizations.

Career Development

- Career development is a technique for generating ideas and suggestions on a relevant topic and also to provide alternate solutions to problems by simulative thinking and imaginative power of employees.
- Banking sector may adopt feedback assessment training and Implement career development initiatives

Conclusion

This paper concludes that if the commercial banks in developing countries like India are able to successfully

implement innovative HR techniques for their business excellence, they could achieve the maximum contribution of their employees, although, at present, the economic and political environment within which innovative HR techniques operate is not that conducive. The study concludes that methods, tools and innovative techniques for business excellence have greater impact on quality improvements and performance for business excellence in various banking sector. Although, the experience of HR Innovativeness in banking sector is relatively new, however, its impact over banking performance is significant. Many banks have attained greater performance goal business excellence and b after implementing these innovative HR techniques.

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DAIRY INDUSTRY IN INDIA- AN OVERVIEW

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Abstract

Indian celebrates seventy years of Independence. Independent India is now the fourth among the fastest growing economies in the world. The transition of the Indian milk industry from situation of net import to that of surplus has been led by the effort of national dairy development board's operation flood program under the aegis of the former chairman of the board Dr.Kurien .Dairy activities have traditionally been integral to India's economy. The country is the World's largest producer of dairy products .Dairy farming is now evolving from just an agrarian way of life to a professionally managed industry-. The Indian dairy industry with these positive signals, there is hope that the sector may eventually march toward another white revolution. India has attained and retained the first rank in milk production in the world. The first five countries in the world producing maximum milk are India, USA, Russia, Germany and China. Today, India is the "Oyster" of the global dairy industry. Its opportunity galore to entrepreneur worldwide, who wish to capitalize on one of the world largest and fastest growing markets for milk and milk products.

Keywords: Dairy, Dairy industry, Milk and Milk products

Introduction

Indian Dairy Industry –A Profile

Today, India is 'The Oyster' of the global dairy industry. It offers opportunities galore to entrepreneurs worldwide, who wish to capitalize on one of the world's largest and fastest growing markets for milk and milk products. A bagful of 'pearls' awaits the international dairy processor in India. The Indian dairy industry is rapidly growing, trying to keep pace with the galloping progress around the world. When entrepreneurs expand their overseas operation to India many profitable option awaits him. Introduction of concentrated investment, new technology, farmer education, veterinary services will enhance milk production and productivity in India.

India rank first in milk production, accounting for 18.5% of world production, achieving an annual output of 146.3 million tons during 2014-15 as compared to 137.69 million tons during 2013-14 recording a growth of 6.26%, whereas food and agricultural organization has reported a 3.1% increase in world milk production from 765 million tons in 2013 to 789 million tons in 2014

The per capita availability of milk in India has increased from 176 grams per day in 1990-91 to 322

grams per day by 2014-15. It is more than the world average of 294 grams per day during 2013.This represents a sustained growth availability of milk and milk products for the growing population dairy has become an important secondary source of income for millions of rural household engaged in agriculture.

Dairy Sector Overview

India contributes to 15% of the global milk production and stands as the largest producers in the milk with a production of 122 MMT in 2011. The production and demand for milk is expected to continue and rise due to various factors including population growth, rise in income and changing life cycle.

List of State and Union Territory Capitals in India

India country located in southern Asia. With over 1.3 billion people India is the most populous democracy in the world. It is a federal constitutional republic governed under a parliamentary system consisting of 29 states and 7 union territories All states, as well as the union territories of puducherry and the National Capital Territory of Delhi, have elected legislatures and governments, both patterned

on the Westminster model. The remaining five union territories are directly ruled by the centre through appointed administrators. In 1956, under the States Reorganization Act, states were reorganized on a linguistic basis. Since then, their structure has remained largely unchanged. Each state or union territory is further divided into administrative districts.

Milk Production and Per Capita Availability of Milk in the Country

The total quantum of milk produced in the country during 2015- 16 is 155.5 million tonnes and per capita availability of milk is 337gms per day. The State /UTS wise per capita availability of milk during 2015-16 is given below.

Milk Production In India		
Year	Production (Million Tonnes)	Per Capita Availability (gms/day)
1991-92	55.6	178
1992-93	58.0	182
1993-94	60.6	187
1994-95	63.8	194
1995-96	66.2	197

1996-97	69.1	202
1997-98	72.1	207
1998-99	75.4	213
1999-2000	78.3	217
2000-01	80.6	220
2001-02	84.4	225
2002-03	86.2	230
2003-04	88.1	231
2004-05	92.5	233
2005-06	97.1	241
2006-07	102.6	251
2007-08	107.9	260
2008-09	112.2	266
2009-10	116.4	273
2010-11	121.8	281
2011-12	127.9	290
2012-13	132.4	299
2013-14	137.7	307
2014-15	146.3	322
2015-16	155.5	337

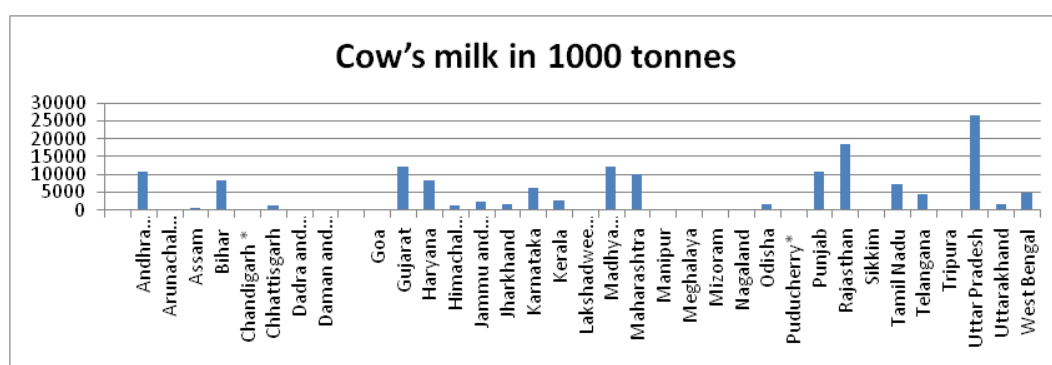
*Source: Department of Animal Husbandry, Dairying & Fisheries, Ministry of Agriculture, GoI

Ranking State Wise Distribution of Cow's Milk and Per Capita Milk Consumption

S.No	States	Capital	No of Districts	Cow's milk in 1000 tonnes	Ranking cow's milk production in 1000 tonnes	Per Capita milk	Ranking Per Capita milk
1	Andaman and Nicobar Islands *	Port Blair	3	15	33	87	27
2	Andhra Pradesh	Hyderabad	13	10817	5	475	6
3	Arunachal Pradesh	Itanagar	20	50	29	105	24
4	Assam	Dispur	33	843	21	70	32
5	Bihar	Patna	38	8288	9	219	15
6	Chandigarh *	Chandigarh	1	43	31	93	25
7	Chhattisgarh	Naya Raipur	27	1277	20	133	19
8	Dadra and Nagar Haveli *	Silvassa	1	9	34	72	31
9	Daman and Diu *	Daman	2	1	36	10	35
10	National Capital Territory of Delhi*	New Delhi	11	281	22	36	34
11	Goa	Panaji	2	54	28	74	30
12	Gujarat	Gandhinagar	33	12262	3	545	4
13	Haryana	Chandigarh	22	8381	8	877	2
14	Himachal Pradesh	Shimla	12	1283	19	505	5
15	Jammu and Kashmir	Srinagar	22	2273	15	395	9
16	Jharkhand	Ranchi	24	1812	17	152	17
17	Karnataka	Bengaluru	30	6344	11	282	12
18	Kerala	Thiruvananthapuram	14	2650	14	200	16
19	Lakshadweep*	Kavaratti	1	3	35	113	21
20	Madhya Pradesh	Bhopal	51	12148	4	428	8
21	Maharashtra	Mumbai Nagpur	36	10153	7	239	14
22	Manipur	Imphal	16	79	25	76	29
23	Meghalaya	Shillong	11	84	24	83	28

24	Mizoram	Aizawl	8	22	32	57	33
25	Nagaland	Kohima	11	77	26	89	26
26	Odisha	Bhubaneswar	30	1903	16	124	20
27	Puducherry*	Puducherry	4	48	30	108	23
28	Punjab	Chandigarh	22	10774	6	1032	1
29	Rajasthan	Jaipur	33	18500	2	704	3
30	Sikkim	Gangtok	4	67	27	282	12
31	Tamil Nadu	Chennai	32	7244	10	283	11
32	Telangana	Hyderabad	31	4442	13	-	-
33	Tripura	Agartala	8	152	23	109	22
34	Uttar Pradesh	Lucknow	75	26387	1	335	10
35	Uttarakhand	Dehradun	13	1656	18	434	7
36	West Bengal	Kolkata	33	5038	12	145	18
	Total			155491			

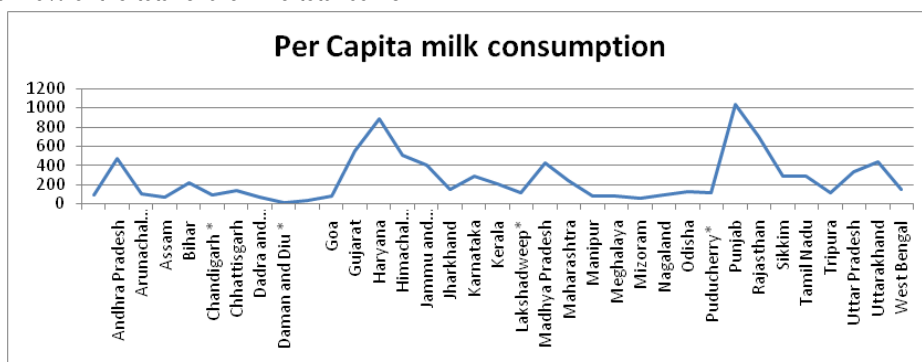
*- Represent the union territory



Uttar Pradesh

The state consist of 75 districts and currently represents the second largest dairy market in India. The milk production in Uttar Pradesh consists of cow and buffalo milk. Cow milk dominates the total milk production accounting for 73% of the total share. The total cow's milk

production in 1000 tonnes in Uttar Pradesh is 26,387 according to Department of Animal Husbandry, Dairying & Fisheries Ministry of Agriculture, GoI. It ranks first in Cow's milk production. Uttar Pradesh ranks tenth in per capita milk consumption with 335gms per day.



Punjab

The state consist of 22 districts and currently ranks first in per capita milk consumption with 1032 gms per day. The milk production in Punjab consists of cow and buffalo milk. The total cow's milk production in 1000 tonnes in Punjab is 10,774 according to Department of Animal

Husbandry, Dairying & Fisheries Ministry of Agriculture, GoI. It ranks sixth in Cow's milk production.

Growth In Organized Dairy Sector Is A Boost For Rural Livelihood.

Nearly 80% of Indian production is contributed by small and marginal farmers, with an average herd size of

one to two milch animals. Penetration of technology banking system will ensure farmers receive payment on time. Despite milk being a very important part of the Indian diet, India was a milk deficit country post-independence. This situation pushed the government to launch "operation Flood", which so far has been one of the most successful government led programs on inclusive growth and livelihood generation.

Operation Flood was implemented in three phases and with three main objectives

- Increase in milk production
- Augmentation of rural income
- Fair prices for consumers

Currently, the organized sector processing (packaged milk and dairy products) accounts for about 25-28 million tones, which is 18-20 percent of the total production^[1]. Indian organized dairy sector anticipates rapid growth in next three years. The organized dairy sector could account for 25% of India's dairy industry by 2018. The revenue share from the organized dairy segment could rise to 25% of India's total dairy market by fiscal 2018 up from 19% in fiscal 2015 a new report shows.

A key characteristic of Indian dairy sector is that it is largely unorganized explained by Sethi of director at CRISIL ratings the company behind the report.

"By unorganized sector we mean that the milk that is sold by milkman (largely) based in villages and small towns, vendors who collect the milk from local producers and sell it directly to household and sweet(mittai) shops in both rural and urban areas", Sethi said. On the other hand

the organized dairy sector represent milk that is processed using modern infrastructure and marketed through organized channels under their own brand such as AMUL, MOTHER DAIRY etc he explained CRISIL ratings has rated on 84 firms comprising 60% of the organized capacity in India, according to the company^[2]. According to National Dairy Development Board (NDDB) India is the leading producer and also the largest consumer of milk and milk products. The milk India produces every year accounts for one-fifth of the global output. (CRISIL research estimates.)

Conclusion

The present study made an attempt to study the total cow's milk production in India and total per capita milk consumption in India. Result shows that Uttar Pradesh ranks first in cow milk production among the states and seven union territories with 26,387 (1000 tonnes) and Punjab ranks first in per capita milk consumption among the states and seven union territories with 1032 (gms per day). The result concluded that milk production and productivity can be enhanced with the introduction of concentrated investment, new technology, farmer education, veterinary services etc.

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A STUDY ON KNOWLEDGE MANAGEMENT PRACTICE IN PUBLIC AND PRIVATE SECTOR BANKING SERVICES

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Introduction

Knowledge is a potentially significant resource to the firm as it may possess valuable, rare, inimitable and non-substitutable characteristics particularly if it has a tacit dimension. Knowledge is described as dynamic, since it is created in social interactions amongst individuals and organizations. Knowledge which is new to an organization has to either be invented internally or acquired from external sources. The benefits claimed by organizations, as derived from applying knowledge management, are many and relate to most areas of organization performance and employee emancipation. The integrated knowledge management system can offer organization the following three most important benefits: help organizations to capture, organize, store, transfer, distribute and use the internal and external knowledge in business line implementation; make valuable knowledge of individual understanding decompose, externalize and accumulate into organization knowledge; and make employees able to share organizational knowledge in business implementation process. Thus, organizations manage knowledge to achieve these benefits. Knowledge management is the vehicle for organizational consequences and competitiveness.

Review of Literature

Iman (2014) examined the effect of the knowledge of management on organizational performance in state banks of Rasht. He revealed that the efficiency, innovation, dynamic capabilities caused by the knowledge management have a significant positive impact on organizational performance. He also revealed the significant mediator role of intellectual capital in between the knowledge management and organizational performance in banks.

Seyed et al., (2013) revealed that the effective implementation of knowledge management infrastructure namely knowledge processes, information technology and organizational culture have a significant correlation with the service quality of the insurers.

Manoji (2012) found that the general status of the practices of KMs and corporate strategy in the Nepalese banking industry is good but not excellent. The practice of both strategies is poor in public sector banks compared to private sector banks. The banks use computer as the major mode of knowledge transfer. Noor and Salvin, (2011) noticed the factors influencing employees knowledge sharing capabilities are technical and non-technical factor. The technical factors includes the IT infrastructure, IT application usage and end user flow whereas the non-technical factor includes the individual dimensions such as awareness, trust, personality and job satisfaction whereas the organizational dimensions covers the structure, culture, reward, recognition, work process and office layout.

Objectives of Study

To analyze the effectiveness of knowledge management practices at banking services in the public and private sector banks.

Methodology

The study is basically an empirical one based on data gathered from the respondents have been chosen for the study in Tamil Nadu. A sample of 572 respondents has been chosen for the purpose of the study. For this study, the researcher used a well-designed interview schedule to collect the data from the respondents. The questionnaire related to opinion of customer about the level of satisfaction of services in the public and private sector

banks. IBM SPSS 21 version was used for statistical purpose.

Designation of the Employees

The designation of the employees is one of the important personal profile of the employees. Since it may have its own influence on their view on the level of implementation and effectiveness of knowledge management practices at banks, it is included as one of the profile variables. The designation of the employees are classified into manager and supervisor. The distribution of employees based on their designation is illustrated in Table 1.

Table 1 Designation of the Employees

Sl.No.	Designation	Number of employees in		Total
		PRSBs	PUSBs	
1.	Manager	115	171	286
2.	Supervisor	115	171	286
	Total	230	342	572

Since the present sampling procedure gives equal weightage to all two categories of bank employees, the manager and supervisor constitutes 50.00 per cent to total in each case.

Gender of the Employees

The gender of the employees may reveal their level of exposure and involvement to implement the knowledge management practices at banks and also to reap the advantages from it. Hence, it is included as one of the important profile variables of the present study. The distribution of employees based on their gender is given in Table 2.

Table 2 Gender of the Employees

Sl.No.	Gender	Number of employees in		Total
		PRSBs	PUSBs	
1.	Male	145	249	394
2.	Female	85	93	178
	Total	230	342	572

The important gender among the bank employees is male which constitutes 68.88 per cent to the total. In the case of private sector banks, the male and female employees constitute 63.04 and 36.96 per cent to its total respectively. In the case of public sector banks, these two constitutes 72.81 and 27.19 per cent to its total respectively. The analysis reveals the dominance of male employees in the banks.

Age of the Employees

Since the age of the employees influence their level of maturity, interest and involvement on their view on the implementation of knowledge management practices at

banks, it is included as one of the profile variables. In the present study, the age of the employees are confined to less than 30 years, 30 to 40, 41 to 50, and above 50 years. The distribution of employees based on their age is given in Table 3.

Table 3 Age of the Employees

Sl.No.	Age	Number of employees in		Total
		PRSBs	PUSBs	
1.	Less than 30	38	75	113
2.	30-40	54	136	190
3.	41-50	77	81	158
4.	Above 50	61	50	111
	Total	230	342	572

The important age group of the employees in the banks are 30 to 40 years and 41 to 50 years which constitute 33.22 and 27.62 per cent to the total respectively. The important age group of the employees in private sector banks are 41 to 50 and above 50 years which constitutes 33.48 and 23.48 per cent to its total respectively. In the case of public sector banks, these are 30 to 40 and 41 to 50 years which constitutes 39.77 and 23.68 per cent to its total respectively. The analysis reveals that the age of employees in PRSBs is higher than that among the employees.

It is inferred from table 1, out of 225 respondents 70 are satisfied with the loan services, 82 respondents are highly satisfied with the deposit services, 57 respondents are satisfied with the technology services, 59 respondents are satisfied with agency services and 62 respondents are highly satisfied with the miscellaneous services in the public sector banks in the district.

Table 4 Attitude towards the Level of Implementation of KM at Banks

Sl.No.	Attitude	Number of employees		Total
		PRSBs	PUSBs	
1.	Highly satisfied	57	37	94
2.	Satisfied	33	39	72
3.	Moderate	67	145	212
4.	Dissatisfied	39	81	120
5.	Highly dissatisfied	34	40	74
	Total	230	342	572

The important level of attitude towards the level of implementation of KM practices at banks among the employees are moderate and dissatisfied which constitutes 37.06 and 20.98 per cent to the total respectively. The important level of attitude among the employees in private sector banks are moderate and highly satisfied which constitutes 29.13 and 24.78 per cent to its total respectively. In the public sector banks, these two levels are moderate and dissatisfied which constitutes 42.39 and 23.68 per cent to its total respectively. The analysis

reveals that the level of attitude towards the implementation of KM among the employees in private sector banks are higher than that among the employees in public sector banks.

Conclusion

The present study has been executed to fulfill the research objectives at four stages. At the first stage, the profile of the banks, its employees and the rate of implementation of the knowledge management practices were discussed. At the second stage, the antecedents lead to the rate of implementation of knowledge management practices and its impact were studied. At the third stage, the consequences of knowledge management and its determinants are studied. At the final stage, the rate of implementation of knowledge management practices on the consequences of knowledge management practices in banks. The confined objectives of the present study are: i) to reveal the profile of the bank and its employees; ii) to study the rate of implementation of knowledge management practices in the banks; iii) to examine the antecedents influencing the rate of implementation of knowledge management practices in banks and its impact; iv) to reveal the various consequences of knowledge management practices in the banks; v) to exhibit the determinants of the effectiveness of knowledge management practices in the banks; and vi) to evaluate the impact of implementation of various knowledge management practices on the various consequences of knowledge management in banks.

Since the present study focuses on the view of the bank employees' view on various aspects related to knowledge management in banks, a special care was taken to collect the primary data from them. An interview schedule was prepared to collect the primary data. The schedule was divided into four parts. The first part of the schedule focuses on the profile of the bank employees and banks.

The second part of the schedule examines the rate of implementation knowledge management practices at the banks. The third part of the schedules deals with the various antecedents to implement the knowledge management practices in banks. The fourth part of the schedule discusses the various consequences of the knowledge management practices and its determinants at the banks. The variables related to the concepts generated for the study were collected from the review of previous studies. A pilot study was conducted among 60 bank employees (30 from private and 30 from public sector banks) working at various branches in Madurai City. These 60 bank employees were equally distributed to bank managers and supervisors respectively. Based on the feedback of the bank employees, certain modifications, additions and deletions were carried out.

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SOCIO-PSYCHOLOGICAL CONCERNS IN THE TRIBAL CULTURAL CONTINUUM IN INDIA

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Abstract

The global forum, in the present scenario, presses on the need for inclusive development to making the world a better place for entire humanity. Yet, there are ongoing debates on varied issues related to the social inclusion of the suppressed lives in the global context. The emergence of the post-colonial perspectives have paved way for looking deep into the plights of the "othered" in the society despite the nationality. In the name of development, the transforming corporate world's materialistic and capitalistic attributes have its indirect impact on the socially secluded lives within the third world nations. Especially, the indigenous cults' whose lives are intertwined with the natural resources are being disturbed. This has stirred on the need for the attention on the neglected indigenous lives and their culture in the international intellectual spectrum. With reference to this, in the present paper, the researcher attempts to probe the representations of the indigenous lives specifically the tribes in India and their culture in select Indian English fiction and in English translations and analyse the socio-psychological issues they face in establishing their identity, preserving their culture and dignity in the hierarchal social structure.

Keywords: Culture, Identity, Socio-psychological issues, Tribes

The hierarchal social setup in India has sidelined the indigenous people from the threads of the seminal society challenging the peaceful and progressive human relations. This is one of the issues in debate on press and in other intellectual forums voicing for the uplift and development of those peripheral lives not depriving of their culture and rights on their land. Government has been formulating varied schemes and implementing them for the welfare of the vulnerable sects of its nation. Yet, the gap in inclusive development is still visible.

After the end of the colonial period, exploring and exploiting the world resources has taken a new form with the advent of globalisation and neo-imperialism that implies on the necessity of transforming global cultures. The on growing context of 'glocal' socialisation demands the developing countries to project their cultural variety, natural resources and human resources as a potential investing allurements towards business and prosperity: socially and economically. This has impacted on the cultural realms of the society specifically the tribes who are caught in the dilemma between their cultural past and the new generalised mainstream culture. They are forcibly displaced from their own forest lands in the name of development that has led to the socio-psychological issues

in adapting to the major culture; in preserving their own culture and dignity; fighting against displacement from their land by questioning the misconceptions and under estimations about them far across the so called modern society. The emerging trends in multi-faceted research have put forth new ideas in resolving the issues of the sidelined people and the importance of retracing every culture with its uniqueness and for the wholistic development. In such a way, multi-disciplinary approach in figuring out the requisites of the culturally diverse humanity is essential in countries like India with vast cultural, geographical and ecological heterogeneity to prevent the injustice against vulnerable people. The social scientists in the present age are actively relating psychological and social sciences to the needs and concerns of people, focusing on the higher standards of human relations in the society. The exploitation of the indigenous lives by uprooting them from the space of their natural livelihood has made them estranged from their cultural proximity and suffer both socially and psychologically. When these issues are closely analysed in the depictions of tribal microcosms presented in literature with broader sociological and psychological perspectives, the readers can understand the agony, the tribes undergo and get

awareness on their cultural richness and essentiality of equality and recognition.

Mahasweta Devi, a vigour voice for the redemption of the tribal culture as a part and parcel of the Indian cultural tapestry. In her literary expressions the plights and pangs of the marginalised of the society are underlined. The difference in understanding the Indian culture on the lime light and the shadows can be deeply felt through her powerful renderings present the subaltern lives with artistic hues of her imaginative endeavour. Her writings has made the entire country to shift their focus from the modern day technological world to the indigenous lives. Most of her writings reflects her ideas as a social activist, ceaselessly crusading against the injustice drawn against the tribes forcing them to be unrecognised, exploited and branded as an uncivilised groups.

Gayatri Chakravorty Spivak in her Translator's foreword to Mahasweta Devi's novel, *Chotti Munda and His Arrow*, clearly brings out the Devi as a social activist who has voiced the realities of the suppressed subalterns in their own perspective. Spivak holds Devi's attempt as a way to bring the marginalised culture to the centre as she calls *Chotti Munda and His Arrow*, "One of the most striking characteristics of the novel is the sustained aura of subaltern speech, without the loss of dignity of the speakers. It is as if normativity has been withdrawn from the speech of rural gentry."(vii).

Chotti Munda and His Arrow, as a novel highlights the rich tribal culture and its vibrant history hidden from the mainstream society, the nobility in the tribes and their socio-psychological problems due to the corruptive materialistic modern minds implies on them. Mahasweta Devi has focused on the exploiting nature of the capitalistic mainstream society using the hierarchal social setup by violently othering the oppressed sects in the society. The social reality of forest resources exploitation by mining in the name of development and growth that is utilised solely by the upper class members of the social framework is revealed through the description of the protagonist's forefather's life Perti Munda,

However remote the place he travels to, something will come out from

under ground, immediately a big settlement will grow there. His Mundari

world will shrink. He doesn't want anything, after all. A small village. All the locals adivasi, worshippers of God Haram. Followers of a priest, the pahan. (2)

The forced eviction of Perti Munda and the growth of the other upper classes of the society sidelining the tribes

to be underdeveloped and deprived of their rights to be in the forest makes the readers to directly find Devi's prime idea in ripping of the rotten layers of the social hierarchy visible. To underline, how the tribes are expelled from their natural forest dwellings that results in their social and psychological sufferings, Devi projects Perti Munda and his clans' thoughts that its their misfortune as something comes from underground wherever they clear and settle. This shows their innocence and non-exploitative, eco-friendly nature in contrast with that of the so called civilised world spoiling the geo-cultural milieu of the tribes and utilising the resources newly explored to prosper materialistically. Perti's plight over the enforced elimination from the land he wants to settle is shown in his recollection,

How White Men and Biharis jumped at the sight of coal and mica, how instantly they disfigured adivasi areas with slums of tile-roofed dwellings. Who knows what such people will do if they see gold? These hills, these forests, this river will once again be spoiled. With great loss of spirit he brought up the sand once more in his open palms.(2)

The psychological trauma that Perti undergoes makes him leave his own family and clan for their welfare. Yet, the purpose of his self imposed exile from his tribal society is not attained is highlighted by the author as she states, "But Perti Munda's wishes were not fulfilled. He had escaped for fear that outsiders in search of gold would make the place all mixed up."(2).

The social scenario of the tribes are shown through the mentioning of modern days development that has reached the place of Perti Munda, even after his exile, but the reason the author gives for the development shows the harsh reality vividly for the welfare of the upper rank people in the social ladder. The settlement of the mainstream population, made the adivasis stay at the distance.

With the presence of power disparity created based on the caste systems prevalent in India, the tribes are compelled to live their lives in periphery due to the utilitarian mindset of the powerful social majority. The root cause of the social, psychological and the cultural issues of the tribes is thus, revealed through the repeated revelation of the caste dominance in the social structure that makes the upper crust of the societal setup usurp the rights of the lower class people in the name of constructive social progress. As the novelist points out the fact in her words:

Its not possible to grasp today that these adivasis, the Mundas, were the ones who first lived in the village. Other Bihari sects and castes now dominate the village. Poor upper-caste, rich upper-caste, etc. The Mundas live at the distance.(5)

Kamala Markandaya's, *The Coffe Dams*, on the other hand brings out the veracity of the dwindling tribal life and culture as the development process are enforcing the tribes to uproot themselves from their ethnic space, living a life in the forest and their oneness with Mother Nature that has fed them by preserving its resources with their cultural bindings. The caste based social setup has made the emotional and psychological calibre of the down trodden to accept the oppression silently as it is enforced on them by the created upper class supremacy. This is questioned by Helen, the white lady, to Bashiam. Their conversation made by the author bringsout the socio-psychological acceptance of implied oppression:

"There used to be a village where the bungalows are...where our bungalow is.A Tribal village."(Helen)

"A small Settlement, yes"(Bashiam replied) "When they were told to go, They went"(Helen), 'Yes'(Bashiam answered). 'Without protest. Just got up and walked away, like animals.'"(45) (Helen commented)

The protagonist of the novel, Bhasiam, represents the transitional phase in the psychological array of the tribes in embracing the modern technological world. Later he realises the need to preserve his tribal dignity from the ruthless pecking order in society leaving the tribes to perish without even a humanitarian consideration. The questions that Helen asks him tends his perception to change psychologically and Thus, he goes against the discriminating social order to save his tribal men's dignity risking his life at the end.

Thus, both the novels portray the socio-psychological predicaments of the tribal community which is disturbed by the external forces like social hierarchy, capitalistic and materialistic attitudes of the people in the creamy layers of the society and the developmental and progressive projects that government implement without understanding the cultural bindings of the tribes with their home land that makes them distinct from the others in the mainstream society. This affects the social standards and cultural

heritage of the tribes to undergo social change leaving behind their cultural roots yet undergoing suppression Based on their cultural origin. This led to the chaos in the cultural continuum of the tribes arising conflict. As Burton Rightly points out that,

Conflict arises when a group is faced with non-fulfillment or threat to the fulfilment of the basic needs, including not only the material needs such as food, shelter, physical safety and physical well being but also psychological needs such as identity, security, recognition, autonomy, self-esteem and a sense of justice.(78)

Thus, the researcher emphasis on the need for multi-perspective approach in identifying the socio-psychological predicaments of the tribal lives in periphery who needs immediate attention to preserve their cultural identity and dignity along with their basic need. The researcher also suggests that, the proper understanding of the tribal culture is essential to resolve the issues related to the tribal progress as their lives are not only based on the modern world's technological development but also on the Mother nature culturally. Hence, the sociological, psychological and economical study of the tribal lives for their upliftment should also be rooted on the cultural richness of the tribes to provide them with due recognition and respect on par with the other social classes. This could also be used to preserve the eco-conservative tribal culture and the natural resources of the nation from illegal exploitations and hierarchal economic distribution leaving the poor to perish while the people from the creamy layers flourish.

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NO MORE MARGINALIZED, TOWARDS EMANCIPATION AS MIRRORED IN P.SIVAKAMI'S *THE GRIP OF CHANGE* AND BAMA'S *KARUKKU*

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Abstract

*Dalit Literature has emerged as a distinct genre out of the excruciating experience of caste discrimination, humiliation, exploitation, abuse and abject poverty undergone by the marginalized segments of Indian society. It is a purposive revolutionary transformation and protest literature. It is marked by revolt and negativism, since it is closely associated with the hopes for freedom by a group of people who, as untouchables, are victims of social, economic and cultural inequality. The physical segregation of the Dalits into "cheris" in the south of India and "basti" in the north from the caste-Hindu settlements make them as weak as the colonized. All the more, their Social, Economical, Political, Religious and Educational disabilities subjugate them unduly. The unique and inhumane treatment of the Dalits as untouchables is mirrored in many of the literary works created by the Dalit writers. The Dalit writers have the vision of removing untouchability and establishing equality. Upholding this vision many Dalit writers willingly head towards championing the cause of their brethren. They take up the mantle as they feel that no one else will take it up with such authenticity. It is also observed that many of their works are not only autobiographical in nature but also wonderful critique of the existing social structure in India. Palanimuthu Sivakami (1957) and Bama Faustina Soosairaj (1958) are the writers whose works have been taken up for study, can be analyzed on a similar note. P.Sivakami's *The Grip of Change* (1988) documents the ill-treatment of the Dalits by their higher caste counterparts in the independent India. Bama's *Karukku* (1992), an autobiographical novel, can be considered as the childhood memoir written by Bama, which voices the joys and sorrows of her people, oppressed by the higher castes in India. This article entitled, "No More Marginalized, Towards Emancipation as mirrored in P. Sivakami's *The Grip of Change* and Bama's *Karukku*" attempts to explicate the harrowing experiences of the Dalits and their struggle in accelerating towards emancipation and equality in the nation at large.*

Keywords: discrimination, disabilities, humiliation, struggle, brethren

Dalit Literature has emerged as a distinct genre out of the excruciating experience of caste discrimination, humiliation, exploitation, abuse and abject poverty undergone by the marginalized segments of Indian society. It is a purposive revolutionary transformation and protest literature. It is marked by revolt and negativism, since it is closely associated with the hopes of freedom by a group of people who, as untouchables, are victims of social, economic and cultural inequality. The unique and inhumane treatment of the Dalits as untouchables is mirrored in many of the literary works created by the Dalit writers.

The Dalit writers have the vision of removing untouchability and establishing equality. Upholding this vision many Dalit writers willingly head towards championing the cause of their brethren. They take up the mantle as they feel that no one else will take it up with such authenticity. It is also observed that many of their works are not only autobiographical in nature but also wonderful critique of the existing social structure in India.

Palanimuthu Sivakami (1957) and Bama Faustina Soosairaj (1958) are the writers whose works have been taken up for study, can be analyzed on a similar note. P.Sivakami's *The Grip of Change* documents the ill-treatment of the Dalits by their higher caste counterparts in the independent India. Bama's *Karukku*, an autobiographical novel, can be considered as the childhood memoir written by Bama, which voices the joys and sorrows of her people, oppressed by the higher castes in India. This article entitled, "No More Marginalized, Towards Emancipation as mirrored in P. Sivakami's *The Grip of Change* and Bama's *Karukku*" attempts to explicate the harrowing experiences of the Dalits and their struggle in accelerating towards emancipation and equality in the nation at large.

Amidst a number of writers, who actively participated in propagating the Dalit Literature, P.Sivakami and Bama are the critically acclaimed Tamil Dalit writers. P. Sivakami, a leading Indian novelist-cum-politician is the first Dalit woman to write a full length, semi-autobiographical Tamil

novel *Pazhaiyana Kazhithalum* (1989) with which she outshined the literary scenario and added a new magnum opus to Dalit Literature and Dalit feminist literary tradition in Tamil. She is a celebrated Tamil writer and is also credited for being the first Dalit woman I.A.S. officer in Tamil Nadu. Publication of her first novel, *Pazhaiyana Kazhithalum* carried her into glare of publicity and it attracted much larger audience and was applauded widely when translated into English by Sivakami herself under the title, *The Grip of Change* in 2006. Bama, originally called Faustina Mary Fatima Rani is one among the appreciating figures, who has written books providing a first hand account of discrimination by upper-caste nuns, priests, defining 'woman' from the socio-political perspective of a Dalit, focusing 'Dalit Victimhood' in a detailed manner in all her writings. She was brought into limelight by her autobiographical novel, *Karukku*. She feels that it is her responsibility to voice for her people's plight to the society and so she penned various works which include novels like *Karukku*, *Sangati* (Events) and *Vanmam* (Vendetta) and also short story collections- *Kusumbukkaran* and *Oru Tattavum Erumaiyum*. *Karukku* (1992), an autobiographical novel, makes a sense of Bama's life as a woman, Christian and Dalit. It is the driving quest for integrity as a Dalit and Christian that shapes the book and gives its polemic.

Placed at the bottom of the Indian Societal hierarchy, the Dalits perennially confront humiliation in some form or the other from the hands of the upper-caste Hindus. The caste-Hindus dissociate them from all kinds of social activities. The Dalits are deprived of all basic needs- food, clothes and shelter. They are not allowed to reside in an area where the higher caste people live. They were marginalized as untouchables, discriminated and denied their basic human rights. In *The Grip of Change*, Kathamuthu, Thangam, Gowri and many other characters and in *Karukku*, Bama and her friends experience the caste bias.

Kathamuthu and Naicker in *The Grip of Change* enjoyed the company of each other, still Naicker was quite conscious of his caste. His indirect exhibition of his caste consciousness irritates Kathamuthu. Once someone brought to the notice of Kathamuthu, the comments of Naicker, "Poor fellow, he belongs to a lower caste. Can't you tell from his gross speech?" (GC 18). Grossed at this comment of Naicker, Kathamuthu waits for the right moment to wreak his vengeance on Naicker. Precisely at that moment, one of his relatives who buy a silver arignan for his newborn baby from Naicker's jewellery shop

complains to Kathamuthu about his behaviour. Kathamuthu understands from the relative that, "Naicker kept him standing and carefully dropped the silver piece on his palm from a distance in order to avoid touching him... The following day, Kathamuthu showed up at Naicker's store... 'Why don't you sit? What's wrong?' Naicker put his hand on Kathamuthu's shoulder. 'Why are you touching me Naicker? Isn't it a sin if you touch me?' asked Kathamuthu provocatively. (GC 19) In *Karukku*, Bama expresses that she has never heard of untouchability until her third standard in school. As Bama is returning from school, she finds an elder from her street holding out a packet of snacks. This packet of snacks is tied in a string. The elder is bringing the snacks by holding the strings without touching the packet and is giving it to a Naicker in the village. Bama is unable to control her laughter, looking at the funny sight. But Bama's Annan told her that "Naickers were upper caste, and therefore must not touch Parayas. If they did, they would be polluted. That's why he had to carry the package by its string" (K 15) The self-questioning has begun in Bama with wonder. Bama writes: What did it mean when they call us 'Paraya'? Had the name become that obscene? But we too are human beings. Our people should never run these petty errands for these fellows. We should work in their fields, take home our wages, and leave it at that. (K 16)

Worst is the condition of the women hailing from the Dalit Community of afflicted men. Women are doubly marginalized in the name of caste and gender. In *The Grip of Change*, Sivakami allocates enough space for women-related issues, especially, the issues of sexual abuse. The Dalit women are either browbeaten by the upper caste or by Kathamuthu, a Paraiyan himself. Till Thangam's introduction into Kathamuthu's life, Kathamuthu follows only bigamy. He is married first to Kanagavalli and then Nagamani, a widow. According to the sociological study, the bickering within his family are inevitable too. Thangam, a victim of rape, sexual abuse and physical assault seeks Kathamuthu's aid. Kathamuthu champions the cause of Thangam only for his own welfare. The amount that he gets as compensation from Udayar for allegedly raping Thangam, he spends on himself and his family. Initially, he borrows a part of it from Thangam and then uses the whole lot. In lieu of it, he provides her with food, clothes and shelter. In *Karukku*, Bama depicts how as a child she played with her friends at being married and setting off on a bus journey; the husband, the Dalit man coming home drunk and hitting his wife; the police arriving and beating him up. It is very evident that Dalit women are doubly oppressed. Dalit children are made socially disabled in the

educational institutions. In *The Grip of Change*, Sivakami documents how Gowri, the daughter of Kathamuthu too was disturbed by an event in which she gets wounded on the remarks of a student belonging to a backward caste. Gowri asked the student who was returning after getting her scholarship money: 'How much did you get?' 'For you, it is different', the girl replied. 'Aren't you from a Scheduled Caste?' Gowri enquired doubtfully. 'Nonsense! I am a Vanniyakula Kshatriya'. 'If you are not from a Scheduled caste, Just say no ! Why do you have to prefix 'nonsense'? (GC 95) In *Karukku*, Bama expresses her feeling that throughout her education, she finds that where ever she goes, there is a painful remainder of her caste in the form of untouchability. The government offers the financial grants and special tuitions to the harijans. These grants and tuitions are more of humiliation than consolation, mainly because they single out her caste identity. Once the identity is revealed, Bama opines: "Among the other students, a sudden rustling; a titter of contempt. I was filled with a sudden rage" (K 22). The social and economic conditions propel the Dalits to forgo education most of the time. But, gifted Dalits like Gowri in *The Grip of Change* and Bama in *Karukku*, avidly pursue education and prove their mettle, only to rise higher and higher from the ashes of discomfiture. Gowri is differently distinct from the other Dalit woman of her age. After completing her schooling, Gowri pursued higher education at college. There she faced casteism in its crude form. She was abused by her classmates' casteist remarks. She disliked any mention of her caste. She even felt ashamed of getting "scholarship application form for scheduled caste students from the administrative office of the college" (GC 95). Though humiliated at times, she did not give up her education. Through Gowri, the ideal of education in the recovery of Dalits' condition is also established. The novel postulates a crude stereotype of the patriarchy along with a hopeful vision presented by Gowri. The glimpses of the growing consciousness can be seen in the novel. This is only by the awareness provided by education that Gowri was able to realize the exploitation of women in a patriarchal set up. She hated the mention of caste and married life. Her dislike for married life attributed to Kathamuthu's (her father) polygamy and gender injustice. Gowri is firm in her conviction that she will not marry and as a ship she is hopeful that the world is gripping change towards an ideal world of equality for all. Gowri finds that society is subverting towards equality when and only everyone is educated. Bama in *Karukku* starts to look out for means to uplift herself and her community from this pathetic existence. Her elder brother shows her the right path and

tells her that education is the only way to attain equality. Bama's elder brother opines: Because we are born into the Paraya jati, we are never given any honour or dignity or respect. We are stripped of all that. But if we study and make progress, we can throw away these indignities. So study with care, learn all you can. If you are always ahead in your lessons, people will come to you of their own accord and attach themselves to you. Work hard and learn. (K 18) Bama's elder brother's counsel makes a very deep impression on Bama. She wants to prove herself. Ever since her brother speaks to her, she studies hard with all her breath and being. Bama takes her studies very seriously. She sees to it that she always stands first in the class. Bama writes: "And, because of that, many people became my friends, even though I am a Paraichi" (K 18).

P.Sivakami and Bama voice forth for the liberation of the Dalits. They also raise a clarion call for the upliftment of their Dalit counterparts. They manage to speak the unspeakable instead of their people. P.Sivakami's *The Grip of Change* and Bama's *Karukku* express that through the right type of education the whole community of Dalit can be empowered and can gain human dignity. They have formulated the poignant tale of Dalits' suffering under the hands of upper-caste society and the Dalit women's struggle to fight against her own men and the upper-caste men and their survival in the caste-biased society. The article, "No More Marginalized, Towards Emancipation as mirrored in P. Sivakami's *The Grip of Change* and Bama's *Karukku*", thus sums up with the idea that the Dalits who were marginalized as untouchables, discriminated and denied their basic human rights should march towards emancipation through the right type of education.

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SOCIO-POLITICAL AND DIASPORIC ELEMENTS IN ROHINTON MISTRY'S *FAMILY MATTERS*

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Abstract

Rohinton Mistry is a leading novelist in the field of Indian Literature. His writings deal with the social and political situations of India during his stay in Bombay. His novel Family Matters depicts the Post-Independence era's despair and speaks of the political schemes, corruption, the deception of Shiv Sena and sufferings of the middle-class people. Family Matters is in many ways a rites of passage book in which the child is the witness-a kind of 'the child is the father of man' text. The child in question is the nine years old Jehangir Chinoy, the younger son of Rexona and Yezad. The Patriarchal figure is that of the seventy year old Nariman Vakeel, his paternal grandfather. It is through Jehangir's eyes that the reader is made aware much of the family Politics that pervades the book. The central motif of Family Matters is the Jigsaw puzzle that the boy tries to fit together, much like he tries to puzzle out the quarrels and power politics that rock his family and which he wishes-hard would cohere together in happiness and harmony, like the pieces in his Jigsaw puzzles. Mistry is well aware of the danger of relying too heavily on a social and political realism. He is more concerned about the lives of individuals and families, their personal tragedies and social lives than the public world of Shiv Sena fanaticism. However, Mistry seeks to create a family realism and a portrait of community inside larger India. The Socio and Political context is just an instrument of individual changes. This paper entitled, "Socio-Political and Diasporic Elements in Rohinton Mistry's Family Matters" focuses on the socio-political and diasporic elements as dealt by Rohinton Mistry in his novel Family Matters.

Keywords: social, political, patriarchy, diaspora, sufferings

Rohinton Mistry is well aware of the danger of relying to heavily on a social and political realism. He is more concerned about the lives of individuals and families, their personal tragedies and social lives than the public world of Shiva Sena fanaticism. However, mistry seeks to create a family realism and a portrait of community inside larger India. The socio and political context is just an instrument of individual changes.

Family Matters is in many ways a rites of passage book in which the child is the witness- a kind of 'the child is the father of man' text. The child in question is the nine year old Jehangir and the patriarch figure is the seventy nine year old Nariman Vakeel, his paternal grandfather. *Family Matters* has the calm of the opening paragraph which is frazzled to shreds by the shrill importuning of his step-children, Jal and Coomy Contractor, who beseech him to go out of the apartment. They are afraid than due to the Parkinson's disease from which he suffers, he would lose

his balance and fall down. The fears of these two middle-aged siblings has to be seen in the context of the geriatric Parsi community in which there are today too few Young and able members to care for the old and disabled.

There is also the fact that in the Parsi community the burden of caring for ageing, ill and often cantankerous parents falls on the unmarried offspring. This often results in feelings of resentment towards the married siblings who it appears have shrugged off their responsibilities towards ageing parents. This is clearly evident in *Family Matters*, where Coomy resents her half-sister Roxana for having 'escaped' parent-care duties and goes to inordinate lengths to force her sister into talking care of Nariman, when he falls down and breaks his ankle.

When Nariman leaves the apartment for his usual evening walk. When his step-daughter Coomy asks, 'How many people with Parkinson's do what you do?' (FM3), he shrugs off her fears by saying, 'I'm not going trekking in

Nepal. A little stroll down the lane, that's all'(FM3). He counters Coomy further by pointing out the dangers lurk indoors as well as outdoors.

While Jal and Coomy bicker among themselves as to what really constitutes a danger to Parsis in Bombay. Nariman Vakeel slips out of their building. Chateau felicity, and the 'Stale emptiness of the flat' (50 into the bustling life of the city. Nariman's longing for fresh air and life outside the ambit of his step-children, is symbolized by the picture on the cover of the text, that of an old Parsis, in a trademark Sola Topee, that harks back to the colonial times, standing with his back to the camera, gazing out at the sea that gridles the island of Bombay and twice a day with its life-giving breezes flushes out the stale colours from the city. Nariman's bravado is a bit dented through when on the eve of his seventy-ninth birthday he returns home' with abrasions on his elbow and forearm, and a limp. He had fallen while crossing the lane outside Chateau Felicity'(FM60). This fall results in a trade from Coomy and also brings up old resentments and unhappy memories.

The flashback over the text moves into contemporary times again as the family goes together to celebrate Nariman's seventy ninth birthday. In the light of the events that follow, this party has a poignant appeal as it's the last time that Nariman and his family as more or less happy. The son-in-law Yezard and the grandsons Murad and Jehangir's love for the old man is palpable and even Coomy ultimately yields to the general atmosphere of goodwill, as her brother Jal keeps fiddling with his recalcitrant hearing aid to catch all the family chatter.

The unhappiness that was lurking in the near future through is preaseged at this party in the form of Coomy's apprehensions about a possible serious fall for Nariman if he continued ignoring her injunctions on going out. In a half-serious manner she warns her half-sibling that if that were to happen ' she and Jal would deliver him straight away to the chinoy residence' (FM 13). This is countered by Yezard's

The chief is welcome, just make sure you bring one of your extra rooms. We live in a two-room flat, not a seven-room palace like this one (FM 13).

So the party ends but not without a reference to Lucy by Coomy, When her step-father had irritated by her asking her to bring ou the best china and then upset her further by switching on the usually unused and hence dust-laden ceiling fan.

As Yezard and Roxana try to explain the problem Nariman's parents had with inter- religious Marriages, Mistry is able to bring in the dilemma facing contemporary

Parsis about inter – communal marriages. This confuses young Jehangir.

He asked if there was a law against marrying someone who wasn't a Parsi. His

father said yes, the law of bigotry(FM42).

In a rather unbelievable manner mistry lets Jal and Commy withhold the news of Nariman's fall and hospitalization from Roxana, so as to let himself have the twist in the plot where the step-children unceremoniously and without any warning dump the old man at Roxan's doorstep. However, they do try to manage themselves for a little while, till the logistics of giving the old man a bed pan and then when that was abonded in favour of a bed side commode, the physical labour of hoisting Nariman onto it, defeats them. As his step-children wrestle with the smelly commode and their consciences, Nariman drifts in and out of painful delirium and the text slips into the next flashbacks episode.

Lucy who had taken to standing on the pavement and staring up at Nariman's widow. Nariman would try to ignore her until his remove would drive him down to see her and this in turn would upset. Yasmin and the children, especially Coomy. After Nariman had left her, Lucy had given up her studies and since he had Already been thrown out of her parent's home thanks to her relationship with Nariman,Was living at the YWCA hostel. Nariman had countered Yasmin's ploy of hiding all his Clothes, while he was talking his bath, by going down to meet Lucy wrapped just in a bath towel. This episode had driven a further wedge between Nariman and his wife Yasmine and also alienated him from Coomy.

Back to contemporary times the narrative moves into another gear as Coomy defeated by the physical labour of taking care of the old man and now even bereft of her domestic help, who is driven away by the foul odours in the flat, convinces her brother to hire an ambulance and without any prior warning takes Nariman to Roxana's flat and leaves him there till the plaster is removed and he is mobile enough again to return to their flat. While the reader might be tempted to censure Coomy for this 'heartless' move, her action needs to be seen against the earlier mentioned Scenario where there is no state help at all for the care of the old and infirm and the Entire burden falls upon their not always willing to do so children.

Nariman is nominally consulted in this move but he knows that he did not really have the right to veto it or even say

This flat is my home, and I put in your names because I did not differentiate

between you and Roxana. Would you now throw me out in my helplessness?

They would probably laugh that I was getting dramatic (FM87).

So all that Nariman says is,

Lying in bed, here or there, is all the same to me. But it will be difficult for them, in such a small flat (FM87).

Paucity of accommodation is the bane of the majority of family units in the congested city of Bombay and has ruined the happiness of families other than the ones in this text. So the ambulance is once again summoned and the helpless old man lifted onto a stretcher and as they take him out:

He wondered if he was seeing the familiar faces [the portraits of his ancestors, which line the walls of the flat] for the last time. He wanted to tell the ambulance men to make a tour of each room so he could examine everything, fix it in his mind before the door closed behind him (FM89).

Thus deprived of decision-making power by age and crippled by his fracture, Nariman is borne off to his unsuspecting daughter Roxana's little flat.

The deeper the plot becomes, the more characters acquire the solidity of flesh and blood. The main characters in *Family Matters* are the Parsis, though the story is located in Bombay, as Nariman is afflicted with Parkinson, he could hurt himself seriously if he has a fall. Coomy yells at him daily as she watches him to prepare himself for the evening walk. She does not help him or does she offers to accompany him on his walks. Coomy is fastidious in caring for her step father but also cruel, still angry and aching from a long ago wrong he did to her mother Yasmin. She thinks her step father to be the responsible for the death of her mother and never forgives him.

The focus of the novel has shifted from the 1970's and years of the emergency to the more recent times. The Shiva Sena is still around the rioting Hindu mobs, under the mistaken impression that fleeing Muslims had been given shelter in that building. Coomy also points out that Bombay burnt for months after the razing of the mosque in Ayodhya. ----- and that was a coincidence- pure bad luck. How often does a mosque in Ayodhya turn people into savages in Bombay? Once in a blue moon.

Coomy also talks about the danger that, not just Parsi but also the senior Citizens of Bombay are experiencing and also killed for the monetary gains. Jal says:

Just last week in Firozsha Baag an old lady was beaten and robbed inside her own flat.

Poor thing is barely clinging to life at Paris general----- (FM5)

Husain, a peon of Bombay sporting goods emporium is a tragic victim of the Babri Masjid riot. His wife and children were killed in the riot. Shiva Sena involved in burning the poor and innocent people.

"----- In Muslim Mohall's they were shooting their guns at innocent people. House was burning. Neighbours came out to throw water. And the police? Firing Bullets like target practice. These guardians of the law were murdering everybody! And my poor wife and children-----I couldn't even recognize them.....more than three years have passed, and still no justice. Shiva Sena polluted the police. And now Shiva Sena has become the government". (FM155).

Rohinton Mistry has successfully given political consciousness to his characters. He beautifully portrays that they are the victims of bloody politics. In *Family Matters* very artificially, he portrays the society and political issues. A Bombay valla himself Mistry effortlessly describes a city in chaos through the experiences of a small but discordant, an educated but narrow minded Parsi family residing in Bombay. Mistry's love for his old city, Bombay shines through loud and clear in the words of Mr. Kapur:

Bombay endures because it gives and receives with in this wrap and weft is

Woven the special texture of its social fabric, the spirit of tolerance, acceptance, generosity Anywhere else in the world, in those so-called civilized places Like

England and America, such terrible conditions would lead to revolution. (FM159).

Mistry has portrayed Bombay city as a protagonist in *Family Matters*. Roxana's Little world in pleasant villa is hit by the catastrophe of Nariman's sudden arrival. Mistry shows Roxana's obsessive solicitude for her son's health, which means keeping them at home at the slightest sign of a cold. Through Roxana loves her father and through she is adored by her sons, the problems is that they live in a small one bed room flat. Roxana's world in pleasant villa also includes her neighbours, the violinist daisy Ichchaporia and the Matka (lottery game) playing villie card master. Villie indirectly by enabling yezard to make a little extra money on the Matka game.

Mistry lets the characters describe themselves to the reader through their dialogues and ways of conversing. Reflections of characters like Nariman remembering his bitter past. Jehangir interpreting the conversations of adults, Yezad's change of soul midway are accentuated with such nuances, that one can't help but feel the pain.

In *Family Matters* Coomy and Jal, the two steps children of Nariman Vakeel, manipulate the power given to them. They left to them to Roxana, his real daughter without notice. They break their plasters of the ceiling so that Nariman cannot get back it home. They both make plants get rid of the responsibility of their ceiling plaster. Further in the end Jal joins hand with Roxana and Yezad his sister and brother-in-law. He invites them to live in his large house to get rid of financial problem and loneliness.

A worst kind of complete power through patronage is shown by Coomy, the step Daughter of Nariman. She controls each and everything of Nariman ie. From food to Walk. But in the heart. She takes good care for him and afraid of his fall by Parkinson's disease. For Nariman's sake she instructs him for medicine etc. *Family Matters* focuses attention on family relationship particularly parents, children relationship and the problem of looking after aged parents. Mistry, however does not suggest remedy but through the protagonist emphasizes the inadequacy of any legal measure. -----How can you force people? Can caring and concern be made compulsory? Either it resides in The heart or now here (FM121)

Mistry also realistically depicts in the novel the present miserable condition at the Parsi race. In India, they

are gradually losing the lofty and exalted position they once enjoyed. At present they have inculcated a feeling that the successive Governments of India are biased towards them. The changing social system, the increasing communal clashes and violence triggered off by fundamentalism depress them to a great extent.

Thus Rohinton Mistry's texts reveal mysticism and mistry with a note of existential trend. His understanding and articulation of the socio-political scenario of post colonial India has brought recognition for him as a socio-political novelist.

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DISHARMONY AND DISSOLUTION OF MARRIAGE IN NAYANTARA SAHGAL'S *STORM IN CHANDIGARH*

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Indian women novelists have set an innovative facet to the Indian literature. Authors like Kamala Markandaya, Shashi Deshpande and Anita Desai have chosen the problems and issues faced by the women in today's male dominated world as the main theme of their books. Nayantara Sahgal is one of the eminent Indo-English writers who writes in the stream of national consciousness. The major theme in her works is disharmony and dissolution of marriage. The main focus in the novels of Nayantara Sahgal is on the plight and problems of the educated women, mostly with an urban base. The achievement of Sahgal as a writer is quite an impressive one. Her novels include *A Time to be Happy* (1958), *This Time of Morning* (1968), *Storm in Chandigarh* (1969), *The Day in Shadow* (1971), *A Situation in New Delhi* (1977), *Rich Like Us* (1985), *Plans for Departure* (1985) and *Mistaken Identity* (1988). In all her novels the political disorder of the outside world and the private agony of the individuals are intertwined together.

Women's quest for identity and free choice to find her life partner and lead an ideal married life are the repeated themes of Nayantara Sahgal. Her last novel, *Storm in Chandigarh* presents a contemptuous protest against the denial of independence and individuality to woman. The female characters in *Storm in Chandigarh* come out of the clutches of righteous stereotypes and emerge as individuals. This is brought out clearly in the portrayal of far from ideal marriages of three young couples-Vishal and Leela, Inder and Saroj and Jit and Mara. Sahgal is acutely worried with the unhappy marriages and the loneliness of living. Through the depiction of the married life of Leela, Gauri, Saroj and Mara, the author holds a mirror to the society that subjects its women to worst type of inhuman exploitation. In *Storm in Chandigarh*, the scene is set in Punjab. The political background is that of the division of the Punjab into the two states of Punjab and Haryana.

There is a human background besides the political background which is very well projected. The theme of the novel is violence, not a physical violence, but an invisible and the subtle form of violence. The pre-marital relationship becomes the reason of breakdown of Saroj's marriage. Saroj's intellect, honesty and sincerity was totally neglected by her husband Inder. But she was expecting equality in marriage. It happened just because of her short term affair before marriage But Inder himself looks for happiness outside marriage and involved in extra-marital relations with Mara. But he is neither able to forget nor forgive his wife. This becomes a great reason for their separation. Jit and Mara also suffer from a related predicament. They are a childless couple who feel lonely in their life. Mara's problem is psychological.

Nayantara Sahgal's women are of two types. There are women who are willing to surrender themselves to the traditional restriction of their marriage life. Even when their self-respect is denied, they do not hesitate to rebel. Sahgal's women make them feel lonely and empty and suffer from psychological distress of the broken marriage. Sahgal's distressed women, force them even for a remarriage. They go in search for meaningful relationship and identity. Most of the women characters feel bonded within the so-called sacred bonds of marriage. They are conscious of their emotional needs by preferring for divorce. Her women characters leave their husbands or break the marriage. Woman needs to be seen as man's equal and privileged partner for the smooth functioning of family and the society at large. In her novel, Nayantara Sahgal, "pleads for the new marital morality based on mutual trust, consideration, generosity and absence of pretence, selfishness and self-centredness." (1)

Storm in Chandigarh portrays the young women broken up by pressure of matrimony and long for love. Saroj, the chief protagonist, a "bright girl with a college

degree," (166) was born and brought up in a liberal atmosphere of an affluent family. But she could not find the same atmosphere at her husband's home. Sahgal's chief concern is freedom of the individual and thereby freedom of the nation. The plot structure justifies these themes by discussing them alternatively as Shyam Asnani points out:

This inextricable interby of themes on two planes, political and personal emotional is a sure sign of Sahgal's competence. (qtd. in Majithia 96)

Saroj is married to Inder who runs the textile mills of Saroj's cousin Nikhil Ray's company in Chandigarh. There is no emotional unity between Saroj and Inder in spite of the fact that they have been married for the last four years and have two children. Saroj "an exaggerated earth mother stereotype – a suburban house frame," (Singh 2) mutely suffers humiliation, degradation and mental agony just to save the marriage and to the future of her children. Saroj emerges as a victim of male tyranny and chauvinism. She fears rather than loves her husband. She represents the new woman who is trying to hold on to her individuality in the unfulfilling marriages. Inder does not consider her as a person with ideas, feelings and emotions. In spite of four years of married life with two children, there is no harmony in her marriage. Her husband treats her brutally. She reveals,

Where would you go far off into your wilderness where I can't reach you? Don't go and be lonely out there and don't leave me lonely here. (132)

Saroj could not tolerate the insulting attitude of the power structure. Saroj had a physical relationship with a person before her marriage but she does not consider it as a sin. She tells about her affair before marriage out of innocence, but the reactions of Inder are very violent. He regards it as a serious moral lapse in his wife and feels that he has been wronged in marrying her. He thinks that Saroj's act has no place

.... in an order that clearly demarcated the roles of men and women, unless that vulnerable order was breached, trampled and mocked. He was maddened by it. When it came over him he sat looking at Saroj with revulsion that had ancient, tribal male roots. (96)

Though Inder humiliates her she remains firm on her views and says, "I don't want forgiveness. I've committed no crime." (101) The reason of her bold and honest replies to her husband may be her pride and purity. She is totally sincere in her conjugal relationship. She clears her mind to Inder, "Look at me! I am clean and whole and yours." (101) She does not want to give any proof of her chastity and honesty neither has she asked him for any. Men like Inder

can never accept non-virgin women as wives because they are the products of conservative orthodox patriarchal society. Inder felt deeply cheated as he recalls,

Somewhere he had read the were primitive societies that demanded the blood of virginity as there were evidence of female purity. No man need be cheated of that. He had been cheated. (96)

Saroj longs for "the oxygen of understanding" (220) and finds it in her friendship with Vishal Dubey. He has come as a liaison officer to Chandigarh to settle the political problems and develops a cordial relationship. Dubey is attracted by Saroj's childlike innocence and draws himself emotionally close to her. Vishal Dubey, a representative of the novelist, rightly sums up patriarchal prejudice against woman when he says,

A woman was not entitled to a past, not entitled to human hunger, human passion or even human error. In the fires and desolations of living she ranked as not quite human. (190)

Sahgal portrays Vishal as contrast to Inder. Undoubtedly Vishal is author's own voice as Sahgal seems to support the issue of feminism through his character. He is introduced as a true counselor of Saroj who always makes her conscious about her individual freedom. In Vishal's company she feels much comforted and peaceful from the stress and tedious routine life. He makes her aware of the new opportunity of life. Whenever she feels depressed, Vishal's words encourages her to take further step. She shares;

Vishal was right there was only one way to live, without pretence. It would be the ultimate healing balm to the lonely spaces of the spirit, beyond which there would be no darkness. (207)

Inder keeps on torturing her mentally and physically ever since her confession. But Vishal Dubey believes in gender equality and women's liberation. His views on female chastity are like trace of fresh air in suffocating patriarchal atmosphere as he says,

If chastity is so important and so well worth preserving... it would be easier to safeguard it by keeping men in seclusion, not women... The biological urge is supposed to be much stronger in men, so it is they who should be kept under restraint and not allowed to roam free to indulge their appetites. The entire east might flourish under this sort of reversal of purdah. (191)

Inder treats her with total indifference and regards her only as a sex object. When he comes to know that Saroj is pregnant in spite of their already having two children, he

felt irritated and scolds her as if only she is responsible for her pregnancy. He puts the whole blame on her when he says, "Hundreds of women use the damned thing successfully its madness to have three children nowadays." (46) After her pregnancy, when Saroj first feels the flutter inside her body, she is overjoyed and wants Inder to feel it move but for Inder

the touch without sexual significance, the caress of affection was different. It cost him an effort to make it. (175)

Saroj finds pleasure when she goes for a walk with Vishal. She feels much relieved and freshened. Saroj has been in dire need for "Someone to talk to (201)" finds Dubey a comforting companion. When Inder forbids her to meet Vishal, she refuses to listen to him. Saroj replies boldly, "I like to talk to him. He is a good man"(193) infuriates Inder who thrashes her not only with words but also with blows. He ignores her for being absent from home. Saroj's departure is a move towards personal freedom and a rejection of the slave role. Vishal tells:

It has taken a million years of evolution for a person and his cherished individuality to matter and no terror must be allowed to destroy that. (227)

Vishal Dubey is also a victim of marital unhappiness. His wife, Leela dies six years back due to the surgery of an incompetent abortionist. She has never been able to reach the inner core of his personality. She marries Dubey because he is a successful civil servant with promising future. The mismatch between the two is evident from the fact that Leela was used to the life of social parties, hypocrisy, adultery and pretence while Vishal wanted a person with whom one can

"talk to when the day's work was done, the friend with whom one could be naked in spirit and to whom one could give the whole of oneself."(69)

His wife does not fulfill his need for companionship. Through the character of Saroj, Sahgal proves that women no longer would bear physical and mental cruelty and torture. Saroj though a mother of two and seven months pregnant, leaves her husband's home when he beats her for no reason. She protests, "That's humiliating like being at the mercy of a tyrant."(191) Her friend Vishal Dubey raises her self confidence and reveals new avenues of life before her and she takes a timely decision to walk out of marriage. Ultimately she declares, "It is gone, the thing we were trying to build. You've torn it down. I should have known you would. Please leave me alone."(225)

Jit and Mara also suffer from a similar dilemma. They are a childless couple. Mara suffers from an acute sense

of emptiness in life. Their differences dissolve in the compromising nature of her husband. Mara's problem is not physical but psychological. The search for communication makes Mara come towards Inder. In her relationship with Inder, Mara stimulates his mind and involves him in ways no woman ever has. But she does not surrender her individuality and offers a challenge to Inder's domination. Mara is capable of responding to Inder's needs which highlights her inability to respond to Jit's much simpler needs. Mara's lack of interest makes Jit feel that all his affection and care are wasted on her:

Back to the caves, she had said, and that was what would suit her best. You gave a woman the perfection of which you were capable; the finest flower of your most evolved instincts.... (138-139)

Mara is childless and runs a school for small children to fill her emotional lack. In the initial period of their affair, both Inder and Mara experience fulfillment and happiness. For the first time, Inder realizes that love does not just mean sex rather it means involvement. His misunderstanding of Saroj being impure, has never given him a sense of emotional involvement with her while making love to her but his brief affair with Mara fills him with new exposure about love. He tells Mara,

Do you know the strangest thing about you, Tamara? Talking to you and kissing you are all the same. It all blends. I don't know where one leaves off and the other begins... Suddenly all the difference between loving and not loving had become apparent to him. (173)

When Inder says about his wife, "She belongs to me" Mara quips, "Belongs to you? So do your shoes." (138) Mara shows that she is a woman of independent self. On one of the occasions when Inder shows his aversion at women, Mara immediately asserts that it may be because that they have started behaving more like human beings and less like possessions. The thoughts of the protagonist seem as an echo of the writer's own feelings. Sahgal herself accepts it,

"Pieces of me going into the men and women I created, when I really began to write" (Singh 3)

Through the character of Mara, Sahgal vocalizes her voice against illogical and imposed higher morality, which women have to carry on the name of tradition and culture. In discussion with Inder, Mara logically challenges his views on tradition,

Old useless, impossible ideas going on and on. We carry them around like dead wood on our backs. It's all ours all right, but some of it is rotten. We'll die if go

on like this. Sometimes I think we are already dead. (144)

The voice of Mara is not only a evidence to the Inder's questions but a protest against the age old tradition and conventionalities, forceful imposed upon women. Her arguments with Inder are really considerable. Their relationship comes to an end when the understanding dawns on Mara that there is some part of Inder which she could never fully know in spite of her best efforts. She makes Inder realize a bitter truth,

She is your wife all right and she has borne your children, but she is not your woman and you are not her man: she flies from you apparently in search of comfort you cannot give her. (109)

By that time, Jit also realizes that there is something lacking in their relationship and makes an attempt to come closer to her. Jit helped Mara to come out of the emotional jungle by talking to her of an unhappy experience of his own. The understanding makes them be submissive and remain true to each other. In the end, Inder is left alone because Saroj decides to go to Delhi for her confinement. She plans to spend the rest of her life with Vishal. Inder's own inflexible and indomitable self is responsible for his loneliness. It is this nature that has prevented him from creating a lasting relationship with Saroj and Mara. Sahgal says that the absence of communication is the reason for the conflict in marriages and that results in the estrangement of individuals. Vishal Dubey's marriage is also a vanishing search for communication. Vishal wants to build a relationship on truth but finds it a difficult task. He is not happy with Leela. Despite her extra-marital affair with Hari, Leela persists on maintaining the fakeness of a stable marriage with Vishal. Vishal is attracted towards Gauri's natural, luxuriously feminine generosity after Leela's death. Dubey's relationship with Gauri is based on sex and the necessity of a temporary need. She makes no emotional demands on him. His affair with her began after Leela's death. Gauri feels secure in her marriage. She feels satisfied with her successful industrialist husband Nikhil Ray. She has no pretensions about her virtuosity; she calls herself a

Social butterfly with positively no interest in life beyond my own comforts and pleasures. (162)

Sahgal is intensely worried with unhappy marriages. Through the portrayal of the married life of Leela, Gauri, Saroj and Mara, she holds a mirror to the society and

explains how women are subject to worst form of inhuman exploitation. As a liberal feminist, Sahgal portrays Vishal as a supporting agent of Saroj's issue. She believes, "there must be a man to guide women through the difficult task of being equal." (Singh 4) About Sahgal's civilized attitude Shyam M. Asnani rightly remarks-

Permissive in outlook, she stands for the new humanism and new morality according to which woman is not to be taken as a mere toy, an object of lust and momentary pleasure, but man's equal and honored partner...(35)

Women need not to make continuous sacrifices in order to please men or rather husbands. Nayantara Sahgal expresses her views that any relationship cannot be maintained by one person alone. She rebukes that this is the right time for women to realize their rightful place in marriage where both the partners should stand on equal level in marriage. She also believes that honesty and sincerity is significant in marriage. The novel, *Storm in Chandigarh*, mainly focuses on the women's sexual freedom and self-realization.

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ROLE OF CULTURE AND SOCIETY IN THE SUBJUGATION OF WOMEN: A STUDY OF THE SELECT INDIAN FEMALE PROTAGONISTS

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Abstract

Across various cultures, milieus and ages, women have been treated as second-class citizens. Though they are adored and respected, they have no autonomy in the male-oriented social system. The binary oppositions such as the male/female, self/other, mind/body strengthened the view that man and woman are not equals but different. Women are considered to be the 'other' of the men and are not recognized as rational individuals. However, biological differences between men and women alone cannot be cited as a reason for the inequality; psychological, historical, sociological and cultural explanations are to be sought why women are reduced to a second or lesser sex. The patriarchal society works to inculcate male supremacy that resulted in the oppression of women which was achieved by a combination of physical violence and cultural pressure. The research article proposes to study the role of culture and society in the subjugation of women by analyzing the character portrayal of three Indian female protagonists - Thangam in P. Sivakami's *The Grip of Change*, Deeti in Amitav Ghosh's *Sea of Poppies* and Ponna in Perumal Murugan's *One Part Woman*.

Keywords: Penis Envy, subjugation, gender inequality, sexual exploitation, patriarchal domination.

P. Sivakami's *The Grip of Change* (2006) is the English translation of *Pazhaiyana Kazhithalum* (1989) that discusses the story of Thangam, a young Dalit widow. Thangam is an agricultural labourer in a small village in Tamil Nadu. *Sea of Poppies* (2008), the first volume of Amitav Ghosh's Ibis trilogy, unravels the notorious opium trade of the 19th century. Deeti in the novel is a high caste widow from Ghazipur in Uttar Pradesh which thrived as an opium farming village in British India. Perumal Murugan's novel *Madhorubhagan* was published in 2010, and its translation *One Part Woman* published in 2013 has won the Sahitya Akademi award. Set nearly a century ago in the early years of the 20th century, in Thiruchengode, Tamil Nadu, the novel tells the story of a childless woman Ponna.

The three women characters taken for study belong to different ages, milieus and social backgrounds and the commonality that unites them is the way they are treated in the Indian patriarchal system. They experience similar circumstances such as sexual exploitation, violence and patriarchal domination. In the name of culture and religion, the society denies them the opportunities, choices and freedom in all spheres of life. This challenges not only their dignity and self-respect, but also their rights to equality and development. Through the analysis of the characters, the paper attempts to analyse the feminist critics' arguments

against Freud's psychoanalytic theory that emphasized on the role of culture and society in creating the self and reinforcing the belief that inferiority was an inherent quality of the women.

Thangam in *The Grip of Change* is denied of her husband's share of land by the brothers of her husband for being childless; whereas Deeti, being the mother of a girl child, when being widowed, had no chance of holding her husband's land and was also forced to undergo 'sati'. Both Thangam and Deeti do not only share the commonality of being poor widows, but they experience sexual exploitation, violence and patriarchal domination. Ponna in *One Part Woman* too experiences the above mentioned abominable vices in a slightly different way.

Thangam's story is constituted by her widowhood and the consequent harassment by her brothers-in-law when she refused to submit to them, the sexploitation by her caste Hindu landlord and the assault on her by the caste Hindu men and so on. Her right over her husband's ancestral land is denied as she was childless. She could get her share of the property only if she satisfied the lust of her brothers-in-law. They tried to take advantage of her as she was a vulnerable widow. She tells Kathamuthu, "My husband's brothers tried to force me, but I never gave in. They wouldn't give me my husband's land, but wanted me to be a whore for them! I wouldn't give in" (GC 7). But she

was unable to save her body from the claws of caste hierarchy.

Devoid of money, the dispossessed Thangam moved outside her home to earn her livelihood by working as a labourer in the fields of an upper class landlord Paranjothi Udayar, who raped her and repeated it after finding that she was not complaining it to anyone. She narrates: "I didn't want it. But Udayar took no notice of me. He raped me when I was working in his sugarcane field. I remained silent; after all, he is my paymaster. He measures my rice" (GC 7). The brutality of class and caste hierarchy made her a subaltern who cannot even speak. Thus poverty reduced an unfortunate Dalit widow to endure the sexual exploitation silently.

Deeti's case of sexual exploitation is even worse. To preserve the family's honour, Deeti's mother-in-law concealed her son Hukam Singh's impotence. She also made him share a little bit of opium with Deeti and arranged Deeti to bear a child, "...in her belly [that] had been fathered not by her husband, but by Chandan Singh, her leering, slack-jawed brother-in-law" (SP 39). To Deeti's in-laws, "Family honour was considered more important than the honour due to a woman" (Dhanaraj 1). The pity is that Deeti was raped in a state of unconsciousness by her brother-in-law in the presence of her husband's mother and her husband's uncle Bhyro Singh. Later on, under the influence of opium, her mother-in-law confessed Deeti, the secret of Kabutri's birth. While her husband was in his death bed, Chandan Singh tried to molest her. So Deeti wanted to die as Hukam Singh's widow rather than living under the kindness of her brother-in-law.

Murugan's *One Part Woman* is based on an ancient, sensitive and supposed cultural practice among Tamil Hindus, called 'Niyoga'. As a part of the carnivalesque traditional ritual at the local temple in Thiruchengode, a childless woman might get pregnant through consensual sex with a stranger. The child born of this union is called 'samipillai' or God's child, since the stranger is perceived as a representative of God. Kali and Ponna, land-owning farmers in Thiruchengode, enjoy a completely happy marriage on all counts but one. Despite over a dozen years together, they are yet to have children. Childless couples, especially the women in these marriages, suffer untold humiliation even today. The idea of her barren womb keeps on haunting Ponna and she tries to come out of it by finding solution to her problem by invoking local gods and goddesses. She even underwent the ordeal of going round the 'Varadikkal' or the stone of barren. It was highly dangerous because the stone was located at the top

of a hill and the pathway around was just one-foot wide; one misstep would end her life. Ponna after completing the ordeal states: "seeking a life, we have pawned our lives" (OPW 56). Finally contrived by her own family members, she chose to attend the festival and was ready to accept the consensual sex. The novel thus narrates a tormenting account of how a community's irrational obsession tears a loving couple apart and destroys their marriage. The tradition of seeking impregnation by an anonymous male in the name of God seems to have died out decades ago; Kali and Ponna must have been among its last victims. Thus sexploitation made the three women – Thangam, Deeti and Ponna - vulnerable inside and outside their home.

Moreover patriarchal dominance forces women to face violence in the society. Once caught by one of the relatives of Udayar, Thangam faces extreme violence in the midnight by four men beating and abusing her by dragging her out of her hut with her hair. Nobody came to her rescue when she was beaten up by the relatives of Udayar. The sufferings gone through by the victimized women are not the concern of anyone. Like them, their sufferings are also taken for granted in the society. Not only the upper caste people, but the people who belonged to her own community thought ill of Thangam as they failed to understand the incident fully. Thangam was forcibly raped by Paranjothi. Her relatives listed Thangam's shortcomings rather than searching for the truth. They said, "They beat her up. Good! Why did they leave her alive? That whore thinks too much of herself. She thinks that she is very beautiful. That's why she went after that Udayar. When she loses her shape, he'll throw her out, and she'll be in a stable worse than a dog's" (GC 28).

Thangam in such a condition gets the support neither from her brothers-in-law nor from any other woman or man of her community. This made her approach the Parayar leader Kathamuthu who took the matter as the caste oppression. Kathamuthu exploited the village caste hierarchy to achieve some sort of justice for Thangam. It is worth observing that Thangam faced problems inside her own community and in the society.

Likewise Deeti in *Sea of Poppies*, was compelled to perform sati by her relatives. Though she wanted to live for the sake of her daughter, her kindred wished to see her dead. "She was slumped over, barely upright: she would not have been able to stand on her own feet, much less walk ... Half dragged and half carried, she was brought to the pyre and made to sit cross-legged on it, beside her husband's corpse" (SP 177). When she was dragged to

her husband's funeral pyre, she was rescued dramatically by Kalua, the untouchable, who had a secret affection for her. If not but Kalua, Deeti would have lost her life on the very day of her husband's death. Instead of protecting the dispossessed woman, her own relatives abandoned her; but on knowing that she had run away with Kalua, a lower caste man, they were determined to find and kill the couple.

Casteism is the greatest anti-social evil of Indian society. Nicholas Dirks in his introduction to *Colonialism and Culture* remarks, "Culture in India seems to have been principally defined by caste. Caste has always been seen as central in Indian history and as one of the major reasons why India has no history, no sense of history. Caste defines the core of Indian tradition, and caste is today - as it was throughout the colonial era - the major threat to Indian modernity" (qtd. in Dhanaraj 3). Caste disparities lead to violence against women, who are expected to yield to upper caste male chauvinism. The cruelty of caste discrimination is exposed when a Dalit woman moves from passivity to action against the sexual exploitation of masculine brutality. The dichotomy of the upper caste is exposed when Udayar abuses her by calling her, "Ungrateful whore! Even if she was hurt by the hand adorned with gold! A Parachi could have never dreamt of being touched by a man like me! My touch was a boon granted for penance performed in her earlier births" (GC 31). These words reveal the egoism and hypocrisy of caste-Hindus, who on one hand hate the lower caste considering them untouchables, and on the other hand gratify their carnal hunger by sexually exploiting them.

Sivagami portrays the exploitation and the sufferings of Dalit women which is quite common in India through her writings. The Dalit woman is never a fighter but always a victim. Time and again she is assaulted physically, verbally and sexually not only by upper caste patriarchs but also by the womanizers of her own community too. Thangam's account of sexual exploitation is not complete yet. She faced oppression for being a woman. Thangam was also exploited at the hands of the leader of her own Dalit community. Unguarded in her own village, she sought help in Athur village but this help proved to be transitory. Not only her money was grabbed by her so called guardian Kathamuthu but her body was also violated by him. Kathamuthu who was once her protector and gave her shelter, turned into a predator and once again, her body was abused. And then she becomes a mistress to him forever. Being raped by Kathamuthu, whom she respected

as an elder brother, was a greater betrayal for Thangam than the upper caste Udayar's savage lust.

There is no difference between Kathamuthu and Paranjothi Udaiyar and both treat Thangam as an object of their sexual craving. Their attitude towards her expresses the extent of male domination on women. Thangam epitomizes all the subjugated women as the novel projects the wretched condition of an outcaste woman from the beginning to the end. B. Mangalam, rightly observes: "Sivakami's fiction documents violence against women within the domestic space. Her fiction exposes caste and gender hierarchies outside and inside the home that renders the woman an outcaste in her community"(111).

In the case of Ponna, patriarchy in connivance with religion legitimizes violence against her. The tormenting sexual violence wreaked on her by the society is that it demands her to sacrifice her chastity in a practice mistaken to have religious backings. The society hounded her to accept the detestable ordeal because it is sanctioned by the patriarchal set-up. It is the society that has fostered the desire to be a mother in the mind of Ponna and this is evidently patriarchal in its principles. Ponna's anguished disappointment at her failure to conceive made her believe that she is useless and she finds faults with herself. She feels bad about not being able to give birth: "If you had married a goat instead of me, it would have given birth to a litter by now" (OPW 46). Thus she is so confused that she under-estimated herself for her state of childlessness.

Ponna is the victim of irrational violence supported by patriarchal ideology. It is a different brand of physical violence shown to be normalized by the society. Consensual sex with a stranger for the purpose of conception on a particular religious occasion would not be considered adultery but accepted as a sanctioned religious custom. One of the idols on the Thiruchengode hill is the Ardhanareeswarar, an idol of Shiva who has given the left part of his body to his spouse Parvathi. Every year, on the fourteenth day of the chariot festival to the androgynous deity, the rules of all marital contracts are relaxed. The childless women would come alone to the area alive with festival revelries. Each woman was free to couple with a male stranger of her choice, who was considered an incarnation of god. The tradition is acknowledged as being a socially and divinely sanctioned method of conceiving should a husband be sterile. If the woman got pregnant, the child was considered a gift from god and accepted as such by the family, including her husband. Ponna's mother and mother-in-law, in the hope that it is Kali who is the

cause of their infertility, suggest the solution of sending her to participate. Thus Ponna has become the victim of 'Biological essentialism' in which a woman has to live under the burden of fixed female identity and her failure to beget a baby results in the repression of her individual self.

The way women are treated under certain cultural norms in the patriarchal society irrespective of age and social background can also be explained through psychological or mental construct. There's no doubt that Sigmund Freud is the most well-known figure in the history of psychology. His theories changed the field of psychology and remain influential even today. Despite his many important and influential contributions to psychology, there are many criticisms to his theories. One of the major criticisms is his views on women. In his early theory, Freud simply extended his views of male sexuality to women, as it marginalizes female sexuality viewing women as simply men without penises. Like the early sexologists, Freud believed that women were sexually passive, engaging in sex only because they want children. Because they do not have a penis, girls come to believe they have lost theirs, and eventually, seek to have male children in an attempt to "gain" a penis. Penis envy in women is a problem that Freud believed could never be completely resolved, thus condemning all women to underdeveloped superegos, implying that women will always be morally inferior to men. Due to this concept, many individuals have viewed Freud as sexist.

Ponna's desire for a child is not an attempt to "gain" a penis. For her relationship with Kali is sexually charged and she never personally felt for the need to have a male child. Her yearning for a child is purely due to societal pressure – she was afraid that Kali would remarry; that their property would be handed over to other relatives after their lifetime; that they would never have the honour of participating in the auspicious functions. Each and every incident in her life such as the cow she brought to her in-laws' home as dowry produces calves year after year, the neighbouring children playing in the yard etc. constantly and painfully reminds her of her childlessness.

Freud seemed content to remain willfully ignorant of female sexuality and how it may differ from male sexuality. A significant number of feminists have been highly critical of penis envy theory as a concept arguing that it is profoundly patriarchal, anti-feminist, and misogynistic and represent women as broken or deficient men. Freud represents the general view of the mass who believe in male superiority and female inferiority. In contrast to Freud, Barbara J Risman argues that in order to analyze human

behaviors, it is important to understand how social structure acts as a constraint for individuals as well as how and why these individuals chose a specific structure over the other.

Looking across cultures, the social nature of gender is highlighted. In *Gender as a Social Structure* (2004), Risman adopts the view that gender is a "socially constructed stratification system" (qtd. in Harshant 2). Gender is a human invention, suggests Lorber (1994), that organises "human social life and social relations into cultural patterns both in everyday life and in major social structures, like social class" (qtd. in Harshant 2). Harshant points out that the multidimensional picture of gender has been addressed by Risman:

Risman offers a three-dimensional model of gender structure: (1) the individual level, for the development of gendered selves; (2) through interactional cultural expectations to fulfil gender roles; and (3) in institutional domains, where explicit regulations are gender specific. By understanding gender as a social structure, it becomes possible to think about how gender is embedded at each of these three dimensions. (3)

Risman in her article "From sex roles to gender structure" opines that every society has a gender structure that is created not by mysterious forces, but by human action. "We are therefore interested in why actors choose their acts, not only their verbal justifications, but also the part of life so routine and so taken-for-granted that actors often cannot articulate, nor do they even consider, why they act" (Risman 8). Gender is deeply embedded in human personalities, in their cultural rules or institutions in complicated ways; it shows how inequality is reconstituted in daily interaction. She concludes the article saying "...gender inequality is produced, maintained, and reproduced at each level of social analysis (individual, interactional, and institutional) (11).

The gender hierarchy forces women to follow the social norms without the least option to question them. It affects women in all spheres of life - domestic work, family life, and the workplace. Lorber in *Paradoxes of Gender* argues that "the historically established institution of gender has created not only differences between men and women but also serious inequality" (qtd. in Risman 12). The three female protagonists taken for study were never given choices, but were goaded to their destination by their stereotyped sex-role and societal pressure.

The title *One Part Woman or Madhorubhagan* is quite ironical in the sense that while Lord Shiva in the form of

Ardhanareeswarar has given one part of his body to his consort Parvati, and thereby establishing the divine equality between man and woman, the followers of the Lord indulge in the acts of subjugating the women. What is the space allotted to women by the society that worships Lord Ardhanareeswarar? is a question with major concern today.

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ANTI-COLONIALISM AND COMMUNAL VIOLENCE IN MANOHAR MALGONKAR'S *A BEND IN THE GANGES*

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Abstract

*Indian Writing in English is primarily a result of the English Colonial rule in India spanning almost two centuries. In spite of the Western Imperialism and Colonialism, the Indian culture has grown incredibly over the past two hundred years. Anti-Colonialism refers to protest or fight against colonial rulers by the expressed colonies. Anti-colonialism struggle picked up its momentum during the 20th century. Manohar Malgonkar's A Bend in the Ganges concentrates on the anti-colonial struggle between the British and the Indians popularly known as the Quit India Movement propelled by Gandhian dynamism. It portrays very strongly the communal poison between Hindus and Muslims which were separated into opposite camps, learning to hate each other with the bitterness of ages. There was controversy among the Indians whether they should follow the path of non-violence preached by Gandhi or to retort to violence and terrorism. In the novel A Bend in the Ganges, Malgonkar has shown how India has to sacrifice a huge lot for earning its freedom from the British Government and how it had to suffer the pains of partition in two countries. The problem of communal hatred between Hindus and Muslims and of exchanging the refugees between the two countries has been portrayed by the author in a very authentic fashion. This paper entitled **Anti-colonialism and Communal Violence in Manohar Malgonkar's A Bend in the Ganges** presents the ideological conflict between Anti-colonialism and Communal Violence.*

Indian Writing in English is primarily a result of the English colonial rule in India spanning almost two centuries. There is an undeniable relation between the literary work and the historical background out of which it arises. In spite of the western imperialism and colonialism the Indian culture has grown incredibly over the past two hundred years. The Industrial Revolution in England could only sustain itself through the capital made in the Indian territories in the form of revenue collection. The British rule completely ruined the agricultural self-sufficiency of the farmers and the trade of silk cloth saw a downslide due to the English factory produced cloth more easily and cheaply available.

The old methods of teaching were made redundant and died a slow death as the earlier system of education was insufficient to cope with the changing social, economic and political circumstances. As it is apparent with scorn and despise towards Indian languages, the sole purpose regarding English was to strengthen their rule and brainwash the colonized; and not to empower or produce scholars.

The Indian English novel of the early nineteenth century was deeply influenced by the political, social and ideological ferment caused by the Gandhian movement.

The novelists of the Gandhian age were so much preoccupied with the politics of the day. It was during this period that Indian English fiction discovered some of its most significant themes such as the ordeal of the freedom struggle, East-West relationship, the communal problem and the plight of the untouchables, the landless poor, the economically exploited etc. K.S. Venkataramani's novel, *Murugan*, *The Tiller* was the first to come up under this influence. There were several others written in the same vein.

Post-Independence Indian fiction retained the momentum that had been gained during the Gandhian Age. The tradition of social realism established earlier on a sound footing by Mulk Raj Anand was continued by novelists like Bhabani Bhattacharya, Manohar Malgonkar and Khushwant Singh, who made their appearance during the nineteenth fifties and the early sixties. By the end of the sixties and in the early seventies newer voices were heard, the most striking of them being Arun Joshi and Chamam Nahal.

Literature and history are closely related. Literature may present history without any exaggeration. The prejudices of the novelists, however, prompt them to change the events of history to some extent according to

the convenience. The modern Indian writers writing in English richly present the historical incidents and events in their works. It is difficult for a writer now, to escape the major historical events. There has emerged a host of writers concentrating on history. Among the writers of this game, three important names figure prominently. These writers survey vigorously the important events in the history of India. One such writer was ManoharMalgonkar.

ManoharMalgonkar was born on July 12, 1913 in Bombay. He comes from a rich land - owingMaharastrian Brahmin family of Belgaum. He has a lovely house amidst the forest of Jagalbet in Belgaum about which 'John Morris' has written so excitedly in his book *eating the Indian Air*(1969). From the childhood, Malgonkar's living conditions, environment and culture heritage moulded his personality in a characteristic frame. 'Paul H Museen' has rightly pointed out the significance of environmental and cultural factors, which give ultimate shape to an individual's personality.

As the author of the novels *A Bend in the Ganges*, which traces the lives of three characters in the violent aftermath of Partition, or *Distant Drum* (his first novel, published in 1960), an eye-opening account of life in the Indian Army during the days of the Raj, Malgonkar's contribution to the IWE canon is seminal and salutary. As someone who also wrote unselfconsciously thrilling novels such as *Open Season*, a film script later converted into a novel, *A Spy in Amber*, later made into the Hindi film *Shalimar*, and *Bandicoot Run*, a detective story, Malgonkarperhaps deserved to have been read more widely.

History obsessed Malgonkar. Author Ravi Belagare, who was one of the last people to have interviewed him and who has translated his books *The Devil's Wind* and *The Men Who Killed Gandhi* into Kannada, says "Malgonkar was one of the Indian authors who based their novels on the British rule in India. His best books, according to me, are *The Princess* about an Indian royal family and *A Bend in the British Indian Army* during the Second World War, for instance, as a base for the book *Distant Drum*.

ManoharMalgonkar's *A Bend in the Ganges* spotlights comprehensively the drama of the terrorist movement into communal hatred and violence. It shows convincingly the degeneration of the terrorist movement into communal hatred and violence. It shows history and reveals how the struggle between Indian nationalism and british colonialism shifted to the communal hatred between the Hindus and the Muslim. The basic Indian

fight for freedom for the foreign rule was thrown into background. In the wake of the partition, a hell was let loose in many provinces of the nation.

The novel depicts the Muslim fears of being ruled by the Hindus are their real enemy, and they are more dangerous than the foreigners. The struggle for a safe homeland separate from India, their striking at the Hindus and the terror and pity of the partition-all these things figure in 'A Bend in the Ganges'

Anti-colonial struggle or anti-colonialism refers to protest or fight against colonial rulers by the suppressed colonies. Anti-colonial struggle picked up its momentum during the 20th century. The fight against colonial powers started due to the rise of nationalization in the European countries. Rise of Facism and Nazism are the significant landmarks which helped in the spread of nationalist ideas in the colonies under foreign rules, across the world. The nationalization ideas have very strong impact in the colonies of Africa, Asia and Latin America and that helped in beginning anti-colonial movements in their respective territories for self-determination. These struggles eventually resulted in decolonization which means freedom of colonies from imperial subjection. Decolonization is understood as an open process which promoted structural transformation of the colonial rule. The imperial set up across the world became destabilized due to various conflicts in Asia and wars among European nations. As result of this the scope for anti-colonial movement became wider and stronger.

The colonized will be happy only when he overthrown the colonizer, no matter how much sacrifice it involves in the process. If the colonized country is very vast, it may contain a wide variety of people, who indulge in the anti-colonial struggle by following their own individual brands of action (or inaction), which may contribute in their own way negatively or positively to the overall national struggle.

The novel concentrates on the anti-colonial struggle between the British and the Indians popularly known as the quit India movement propelled by Gandhian dynamism. The main purpose of this movement was to oust the British from the Indian sub-continent. There was a controversy among the Indians whether they should follow the path of non-violence preached by Gandhi or to resort to violence and terrorism. ManonarMalgonkar, who was a colonel in the army, naturally affirms the validity of a military action as opposed to non-violence which is a Gandhian persuasion. G.S. Amur is right when he says, "it concedes the reality of violence but shows it to be self-

consuming and destructive. It is this martial vision that finds expression in the major characters of the novel, Debi-dayal. He does not approve of the peaceful agitation of the Gandhian concept as he deems it to be useless and unfruitful. He wants to express his anti-colonial philosophy through indulgence in violent activities.

GianTalwar provides a good contrast to Debi-dayal and ShafiUsman as he stands for Gandhian values at least initially in the novel. He is a traditionalist, a puritan and even a coward in his student days. When he was in the college, he had become a butt of ridicule among his friends for wearing the sacred thread, a symbol of puritanical religion. In the early days of his youth he had seen the family feud between the big house and the little house and was so cowardly that he stood back when his own brother Hari was murdered by Vishnudutt with an axe. But such a coward grows into a self-confident and defiant young man later when he realizes the futility of non-violence and succeeds in murdering Vishnudutt with the same axe with which the latter had murdered Hari. Consequently, he has to undergo life imprisonment in the cellular jail at port Blair.

Debi-dayal, who is a terrorist of the first order. He identifies himself with the Indian national struggle so ardently and hates the British so fiercely that he has practically no private life of his own. In spite of being the son of a millionaire, he does not long for a cozy and comfortable life. He disagrees with his father Tekchand's pro-British policy. He, therefore, leaves the parents to plunge into the national struggle for independence. He believes in terrorist activities like cutting the telephone wires, derailing the trains, etc. The culmination of his terrorist activities may be seen in his life-imprisonment in the cellular jail at port Blair in the Andaman Island. An ardent patriot as he is, he does not want to submit himself to the prison rules meekly. He, for example, refuses to salute Patrick Mulligan, the jail superintendent of the cellular jail, writes anti-British slogans like *Hitler Ki Jai* and *Angrezmurdabadon* culverts and bridges. He openly sympathizes with the German side in the war and incurs the wrath of the British officers. He has so much self-respect that he refuses to have anything to do with his own parents at home.

The personal rivalry acts as the cause of rift between Debi-dayal and GianTalwar and weakens the anti-colonial struggle, the communal rivalry between Muslims and Hindus acts as a greater cause of rift in the same. It is common knowledge that the British Government, when forced by inevitable circumstances to give freedom to

India wanted to divide the Hindus and the Muslim India wanted to be free from the Hindu control after the departure of the British from the sub-continent. The Muslim separation is, of course, clearly represented by ShafiUsman, who was once upon a time, a member of the Hanuman Physical Culture Club and a co-fighter with Debi-dayal against the alien government, comes under the influence of Hafiz Khan and begins to drift away from the Hindus. Hafiz Khan brainwashes him.

ManoharMalgonkar has shown how India has to sacrifice a huge lot for earning its freedom from the British Government and how it had to suffer the pains of partition into two countries. The individual characters like Debi-dayal, ShafiUsman and GianTalwar become important in so far as they play their individual roles in the epic drama of anti-colonial struggle. The novel shows how India achieved what she wanted, but she had to make a great sacrifice for the achievement of a grand success over the enemies. It can be said to be an epic story of Indian freedom struggle containing the tragic loss of Pakistan from it.

A Bend in the Ganges, like Khushwant Singh's *Train to Pakistan*, takes up the theme of partition and the riots after it. Malgonkar presents here a powerful story against the background of the troublesome event which starts with partition. The novel starts with Civil Disobedience Movement of Mahatma Gandhi and ends with the Partition riots, violence and brutality.

A Bend in the Ganges (1964), ManoharMalgonkar's fourth novel, "raises the fundamental issue of the meaning of violence and non-violence" (G.S.Amur, ManoharMalgonkar). It exploits the inter-related destinies of GianTalwar, who subsequently realizes that his creed of non-violence destinies of GianTalwar, who subsequently realizes that his creed of non-violence is not a practical one in real life; Debi-dayal and ShafiUsman who are wedded to violence as terrorist working for the overthrow of the British Raj, the former courting disillusionment and the later becoming an ardent communalist; and Sundari, Debi-dayal's sister who breaks her own marriage for emotional revenge, against the epic of the novel is "the stupefying bloodshed and violence that erupted from the dream of independence" and which consumes Debi-dayal, a ShafiUsman and many others. Only GianTalwar and Sundari are left with a faint promise of hopeful future.

A Bend in the Ganges records how gradually, drop by drop communalism embittered the lives of Freedom Fighters and ultimately turned them into communal

fanatics. This strand of the novel is woven through Debi-dayal, Basu and ShafiUsman who are dedicated terrorists but who are finally separated from one another by the barrier of communalism. Incidentally it may be mentioned here that *A Bend in the Ganges* is one of two novels in Indian English fiction, the other being Khushwant Singh's *I Shall Not Hear the Nightingale* (1959) that boldly depict the terrorist movement. This area of struggle for independence is yet to be fully explored in Indo-Anglia Fiction. Malgonkar has tried to highlight the contribution of terrorist movement to freedom struggle.

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THE UNAPPEASABLE THIRST FOR SPIRITUALITY

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Abstract

Looking at the past of English Literature, it is clear that critics, even before Mathew Arnold, have referred back to form and content of religious scriptures. A generation of scholars once committed to secular criticism is now turning to religion as a way to redress literary queries that materialist criticism has evaded. Emily Dickinson, who was always viewed as a rebel against religious orthodoxy by critics, also referred to the form and content of religious scripture and wrote on spiritual life. The outside world condemns her to be unconventional; her inner experience with the word of God shows her true love for Almighty. She is a practicing spiritualist. Most of her poems talk on the union of human soul with God and the eternal life. The objective of the present paper is to analyse Emily Dickinson's unquenchable passion on spirituality and for heavenly love as seen in her life and poetry.

Keywords: love on spirituality, God as a companion, eternal life.

In early period, even before Matthew Arnold, the form and content of religious scripture has spotlighted in the literary writings. It has also become the base of English Literature for instance, Chaucer's "Canterbury Tales", T.S Eliot's "Wasteland", William Bradford's *Plymouth Plantation* and Andrea Lee's *New Africans*. Their writings do not promote any religion but guide the people towards humanity, civilize them with human virtues and shape their lives. Emily Dickinson, who was always seen as a hater of religion, also referred to the eschatological narrative form of the Bible and content of the religious scripture and talks on the union of human soul with God, the eternal life and spirituality. She always retains an independent view towards the matter of spirituality and concentrates on truth and reality. She loves God and creates a close intimacy with Him. The unquenchable love towards divinity makes her to see heaven near and makes her to enjoy the everlasting happiness. She not only expresses her feelings but also represents the people who feels that spiritual way of life as better option.

Dickinson's writings on God and spirituality are unique. She rails at God for series of deaths and enjoys, praises, wonders on His beautiful creations. She considers Him as her soul and sole companion which makes her to overflow with many devotional poems. As John Donne, she also understands the role of God in real life and pours out her heart on human spirit and soul rather than the materialistic life. For her, the over-soul is the only way to

unite all people as one being. She voices out that everyone can feel and experience the spiritual touch if they realize that God is within them. She could feel the smile roll on the face of Jehovah when she offers prayers.

A smile suffused Jehovah's face;
The cherubim withdrew;
Grave saints stole out to look at me,
And showed their dimples, too.
(‘A Prayer’, PEDSS 34)

Her assertion of her love for God is too high when compared to the people who are in the 'saved' community. She explains, even the redeemed people --the 'saints' are awestruck and astonished by her love. Through this she clarifies that there is no limit or status needed for a being to love God. It teaches a lesson to the world whose sees the status of the people and positions to allow them inside a holy place. She goes to the next level and says God's holy place is not the man-made buildings but the mortal bodies on earth where no one can frame rules. "To this apartment deep/ No ribaldry may creep; / Untroubled this abode / By any man but God." (*The Single Hound* 104). Here the 'apartment' is the heart of human being, the God's holy place. The speaker emphasizes that the person who loves God and who allows Him to dwell inside becomes a devotee as well as the living place of the Holy being. The man is free enough to speak where no restriction prevails. Through this poem she exhibits God is unbiased and common for all and she suggests that the faithful eyes and

heart can experience this spiritual touch and not the microscopes and fanatical society.

Dickinson further states, if God is allowed to abide inside a heart He becomes the best companion. He is the best doctor to replace the torn heart, she adores.

A POOR torn heart, a tattered heart,
That sat it down to rest,
Nor noticed that the ebbing day
Flowed silver to the west,

.....
.....

The angels, happening that way,
This dusty heart espied;
Tenderly took it up from toil
And carried it to God.

(PEDSS 45)

These lines are of great consolation for the people who are expecting a consoler. The lyricist highlights 'poor' in uppercase to show the deep sufferings and pains of the heart-broken people. She explains the condition of the frayed heart which is experienced in day to day life. People who sit with crushed and despaired heart in miserable state pine for the good comforter but they are lightly viewed by the world. According to Dickinson, no one can repair or soothe well the grief-stricken people but the attempter like angels can surrender the sufferings in the hands of God as prayers, the time the human soul and eternity get united. It reflects the real life and conveys the good news that God is only the best comforter and solution giver for the frustrated soul. The bard speaks the truth as well as the reality of mankind. In the current scientific world, everyone takes suicide as a solution for their problems without realising the fact that there is a super-power around them who sees everything. The poems of Dickinson expose the practical reality with some solution. She speaks the true fact of life and it is the only reason why she is still misunderstood by the critics. Then, she moves to the concept of eternity. For her, the united soul with God will have an unquenchable thirst for eternity. The eternity can be attained only through soul satisfying service.

A DEED knocks first at thought,
And then it knocks at will.
That is the manufacturing spot,
And will at home and well.
It then goes out an act,
Or is entombed so still
That only to the ear of God
Its doom is audible.

('Deed', PDESS 66)

She talks in connection with the biblical concept "what you have sown, you will reap". Dickinson is trying to decipher exactly that each deed stands as a witness before God and speaks the destiny. It processes the judgement for the person- a concept witnessed in all religion. The deeds include the words, the thoughts, the actions and the intentions. Everything is as alive as human. So she warns "A WORD is dead/ When it is said, /Some say./ I say it just/ Begins to live/ That day" ('A word', PEDTS 18). Eternal life stands behind each and every person's earthly life, the reward of the life. So, the poet says that the passion towards spirituality will lead to eternity. Through this analysis the researcher finds the fact that the concept of spirituality and eternal life is not only related to religion but also to the quality of being concerned with the human spirit opposed to material life. By having an intolerable thirst for this concept, mankind could lead a corruption free concerned society which results in peaceful unending life, that is, the life which is followed by many.

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ANALYSING THE AUTHORS' STYLE AND PURPOSE: A READING OF VIJAY TENDULKAR, MANJULA PADMANABHAN AND MAHESH DATTANI'S PLAYS

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Abstract

Vijay Tendulkar, Manjula Padmanabhan and Mahesh Dattani, the dramatists need no introduction as their names themselves bring before the audience their expressionist, experimentalist and revolutionary dramatic worlds. Each excels in the field of Indian Drama in a uniquely remarkable way. The unusual socio, cultural, religious, sexual, and psychological issues that they have daringly explored in their plays, contributed to their popularity throughout the world. The researcher analyses the thematic and technical convergence of their select plays: Silence! The Court is in Session, Lights Out and Ek Alag Mausam, to explore how the author's style and purpose impacts the text and the reader's perception of the text. It further suggests how the trio's dramatics infused Indian English Drama with avant-garde themes and techniques and paved the way for the founding of post-modernist theatre in India.

Keywords: Indian English Drama, Author's Style, Dramatic Techniques, and Literary Purpose, etc.

Style and literary purpose are the hallmarks of a good writing. The authors earn certain epithets such as feminist, revolutionist, symbolist, absurdist, modernist, and so on based on the literary quality and social importance of their creative works. To simply define, style of a text refers to the diction, the word order, the sentence type, the mood, the tone and other expressive techniques that the text is featured with; and literary purpose and its relevance to the society is determined on the basis of what themes, motifs and symbols that the authors employ and whether their intention is to explain and explore a debatable phenomenon, to expose or acknowledge an intentionally hidden truth, or to educate the audience about the current social, religious, political, economic and technological status or to provide the audience with the information and to persuade them to fight for their rights.

This paper analyses how the trio's – Vijay Tendulkar, Manjula Padmanabhan and Mahesh Dattani – plays serve the purpose that they are intended to. Analysing their plays from holistic perspective and neutral mindset will definitely help the readers to realise what purpose lies behind the

motifs, diction, dialogue, symbols, images, and literary techniques and devices used in these plays.

The biographical incidents and the social events which impacted the thoughts of the playwrights have huge influence on their literary works. Their personal and public relationship and encounter with certainly worse kind of situations, their first-hand experiences, their intellectual indulgence and insights into the contemporary issues that the society suffered with, and all can be quoted for their becoming of celebrated writers today. The material or the theme or the issue that the playwrights have dealt with are not new, but what makes the difference is the trio's dramatic style or the narrative techniques employed. The dramatists thus succeeded in establishing a vibrant theatre culture in India when she lacked both the living theatre and appreciative audience. Further, the playwrights' recreative vitality, sensitivity, rationality, imaginative skills of the playwrights' and their expertise in balancing the matter and the manner of play writing distinguish their dramatic creations from both that of their predecessors and contemporaries.

The select plays are featured with multiple theatrical styles and forms. They are the combination of tragic, comic, melodramatic, farce and musical forms. They create a unified effect of naturalist, expressionist, absurdist, modernist, and postmodernist styles of playwriting. They resemble Brecht's epic theatre as they are filled with bursts of poetic speeches, songs and elements of absurdity and breeches the imagined fourth wall and directly address the audience. As Prabhakar Machwe posits:

The playwrights see the modern Indian man as a caged object, a helpless sheep, impotent and despairing. The concern, in the social context, is fairly obvious. The human values which Sartre identifies with existentialism could very admirably be related to the theatre scene in India as it exists today... (136 – 137)

Thus, the authors force the readers to constantly return to reality and make rational observations, rather than emotional pretensions. This makes one grow curious to study how they present their ideas and what helps them to achieve the purpose of writing.

To begin with, Tendulkarian plays that explored the underlying facts behind these concepts made "the urban white-collared, middle class take a note – with quite a bit of shock – of the reality as it existed, in its 'bare-to-the-bone' form." (Sathe 13) His plays are textual discourse on 'violence in human nature' have their origin in "... a germ or an idea... sometimes just an incident someone has narrated." (Qtd in *CPIT* xii) He might have made violence, sexual infidelity and moral dilemma as his prominent subjects of discussion, as he found a rigid dichotomy between the social concept of violence and sex and the individual indulgence in them.

Tendulkar handles variety of forms, concerns and mediums in his plays. "The forms of these plays, the concerns expressed, the classes of society these depict, the language of the dialogues etc., are so different from each other that these stand out as brilliant facets of Tendulkar's art and craft." (Sathe 20) It is quite obvious in *Silence! The Court is in Session* discussed here. It presents the existential struggle of Leela Benare, a victim of child sexual abuse who finds it difficult to escape the conventions of her society. No men in this play also can be termed as independent when they put forth the argument that women are not fit for independence. They are also slaves to the socially predefined codes. Through the casual conversation between Samant and Benare, that the play begins with, the readers are informed the background

details. It is obvious from the beginning that Benare and Samant are unacquainted; but Benare's behaviour with him makes the reader feel disgusted and even motivates the readers to conclude that she is immoral. The innuendo in Benare's questions and ignorance in Samant's replies suggests the contrast between the city and the villagers. Further Benare's introduction of her troupe members while creating a negative image of them, the attitude, the tone and the intonation that she adds to her speech makes the readers understand the duality in her character – her superiority complex and psychological dilemma and frustration.

The word 'silence' in the title serves as the symbolical reference to the theme and the message that the play delivers at the end. At surface level, this play is just about imposing 'silence' on Benare, who defies the established social system; but when studied in depth, the word 'silence' becomes the most recurring motif and gives a structurally unified verbal whole to the plot. Thus the term 'silence' turns out to be the main motif and symbol throughout the play. Whoever the character may be, Benare, Mrs Kashikar, Mr Kashikar, Balu Rokte, Sukhatme or Samant, they are 'silenced' by quoting culture, religion, status, gender and social conventions. Benare tries to silence her counterparts highlighting her economic status; Mrs Kashikar desires to take advantage on Balu Rokte and Samant exploiting their ignorance, and Mr Kashikar and Sukhatme tries to dumb the women characters citing the social conventions that confer extra-privileges to men over women. And, Balu Rokte attempts to subdue Benare when things go against her. Thus, each of the characters is keen on silencing others' voice and to achieve authoritative position.

The readers are taken into the suspense phase of drama that raise multiple questions in the beginning: why Benare should feel wonderful at leaving others behind, why she wish to go "somewhere far, far away" with Samant whom she is unacquainted with, and what makes her to like the old, dilapidated hall. Her sudden emotional outbursts and falling silent and the notes: "Unconsciously, her hand is on her stomach. She suddenly stops. Seeing Samant, she falls silent..." that follow this, fill the readers with both confusion and expectations.

The rhetorical and verse diction that the author used in this play brims with symbolic and imagistic flavours and foreshadowing techniques. The sombre mood and tone with which the play begins also sends shock waves into the readers and is suggestive of the crooked mentality of the dramatist personae. It soon changes into melodramatic

and tragic in the consequent acts. Benare's monologue at the end reveals how the symbols, images, and allusive ideas that the author has used in the play are relevant to the proper understanding of the author's purpose.

The author also never lags behind in adding humoristic touch. Indeed, a few scenes that abound with comical statements add satirical, ironical and sarcastic effects and also help to ease and relieve the audience from the emotional shock of tragic and disturbing events that follows. For instance, Benare's mockery of other characters is perfect example for understatement, verbal irony, and hyperbole. She invariably criticizes:

Mr Prime Objective is tied up with uplifting the masses. And poor Hand-that-Rocks-the Cradle [Mrs.Kashikar] has no cradle to rock! [So, they] gave shelter to a young boy... made a slave out of him. His name's Balu – BaluRokte...we have an expert on the Law. He's [Sukhatme] such an authority on the subject, even a desperate client won't go anywhere near him! ...And there's an 'Hmm!' [Ponkshe] with us! ... Scientist! Inter-failed! ... And we have an Intellectual too...He's not here today. Won't be coming, either. He [Prof. Damle] wouldn't dare! (CPIT 59 – 60)

This evokes the sense of laughter and doubt in the readers. Further the pan spitting contest that the author introduces in between serves as the comic interlude and bridge to link the latter scenes that depict how women's voices are subdued by the male-authority.

Whatever may be the images of parrot, sparrow, crow that the background songs suggest, or the proverbs such as "Mother and motherland... even higher than heaven" (CPIT79), and allusions to religious texts, and references to historical events: the custom of child marriage, gender stereotyping and sexual objectification (CPIT 98) suggest and define her deed as reflective of a foul and loathsome actuality and against established culture and tradition. The unusual pauses: I — think — I — know — this — lady. (CPIT 83), half-finished sentences: "... the old man's wife, the wife's little baby and the baby's nurse, the nurse's visitor..." (CPIT 63) and sudden changes in the mood of the characters and breaks in the dialogues of the play and the negative statements that the story brims with noticeably "I can never, never sleep just when I want to. Never." (CPIT 90) and "No. No. No. — I won't let you do it. I won't let it happen," all add more impact to the storyline. Thus, the somberbeginning, tensed arguments and tragic end help to create a unified impact on the audience and reach the implication.

Disturbed by the eyewitness account on1982, Mumbai, Santa Cruz gang rape that shook the really concerned citizenry, Padmanabhan wrote *Lights Out*, a richly symbolical factious play to satirize the savagely inhumane tendencies and brutalities of the so-called moderns. This play thematically deals with the morally degrading and gradually disconnecting society in the name of decency. The true incident that she chooses to depict the utter inhumanity that has come to characterize the modern society makes this play more impactful. Further, the way of presenting her ideas: the diction, the dialogue, the characters, the setting, the techniques, the structure and each and every props help to meet the purpose of writing the play.

The Author begins with the basic description of the setting, people and their nature. The play sets in the six floor of the multi-storied apartment in the heart of Bombay. The characters undoubtedly belong to upper-middle-class society. It is also suggested from the dialogue of the dramatic personae that they are not in friendly terms with neither of their neighboring residents. Even the children are not allowed to mingle with others. They and all those who are living nearby are leading a secluded life. This description itself foreshadows something unpleasant may follow. As expected, the story starts with Leela's complaint about the rape victims' far cry for help which 'come inside...' her 'nice, clean house.'

"I know you've told me they're [the police] not interested in cases like this, they don't bother about *minor little offences* – but – but I'm frightened!" (LO 5)
"I can't push them out! If only they didn't make such a *racket*, I wouldn't mind so much!" (LO 8)

The terms, 'their sounds come inside', 'minor little offences' and 'racket' project the moderns mentality.

The implied questions: is sexually assaulting a woman, destroying her private space, reducing her into an object, and defining it as 'minor little offence' modernity? If the police are not interested in this case which risks the individual freedom of a human being, and then what could be their interest? If such an inhumane act of beating a woman till she bleeds and dies is avoided stating that "it's none of our business, what goes on next-door compound", (Bhasker LO 9) then what is their business as a social being? As in the story, today everyone who call themselves a middle-class decent family member, "keep the window shut, draw the curtains and put on some music," to avoid getting entangled in other's problems.

In the same play in which she sarcastically describes how the society is avoiding social issues by variously

calling it a personal dispute, domestic affair, low-class behaviour, religious rite, act of exorcising and so on, it is also depicted how the humane tendencies and attitudes are radically degrading and the people are neglecting the voice of conscience. Dialogues of Naina serve as the voice of human heart which teaches what a man should do while witnessing such savage incident. But, Mohan's role is totally contrasting and is the voice of technology and machine culture which has no room for love, emotions and feelings. Susila's account: "If you can stop a crime, you must – or else you're helping it to happen..." (LO 16) is deliberately circumvented and argued "These intellectual always react like that, always confuse simple issue. After all, what's harm in simply watching something?" All sort of attempts and reasons are made to argue that the incident is not a rape.

The play is full of comments that can only be described as obscene, disgusting and coarse: "Three men, holding down one woman, with her legs pulled apart, while the fourth thrusts his — organ — into her! What would you call that — a poetry reading?" (Naina 39) But the male characters regard neither the rape nor the physical violence nor beating and even killing of those women as an offence. It is argued that those women are indecent, whores, and poor; so it is not rape. "A whore is not decent, so a whore cannot be raped!" (Mohan, LO 40) and "If she were a decent woman, we people would go to her rescue!" and "whatever rights a woman has, they are lost the moment she becomes a whore." (Bhasker, LO 41) All such comments fill the hearts of the readers with questions: what is decency? If whores are indecent, who are responsible for their becoming of whores? If a woman's dignity is what a man defines? What sort of existence a woman has on earth? All these questions push the readers into reanalysing the reality.

Some words that are emphatically and repetitively cited to escape the reality and their responsibility: Sex, violence, indecent, poor, religion, culture, demon possession, blood, scream, naked, fuckers and other such obscene words disturbs the readers' faculty. The character of Frieda who is constantly present in all the scenes but never utters a word and not even shows emotional reaction serves as the major symbolic figure to suggest how the present society suffers from the malady called 'bystander apathy.' It is portrayed as incurable disease of the modernised and reason for all the social evils. References to media: Newspaper, Television channels and social web which are ready to shell out money to buy the recording of such real incidents and the characters'

willingness to video the rape, sell it and earn money out of it showcases how inhumane the present society is.

Structurally, the play is an example for absurd theatre, or, more precisely, it can be called semi-absurd; as two more characters joins the argument towards the end, but there is no change in setting, position, and time. All the characters indulge in an argument on whether they have to step out of their comfort zone, or simply watch, if so for whom and when to stop the gang rape crime happening before their eyes. But, there is no remarkable change in their attitude and no action. 'Glassed windows', 'closed doors', 'candle lights', 'phone' and more importantly the title 'lights out' are highly symbolical and metaphorical terms that the author uses to connotatively convey her point of view.

Leela constantly instructs Frieda to close the doors, screen the glassed windows, and switch off electronics and burn candle lights. The think is she never wants to be noticed neither by those assailants who, she thinks, would break the window glasses of her clean house, nor the neighbours. She says she wants to go out and gather help to stop the crime, but never allows the door to be unlocked. Her continuous appeal to her husband also brings before the audience her slavish identity. She either allows or the men make her subdue to their authority fearing 'shame'. The male characters account of decent and indecent women forces the readers to reanalyse the culture, tradition, social rules and gender roles. The note displayed at the end describes how symbolical and self-explanatory the title is:

"In real life, as in the play, the incident took place over a period of weeks.

In real life, as in the play, no-one went to the aid of the victims."

Here the title becomes a metaphor for whole society which simply chooses to go 'blind', 'dumb' and 'deaf' whenever comes across crimes. Bhasker's account: "I'm not deaf and I'm not disturbed by them", "sounds can't hurt", "you must learn to relax, the most important thing is not to give in to them." (LO 8 – 9) This what the society does today.

EkAagMausam, a Bollywood film adaptation of Mahesh Dattani's play script about the agonies and mental pains of innocent victims of deadly disease, AIDS. Beholding the impeccable characters: Aparna, George and Paro who are subjected to inhumane treatment in their families, friends circle and society disturbs the readers to the core and to feel ashamed of carrying rootless prejudices against them. Though it is an issue addressed

worldwide, yet emotional and psychological violence against HIV infected pervasively continues to be. Thus by depicting the harsh realities of becoming a social victim without committing any sinful act and suffering social discrimination, the author strikes a sympathetic chord among the conventional Indians. The message that Dattani wants to convey is that even the society holds innumerable prejudices, conservative ideals, personal idiosyncrasies and though they are impatient to behave humanely with these victims of queer sexuality and diseases; at least they should try not to hurt them with their looks, words and expressions of disgust. This play too abounds with literary techniques. Being a cinematic drama, the setting, lights, costume and properties in the play constantly changes. It is here the author proves his mastery. The transcript of the play which narrates where the scene takes place and what are the properties are there and how the characters behave and perform brings the characters alive before the readers. Reading of the play also gives the impression of watching a full-length film full of wounded emotions, feelings of pity, adventures, realisation and acceptance.

The home JeevanJyoti, which gives asylum to hundreds of AIDS infected including women and children, itself can be seen as a symbolical image. AIDS victims find it as the only place in which they can feel togetherness. And the sign it displays: 'Leave Your Prejudice Outside' carries double connotations. One is that the outside society should never carry their personal prejudices of AIDS victims inside and when someone unfortunately becomes the insider, they automatically long for acceptance from the outsiders. Getting reconciled and connecting the outsiders with the insiders or vice-versa is the main issues addressed here. Through, Aparna and George's character the author illustrates this. Aparna who gets infected with AIDS from her husband, and George who gets it through blood transfusion, feel gravely hurt not because they are dying, but because of the familial, social and cultural discrimination that they are subjected to. The author also offers options to choose through these characters. Some of them may be destructive and others are personally constructive. The options that the characters: Manoj who hides the truth that he is a HIV from the second doctor when the first neglects to treat his tooth problem; Prostitute Rita who reveals the truth to her customers and advises them to use condom, when she is thrown out of for this and finds herself hapless just to buy clothes for her daughter, curses the textile owner and has sex with him; Suraj, the small child who hopes death would reunite him with his parents wants to die soon; and many other inmates who despise their lives and wish to die soon because of the public humiliation that they are subjected to

are like models to the society. The play clearly portrays what makes these victims to turn victimisers. And, the social encounters of George and Aparna with his parents and Dr.Sanyal respectively demonstrate how cruel the society is.

The visual medium or movie form through which it is presented to the audience makes it more memorable and appealing. As Martin Scorsese said, this movie touches "out hearts and engage our vision. And change the way we see things... take us to other plans... open doors and [humane] minds." (Burman 101) The symbolic representation of Sun and day in George's imaginative story: God playing food ball with sun and moon and his utterances: "death is not a news over here. Life is" and "When you are driving your truck in there, wear your cap. Undersand?" when he advises Sukhiya, and "another mile. The longest mile I have ever driven" while taking dying Suraj to his hut; and Aparna's story about the God's curse on Devas all contextually connote metaphorical, melancholic and philosophical meanings that the author aims at imparting on the audience. Though the play is full of pain, despair and emotional imbalance, the denouement offers an optimistic note. The reunion of George and Aparna and Dr. Machado's monologue best convey the solution that the author intends to. To bring these plays under a caption, they are tragic in subject matter, comic in presentation, ironic in diction and satiric to broadly categorise. The dramatists focus on exploring the intentionally avoided issues and vice practices of their immediate society. They are at times hard-hitting, overwhelmingly moving and capable of changing the social outlook of the readers when are read, without the usual preconceptions and conservative attitudes.

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A STUDY ON THE CONCEPT AND NATURE OF REBELLION AS PORTRAYED IN R.K.NARAYAN'S *THE DARK ROOM*

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Abstract

This paper deals with the concept and nature of rebellion in R.K.Narayan's The Dark Room. As in the tradition of acceptance, rebellion may be interpreted as a cultural aberration and in Narayan's novels it is regarded more of a deviation than defiance. Narayan's presentment of his typical rebels is interesting and more so in The Dark Room. The Dark Room has been regarded as Narayan's version of Ibsen's The Doll's House and Narayan seems to handle, unobtrusively the major issues like marital disharmony, the status and role of the Hindu wife in the society, the implication of the other woman, free will and disobedience. The rebellion in the novel springs from the marital disharmony and Ramani stands out as its major contributor and Savitri also rebels when circumstances force her to be a rebellion. But in the process, she comes to realize and is a typical product of the preordained world and of the household harshly reflecting, the corruption of Hinduism, Savitri remains a copy book of the Manu framed society. She plays the role as a total subjugation to her Lord. Instances have been quoted to justify the topic.

Keywords: Typology, rebellion, preordained, extra-marital, oppressiveness.

Introduction

Rebellion according to the Oxford English Dictionary is 'Open or determined defence of, or resistance to, any authority or controlling power.' Albert Camus in his book *The Rebel* observes rebellion as:

The problem of rebellion only seems to assume a precise meaning within the confines of the Western thought ... In fact for the Inca and the Hindu pariah the problem of revolt never arises, because it has been solved by tradition before they had time to raise it – the answer being that tradition is sacrosanct. (25-26)

These definitions for rebellion serve as the background and indicator throughout the typology of rebellion. Rebellion as such is a part and parcel of the human perception. As a natural human tendency, it seems to have its footing in "Man's first Disobedience." Satan, in the guise of the talking serpent instilled the spirit of rebellion into Eve's consciousness. Apart from the Biblical base, the idea behind the forbidden fruit has a universal appeal. It underlines the instinct to sever the code and disobey the commandment.

The typological expression rebellion may indeed appear ironic and irrelevant in the context of Narayan's novels. Narayan's characters are placed in a pre-ordained

envisaged world. They have an acute Karma consciousness and take in the pervading spirit of the cultural tradition. Theirs is essentially a sacrosanct tradition. Rebellion appears meaningless against the accepted norms of their tradition. Camus is of the opinion that the Indians will not rebel because they have their answers ready in their myths. In other words, according to tradition, acceptance may be interpreted as a cultural divergence. In fact, rebellion as such in the world of Narayan's novels is regarded more of a deviation than insolence. Therefore Narayan's presentment of his typical rebels may be considered as a fascinating study of rebellion suggesting socio-psycho-cultural implications.

Concept and Nature of Rebellion as portrayed in *The Dark Room*:

The Dark Room has been regarded as Narayan's version of Ibsen's *The Doll's House*. Narayan seems to handle, unremarkably the most important problems like marital dissonance, the status and role of the Hindu wife in the society, the implication of the other woman, free will, disobedience, etc. Notably, these issues have been dealt with through the basic theme of the Malgudi novels; illusion versus reality. As for the typology of rebellion, *The Dark Room* can be regarded as a unique case, because

the essential theme of the novel is comprehended through the rebellion of the husband, the wife and the other woman. To know the concept of rebellion is in fact to spotlight on each agent's nature of rebellion and underline the emerging implications. Since the rebellion in the novel rises from the marital disharmony, Ramani is seen as its major contributor.

Ramani stands out as the male chauvinism established by tradition. In fact, it is because of his extreme deviation that Savitri rebels. Bearing the Narayanesque view of rebellion in mind, we can come close to Ramani.

Narayan makes his sarcastic purpose clear as he presents Ramani as Savitri's husband. Ramani is anything but the legendary Satyavan. On the contrary, of all the Malgudians, Ramani is exposed as the most arrogant, ego-centric, conceited and caddish husband. He pompously regards himself as the Commander-in-chief of his family and illustrates the role to the last letter.

Ramani is mainly portrayed through his complete dictatorship at home and the mindless treatment he gives to his wife. Significantly enough, on the first page of the novel the bully is seen violently slighting Savitri because she tries to shield her son against the will of the dictator. Ramani shouts at her saying: "Go and do any work you like in the kitchen, but leave the training of the grown-up boy to me. It is none of a woman's business," (1) the example clearly shows Ramani's male chauvinism and the Manu-based attitude to keep woman to her life-long servility and to the confines of the fireplace. He seems to have given her the instruction, Thou Shalt Obey, which Savitri feels obliged to respect and carry-out all his commands.

Although Ramani's rebellious deviation is exemplified through several situations, mainly it is projected in the framework of his most scandalous affair with Shanta Bai. The affair has many grave implications. It may be taken as Ramani's infringement of the sacred family codes - to be faithful and honest to one's wife. It may also be termed as Ramani's violation of the time-honoured social norms, as he gets involved in an extra-marital affair. Although he continues to call Savitri, "My pet" (110) evocative of Helmer's "Is that squirrel frisking around?" (Ibsen, 120) Ramani at any rate does not give her the promise not to go near the other woman and says defiantly, "I don't want you to dictate to me". (111) But the worst insult comes when Savitri's threat to leave the house if he does not come to his senses, he cold-heartedly says: "You can please yourself. Put out the light. I want to sleep". (111)

Paradoxically enough it echoes Othello's words "Put out the light" and his excessive love for Desdemona in the drama of Shakespeare.

Narayan presents Ramani as a complete out of the ordinary, an inborn rebel to be specific, when his father advises him to continue his studies after matriculation, the egoist snubs him with: "I know better, what I must do," (140) He also boasts of tendering his resignation if the company dares to dishonour him. Ramani persists on his affair with Shanta Bai even after the disquieting pause of Savitri's disappearance from home. In the context of his children, he is never understood as a loving father. They don't seem to love their father. And as for the other woman, Ramani yields to her charms and continues the affair, inspite of the danger it results in. Thus, his entire life may be regarded as a sequence of deviations. Hence, the rebellious tendencies of Ramani seem to run in his blood-stream and he just leads the life of a rebel.

Notably, Narayan has given a silver lining to the otherwise darkish portrait of the oppressor Ramani. It is exemplified in his role of playing a loving husband of Savitri. He had bought a six-sovereign necklace for Savitri at the beginning of his career and he also feels cheerless when she has labour pains. At times he plays the role of a good daddy. This is seen when he always insists on his near ones to eat more.

In terms of characterization, Ramani is almost in every sense as Harvey defines the term, especially when he disagrees with McCarthy, he points out that, "Cards are not absolutely immune from change and growth" (241) Having faced the nerve-killing experience and realizing that even Savitri could say no to his ardent intentions, Ramani has second thoughts regarding the irresistible but equally trying affair.

The situation forces Savitri to be a rebellion. In fact she rebels against the misbehaviour of Ramani. In other words, the life-role she plays makes her to keep her husband's ego burning. During the process, she comes to realize, with a painful and shocking tense, that she herself has become a burnt-out case. As a typical creation of the preordained world and of the household harshly reflecting, the corruption of Hinduism, Savitri remains a copy book of the Manu framed society. Therefore, Savitri symbolizes the pains suffered by a tongue less creature. She adorns the role as a total subjugation to her Lord.

With regard to Savitri, the vital and overall image she projects very clearly shows her as a person who has failed despondently to play a convincingly full fledged rebel. Narayan builds up the case of Ramani's total

rebellion and he vigilantly presents the story of Savitri's acceptance which exhibits Savitri's negative rebellion.

Savitri with three children, after fifteen years of marriage, is faced with the unvarying bullying and mortification of her husband. She has been left with only one way out. It is to give vent to her anger and suffocation in 'The Dark Room'. In the early part of the novel, snubbed by her husband, Savitri is seen brooding in the 'dark room'. The 'dark room' becomes a metaphor in the novel, symbolizing an externalization of her mental condition created by the stuffy oppressiveness, which, women of the conventional Indian middle-class are destined to undergo.

The first illustration of Savitri's rebellion reflects the total disharmony in her household. In spite of Savitri's requests, Ramani refuses to give up the other woman and yet takes his wife's closeness for granted, and she rebels. Years of pent-up feelings and the choked voice in her suddenly well-up and to Ramani's shock, perhaps, Savitri shouts at him: "Don't touch me ... You are dirty, you are impure. Even if I burn my skin I can't cleanse myself the impurity of your touch". (112) It clearly reflects the pained and anguished wife's real outburst and it also underlines her unmistakably acute awareness of chastity. In fact Savitri's entire revolt underlines an overwhelming despotism of the traditional morality.

As the desperate Savitri insists on leaving the house without a thing, she seems to believe that in a man's world a woman cannot own anything: "What possession can a woman call her own except her body? Everything else she has her father's, her husband's or her sons's." (113) Although Savitri's remarks underline a universal tone, sub-consciously perhaps, she could certainly be rendering Manu's famous dictum:

pita raksati kaumare
bharta rakshati yauvane
putras tu sthavire
tasmāt na stri svantantryam arhati.

(The father protects her in childhood, the husband in youth and the son in her old age. A woman does not deserve independence) (Jones, 9.3).

Interestingly, Savitri's rendering echoes the similar sayings of Nora in Ibsen's

The Doll's House:

When I look back on it now, I seem to have been living here like a beggar, from hand to mouth. I lived by performing tricks for you, Torvald ... You and your father have done me a great wrong. (89)

But Narayan's Savitri is a far cry from the Ibsenite heroine. Unlike Nora, who bangs the door, Savitri simply "walked out, softly closing the door behind her. (114)

As Savitri strips out with the intent of committing suicide, she appears more wretched than determined and angry. Her mind, instead of dwelling on her husband's inhuman treatment towards her, dwells on Yama's Cauldron, (116) symbolizing punishment for disobeying the husband. And when she finds herself just a moment away from the act of suicide, Savitri cries: "no, no. I can't die. I must go back home." (121)

Savitri, with her alarming impact of the religious system paralyzing her mind, presents herself as the weakest creature in the background of her suicide. Her attempt to earn bread by the sweat of her brow and staying out all by herself at the temple are meager. Finally, as she comes back home, Savitri betrays the typical middle-class psychology. The narrator says, "and she grew homesick, a nostalgia for children, home and accustomed comforts seized her." (189)

So, Narayan's Savitri, like Nora in Ibsen's *The Doll's House* faces altercation and unequivocal rebellion and lands up in a docile settlement. One may read Narayan's ironic intention in naming his heroine Savitri as she appears just a frail figure before the legendary Savitri. Narayan's Savitri basically seems to project the Indian womanhood realized through the idealized roles of mothers and daughters in the male-dominated society. Through her surrender and suffering Savitri seems to have stopped the house from the fall. Her traditionally realized act may not have the approval of the feminists, but Savitri values human concern, besides, of course, the whole Indian tradition.

Savitri's characterization, due to her tame withdrawal, one may view her as a flat never-changing character. In fact there seems to be a faint growth in her consciousness. She does not welcome the lord of their house Ramani. In spite of her painful realization, that a part of her being is dead; Savitri says, "No" when Ramani wants her. Narayan's ironic purpose in naming the other woman Shanta Bai in *The Dark Room* seems to be obvious. Contrary to the suggestion of peace denoted by her name, the woman seems to be a personification of restlessness; what's more, she also makes Ramani restless. Shanta Bai, a thoroughly licentious woman, having dubious credentials, is the first 'other' woman in Narayan's novels. She wins Ramani's compassion with her sad story and his heart by her charisma. Although a probationer, she is hardly realized as one. Her philosophy

is "Living Today and Letting Tomorrow Take Care of itself ... However being the One Important Possession" (81) sounds shallow and her obsession for Omar Khayyam also appears to be just a fancy. Her car-drive and going to see the late movie with Ramani come out airily. In fact, her whole affair has an airy appearance. Although Shanta Bai remains a two liner and a flat character, she plays an important role: on the one hand she exposes Ramani's outside appearance as a mad and uncertain lover and his double-dealings and, on the other, she reflects Savitri's marital disharmony. Even her watching a film with Ramani seems to be for the advantage of Savitri's friend, Janamma, who reports their "togetherness" with Savitri. Thus Shanta Bai remains a shadowy figure and becomes a symbolic character.

The novel *The Dark Room* can be regarded as Narayan's characteristic study of rebellion. It also suggests the author's approval to the philosophy of acceptance and the reiterative theme of the return of the native.

Conclusion

Taking into consideration, the typology of rebellion as a whole, there are certain distinguishing characteristics resulting out of the study focusing on the nature of rebellion in the novel. Generally, rebellion in Narayan's novels is taken as a deviation from the accepted norms of the socio-cultural codes. The events in the novels suggest a view that those who accept the tradition lead a balanced and quiet life and the deviants head for a lonely sort of existence. The most obvious deviation is realized as sex abnormality. Sex has a purposeful existence in Malgudi. As *The Dark Room* exemplifies, sex may have a fruitful and balanced realization within the confines of the social norms. The novelist's respect for the privacy of his characters may underline his treatment of sex. When obliged to depict a sort of open sex, Narayan employs the strategy of treating sex comically.

Like most of the rebels in Narayan's novels, they underline several implications such as the influence of the socio-cultural codes; Manu's deciding norms, the mythic images of Sita and Savitri and the idealized images of the mother and wife. The return of the rebel also marks the cyclical pattern of the journey, the epic of the ordinary and the preordained nature of life. It also depicts the novelist's

strategy to use the *rite de passage* to signify the spiritual growth of his characters as they pass from illusion to reality. The typology vividly focuses on the novelist's comic ironic perception of life underlining his notion of Comedy bordering on the tragic lines and his ironic vision telescoping the essentially paradoxical and incompatible nature of life.

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STREAKS OF LIVING PAST IN THE POETRY OF NISSIM EZEKIEL

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Abstract

No one can walk beyond his shadow. The shadow of his past falls on them from which he cannot extricate himself. The term used in the title 'living past' means how the past with all its charms, pains and pleasures are still remembered by the readers in the poetry of Nissim Ezekiel. The experiences he encountered in his career graph are not things of the dead past but living past in Ezekiel's poems. Nissim Ezekiel has carved out a niche for himself as a creative artist. He weaves poetry out of ordinary events and incidents. He takes situations and describes it in such a way that it assumes a kind of social and universal significance. Any incident, however ordinary or trivial, he has a chance to know, feel, or experience he transforms into poetic artifacts. Ezekiel chooses the English language as the medium of his creative art. It is the vehicle of his mental make-up, thinking, feeling and basic communication. This paper is devoted to a discussion of the various facets of Nissim Ezekiel's past life.

Keywords: Experience, Episodes, Habitation, Reminiscence.

Introduction

The Post- Independence Indian Poetry in English has proved vibrant and varied, robust and responsive to the times. It has seen its new dimension in the fifties. Earlier, it was highly critical of its derivative quality. Gordon Bottomley describes Indian poetry in English as "Mathew Arnold in a Saree" (*Five Indian English Poets: Nissim Ezekiel, A. K. Ramanujan, Arun Kolatkar, Dilip Chitre, R. Parthasarathy* 12); however V. K. Gokah has points out that it is also "Shakuntala in skirts" (*The Golden Treasury of Indo-Anglian Poetry* 2). The Post-Independence Indian poetry has come of its own with the breakdown of traditional inhibitions and inhabitations. The distinguished Poets in Indian English Literature -- Nissim Ezekiel, R. Parthasarathy, A. K. Ramanujan, Kamala Das and K. N. Daruwalla, have evolved their own techniques to suit indigenous experience. Among these poets, perhaps, Nissim Ezekiel may be said to have laid the foundation of modern Indian English poetry. Discerning critics aver that Ezekiel used to relate the immediate present to the living past. As K.R. Srinivasa Iyengar rightly has said that "No one can walk beyond his shadow" (*Indian Writing in English* 432). As the poet leans over the pages, the shadow of his past falls on them from which he cannot extricate himself. Ezekiel's poetry is noted for his memory. The dramatization of memory of the family incidents, his acquaintance with people and his approach to the society from his childhood is to be found

in his poetry. Ezekiel's versatile genius is in evidence in his poetry, plays, criticism, journalism and translation. He chooses English which is the language he knows better by education and training. He claims : "Contemporary poets of India generally write in English when they have gone through English Medium schools. I write in English for this reason and cannot write in any language" (*Expressive Form in the Poetry of Kamala Das* 43). He recalls the impact wrought upon him by the poetry of T.S. Eliot, Ezra Pound, W. B. Yeats, W. H. Auden, and Empson. With a wide canvas, he has written poetry on a variety of topics – love and sex, the Indian contemporary scene, modern urban life and the problem of personal integration. He employs conversational tone and ironic mode by means of which he catches immediate attention and gains immediate intimacy with the educated reader. Many of the younger poets in English have acknowledged Ezekiel's constructive influence on them during their formative years. The pages that follow is a careful analysis of the imprint of the past in the corpus of Ezekiel's poetry viewed from diverse angles such as familial past, sensual past, and personal past.

Familial Past

Nissim Ezekiel was born in Bombay of Jewish parents (Bene-Israel). A committed member of the Radical Democratic party in the forties; he became a copy writer and later manager of a reputed advertising firm in

the fifties. His flair for teaching he owes to his father and mother both devoted to education. The father, "Skeptic rationalistic," with the penchants for proverbs and homilies was the Principal of a number of colleges. The mother was the Principal of a school started and run by herself for over thirty years. To quote Gieve Patel: This heritage, including the taste for homespun wisdom, runs deep in Ezekiel. He has taught at school, at college and at the University when he conducts programmes on art appreciation for Bombay television, he teaches; when he sits in his dusty office at the Indian P. E. N as its most active office bearer, reading quantities of other people's poems and giving his comments on them – there by earning lifelong friends and enemies – he is teaching; again when he writes his poetry, he teaches.... (*Collected Poems:1952-1988 ii*).

It is the apt-quoted statement that family is a chief metaphor in the poems of A. K. Ramanujan. This mode of thinking can be extended to the poems of Nissim Ezekiel. The nostalgic peep he makes into the past of his life is reflected in a number of poems. There are poems where the poet carries on a dialogue with the past through the members in the family. The formative influence exercised on the poet cannot be minimized.

In all the poems that are in the past tense, the historic present is used as if it were an experience cherished forever and he uses the present tense for writing about past events by lending it verisimilitude and making it seem exciting.

The poet registers his childhood memories in the poem "Night of the Scorpion." The multiple methods of treatments given to the poet's mother stung by a scorpion are artistically articulated in this poem. The role played by the villagers immersed in superstitious beliefs and the poet's father, trying every curse and every blessing, though 'a skeptic rationalist,' are graphically described by the poet in a remarkable manner. The concluding lines attributed to the mother's reaction to the scorpion bite speak well of his (My mother) abiding affection towards his mother and of his mother's self-negating nature. The poet then a child was a silent spectator of the pathetic scene of the mother wreathing in pain and groaning on a mat.

I remember the night my mother
Was stung by a scorpion

My mother twisted through and through
groaning on a mat. (NECP 131)

The father with no concern for the mother goes on experimenting item after item: "powder, mixture, herbs, hybrid" not to be beaten by the peasants who also go on preaching philosophical words.

My father sceptic, rationalist,
trying every curse and blessing
powder, mixture, herbs and hybrid.

He even poured a little paraffin
upon the bitten toe and put a match to it. (NECP 131)

To quote Thakur Guruprasad: One of the potent themes of the poem appears to be the contrast borne out by the clash of values. The deep traditional, immanent superstition of illiterate rural folk belief overwhelms the half-baked, urban educated, rational element represented by the father of the persona and the muted, tongue-in-cheek, sarcastic attitude of the persona himself. The contrast ranges round the treatment of the scorpion-stung mother (*Perspectives on Nissim Ezekiel* 25).

The mother's self-effacing nature is in evidence in the concluding lines of the poem "Night of the Scorpion." Neither the peasants nor the father nor the priest did care for the children's welfare. They had all concern and care for the mother's well-being. The mother only did care for the children's weal. The words spoken by the mother are a demonstration of the selfless love of the mother. She did not blame God. Rather she praised God for the scorpion bit her and spared her children. The ironic twist in the last lines of this poem cannot be missed. The moveable adverbial 'only' intensifies the enrichment of the meaning of the passage. The word 'only' is a squinting modifier. When the word looks forward, it gives one meaning; when the word looks backward, it gives another meaning: Only the mother thanked God and no one else. When the word looks backward, it does mean that she did not waste her time by indulging in many words of philosophy as spoken by the peasants. Even the father goes on experimenting an item after another while the priest goes on chanting mantras in an endless manner. However the mother uses just eleven words. The passage has an extended meaning; it attains universality by laying emphasis on the merits of the mother's self-effacing nature. According to B.N. Balakrishnan, "The concluding lines lift the poem to a higher place: They reveal one of the strengths of our culture" (*Contemporary Indian Poetry in English* 67).

My mother only said
Thank God the scorpion picked on me
and spared my children. (NECP 131)

To quote K. R. Srinivasalyengar states, "Ezekiel invests the poem ("Night of the Scorpion") with a deep significance by trying to understand the Indian ethos and its view of evil and suffering, though he makes no claim to sharing it" (634).

Nissim Ezekiel holds his mother in high esteem but it does not smack of blind adoration. In the poem "Cows" he even pays tribute to his mother's altruistic attitudes on the one hand while on the other to her hygienic sense. Though advanced in age, she has a heart to feel the need for the infrastructure of her school. That is why she is seen collecting money for her school by going from place to place. At the same time she cannot tolerate sitting cross-legged to see the environment polluted by the excretion of the cows on the pavements. The cows either block the way or clutter the pavements with dung.

She knows that cows are holy
worshipped by the parents
of the children in her school
Even gods ought not to clutter up
the pavements – that's her view.
She's not against beliefs: believe
what you like, she says,
but get out of my way. (NECP 299)

No doubt, the cow is an object of worship in India but it does not purport that the cows, though defied, have the right to block or pollute the path of the passersby. The poet's mother concedes the religious beliefs of the people. Belief is a private matter but it should not come into conflict with the canon of public hygiene. One's belief should come in no way of another person.

Nissim Ezekiel's unbounded regard for the mother is registered in a few poems. One among them is "A Daughter's Illness". The poem makes inroads into the poet's past about the care and anxiety caused by the daughter's illness. In addition to administering a number of medicinal items to bring down the temperature, the mother wastes no time in offering prayers in languages known to her for the girl's recovery.

If your mother
were alive now, my wife said,
who had never taken her advice,
she would suggest
half a dozen remedies.
Coriander, Coconut milk, ginger leaves
boiled or crushed, even
kept beneath the girl's pillow
while she slept, and your mother
prayed in Hebrew, Marathi and English

for our girl's liberation
from the Evil Eye. (NECP 300)

The memories of his father often echo in Nissim Ezekiel's ears. With all his regard for his father's intellectual bent of mind, he cannot help making candid comment on his gregarious nature: "My father talked too loudly/ and too much" (208). With death near at hand he seems to have a desire to share certain untold secrets with the son: "He drew me close to him/ and spoke his truth to me" (208). In fact, it was not verbal expression of the secrets but only a whisper: "I felt the breath of his love/ but could not hear a word" (208).

The familial past of Nissim Ezekiel is linked to the personal past of the poet where love reigns supreme. The love poems of Nissim Ezekiel are, perhaps, personal revelations of the poet's libido in his encounter with women. The past experiences recorded in his career graph show that he has no scruples. The past related to his relationship with women is recreated in such sensuous images that one will feel as if one were reading a chapter in Vatsyayana's *Kama sutra*. As stated by Linda Hess: "Ezekiel as a poet of the body and an endless explorer of the labyrinths of the mind, the devious delving and twisting of the ego and the ceaseless attempt of man and poet to define himself to find through all myth and maze a way to honesty and love" [*Considerations* 43].

Sensual Past

A reading of the poems of Nissim Ezekiel especially those dealing with woman, love, sex and marriage is bound to mark Nissim Ezekiel as a poet of sex. And there are poems that celebrate with the physical aspects of love and also they betray the lack of morals in him as confessed by him in "Background, Casually": "My Morals have declined" (179). During his sojourn in London the words spoken by a woman "you are a son of woman" underlines the fact that it is no wonder he will fall a victim to the seductive charm of woman. It has a Miltonic echo reminding the readers how even Adam fondly overcome by female charm yielded to Eve's plea to share the forbidden fruit with her. These bittersweet memories are still alive in him.

Time does not matter but they leave an impact upon him and these little insignificant incidents get through the crucible of imagination into poetic gems.

In a candid manner with no privacy or secrecy, Nissim Ezekiel makes it clear that his motives lie buried in the heart of his heart to enjoy the sexy seductive poses put on by the cabaret dancer. In the poem entitled "At the

Hotel" Nissim Ezekiel confesses that he entered the hotel along with others not to drink coffee but to delight his eyes with the sight of the naked Cuban dancer. The twice-repeated lines at the start of the poem and at the end betray his motives.

Our motives were concealed but clear,
not coffee but the Cuban dancer took us there,
the naked Cuban dancer.

On the dot she came and shook her breasts
all over us and dropped
the thin transparent skirt she wore.

Was it not this for which we came?

The noise, the smoke, the smell of flesh we relished
Secretly and wanted more,
we drank our coffee swiftly
when the Cuban dancer left the floor,
the naked Cuban dancer.

Our motives were concealed but clear. (NECP 112)

The poem begins with "Our motives were concealed but clear" and is rounded off with the same line. It is only the sensual urge that impels people to go to hotels and parties with cabaret programmes. The visit to the hotel in the company of friends to have a cup of coffee is a deliberate attempt to cover up the irresistible sensual urge to see the Cuban dancer naked. The concluding line set off from the preceding lines is a comment on their suppressed urge.

All these incidents the poet had experienced gave him an opportunity to transmute them into artistic artefacts. There is a justification to stress the point that the past is not isolated from the present but it is related to the present giving rise to poetical creations.

The poem "Event" is a continuation of "The Female Image". This poem is a portrayal of an event in Nissim Ezekiel's life. The poet persona records the sex experiences euphemistically called an event. The poem is a recordation as well as a recollection of a sexually passionate woman who seeks sexual congress with him. The way in which she lies naked in her bed will have sex appeal to him and he will not help yielding to her desire. There follows a graphic description of enticing behaviour:

She lay and waited, watching me,
Like a child in her nakedness.
Uncertain if it ought to be,
Awe-inspire and motionless
She stroked my hair and talked away
About a film she had admired,
A speech she heard the other day,
And Art of which she never tired. (NECP 123)

The 'I' of the poems dealing with love, marriage and sex may be interpreted as standing for the poet himself because he cannot be taken for a man with no blot in his character. As stated earlier and as vouchaled in a addressed to V. A. Shahne : "I am not a religious or even a moral person in any conventional sense" (*Journal of South Asian Literature* 23). Both the familial and sensual past, though discussed separately, stem from the personal past as discussed in the pages that follow.

Personal Past

Though by birth Nissim Ezekiel is a Bene -Israel, by upbringing he has all along been in the Indian setting. Something there is in him that does not love his being rooted to the Indian atmosphere. The superstitions prevalent in the Indian society staring at Nissim Ezekiel make him have a dig at the blind beliefs and worn-out practices of the Indian society. Though he accepts India as a country he belongs to, it cannot be said that there is a total identification with the Indian life style. Elsewhere he confesses: I am not a Hindu, and my background makes me a natural outsider: circumstances and decisions relate me to India.... Not being a Hindu I cannot identify myself with India's past as a comprehensive heritage or reject it....I can't identify myself with modern India (*Ten Twentieth Century Indian Poets* 65)

The experiences Nissim Ezekiel encountered in his career and the impressions he formed of places and persons got branded on his memory. Bombay is the bitter native city where Ezekiel was born and brought up and where he lived till his death. He was born in Bombay in a Bene- Israel family and spent most of his life in highly westernized circles of the cosmopolitan city. He confesses that he cannot identify himself with India's comprehensive past with its culture and tradition. Many of his poems spring from his immediate environment. As remarked by Chetan Karnani: "Ezekiel's poetry derives all its sustenance from his immediate environment though it is written within the broader framework of the tradition of English poetry" (*Ten Twentieth Century Indian Poets* 28).

In the poem titled "Background, Casually" the opening line "A poet-rascal-clown was born" justifies what follows in the poem. The very atmosphere in which Ezekiel has had his upbringing contributed to a child getting scared because of the hostile environment in which he was placed in the school. He felt himself having been among Christians who called him a killer of Jesus Christ and among Muslims who frightened him always with their muscular strength. He also grew in terror of the strong Hindu lads. He feels himself like a fish out of water

in the unfriendly atmosphere. The result was he could not eat or sleep or even play games like flying a kite or spinning a top.

A poet-rascal-clown was born,
The frightened child who would not eat
Or sleep, a boy of meager bone.
He never learnt to fly a kite,
His borrowed top refused to spin.

.....
A mugging Jew among the wolves.
They told me I had killed the Christ,
.....

A Muslim sportsman boxed my ears.
I grew in terror of the strong
But undernourished Hindu lads, (NECP 179)

So far as he made a fool of himself in getting married and as he turned into a rascal because he used a knife in a self-defense from the three hostile communities around him and in falling a victim to the seductive charm of a woman. All these bitter experiences left indelible marks on him and made him the poet and the man he became in life. Ezekiel's relationship with India is one of dichotomy. He brings out the contrasting pictures presented by India a land of slums and skyscrapers but even then he could not leave the Island because he himself says: "I cannot leave the Island/ I was born and belong." (NECP 182)

Ezekiel claims to have made his commitment to the country of his adoption and to the city of Bombay, the home of his choice. The climate sears his eyes but he has become part of it. His foreign friends feel surprised to see him managing to survive in the heat and squalor of India. He dismisses it as an exaggeration:

The Indian landscape sears my eyes
I have become a part of it
To be observed by foreigners
Their letters overstate the case. (NECP 181)

He has made his commitment, India is his home and he will continue to live in his chosen home:

I have made my commitment now
This is one: to stay where I am
As others choose to give themselves
In some remote and backward place
My backward place is where I am (NECP 181)

In an interview to John B. Beston, University of Hawai, Nissim Ezekiel affirms his identification with India: "I regard myself essentially as an Indian poet writing in English. I have a strong sense of belonging not only to India, but to this city. I would never leave Bombay" (*World Literature Written in English* 56). In the course of an interview given to *The Hindu*, Ezekiel vouchsafes the commitment he has made: If I hadn't made myself part of the culture of the city where I live I think no Indian poet would've come within a hundred yards of me. I've seen this happen to people who are enormously gifted yet do

not become a part of the culture around them. A lot of people I know have ruined their lives by going abroad and settling somewhere they have no relation to the culture (*Hindu* 3).

Ezekiel lets slip no single opportunity either to laugh at the landscape or the people or the language they spoke. In the poem titled "Island" he calls India utterly unsuitable for song in glorification because poverty and opulence exist side by side as reflected by the existence of slums and skyscrapers in the country. Ezekiel says "the island flowers into slums/ and sky scrapers.... / unsuitable for song as well as sense." But in the concluding lines of the poem he claims, "I cannot leave the island/ I was born here and belong." K. R. Srinivasalyengar calls it the "testimonial of being a good native." In "The Egoist's Prayers," Ezekiel, is in the role of an egoist and prays to god to confiscate his passport in case he longs to go abroad leaving India.

Confiscate my passport, Lord,
I don't want to go abroad
Let me find my song
where I belong (NECP 213)

The split-personality in Nissim Ezekiel is in evidence in his poems. The opening line of the poem is no word of praise of the island. He cannot glorify the city in songs because slums and skyscrapers are found side by side. But towards the end of the poem he asserts that he cannot isolate himself from the island because "I was born here and belong." To quote William Walsh: One is aware of a double impulse in the poet, which on the one hand keeps him at a distance from his environment as he clutches his private history and aspiration and which on the other, by the painful act of will, reconciles him to his environment (*Aspects of Indian Writing in English* 65).

The city known for sadhus and saints with their miracles hastens him to lead his life in it minding the ways of the island. He cannot alienate himself from the island but becomes part of it.

minding the ways of the island
as a good native should,
taking calm and clamour in my stride (NECP 182)

To quote G. Damodar: Aware of narrow "cultural pitfalls," Ezekiel endeavours to find roots as a man basically and as one who belongs to a definite geographical and cultural tradition. For him rootlessness is a matter that bothers not merely the poet lifted from his moorings and transplanted elsewhere, but the man who has not been able to strike a sense of "belonging." A writer in Nissim Ezekiel's views has an immense responsibility to society. He has to make life, more endurable. The means with which he can do so is by discovering one's own identity with a sense of commitment.... The typical strength of his poetry arises from the fact that he has his ideas firmly rooted in Indian

soil (*Nissim Ezekiel: A Critical Companion* 65). Ezekiel may love India but it does not mean that India loves him. He states: "I love India; I expect nothing in return because crucial, skeptical love does not beget love" (*Selected Prose* 76). To quote Suresh Chandra Dwivedi: Bombay is the best place for Ezekiel and it is here that his temperament as a human being and as a poetic genius can find a rich soil to grow and blossom. Ezekiel's Bombay is not inferior to Paris or for that matter any place of the world. His temperament requires somewhere to belong to. He does not want to be considered as a world poet. He detests the very idea of it. He is an Indian poet and would like to be known as an Indian poet (*Perspectives on Nissim Ezekiel* 32).

Nissim Ezekiel does not distance himself from the uglier aspects of India. Total commitment means identification not only with finer aspects but also with the otherwise unpleasant aspects of India. The experiences encountered by Nissim Ezekiel in his life by virtue of their being past have had their impact upon his growth and development as a poet. All his experiences pass through the crucible of imagination and come out as poetic gems chiselled by Nissim Ezekiel. In an analysis of Nissim Ezekiel's living past, Nissim Ezekiel's Indian sensibility is at work in the poems that have pointed reference to his life in Bombay and his portrayal of the Indian scenery.

This paper has dealt with the living past in the poetry of Nissim Ezekiel. The past life of his is viewed from varied angles such as the familial, sensual and personal. It traces the development of the Indian sensibility in Nissim Ezekiel. The different parts of his past life are related to each other and they contribute to the whole. It is well-nigh impossible to isolate one type of past from the other; thus a unified vision is perceptible in Nissim Ezekiel.

Conclusion

This paper shows the well-marked phases in the memory of Nissim Ezekiel and the significant milestones reached in his creative Odyssey. The different aspects of the past discussed in the poems of Ezekiel lend themselves into different types of past. They do overlap in the sense that some of the relics of the past analysed, for example, in the familial past makes inroads into the personal past and those in the personal past into sensual past. Though the events and incidents relate to his bygone days, they become alive in the pages of the poet. Hence, this caption is justified that the past is not dead but lives in the present in the poetical works of Nissim Ezekiel.

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THE ART OF RHETORIC THAT EMANCIPATES HUMANISM WITH SPECIAL REFERENCE TO PAULO COELHO'S MANUSCRIPT FOUND IN ACCRA AND KAHILIL GIBRAN'S *THE PROPHET*

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Humans are always bestowed with the freedom of choice to choose between good and bad. Man is civilized but at certain stage he goes beyond the natural law harming the fellow beings which in turn causes a disturbance in the universal set up. Man is always in need of a stimulating force that enables him to bring out his potentialities as well as to be aware of all that he does in respect to the consequences too. All that is to be taught and learnt can be made possible through the art of rhetoric : beginning with religious ethics, public speech and classroom experiences. Even in day-to-day life man is confronted with words that break him or shape him. In order to bring humanism to the frontier, rhetoric has a manipulative value which the human mind will adapt and respond to. This paper aims at witnessing the outlook of two distinct authors (Paulo Coelho, kahlil Gibran) who had influenced the people with their rhetorical approach in writing, in order to make this world a beautiful and better place to live in. It will also evaluate the hurdles which the contemporary world is bound with and provide solutions that can be executed for world peace from the works discussed.

In today's world the younger generation are very much aware of the space that is devoid due to the societal set up creating class disparities, communal riots and other activities that threaten their unity. They are in need of a new set up that showers creativity providing way to equality. They are aware of the situations that are about to arise in today's scenario of political and social conditions . But the way in which they are about to travel needs a turn back to the former conditions established by the government as well as the hindrances that were crossed and the hurdles that are to be crossed. Their spirit of enthusiasm is in peak and they speak with much power and influence. Some turn into the field and survey

the various available facts about the social cause for which they are about to handle. The wide spread knowledge and sources enable them to create a capable team to face reality. But still they need guidance from the experienced ones.

In every way we are in need of motivation and influence in all the good we do. As in the works of Paulo Coelho and kahlil Gibran one can find an enormous amount of good ethics that can be put into function. The selected works function as a medium of transformation. The classical age of the literary world had great philosophers like Aristotle believed in the art of rhetoric. They engaged themselves in the discipline of stimulating the thought of the peoples for a noble cause.

The scenario of circumstances are same in *The Prophet* as well as in *Manuscript Found in Accra*. Both the authors have put forth a symbolic representation of the religious set up mentioned in the bible where Jesus Christ makes an attempt to speak to his disciples and followers in the form of parables in the Gospel of Saint Mathew at the mount. The central figures Almustafa and the Copt portray their experience in the form of words regarding love, marriage, joy and sorrow, self-knowledge, study and work, community, defeat, solitude, miracles, future, freedom, religion, good and evil, change, beauty and so on. The people of Jerusalem as well as the city of Orphalese had the blessing of priceless orations that helped them in the daily chores of life.

In human life the power of existence is the major art that transforms an individual into a whole being. And that involves a great progression of the external as well as internal factors that contribute in shaping himself or herself. Every moment we face reality with the bestowed nature of the circumstances that we live in. In common when everything is affordable and readily available we are

adapted to live in serenity paying no concern to what is happening around us. But when our personal space is disturbed there arises a change in the thoughts as well as the way in which we approach our living in such a society.

The world is competitive and people march towards the technological inventions but their state in society is still in a state of interrogation. Even when they achieve something or do a good deed the individual is not celebrated. Instead his background from which he was brought up is being highlighted. Many years of tribulation and successive loss has not changed the minds and hearts of people. When the youngsters rise up their voices against the evils that happen in the society they are made to undergo a fatal phase of being abused, dominated or even treated badly with the attitude of taking away their identity from them. But Paulo Coelho states : " Only he who gives up is defeated. Everyone else is victorious." (23) This seems to be a redemptive remark that musters up courage and encourage every human to go on with the attitude of attaining fulfillment. For , "the four cardinal virtues : boldness, elegance, love and friendship." (137) will be the foundation of all settlement in human life.

All the hardships and troubles that we face in this world are like an stimulating catalyst that results in the formation of humanity were the art of respecting and acknowledging our fellow men becomes an natural law without hatred. The world that we live in could be made into a better place only through the acceptance of living together as a community with equality. As Gibran says " Your daily life is your temple and your religion. Whenever you enter into it take with you your all. Take the plough and the forge and the mallet and the lute." (108) It's a rescue medium that transports optimism in our hearts allowing us to possess the spirit of hard work to be installed within us. "Let us, therefore, be aware of the forces that move us." (169)

The prime source of the existence in human hierarchy is made possible only with the establishment with love that initiates support to the rise of goodness and prosperity leading to live with serenity neglecting all other pessimistic norms. we humans have the inbuilt potential to love as we were made out of love and with love. " Nature is a manifestation of the Love of God. Regardless of what we do, Nature continues to love us. Let us, therefore. respect and understand what Nature teaches us." (82) This phrase provides us the thought of creating a good atmosphere in every way to be stable in living a peaceful life. Even when we fail to preserve nature there

comes a an endangered scenario of fight ,not alone with weapons but with famine too. The world may call up for war with great might but all the religious ethics provide us the knowledge of love for the neighbor. When we fail to realize this and indulge in warfare everything seems unpleasant, the space of humanism is shaken and as a result there is a chance of all the negative sectors to enter in. "Don't give up. Remember, it's always the last key on the ring that opens the door". (84)

The life that we live in this world is an one-time opportunity. It is filled with hardships, downfall, uprising moments, struggles, failures and at one point the attainment of success. Before we reach all the accomplished areas of life, there comes the important phase to create an self-identity that would in turn promote humanism when every individual comes to take note of its value and importance by adapting to practice it. This enables us to live a better life with hope ,despite all the disparities and ambiguity. In spite of all the inventions, discoveries and development human nature is still in vain due to the ignorance of respect and acceptance towards the fellow men irrespective of their birth, country, religion, class and so on. Humanism is the only subject that we never consider to put into effort, instead it remains as a source of written document. Every novel in the field of Literature has such backgrounds that try to initiate and stimulate a sense of light to eradicate hatred and emancipate righteousness making the readers to look at life with a different perspective and adapt to changes, making this world a better place to live in. It is good to note that both Kahlil Gibran and Paulo Coelho had made a remarkable attempt in trying to bring goodness on earth with morality through their writings.

The following are the resonating factors brought out with the medium of self-introspection by studying their works that invokes the spirit of humanism to change the world:

- A life is never useless. Each Soul that came down to earth is here for a reason.
- We must serve as an example to our parents, teachers, our children, and keep to the correct path. Our neighbors expect us to teach everyone the virtue of perseverance, to struggle against adversity and overcome obstacles.
- Religions teach that faith and transformation are the only ways of drawing near to God and that promotes the art of love.
- Beauty exists not in sameness but in difference.

- Work is the manifestation of love that binds people together. Work is love made visible.
- Beyond the mountains that separate the tribes, beyond the distant that separates bodies, there exists the community of spirits. We are part of that community, where there are no streets peopled with pointless words, only broad avenues that connect what is distant and sometimes have to be repaired because of the damage caused by time.
- When we forgive, the person one who insulted us feels humbled and becomes loyal. Let us, therefore, be aware of the forces that moves us.

The most terrible of all weapon is the word, which can ruin a life without leaving a trace of blood, and whose wounds never heal. Let us, then be the masters of our

tongue and the slave of our words. Let our words lift others up. Finally, to rejuvenate humanism in the words of Kahlil Gibran: "For to the bee a flower is a fountain of life, And to the flower a bee is a messenger of love, and to both, bee and flower, the giving and the receiving of pleasure is a need and an ecstasy".(100)

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THE PROBLEM OF IDENTITY CRISIS IN THE WORKS OF ARAVIND ADIGA, NAYANTHARA SAGHAL AND KIRAN DESAI

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Abstract

Identity crisis as a theme has been dealt with by various eminent authors in world literature and this is a theme which warrants exploration with the advent of globalization. In the case of Indian English literature, the theme of identity crisis has been analyzed in detail by various Indian diasporic writers such as V.S. Naipaul, Salman Rushdie and Jhumpa Lahiri. In this paper the theme of identity crisis is to be analyzed through the works of Indian writers – Aravind Adiga, Nayanthara Saghal and Kiran Desai. Aravind Adiga as a writer has depicted the identity crisis in both of his novels *The White Tiger* and *Last Man in Tower* with brutal sincerity through the protagonists. Nayanthara Saghal is a writer of strong conviction and strong opinion and she has spoken about the identity crisis of the Indian woman in the ever evolving society in her novel *Rich Like Us*. She has depicted the identity crisis of the Indian woman through her characters who will be searching for their rightful place within the society. In the works of Kiran Desai, identity crisis is a central theme and in her novels she has clearly shown all the shades of identity crisis that an immigrant has to go through particularly from an Indian perspective in her novel *The Inheritance of Loss*. This paper analyzes the issue of identity crisis through the select works of the abovementioned writers and it also analyzes the various concepts such as feminism and culture with respect to identity crisis through the prism of the select novels.

Keywords: Identity Crisis, Culture, Feminism, ethnicity

Identity crisis is a term which was coined by the theorist Erikson and identity crisis refers to the intensive analysis and exploration about the way in which an individual perceives oneself. The theme of identity crisis has been touched upon various novelists in the Post-colonial Indian English literature. The big three novelists of Indian English literature in the Post-colonial era are namely R.K. Narayan, Mulk Raj Anand and Raja Rao. These three novelists looked in to the search for identity among the Indian public in the socio political as well as economic domains.

The emergence of Anita Desai can be considered a watershed moment in terms of handling the theme of identity crisis in Indian English literature. Her novels looked in to a complex issue of identity crisis through its central female character. Salman Rushdie is also another novelist whose work has a strong undercurrent of identity crisis through his novels *Midnight Children* and *Satanic Verses* to name a few. The other writers like Amitav Ghosh and Jhumpa Lahiri have contributed significantly to explore the theme of identity crisis. In this paper the researcher will be analyzing the theme of identity crisis through the works of Aravind Adiga, Nayanthara Saghal

and Kiran Desai. The novels that are taken for analysis are *The White Tiger*, *Rich Like Us* and *The Inheritance of Loss*.

Aravind Adiga is the Booker prize winning novelist who was born in Chennai in the year 1974. He has authored three novels till now namely *The White Tiger*, *Between the Assassinations* and *Last man in the Tower*. He won the Booker prize for his first novel *The White Tiger*. The *The White Tiger* is essentially a story of a search of identity of Balram. This story depicts the reality of the socio - economic pressures of the people who are trying to have their own identity when they are moving away from the lower strata of society. The way in which people who belong to the economically lower rungs of the society is handled by the people from the higher end of the society is captured vividly in this novel.

The White Tiger is presented in the form of letters written by the protagonist Balram to the Chinese premier and Balram's search for identity started even from his childhood. His parents used to call him Munna which refers to a boy and the name Balram was given to him by his School teacher during the first day of school. Balram was a good student and he was in the good books of

histeacher but poverty ensured that he was not in a position to complete his education.

Balram starts his career in a tea shop with his brother and he then decides to learn driving so as to earn more money than what he is getting in his current job. His primary goals in life was to get the food, shelter as well as an identity for himself. The author depicts clearly the way in which people from poor backgrounds are treated by the people from the upper echelons of the society.

Balram gets his break when he was employed as a chauffeur to the son of his landlord. So Balram becomes a chuffer to Ashok who is the son of his landlord. Ashok is a well-educated and important person in the society and these results in Balram questioning himself about his life: "His eyes seemed full of wonder! How could two such contrasting specimens of humanity be produced by the same soil, sunlight and water?"

Aravind Adiga paints a realistic picture of the identity crisis that is faced by Balram who started his career in a tea shop to become an entrepreneur in Bangalore. In certain places it is shown that the protagonist Balram is treated as an animal by his masters and how he deals with it. This novel gives a clear picture about the hardships that are faced by numerous individuals who are moving to towns from villages in search of an identity: "We have left the villages, but the masters still own us, body, soul and ares."

This novel shows the lives that are led by people who are part of the slums and also the people who part of the elite. This novel is essentially a struggle of an individual who is from the lower strata of society to become a part of the elite. Once Balram reaches Delhi, his life takes a turn to worse when Ashok's wife kills a child while driving the car. So the landlord's family pressurizes Balram to surrender himself to the police and he escapes without punishment only when there was no complaint registered on that count.

Aravind Adiga provides a glimpse of corruption which pervades through all the strata of society and how it crushes the people who don't have much of their own voice. The way he was manipulated by his masters makes him a corrupt individual and he decides to loot the money from his master and escape from Delhi so as to forge a new identity for him. The protagonist Balram kills Ashok and moves away to Bangalore with his looted money and then he becomes an entrepreneur.

Aravind Adiga through this narrative has given an accurate description of the way in which the society is handling the oppressed people and it also provides a

glimpse of the extent to which an individual will go in search of an identity for himself. All the deeds that are done by the protagonists are done with the aim of escaping the darkness which he was born in to.

Nayanthara Saghal is one of the eminent voices of Indian English literature and her novels will have a strong streak of identity as its main theme. Nayanthara Saghal is part of the powerful Nehru Gandhi family and hence in her work there will be a clear commentary on the political climate of the nation. She was the winner of numerous awards such as the Sinclair prize and the Sahitya Akademy award which is the Indian academy of letters for the novel *Rich Like Us*.

Rich Like Us is a novel depicting the story of two women Rose and Sonali and explains about their search for an identity. These two women are essentially from the upper class society and Rose is a foreigner who gets married to a rich Indian business man Ram as his second wife and she is being a Britisher, she faces a lot of issues pertaining to her identity with regards to being in an Indian household. Similarly Sonali is an upright IAS officer she faces the issues of identity pertaining to her gender and equality in the workplace.

Rose in this novel belongs to a blue collar family in London and when she falls in love with Ram, he is already married to Mona. She is thrust into a different culture where she is confronted with different customs compared to the ones she is accustomed to. This novel depicts in detail about the way in which she loses herself to the changes that are happening around her in an alien society.

Sonali is portrayed as an upright and honest official who is patriotic and does her duty to perfection but she faces the crisis of identity when it comes to her gender and equality crisis particularly in the Indian bureaucratic set up. She was brought up with her own ideas about honesty and she too feels lost in this country particularly when the state of emergency is declared in India which is against her beliefs.

The illness of what had just happened, the Midnights mid-day, for no reason. I could not understand paralyzed me, until I realized that nothing new or shattering had happened. After all, no malign fate had singled me out for punishment. The logic of June 26th had simply caught up with me.

Her sense of identity comes in to question when the people who are corrupt or placed in the higher end of the spectrum by the people of the country rarer than the honest and upright officers who are part of the

bureaucracy. When it comes to Rose she as an individual learns to live with her culture shock and she finds an ally in Sonali on an intellectual level and Sonali on her part feels more human when she interacts with Rose since they can feel then connection on an ideological level.

The theme of identity crisis pervades the society in all its spheres particularly in the time period the Novel is set in the 70s. The protagonists in the novel who are both women with a streak of independence about them wrestles with the identity crisis and in the end Sonali is given a transfer order for upholding her values and Rose loses her life in the hands of a hired goon who is employed by the person in the same family where she has lived all these years.

Kiran desai is an Indian author who won the booker prize for the novel *The Inheritance of loss*. She has elucidated in great detail about the way in which one goes through the crisis of identity in times of globalization through her characters in the novel. The theme of identity crisis has been explored in great detail in a vivid style through two of the characters namely Jemubhai Patel and Biju.

Jemubhai is an Indian who goes to the United kingdom to study law and his separation from his roots such as the separation from his wife as well as his family hardens him so much and once gets selected as a judge it alienates him completely from his kith and kin. This man has lost his own sense of identity and he goes through his whole life with the illusion of him being an Englishman. He refused to accept his Indian origin and he lived his life with the sole aim of being able to match up to the English and to move away from his roots.

These experiences made him to lose the importance of human relationships and the only attachment that he had was with his dog Mutt. *The Inheritance of Loss* is a novel of introspection and it was set in the town of Kalimpong and Jemubhai stays alone to move away from the pressures of human life. This novel speaks about Jemubhai's reluctance to acknowledge his roots and at the same time his inability to match up to the English way of life.

Biju is the son of the cook who works in the house of Jeemubhai Patel in Kalimpong. This novel describes in great detail about the plight of illegal immigrants who are working in foreign countries through Biju. Biju moved to the United States from India so as to forge a new identity for himself and him being an illegal immigrant was working

odd jobs in the United States. He left India since he felt that he had no future here and he was experiencing dire working conditions in the United States but on top of that he did not compromise on his roots even in the face of a global exposure.

You had to live according to something. You had to find your dignity.

Kiran desai explains in this novel how the immigrant population tries hard to cling on to their customs and values so that they don't lose their identity. Biju is shown as a sample of the immigrant population which is present across the world. He leaves the country to move away from the lack of development which is plaguing his country. The author documents with brutal honesty about the plight of the immigrants with regards to the racial discrimination which is prevalent in those countries.

Biju lives the life of a fugitive who is on the run from the authorities and these experiences resulted in him yearning for his homeland. These experiences made him realize that people who are moving to the United States from the developing countries will be waging losing battle when it comes to them having an identity for themselves. Biju reminisces about the life that he had in his homeland and the culture shock that he encounters when being alone in a foreign country is depicted with spine chilling detail.

In the end of the novel Jemubhai loses his dog mutt which is the only living being he is attached to. Similarly Biju loses all these material things that he has acquired while being an illegal immigrant in the United States and then he finally reaches India to be with his father.

In all the three novels the central theme of identity crisis is touched upon by the authors in various capacities and all these novelists looked in to the theme of identity crisis which is turning out to be the most pressing issue in the era of globalization.

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ASSESSMENT OF EMOTION REGULATION DIFFICULTIES AMONG PROSPECTIVE FEMALE TEACHERS

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Abstract

Recent trends in the study of emotional development has seen an increased interest in emotion regulation. Earlier researches in emotion regulation have been mostly in clinical fields. Hardly has there been a study in educational field on difficulties in emotion regulation. Keeping in view of this emerging trend as well as the importance of emotion regulation for prospective teachers, the present study was undertaken to assess the difficulties in emotion regulation among prospective female teachers. As prospective teachers, the trainees must be able to regulate their emotions in order to create an effective teaching-learning process. For this study, Difficulties in Emotion Regulation Scale (DERS) developed by Gratz and Roemer was used. The DERS is a 36-item, self-report questionnaire designed to assess multiple aspects of emotion dysregulation under six subdivisions with five to eight statements under each subdivision. DERS assesses the abilities to identify, differentiate, and accept emotional experiences, engage in goal-directed behavior and inhibit impulsive behavior in the context of negative emotion, and use effective emotion modulation strategies. The distributional analysis showed 69.5%, 45%, 57.5%, 46.5%, 79%, and 44.5% of prospective female teachers have Emotion Regulation Difficulties in Non-acceptance, Goals, Impulse, Awareness, Strategies and Clarity respectively. Differential analysis revealed a significant difference between the prospective female teachers based on their place of birth in Strategies sub score. There is a significant difference between prospective female teachers living in urban and rural areas in clarity sub score and the total score of DERS. There is a significant difference between prospective female teachers studying B.Ed. through open university and regular mode in Strategies and Clarity sub scores of DERS. There is a significant difference between married and unmarried prospective female teachers in Awareness, Strategies, and Clarity sub scores of DERS. 200 prospective female teachers were taken as sample for the study. Demographic variables like Place of Birth, Place of Residence, Mode of study and Marital status were considered.

Keywords: Emotion Regulation, Prospective Female Teachers

Introduction

Emotion – an intense mental activity both positive and negative are a part of a human being which can at many times reflect our actions and influence the decisions we take. “Emotions and emotional responses can serve people well, but there are times when emotional responses do more harm than “good” (Gross, 2002). This finding supports the view that emotions periodically need to be regulated, which is particularly relevant in a school setting where rules for social conduct exist” (Fried, 2011). Teachers also face situations that may make them feel angry, frustrated, disgusted, and sad, and they need to find appropriate ways of regulating these emotions in the classroom (Hargreaves, 2000). One has to identify one's emotions, accept both pleasant and unpleasant emotions, manage and maintain emotional balance, have adaptive adjustment of behavior to facilitate social interaction, and should have the capacity to sustain motivation to go on. If there is emotion regulation, there will be a positive behavioural change.

Methodology

For the current study, the following methodology was followed – selection of variable, sample, distribution of tool, and analysis of the tool.

i) Selection of Variable: The main variable is Difficulty in Emotion Regulation while the demographic variables were Place of Birth, Place of residence, Mode of Teacher Training, and Marital Status.

ii) Sample: 200 prospective female teachers undergoing training in teaching profession were taken for the research study from a selected study center of Tamil Nadu Open University and B.Ed. college in Chennai city.

iii) Selection & Description of Tool: The tool for evaluation was selected appropriately keeping in mind the aim of the study.

The Difficulties in Emotion Regulation Scale (DERS) - Gratz and Roemer (2004)

This is a 36-item scale to measure Emotion Regulation difficulties. The DERS consists of six dimensions: i) Non-acceptance (6 statements) - one's feelings about emotional responses, ii) Goals (5 statements) - ability to accomplish goals in the midst of emotional states, iii) Impulse (6 statements) - ability to regulate behavior while under emotional distress, iv) Awareness (6 statements) - ability to attend to and

acknowledge the significance of emotions, v) Strategies (8 statements) - ability to influence emotional states, vi) Clarity (5 statements) – ability to understand the emotions they are feeling.

Scoring Procedure

The tool is a five point Likert scale ranging from 1 (Almost never) to 5 (Almost always). There are 25 positive and 11 negative statements. Scoring for the negative statements are given reverse scoring. Total score and subscale scores are calculated by summing all the responses. **Higher scores suggest greater problems with emotion regulation.** Higher scores for dimensions reflect the following: i) Non-acceptance - higher scores reflect negative feelings about emotional responses. ii) Goals - higher scores indicate greater difficulty accomplishing and concentrating on tasks when one is experiencing negative emotions. iii) Impulse - higher scores indicate more impaired regulation. iv) Awareness - higher scores reflect lower awareness. v) Strategies - higher scores indicate lower capacity to change how one feels. vi) Clarity - higher scores indicate poorer understanding of feelings.

Reliability and Validity

The internal consistency of the DERS is 0.93 and all the dimensions of the DERS have internal consistencies greater than 0.80. Test re-test reliabilities were between 0.57 and 0.89.

Findings of the Study

The distribution of DERS among prospective female teachers revealed that 14.5%, 35.5%, 25.5%, 29%, 5.5% and 35.5% of them had low Emotion Regulation Difficulties in Non-acceptance, Goals, Impulse, Awareness, Strategies and Clarity respectively while 69.5%, 45%, 57.5%, 46.5%, 79%, and 44.5% of them had high Emotion Regulation Difficulties in Non-acceptance, Goals, Impulse, Awareness, Strategies and Clarity respectively. Those with high emotion regulation difficulties need to have knowledge on regulating emotions and follow them to have a good teaching-learning process.

Hypotheses Testing

H₀-1. There is no significant difference between prospective female teachers' place of birth with respect to DERS total score and sub scores.

Table 1: 't' test values of DERS– Place of Birth wise

Ders	Nativity	N	Mean	SD	t value	P value
Non-acceptance	Rural	74	17.19	3.867	0.048	0.962
	Urban	126	17.16	4.615		
Goals	Rural	74	15.00	4.068	0.174	0.861
	Urban	126	15.10	3.500		
Impulse	Rural	74	16.58	4.246	0.431	0.667
	Urban	126	16.87	4.830		
Awareness	Rural	74	14.95	3.289	0.416	0.678
	Urban	126	15.14	3.194		
Strategies	Rural	74	21.45	6.819	2.312	0.022*
	Urban	126	19.27	5.691		
Clarity	Rural	74	14.55	3.012	1.596	0.112
	Urban	126	13.79	3.706		
Total	Rural	74	99.72	14.228	1.190	0.235
	Urban	126	97.33	13.411		

***Significant at 0.05**

In table -1, there is a clear evidence showing a significant difference between the prospective female teachers based on their place of birth in Strategies sub score while the other sub score does not show any significant difference at all. The mean value of those born in urban area is greater than the rural born teacher trainees. This indicates that urban born have limited

access to emotion regulation strategies than their counterparts.

H₀-2. There is no significant difference between prospective female teachers' place of residence with respect to DERS total score and sub scores.

Table 2: 't' test values of DERS– Place of Residence wise

DERS	Residence	N	Mean	SD	t value	P value
Non-acceptance	Rural	48	17.58	4.872	0.755	0.451
	Urban	152	17.04	4.172		
Goals	Rural	48	15.60	3.286	1.167	0.245

	Urban	152	14.89	3.828		
Impulse	Rural	48	17.25	4.765	0.835	0.405
	Urban	152	16.61	4.570		
Awareness	Rural	48	15.02	3.884	0.121	0.904
	Urban	152	15.09	2.999		
Strategies	Rural	48	21.04	6.572	1.24	0.217
	Urban	152	19.77	6.076		
Clarity	Rural	48	14.81	3.343	1.705	0.090*
	Urban	152	13.84	3.497		
Total	Rural	48	101.31	14.525	1.806	0.072*
	Urban	152	97.23	13.372		

***Significant at 0.05**

Table 3 shows a significant difference between female teacher trainees living in urban and rural areas in clarity sub score and the total score of DERS while there is no significant difference for the other sub scores. The mean value of those living in urban area is high indicating

that they lack emotional clarity of what they feel than those living in rural areas. **H₀-3.** There is no significant difference between female teacher trainees' mode of study with respect to DERS total score and sub scores.

Table 4: 't' test values of DERS- Mode of Study wise

DERS	Mode of Study	N	Mean	SD	t value	P value
Non-acceptance	OU	100	17.20	4.934	0.097	0.922
	Regular	100	17.14	3.685		
Goals	OU	100	14.94	3.234	0.456	0.649
	Regular	100	15.18	4.145		
Impulse	OU	100	16.46	4.764	0.935	0.351
	Regular	100	17.07	4.461		
Awareness	OU	100	14.73	3.856	1.497	0.136
	Regular	100	15.41	2.404		
Strategies	OU	100	21.04	6.784	2.221	0.028*
	Regular	100	19.11	5.433		
Clarity	OU	100	12.58	3.479	6.692	0.000*
	Regular	100	15.56	2.779		
Total	OU	100	96.95	17.207	1.300	0.196
	Regular	100	99.47	8.931		

***Significant at 0.05**

Table 4 shows a significant difference between prospective female teachers studying B.Ed. through open university and regular mode in Strategies and Clarity sub scores of DERS. There is no significant difference between those studying B.Ed. through open university and regular mode in Non-acceptance, Goals, Impulse and Awareness sub scores. The mean value of the open university teacher trainees is high in strategies

sub score indicating that they have lower capacity to change how one feels. The mean value of those who study through regular mode is high indicating that they lack emotional clarity of what they feel than those studying through open university mode.

H₀-4. There is no significant difference between prospective female teachers' marital status with respect to DERS total score and sub scores.

Table 5: 't' test values of DERS- Marital Status wise

DERS	Marital Status	N	Mean	SD	t value	P value
Non-acceptance	Married	107	17.22	4.618	0.191	0.850
	Unmarried	93	17.11	4.028		
Goals	Married	107	15.08	3.478	0.098	0.922
	Unmarried	93	15.03	3.979		
Impulse	Married	107	16.49	4.703	0.917	0.360
	Unmarried	93	17.09	4.512		
Awareness	Married	107	14.63	3.845	2.182	0.030*
	Unmarried	93	15.58	2.223		

Strategies	Married	107	22.07	6.969	5.345	0.000*
	Unmarried	93	17.78	4.175		
Clarity	Married	107	12.98	3.434	5.066	0.000*
	Unmarried	93	15.32	3.100		
Total	Married	107	98.47	16.786	0.295	0.769
	Unmarried	93	97.91	9.115		

*Significant at 0.05

In table – 5, there is a significant difference between married and unmarried prospective female teachers in Awareness, Strategies, and Clarity sub scores of DERS and no significant between married and unmarried prospective female teachers in non-acceptance, Goals and Impulse sub scores. The mean values of those who were married is high for Strategies sub scores and the mean values of the unmarried was high for Awareness

and Clarity sub scores indicating that married ones have limited access to emotion regulation strategies while unmarried ones are lacking in emotional awareness and emotional clarity.

H₀₋₅ There is no significant relationship between DERS total score and sub scores of female teacher trainees.

Table 6 Correlation between DERS Total score & Dimensions score of Teacher Trainees

		Non-acceptance	Goals	Impulse	Awareness	Strategies	Clarity	Total
Non-acceptance	r value	1	0.268**	0.341**	-0.314**	0.443**	0.114	0.659**
Goals	r value		1	0.335**	-0.202**	0.328**	0.089	0.591**
Impulse	r value			1	-0.168*	0.284**	0.166*	0.665**
Awareness	r value				1	-0.305**	0.010	-0.110
Strategies	r value					1	0.096	0.729**
Clarity	r value						1	0.415**
Total	r value							1

** Correlation is significant at the 0.01 level (2-tailed).

*Correlation is significant at the 0.05 level (2-tailed).

The correlational analysis shows correlation at both levels (0.01 level and 0.05 level) between all the six latent factors except for lack of emotional clarity with non-acceptance, Goals, Awareness and Strategies and the total score of DERS. There is a positive correlation between all the six latent factors except for Awareness sub score which has a negative correlation with the total score and other sub scores.

Discussion and Conclusion

Prospective Female Teachers must practice emotion regulation as teaching is an emotional endeavor and it also makes them more effective in management, discipline, and in their relationships with students. Further, teachers can communicate their positive emotions and reduce their negative emotions and they could use a variety of emotion regulation strategies. In this research study, high number of prospective female teachers' experience emotional regulation difficulties which is a not a good sign for them as they will be entering into real classroom scenario in a year or two. They must be able to follow healthy emotion regulation strategies. It enhances their well-being, performance, and their relationships. The ability to regulate emotions is vital to build good relationships with colleagues and students. It affects a positive behavioural change in turn reflecting in the classroom scenario. It would be of great help to the teacher trainees if they have a unit on Emotion Regulation in their course study which could emphasize on reflecting

positive feelings about emotional responses, accomplishing and concentrating on tasks easily when one is experiencing negative emotions, enhance regulation, reflect higher awareness of emotions, possess higher capacity to change how one feels and have greater understanding of feelings.

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LOMAN AND MOHAN: A MICROCOSMIC COMPARATIVE STUDY OF THE WESTERN AND THE EASTERN PSYCHOLOGY

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Abstract

"Life is ten percent what happens to you and ninety percent how you react to life" – Charles.R.Swindoll.

People around the world have almost a similar attitude when it comes to chasing their dreams. They develop a desire, fancy determination, work hard and conceptualise the fruits of victory. However, during the journey towards success, the dreamer is pulled down by constant failure and frustration. The propensity to confront the imploded reality forms the crux of this microcosmic comparative study. Mu.Varadharasanar's "Karithundu" (A piece of Charcoal) of the east and Arthur Miller's "Death of a Salesman" from the west are analysed to instantiate the varied approaches towards life and failure. Mohan, the protagonist of "Karithundu" was an affluent, adept artist who was robbed off his fortunes by an accident. Mohan becomes crippled, deserted and dirt poor. His dwelling switches from a cosy house to the platform, his exquisite paint palette to a mere charcoal. But Mohan the artist never stopped believing in his skills. He accepted life as it came and lived a contented man. On the other hand, Miller's protagonist Willy Loman wholeheartedly believed in the American dream. He tried every means to persuade it but was entangled between his dream and reality. When his imagination faltered, he started to deny his reality. At the end, he chooses to elude from actuality by killing himself. The way one reacts to life makes it fulfilled or failed. In general, and as seen in the texts the eastern psychology emphasis on accepting the reality as it is. whereas, the west cocoons itself and is lost in the illusions. Due to various factors things have started to dismantle in the east. This study aims at digging the indigenous literature to enlighten the future as life isn't about finding oneself but creating oneself.

Keywords: Karithundu, Death of a Salesman, Eastern Psychology, Western Psychology

"Life is ten percent what happens to you and ninety percent how you react to life" – Charles.R.Swindoll.

People around the world have almost a similar attitude when it comes to chasing their dreams. They develop a desire, reckon determination, work hard and conceptualise the fruits of victory. However, during the journey towards success, the dreamer is pulled down by constant failure and frustration. The propensity to confront the imploded reality forms the crux of this microcosmic comparative study. Mu.Varadharasanar's "Karithundu" (A piece of Charcoal) of the east and Arthur Miller's "Death of a Salesman" from the west are comparatively analysed to instantiate the varied approaches towards life and failure.

The way one reacts to life makes it fulfilled or failed. By the way of life in general, and as seen in the texts, the eastern psychology emphasis on accepting the reality as it is. whereas, on a wider aspect the west cocoons itself

and is lost in the illusions. Due to various factors like globalization, westernisation and neo liberalisation things have started to dismantle in the east. Before things fall apart and mere anarchy loses upon the world it is imperative to resuscitate the young minds from psychological pathos. Thereby, this study aims at digging the indigenous Indian literature to enlighten the future as life isn't about finding oneself but creating oneself.

The strive to deal with the human problems fostered by economically and politically distorted societies glean a humongous significance in any study of modern literature that deals with the motif of isolation and insecurity. The Modern man is agonised and his life is an everlasting tale of deterioration owing to assorted stimulus. In his play Death of a Salesman, Arthur Miller describes how an American dreamer Willy Loman evades his self-worth by many presumed pessimistic incidents that occur throughout his life.

To lead a contented life is not an effortless errand. Everyone has to confront daunting events which make Life seem like an inexhaustible expedition. To thrive in a competitive society may accentuate some disquiet, which constantly requires drive, persistence, intelligence and belief in the self. For some contempt and success comes with little or no effort. Whereas for many it is attainable only through agony and failures. Willy Loman is no exception. He grapples a lot to place him among rich businessmen. His profession as a traveling salesman seem onerous, as he faces many failures. Life declines Willy the financial and social success he desolately yearns. As a means to cope with failure, he rejects his failures, coaxing himself of his preconceived success. He also smothers his failures to maintain his self-image. Psychoanalyzing Willy reveals that his escape from reality causes psychological depression.

In contrast to normal sadness, depression can dramatically impair a person's ability to function in social situations and at work. It is clear that Miller has made consistent attempt to dramatize Willy's depressed state of mind in this play. His understanding of the human psychology and how a person reacts when he is in a state of severe depression are illuminating. In the case of Willy, under the drive of social success who struggles to achieve a successful career and longs for the admiration and friendship of his customers to reinforce his sense of worth as a person. He says, "My God if business doesn't pick up, I don't know what I'm gonna do!" (P.18) "I get the feeling that I'll never sell anything again, that I won't make a living for you or a business for the boys" (P.20). The confrontation with Charley, his friend marks the degeneration and decay of his personality.

People with depression often have feelings of despair, hopelessness, worthlessness, and thoughts of committing suicide. But Willy's wife Linda is a practical thinker who dissents from her husband. She understands depressed Willy and even fights for him when her son blames Willy. She says,

Willy Loman never made a lot of money. His name was never in the paper. He's not the finest character that ever lived. But he's a human being, and a terrible thing is happening to him. So, attention must be paid.

He's not to be allowed to fall into his grave like an old dog. Attention, attention

must be finally paid to such a person. (38)

Willy tends to enjoy his wife's admiration; his children's filial piety and other women's tenderly care, but

still he fails. In order to bring in change one has to believe in the self which is primary. The external appreciations and moral support can just be of secondary or tertiary abutment. This may be the reason why the play concludes in a tragic note when Willy leaves the house and crashes his car to end his life. The psychological immaturity leads to the destruction of the American dreamer and the dreams of his sons. Willy wanted a dream that seemed materialistic and vital compared to the cost of his own life. He unconsciously relishes in self-pity throughout the play, never pardoning himself for the things that have gone wrong in his life. Willy's sad ending is the result of his denial of reality and repression. Although Willy's mental condition may be an exaggerated case, Countless individuals experience similar troubles, paving way for a rotten unhealthy family and society.

Mu.Varadharasana's "Karithundu" on the other hand is a substantial work of literature which invites reading on multiple levels or re-reading. At each of these readings, the illustrious work presumably yields extended interpretations and expanded meanings. For instance, readers can receive the novella as an engaging and realistic story of Mohan, the crippled artist; The narrator, the young man who is fascinated by Mohan; and the sub story of the professor and his lady love.

Unlike Willy Loman, Mohan the protagonist of "Karithundu" was an affluent, adept artist who was robbed off his fortunes by an accident. Mohan becomes crippled, deserted and dirt poor. His dwelling switches from a cosy house to the platform, his exquisite paint palette to a mere charcoal. But Mohan never stopped believing in his skills. He accepted life as it came and lived a contented man.

Mohan's battle with poverty and social suppression is not only a battle of strength, but a battle of wills. His lame state with astonishing endurance, willingness to withstand hunger, and being forsaken by his wife and the society to which he once belonged makes him stand tall from Loman.

Mohan is portrayed as a man who faces so many oddities. Yet he never gives in to depression or defeat: he exercises calmness throughout the text in hopes of attaining contempt in life as he is completely aware of the fact that peace of mind comes neither by money nor by external influence. He struggles to cope with his life despite immense physical pain and exhaustion, even in a tragic situation where he loses his house and belongings to rain. Whenever the situation gets particularly difficult and despair threatens to overwhelm Mohan, he turns to a number of tactics to fuel his resistance : he recalls

memories of his youthful years as a successful artist; he relies on his pride by demanding that he can prove himself a worthy role model for Ponni's Children or by showing his love and compassion to his wife Ponni; and be a pillar of moral strength to the people among who he lives, though there is nothing which could ease his physical suffering.

Ultimately, Mohan represents every eastern man's struggle to survive and at the same time be composed. In other words, victory over the inevitable is not what defines a man. Rather, it is a man's struggle against the inevitable, even when he knows it is inevitable, that defines him. And the more difficult the struggle, the worthier the opponent, and Mohan stands as an exemplified figure in this aspect.

When the characters of Loman and Mohan are juxtaposed it is evident that both follow the life style of the community to which they belong. For instance, Mohan is able to find peace in spite of losing so many precious things in his life because, In the eastern view, what is past is past and what is lost is lost should to be accepted to lead a life of higher spiritual order, the present is the only moment of value and the only thing we should be fully focused on.

Whereas Loman fails despite not losing anything because in the west, materialistic things are more important. Little things are seen as if the world depends on it, emotions are riled up and neglected behind what is perceived to be so important, and it changes the next day to something else which takes the attention away from the basics.

The two works were contemporaries in the 1950's which showcase the perspective eastern and western psychology like a mirror, making it obligatory to delve into the nuances of the divergent behavioural patterns. In effectuating so it is required to do a rudimentary examination of the eastern and the western psychology.

In the east there is an acceptance that all beings are what they are without any expectation of anyone being perfect, enables everyone to be flawed and human. The phenomenon makes people understand how the mind functions and the way the world works, which allows the eastern way to look forward to the future. It is a simple logic that the one who looks backward will not see the dangers in the path ahead while the one who looks forward will be ever proceeding safely.

The western way makes things much bigger than they are, stretching the truth to get attention. The eastern way is to see things as they are. The objective view being what things realistically are right now.

In the east there is a saying, "This too shall pass" Why to worry, when we witness, nations rise and fall, children born and elderly die, it is all normal, why get excited and miss life in shock and horror about what is natural and unavoidable. Western way makes it big, which in fact inflates and fuels the ego which ultimately resulting in many psychological disorders like mental stress, anxiety and depression.

The general orientation of Western psychology is towards the observation, categorization, and alteration of observable behaviour, this has led to a therapeutic attitude limited to the diagnosis and treatment of psychopathology. The general assumption seems to be that drug therapies and techniques that lead to behavioural change will also initiate change in mental processes and states. Until the advent of cognitive, existential, phenomenological, humanistic, and transpersonal perspectives, little effort was devoted to the rigorous study of inner mental states and processes and embodied cognition.

Most Eastern psychologies, in contrast, concentrate on the exploration of the function and operation of the mind as well as methods to free the individual from suffering. Since Eastern psychologies are inwardly focused, they may appear to be narcissistic or nihilistic; however, more accurately, they offer "therapy" for everyday living as their teachings are designed to assist the person in working towards optimal functioning and psychological wellbeing. Through inner development, the individual comes to see his or her place in the larger context as a part of the whole, which can lead to improved relationships with self, others, and the environment.

In a nut shell the eastern approaches are not easily comparable to religious or philosophical systems as we understand of the West. For Western psychology, "the psychotherapist has, for the most part, been interested in changing the consciousness of...disturbed individuals. The disciplines of Buddhism and Taoism, are, however, concerned with changing the consciousness of normal, socially adjusted people" (Watts, 1961, p. 16). In the five decades since these words were written, Western psychology has become increasingly interested in aiding "normal" individuals to reach their maximum psychological potential. In the Eastern view, we are all in need of "therapy" (normal or disturbed alike) since few of us are functioning free from the influence of delusions, projections, or uncurbed desires.

To conclude, the present world at large faces innumerable problems like poverty, lack of education and

political freedom, unemployment, government instability, corruption, religious conflicts, large scale wars and destruction of natural resources. To keep us sane and swim through disappointments, frustration, and pain the process of meditation, mindfulness, and getting back to classical indigenous literature helps us examine the inner workings of our mind and come to understand the nature of mental disturbances and how it arises. We then come to experience a profound change in attitude and perspective; can begin to see things as they truly are, unfettered by illusions, social mandates, or our own projections. Thereby, we could envisage a more authentic and genuine view of reality and relish the existential bliss.

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EUGENE O' NEILL'S ANNA CHRISTIE: A CRITICAL READING

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Abstract

The sea is always used as the symbolic representation of human life and its hardships in literature. Eugene O'Neill, been a stalwart in the American literary arena, especially as an exemplary dramatist, has used sea in varied dimensions in his writings. One such rendering is his play *Anna Christie* that projects sea as the symbol of life and its adversities. In a unique way, the bright side and the dark side of the sea is vividly depicted in the play through the chief characters. The present paper focuses on the portrayal of constructive and destructive nature of the sea and also scrutinizes the use of symbolism in feminist perspective that tries to contrast the projection of sea as a cleansing factor of life by Anna, the female protagonist with that of negative patriarchal representation by the protagonist's Father.

Keywords: Feministic perspective, Life, Patriarchy, Sea, Symbol.

Variously designated as a doyen of American Literature, an exemplary dramatist in the literary circle of American literature, a stout champion of portraying the issues of women, Eugene O'Neill is a towering personality in using symbols and images to showcase the tangles and hurdles of women experienced in their day to day life against the backdrop of American society. Eugene O'Neill's craftsmanship reveals in his selection of themes and its picturization. To Eugene O'Neill, the sea is a symbolic depiction of human life and its hardships in literature. He uses the image of sea to portray the diverse dimensions of human life in his literary corpus. In his play *Anna Christie*, he projects sea as the symbol of life and its adversities. His portrayal of bright and dark side of the sea, denotes a philosophy of human life.

The objective of the paper is to make an analysis of uncertain emotions of characters with their intense longing for a soul satisfying life with the sea forming the backdrop of the story. The sea image is considered a typical channel for the sublime emotions. The sea has mesmerized, enticed, and challenged humanity throughout its history. To archetypal symbol, the sea is a symbol of purification and redemption, death and rebirth.

In feministic perspectives, the play *Anna Christie*, taken up for analysis is about a prostitute and her attempts to turn her life around. O'Neill in *Anna Christie* has portrayed the characters to explore their self identities, especially Anna, a young girl, deprived of

proper parental care and security during her childhood and was molested by her own cousin. This traumatic event has made an impact on her life as an adult. Anna's hatred towards her irresponsible father, her questions against patriarchy giving authority only to men in deciding the girl child's life, forbidding her individual desires and the use of the sea, as a symbol of Motherly figure, helps in redeeming Anna's identity as a liberated woman, makes the play as a remarkable feministic play voicing the sufferings of the muted woman in a family.

Anna has no soft word to her father, Chris Christopherson, who has never cared for her life. The parental affection is denied to her. She is also lonely. She is searching someone to share her problems, but she cannot. She wants to search for happiness. Anna Christie finds that the sea can give her the happiness which she never got. "I'd rather have one drop of ocean than all the farms in the world! Honest!" (Act 2).

Anna's troubles are clear from the beginning of the play as she describes feeling trapped inland: 'I never could stand being caged up nowhere'. Later in Act 3, she repeats this: 'I was caged in, I tell you – just like in jail – taking care of other people's kids.'

The play explores the tensions that can arise between family members as a result of feelings of abandonment and guilt. The sea becomes almost a character in the play as it affects the lives of Chris, Anna, and Mat. Travis Bogard, in his *Contour in Time: The Plays*

of Eugene O'Neill, praises O'Neill's characterization of Mat, whom he calls "a true citizen of the sea." as the young man represents the positive side of the sea being a successful sailor. In contrast to Mat, Chris claims that the sea is an "ole devil" that controls the lives of men and it becomes almost as a symbol of supreme power in the play as a life giver and as a destroyer.

Searching for roots and the quest for happiness play a central role in O' Neill's *Anna Christie*. The protagonists of the play Anna and Christie long for happiness through visualizing the sea. She believes that her mental turmoil and agony can be eradicated only through the sea which gives source of inspiration and happiness to her life. She states: "I'd rather have one drop of ocean than all the farms in the world! Honest!" (Act 2). Anna is of the opinion that the sea purifies her illness from troubles towards leading a life. Anna yearns for the sea as a liberator, a place where their land-locked troubles can be washed away. Moving on to her father's coal barge, Anna finds the sea purifying, as if, she says, she has just taken a bath.

In the play *Anna Christie*, the sea is almost a fourth central character, constantly referred to by the characters and a driving force behind the narrative of the play. For hardened sailor Chris Christopherson, the sea is 'dat ole devil', a symbol of uncertainty and an unknown future, a menacing force which has swallowed up countless members of his family, and from which he endeavours to protect his daughter, but is also a force from which he cannot escape; he is pulled back to the sea almost against his will, and has a great affection and passion for the ocean, while simultaneously blaming it for all his past misfortunes.

Anna, however, regards the sea in a completely different light. To Anna, Sea as a Mother with unconditional love, unlike her father, who soothingly embraces and washes her off from the gloomy stains of her past and it is the source to find her best suitor Mat.

She is able to discover a new sense of self through her contact with the sea and through a loving relationship. After a short time living on the barge with her father, the sun and fresh air out on the water restores her health. The sea also rejuvenates her spiritually, as she notes, when she claims that it has cleansed her of her old life. The sea also brings Mat to Anna. The sea has brought them together and Mat sees that as his destiny. "I'm telling you there's the will of God in it that brought me safe through the storm and fog to the wan spot in the world where you was!" (Act 4). She explains that the sea and Mat's love have cleansed her of her past. When Mat abandons her, she considers going back to her former life as a prostitute, but she cannot return to prostitution.

An attempt is made in this paper to study O'Neill's *Anna Christie* and to portray an expose of the sufferings of human life. The feminist reading of the play hints on the woman's quest for identity and individuality. The characters in the plays of O'Neill are true to the present life. The readers can visualize the characters like Anna and Christie in our every walk of life. The symbolic representation of sea used in this play enriches one's understanding of the philosophy of life.

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AKAM POEMS & SHAKESPEAREAN SONNETS: DIVERGENT DEPICTIONS OF IDENTICAL CONCEPTS

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Abstract

Considering the brevity and themes, most of the Akam poems in Sangam Literature and sonnets in English literature seem to complement each other. Both of them express subjective emotions. When examining two or more literatures, comparison helps in bringing to light the merits of those literatures. This study aims to compare how Akam poems and sonnets express the identical emotions and concepts through different images and metaphors respectively. To accomplish the aim of the paper, select Akampoems, and select Shakespearean sonnets are chosen for comparison.

Keywords: Shakespearean Sonnets, Akam Poems, Emotions and Concepts, Comparative literature

Introduction

Poetry expresses human feelings and emotions more intimately through images, themes, rhythms and other linguistic cues like puns compared to any other genres in all literatures. Love is considered to be one of the most significant human emotions and the most common theme in literatures. Love is an emotion that is commemorated by both a common man as well as a royal king. Poets compare love with colossal images as did John Donne in his *Canonization* by comparing the lovers with a compass. In Tamil, Sangam literature (*Cankailakkiyam*) celebrates the love between *thalaivan* and *thalaivi* in Akampoems. Likewise in English literature, amidst the various forms of poetry, sonnets play a vital role in celebrating the love between a man and a woman.

Background: Setting the Context

A Sonnet is written in fourteen decasyllabic lines expressing an idea or emotion. Sonnet as a form has its origin in Italy in the later half of the 13th century and was chiefly associated with the Italian poet Petrarch. Later, Sonnet was introduced in England by Sir Thomas Wyatt and Earl of Surrey in the first half of the 16th century with a variation in its form that it did not merely follow the rhyme scheme of the Italian sonnet but with Surrey's introduction

of the rhyme-scheme of 3 quatrains (of four lines each) followed by a rhyming couplet, the pattern which Shakespeare himself followed in his sonnets. Thus, the rhyme scheme of the Shakespearean sonnet is *abab, cdcd, efef, gg* where the subject matter is linked though the quatrains stand apart.

Many poets used sonnets to express their personal feelings of love towards some imagined mistress which "accounts for the artificiality of most of the Elizabethan Sonnets" (Dasgupta 28). On the other hand, Spenser's *Amoretti* stands for its sincerity of expressing his genuine feelings to Elizabeth Boyle, to whom his collection of 84 sonnets was addressed. Sir Philip Sidney composed 108 sonnets titled *Astrophel and Stella* celebrating "his fruitless love for Penelope Deveneux, the daughter of his patron, the Earl of Essex" (Dasgupta 32). Like Spenser's, Sidney's sonnets too expressed his heart-felt love experience. When Spenser and Sidney wrote sonnets and dedicated them to their loved ones, Shakespeare wrote 154 sonnets both for friendship and for love. Sonnets 1 – 126 celebrate the theme of friendship and are addressed to Young Man while sonnets 127 – 152 are addressed to the Dark Lady, the poet's mistress and celebrate the disloyalty of her who falls in love with a friend of the poet. Thus, it is evident that sonnet is used as

a form to express personal feelings and emotions especially the human love and are dedicated or addressed to the sonneteers' beloveds.

Sangam Literature stands as evidence in documenting the ancient Tamil literary sources classifying it into two broad categories, where the Major Eighteen Anthology Series are called *Patinenmelkanakku* comprising of *Ettuthogai* (the Eight Anthologies) and *Pattuppattu* (Ten Idylls); and the Minor Eighteen Anthology Series are called *Patinenkilkanakku* under which moral texts like *Nālaiyār* and *Tirukkua* are included. According to *Tolkappiyam*, Sangam poems are divided into two distinct categories: *Akam* (Interior / Inner Field) and *Puram* (Exterior / Outer Field) where the former deals with personal human feelings such as love and intimate relationship between a man and a woman and the latter deals with other phases of human experiences such as war, courage, social life and heroism. Among *Ettuthogai* (the eight anthologies), *Aikurunūu*, *Akanāūu*, *Kalittokai*, *Kuuntokai*, and *Natīaiare* the five compilations of *Akam* poems.

From this contextual background, it is apparent that both *Akam* poems and Sonnets deal with love as one common theme. This study uses select Dark Lady Sonnets of Shakespeare and *Akam* poems in *Ettuthogai* to compare the divergent depictions of love as an identical theme through persona, imagery, tone and brevity.

Persona

Persona in a text is important to understand the context. It is one of the elements through which writers express emotions. It can be either a different person or the writer himself. In *Akam* poems, there are many personas which include: *thalaivan*, *thalaivi*, *thozhi*, *sevilī*, *paratthai*, *paangan* and *kaṇṭṭi* or giving their statements (*Kootru*) about the love between *thalaivan* and *thalaivi*. *Akam* poems are written by different writers using the same personas to express the intimacy between *thalaivan* and *thalaivi*. On the other hand, Shakespeare has used himself to be the only persona to express the love between the Dark Lady and him. Since there are many personas in *Akam* poems, varied views of the love between *thalaivan* and *thalaivi*, the intensity of their love and the views of the other personas through their own statements are exposed to the readers. In the Dark Lady sonnets, only Shakespeare's views are known to the readers. There is no voice given to Dark lady as well as the supposed friend of Shakespeare called Will.

In *Akam* poems, the personas are represented with a unique common label as *thalaivan* for the hero and *thalaivi* for the heroine instead of any personal names. This ideal label facilitates the reader to understand the concepts discussed in the poems in a much more generalized and broader manner. On the other hand, it is known that the Shakespearean sonnets are addressed to Dark Lady and it cannot be further compared to any other lady except the Dark Lady. This constrains the generalisation of the concepts in the Dark Lady sonnets.

Since there are individual personas in the *Akam* poems, the contribution of each persona through their own statements help in establishing their emotions. For instance, *Thozhi* sympathises with the yearning of *thalaivi* for her hero, for which *thalaivi* reciprocates her grief for her friend in *Kurunthokai* 224 through the line *துயர்பொறுக்கல்லேன், தோழிநோய்க்கே*.

(I cannot bear to think of my friend's grief for me, Trans. by A.K. Ramanujan). On the other hand, in Shakespearean Sonnets, the feelings of his friend and him are stated only through a persona, being the poet himself. Unlike the *Kurunthokai* poem, in Sonnet 133, the personavoice for his friend but the readers are not exposed to hear the voice of the friend. This is evident from the opening lines of the sonnet 133 where the poet curses Dark Lady for hurting both his friend and him. The lines are as follows:

"Beshrew that heart that makes my heart to groan
For that deep wound it gives my friend and me!"

(Sonnet 133: 1-2)

Shakespeare, by voicing for both Dark Lady and his supposed friend Will, has not given the space for them to express their emotions, whereas in *Akam* poems, the writers have given space to each persona to express their concern for each other. Since all the characters state their opinions about the love between *thalaivan* and *thalaivi*, the readers get the authenticity of their love in *Akam* poems. On the other hand, since only Shakespeare voices for other characters in the Sonnets, the authenticity of Dark Lady's love or hate towards Will and the poet is questioned.

Imagery

Imagery is one of the inevitable literary devices that poets use in their poems to express their thoughts. A poet can represent even subtle emotions using imageries. Both in *Akam* poems and in Shakespearean Sonnets, imageries help in expressing the physical beauty of the heroines. In *Ainkurunuru* 185, *thalaivans* says his beloved's teeth are like

the shining pearls from the ford of Korkai (கொற்கை முன்றுறை இலங்குமுத் துறைக்கு

மெயிறுகெழு); her mouth is like the red coral (துவரவாய்); and her speech is sweet like the sounding of the strings in the harp

(நரம்பார்த் தன்ன தீங்கிள வியளே). The imageries like 'shining pearls' and 'strings in the harp' are used as similes and 'red coral' is used as a metaphor for portraying the physical beauty of *thalaivi*. Likewise, in Sonnet 130, Shakespeare has also described Dark Lady's physical beauty using imageries but with a difference in perception of celebrating the beautification of women. He says his mistress's eyes are not like the bright sun; her lips are not as red as coral, and her voice does not sound as pleasant as music, through the lines:

"My mistress' eyes are nothing like the sun;
Coral is far more red than her lips' red;...
...I love to hear her speak, yet well I know
That music hath a far more pleasing sound;"
(Sonnet 130)

His comparison reveals that his lady love does not possess the ideal physical beauty and yet, he feels her to be beautiful. In *Akam* poems, ideal imageries are used to elevate the physical beauty of *thalaivi*. On contrast, Shakespeare glorifies the beauty of his lady love by breaking down all the stereotypical imageries. This is explicit when Shakespeare says his lady love's mouth is not as red as coral in Sonnet 130, while coral red is the ideal imagery used to represent *thalaivi*'s mouth in *Ainkurunuru* 185. With this, Shakespeare establishes that the ideal imageries are false comparisons and that even without those ideal imageries his lady is beautiful which is evident through the rhyming couplet "... And yet, by heaven, I think my love as rare / As any she belied with false compare" (Line: 13-14) of the sonnet.

Tone

Beyond adding rhythmic structures, poets set different shades of tones to express the nuances of their emotions supplementing to the meaning of the poem. At the level of comprehension, tone is not only heard, but also felt. It is through the use of vocabulary, punctuation marks and imageries that a poet sets the tone of a poem. Both the Dark lady sonnets and *Akam* poems exhibit a tone of yearning for love predominantly. Since the poet is the only persona in the Shakespearean sonnets, the readers could feel only his tone in the sonnets. Yearning for love and possessiveness are the most felt emotions by

the readers through the tone set in the Dark Lady sonnets.

In Sonnet 132, the persona's yearning for love is expressed through the lines "... As those two mourning eyes become thy face: / O! let it then as well beseech thy heart" where the poet wants the Dark Lady to at least pity him for love. His possessiveness for the Dark Lady is expressed in Sonnet 139 through the lines "Tell me thou lov'st elsewhere; but in my sight, / Dear heart, forbear to glance thine eye aside." where out of his possessiveness, he asks his lady love not to glance at other men in his presence.

In *Akam* poems, there are many personas to set different tones to the text such as *thalaivi*'s yearning for *thalaivan*'s return, *thozhi*'s sympathy for *thalaivi*, *paankan*'s empathy for *thalaivan*, *sevilithai*'s apprehension for *thalaivi*, and the like. A sample illustrating *thalaivi*'s yearning for *thalaivan*'s return is expressed through the lines "நும்மில் புலம்பினும் உள்ளதொறுநலியும்..... (இ)டம்பார்த்துநீடி" (in *Akanna* 58) in which she says she suffers from her separation from *thalaivan* and that she is pondering over his return.

Brevity

Shakespeare himself has said '... brevity is the soul of wit' (*Hamlet*, 2:2), for brevity indicates the use of appropriate words and also strengthens the language of a text. A sonnet is composed of fourteen lines where brevity becomes necessary. Shakespeare, having contributed ample number of words to the English language through his works, maintains brevity to the extreme in expressing emotions in his sonnets. The rhyming couplets in almost all the Shakespearean sonnets play a vital role by providing a turn in the form of contrast to the quatrains thereby disseminating the meaning of the entire sonnet. In Sonnet 130, throughout the three quatrains, the poet conveys that his lady love does not fit to the conventional imageries that are used by poets to describe the physical beauty of a woman. With brevity in the rhyming couplet (last two lines), he contrasts the quatrains by expressing that his lady love is as rare as any other woman who caters to those conventional imageries.

Brevity in Tamil Literature is a well-established concept with *Tirukkura!* standing as an epitome. Considering the significance of the number of lines in each of the subdivisions in *Ettuthogai*, brevity becomes the innate quality of *Akam* poems too. The number of lines varies in each compilation ranging from 4 to 8 in

Kuruntokai, 9 to 12 in *Natrinai*, 3 to 6 in *Airikurunūru*, and 13 to 31 in *Akananūru*. Though the lines are short in size, the subject matters compressed in these texts are large like an ocean. Hence, brevity, both in *Akam* poems and Sonnets, successfully articulates the subtleness of the poets' conceits.

Conclusion

Both *Akam* poems and Shakespearean sonnets stand as epitomes of poetry in their respective literatures. The comparison between these two series of poems based on their persona, imagery, tone and brevity facilitated to understand the merits of both of them. At the level of persona, voicing with one persona and expressing about all the characters in Sonnets in a way questions the authenticity of the emotions of the other characters, while in *Akam* poems, the authenticity is enriched with the participation of individual personas to express their varied views. In *Akam* poems, ideal imageries are used to describe the physical beauty of *thalaivi* which is a part of the celebration of womanhood. Shakespeare, on the other hand, chooses to break all those typical

imageries and establishes a new way of description by celebrating the reality of his lady love. Further, tone and brevity enhances the expression of holistic emotions in the *Akam* poems of *Ettuthogai* and the Dark Lady sonnets of Shakespeare thereby complementing each other with varied presentations and representations.

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A THEORETICAL APPROACH ON ACQUISITION OF LEXICO-SYNTACTICAL ITEMS TO COLLEGE STUDENTS OF ENGLISH CLASSROOMS THROUGH VIRTUAL T20 CRICKET GAME: WITH SPECIAL REFERENCE TO THE USE OF ADJECTIVES AND ADVERBS IN DEGREES OF COMPARISON

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Abstract

This paper aims at introducing an activity to the learners of English to acquire lexico-syntactical items by focusing on the use of adjectives and adverbs in degrees of comparison through virtual T20 cricket game. It is doubtless that cricket, an international game, has still retained its popularity amidst most of the Indians in general and youth in particular. In addition, this activity throws light on the decisive features such as listening, speaking, team building, time-keeping and feedback. So, in this activity, a bowler, while bowling, applies all the six varied lexical items (of his / her own choice) given below and instructs the batsman to use one of the clues such as:

1. Add one letter to get a comparative form – in short, **ADD ONE**
2. Add two letters to get a comparative form – in short, **ADD TWO**
3. Add three letters to get a comparative form (or) Drop a letter – in short, **ADD THREE (or) DROP**
4. Double the consonant – in short, **DOUBLE**
5. Irregular form – in short, **IRREGULAR**
6. Use adjectives or adverbs that have two or more syllables– in short, **TWO OR MORE THAN TWO SYLLABLES**

*As per the rules, if the question from the bowler is **ADD TWO**, the batsman will listen to the bowler and come out with the adjective for example "short". Hence, the batting team will acquire 1 run. If he utters "shorter and shortest", he scores two. Once he makes a sentence using "short", he acquires 3 runs. If he makes a sentence (in comparative) using "shorter", he obtains 4 runs. If he produces a sentence (in superlative) using "shortest", he gets 6. If he keeps quiet, the bowler is advantageous by not giving any run. If he makes a mistake, he will be sent out and the next batsman will be in. In this set, the runner may also help his partner, if the batsman fumbles for words. Thus, this virtual cricket game ensures virtuosity of the learners of English.*

Keywords: Cricket, Adjectives, Adverbs, Batsman, Bowler, Runs, Listening, Speaking, Team Building, Time-Keeping and Feedback.

Introduction

Cricket, an enthralling game, has been mesmerising most of the Indians. Albeit Cricket, by origin, is a game of an alien, the majority of the youth in India not only watches the cricket match on television or present themselves as audience on the Indian grounds and abroad, but also play it whenever or wherever they find time to. As is the scenario, this activity is to be conducted in the language classroom where two teams of eleven members in each team are formed by randomly selecting the first year undergraduate students. In order to widen the learners' horizon, this methodology is adopted which would certainly be able to help them face challenges ahead. While virtually playing T20 Cricket, identifying adjectives or adverbs and framing sentences using them in degrees of comparison is an objective of the batsman.

When the batsman at crease is at stake, the runner can rescue his partner. Hence, this virtual T-20 Cricket game includes both listening and speaking skills on the whole and thinking skill specifically. To enable the participants to work out, a rigorous practice is required. It is also customary that the rules framed for this game should be adhered to till the game is over. Thus, this game would make a significant difference for the learners from their usual classroom learning to learning lexico-syntactic items through this game. Arora Navita has rightly said, "A game should give students a chance to learn, practice, or review specific language material".

Objectives of the Study

The objective of this study is to explore how far the learners have understood the basics and nuances of Degrees of Comparison by applying appropriate

adjectives and adverbs while identifying lexico-syntactical items. This study has been chosen as the concept of six balls per over in T20 Cricket harmonizes with six rules in Degrees of Comparison. Subsequently, this virtual game of T20 Cricket focuses on the enhancement of listening and speaking skills of the chosen first-year undergraduate students of higher education. Meanwhile, the bowler would also discuss the matters with the wicketkeeper as these two participants are on the field.

Modus Operandi

This virtual T20 Cricket game has the following modus operandi to be included in this simulated background and at most care is to be taken to evaluate the candidates' potentials in this activity.

- Virtual T20 Cricket game to be played during English hour of the classroom
- Random selection of the learners in a classroom to be encouraged
- If not, they may choose better candidates whose English is better and subsequently the reality of the game to be defeated.
- Timer is used to keep time throughout the game and a Scorer to be appointed to enter scores.
- Two teams of eleven players in each team to be permitted to participate in it
- Three substitutes from each team to be selected and they are seated with the audience. As the game runs approximately for 40 minutes, the duration of the class may be over and the bowling team will play when the member of faculty (facilitator) has his next period.
- All the participants to be numbered as the Opening Batsman, the runner, one down, etc.,
- Virtual bats and ball to be used.
- Toss a coin to know which team to bat first or bowl first
- Maximum of five bowlers (four overs per bowler) to be used from the bowling team by taking their turns accordingly
- If the bowler repeats any clue(s) more than twice in the same over, it will be taken as 'No Ball' and hence the batting team gets one run.
- The terms such as 'Wide', 'Overthrow', 'Stumping', 'Catch', 'Bowled' (except 'No Ball') to be discarded
- To avoid "No Ball", the bowler would discuss the affairs with the wicketkeeper as these two partakers are on the field.
- No repetition of adjectives or adverbs or sentence pattern from the batsman to be permitted. If so happens, the bowling team gets a wicket.

- Once the striker does not answer the clue in 5 seconds i.e. immediately after the utterance from the bowler, it is decided that the bowler has given no run. If the striker renders the answer in full sentence of simple or compound or complex within 30 seconds, the batsman's score will increase as per the rules.
- The spectators (students) to be asked to remain silent throughout the game (if needed, applause to be permitted)

Methodology

It is apparent that cricket has retained its popularity and survived at its acme for the past four decades, a modest attempt has been made to help the learners of English revitalize through playing Virtual Cricket Game in a classroom by imparting all the six important rules that are applied to positive, comparative and superlative forms of Degrees of Comparison regarding adjectives and adverbs. The six different rules are as follows:

1. Fine	-	Finer
	-	Finest
2. Great	-	Greater
	-	Greatest
3. Lazy	-	Lazier
	-	Laziest
4. Big	-	Bigger
	-	Biggest
5. Much	-	More
	-	Most
6. Beautiful	-	More Beautiful
	-	Most Beautiful

In this activity, a bowler, while bowling, applies all the six varied syntactical terms (of his / her choice) given below and instructs the batsman to use one of the clues (any clue shall be repeated only once) such as:

1. Add one letter to get a comparative form – In short, it is proclaimed as **ADD ONE**.
2. Add two letters to get a comparative form – In short, it is proclaimed as **ADD TWO**.
3. Add three letters to get a comparative form (**or**) Drop a letter – In short, it is proclaimed as **ADD THREE**.
4. Double the consonant
5. Irregular form
6. Use adjectives or adverbs that have two or more syllables

Scoring System

Based on the regulations, if a batsman identifies the clue and comes out with the correct form of an adjective i.e. ("large" – if the question from the bowler is **ADD TWO**), the batting team will acquire 1 run. If the batsman

emerges with the other two forms of degrees, he scores two. Once the batsman makes a sentence using positive degree, he acquires 3 runs. Ex: Chennai is **as large as** Mumbai. If the batsman brings out a sentence of comparative form, he acquires four runs. Ex: Chennai is **larger than** many other cities in India.

Apropos to the example given above, the word "than" should be used in the comparative degree. If the batsman produces a sentence with the help of superlative degree, he gets six. Ex: Chennai is **the largest** city in India. "The" is the definite article that has to be placed before the adjective form of a sentence in the superlative degree. Once the chosen adjective or adverb has more than one or two syllables, the sentence should be with the combination of "the most" which is to be used before the adjective or the adverb in the superlative form. Further, unless the batsman makes a mistake, he will not be sent out from the virtual cricket ground. The batsman will not get any score, if he does not utter any answer to the question asked by the bowler. Therefore, this novel approach will certainly enable the learners of Degrees of Comparison. According to Edward Antony, "An approach is axiomatic".

Listening and Speaking Skills

Listening skill, one of the receptive skills, is the primary skill which underpins the acquisition of any language. To testify a participant's listening skill, speaking skill, one of the productive skills, is applied for better understanding of the language. In play-way method, the importance of listening and speaking skills plays a seminal role. Aruna Koneru states, "Listening is the important counterpart to speaking".

Listening and speaking skills go hand in hand. The following table, according to Geetha Nagaraj, illustrates how far these two skills are closely connected.

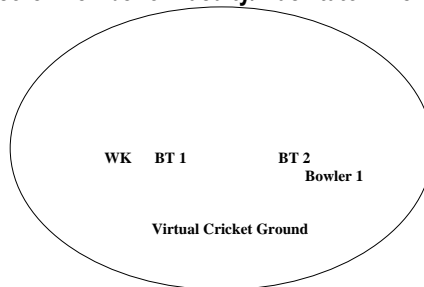
Listening	→	Speaking
identify sounds	→	produce meaningful sounds
segment sounds into	→	produce sounds in meaningful
meaningful groups	→	chunks
understand syntactic patterns	→	produce language in syntactically acceptable pattern forms...

In addition, sharing information between batsmen while at crease leads to ponder over new lexico-syntactic items required during the game and helps increase the team's score. Andrew J. DuBrin asserts that Group members often evaluate each other's thinking... And hence, nervousness in the teammates would be defeated all over virtual T20 Cricket game, as the teammates would get a space for discussion by which one of them could nullify the issue on the spot within stipulated time.

Similarly, the bowler would also seek help from the wicketkeeper if necessary so as to avoid "No Ball."

Virtual Ground and a Seating Arrangement of the T20 Virtual Cricket Game – A Model Board in the Classroom

The Scorer Member of Faculty/ Facilitator The Timer



Left Side

Bowler 2
Bowler 3
Bowler 4
Bowler 5

Right Side

Batsman 3
Batsman 4
Batsman 5
Batsman 6
Batsman 7
Batsman 8
Batsman 9

Viewers / Audience / Classmates

Note: WK stands for Wicketkeeper and BT means Batsman.

Team Building

In this scenario, the runner at the other end of the crease may also help his / her partner, if the batsman fumbles for words to come to his / her mind. It also encourages passive participant in the cricket game to listen to his / her partner through peer learning. In the case of bowling side, the bowler could approach the wicketkeeper for assistance. Thus, this virtual cricket game ensures virtuosity of the players and deals with listening, speaking, and Team Building.

Merits

All the games may have both merits and demerits, if they are keenly looked at. This T20 Cricket game would also encompass merits and demerits. The subsequent ideas are taken into account as merits to each participant to activate this game vitally:

- To reinforce the participants, various strategies are adhered to before the game begins.
- Each bowler or batsman knows about their role and so each player avoids functioning as a silent player.
- Lexico-syntactical items are taken care of by a member of faculty concerned.

- Slow bloomers of English would also be encouraged by their partners on the ground i.e. both bowling and batting sides to apply the required grammatical components during this match.
- So as to sustain the tempo throughout the match, the runner at the non-striker end could help his / her partner to use the correct word(s) or sentence(s) when the batsman is unable to do anything.
- Correspondingly, the bowling team would get an agreement between the bowler and the wicketkeeper, if the bowler stands clueless.
- As soon as a cricket team is formed, the participants know their strengths and weaknesses which would make them develop better understanding, and the same would lead to increase their strengths.
- Except two batsmen, a wicketkeeper and a bowler on the field, others are asked to take their respective positions as per the order of preference shown in the model ground.
- The participants who meticulously perform on the field would certainly win this game by establishing interpersonal skills.
- It promotes efficacy of the learning and how to deal with emotions and language barriers.
- This virtual game pays attention to the learners and hence learner-autonomy is ensured.

Demerits

This simulated T20 Cricket seems to possess a few demerits which cannot be averted since the game may not keep pace with the real T20 Cricket concerning detached players, if any. These demerits are given below.

- Five seconds to think and utter an adjective or an adverb and the next fifteen seconds to make a sentence using anyone of the degrees.
- Wrong answers demand interference from the member of faculty (facilitator).
- Noise from the audience side may at times be witnessed due to over enthusiasm.
- It may lack concentration on if the partakers are not well-planned.
- If the participants have not practised well, they may lose their game. This tendency may prevail in the partakers due to over-confidence.
- The participants off the field sometimes are embarrassed.
- Domination by the member of faculty (facilitator) over some issues, if any.

Feedback

Feedback is an integral part of any activity held in a classroom meant for English hour. At the end of the activity, the participants would register their feedback what and how T20 Cricket went on. In this virtual game,

feedback is set for improvement but not for finding fault with any player. This system would certainly lead to deal with how to overcome certain difficulties in the near future and as a result a natural tie-up would emerge among the players. Kevin Eikenberry affirms, "The truth is that feedback says as much about the giver as it does about the receiver." In addition, it would pave way for expanding the partakers' horizon, if the feedback is received from the audience.

Conclusion

This paper pays attention to create a new environment in which the participants of both the teams in T20 Cricket find themselves ease to cope up with the system and get their runs with minimum mistakes using lexico-syntactical items. When the contribution from each participant is felt evident, the English classroom gets vibrant. The score shall increase or the wicket shall fall based on the clues and the word and the sentence patterns used by the participants. Thus, this proposed T20 Cricket game which is merged with the use of Degrees of Comparison with the rules mentioned above would evince interest in both the participants and the audience in the English Classrooms. It would also be noted that if one hundred and twenty balls are used by the batting team, the time the batting team would consume is 40 minutes and hence 2 minutes per over. To keep the classroom energetic, this virtual T20 Cricket game would be played to showcase their inherent talents using English vocabulary and making sentences on their own by focusing on Degrees of Comparison. In this context, the participants would begin to feel that the title, Degrees of Comparison, is trouble-free and this activity largely supports learning.

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SELF-SCOURGE AND SOUL-SATIETY in SHASHI DESHPANDE'S ROOTS AND SHADOWS

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Abstract

Deshpande's works does not simply project the lives of poverty- stricken, hardworking, sincere and silent women of India, who live like animals. She also permeates deep into the women's psychological, emotional and intellectual needs, aspirations, cravings and desires. Her characters grapple with their struggle, which drags them through innocence and experience, girlhood and adulthood, ignorance and knowledge, submission and rebellion, joy and sorrow. This paper explains how the self-scourge brings a change in the women's life. And by tormenting herself she allows herself to find soul-satiety by her living.

Deshpande's novels are mainly based on women lives and their problems, particularly in the Indian context. Her novels: *The Dark Holds No Terror* (1980), *If I Die Today* (1982), *Roots and Shadows* (1983), *Come Up And Be Dead* (1985), *That Long silence* (1988) *The Binding Vine* (1994), *A Matter of Time* (1996), and *Small Remedies* (2000). She has also written a screen play: *Drishte* (1990). Though she doesn't call herself a feminist, her novels depict the status of women under the domination of the patriarchal society. All her works invariably focus on the anguish and conflict between the values of the modern women and traditional women. As a novelist she uses the cinematic technique of flashback for narration.

Deshpande's works does not simply project the lives of poverty- stricken, hardworking, sincere and silent women of India, who live like animals. She also permeates deep into the women's psychological, emotional and intellectual needs, aspirations, cravings and desires. Her characters grapple with their struggle, which drags them through innocence and experience, girlhood and adulthood, ignorance and knowledge, submission and rebellion, joy and sorrow. This lends her novels an elemental sweep, simple though the surface text is. Deshpande's extensive observation of middle class families plagued by enormous dreams and indomitable obstacles make her one of the most widely read novelists.

The common threat that binds the people all over the world is their human nature, which remains same while the physical attributes, mindsets, habits, customs, and climatic factors, and others may differ from one country to another. Women who are covering fifty percent of the population possess the stamina to cope with men and are not inferior in any sphere of life. It is they who turn a 'house' into 'home' with the magic of their feminine virtues like love and suffering.

In the history of humanity the saddest part concerns the treatment of women; the amount of suffering by women is beyond one's imagination. The problems and predicaments peculiar to Indian women find an artistic expression in the Indian fiction. Indian fiction traces the problem faced by women, right from their girlhood till their adulthood, The sufferings of women is such a commonplace experience that very few are sensitive to it.

A girl is the young plant that gets neither light nor water.

She is the flower that would have blossomed but cannot.

Half- fed and half heartedly educated

She gets only half wage for her labour.

The country got its freedom but she continues to be bonded.

(Kamala Bhasian 3rd Mar 2012)

The plight and struggle of Indian women is aptly captured by Kamla Bhasian in the above mentioned lines

from her poem. The existing desperation in the demographic, economic, and social indicators between males and female is a testimony to the consequences of gender inequality faced by the Indian women.

Writers like Kamala Markandaya, Kamala Das, Nayantara Sahgal, Anita Desai, and Shashi Deshpande, started discussing all the issues that concern women including the sexual problems faced by women. Women are in mindless and they are less in concentrating more about their individual. Love and their gender role expectations make them to suffer more and to self scourge themselves.

Still a vast majority of women in families outside the civilized society are reconciled to a life of humiliation in the form of gender-bias while performing the roles of wives and mothers in the rigidly customs bound milieu they live in. As an insider woman is both at the center and in the margin:

The endeavor of the woman in such a direction forms the crux of the ideal image of woman in India. But, despite of these efforts at harmonizing the relationship, what is actually unique is in the fact that a woman may embark in an inner / spiritual journey that fulfills her quest for identity. (Bhatnagar 19)

Loneliness, one of the concerns of existentialists, is not merely an incorrigible disease but a symptom of modern man's predicament, and the awareness of this have made him search for the true meaning of life. Ironically, the search itself has become a disease and meaningless and man has been externally condemned to free in the vicious circle of struggles. For long, women in India and in other societies has been seeking an identity, and trying to declare that she is just a being and can live in the world where men also live.

In trying to carve a place for herself, she has become more and more self-assertive and cognitive of her position and rights. As a result she suffers from loneliness more than her ancestors in the past. Her constant search for self autonomy and freedom has proved meaningless. Deshpande is one of the writers in Indian writing in English, who has depicted of the existentialism in women, possibilities in her novel as well as in the collected stories.

Deshpande focus is on the sufferings of women. But the underlying theme in Deshpande's novel is human relationship, especially which existed between father and the daughter, husband and wife and also between mother and daughter. In all these relationships women occupies the central stage and significantly the narration shifts from the feminine to the feminist consciousness. Her novels

reflect the lives of suffocated women in search of a refuge from suffering. Her art is intensely personal, not political. Her feminism rooted in the nature environment tends to be humanistic and optimistic in its outlook.

Searching for a solution to their private problems, the female protagonist in her novel, shifts from their personal pains to the sufferings of the other women around. In all her novels the heroines are left without any sense of fulfillment at both the physical level and mental level because of their husband's lack of understanding. The heroines who have children also sense a kind of uneasiness in their relationship with their siblings.

All of Deshpande's novels represent the different types of sexual oppression underwent by women. Deshpande's protagonists might be considered as sexual profligates as they go off the track of tradition, but their extra-marital refuge fails them because their sexual freedom does not pilot them out of their predicament.

In Deshpande's novels three types of suffering woman characters recur with subtle changes. To the first type belong the heroin's mothers or the mother figure -- the traditional woman who believes that her place is with her husband and family. Whatever be her troubles she does not leave her husband, she strives for a working relationship with him at any cost.

In a sense, she represents the traditional religious ethos and conforms to the man code that the woman should be under the control of the father in the maidenhood, the husband in her youth and the sons during her old age. Despite being the victims of the patriarchal set up, some of these women hold power or control over other women in the family, Akka in *Roots and Shadows* and Saru's mother in *The Dark Holds No Terror* belong to this type.

The second type of suffering is the converse of the traditional type. Here the woman is bolder, more self-reliant and rebellious. She cannot conform to the Sita's version of womanhood and is consciously inclined towards what could be designated as a radical feminist ideology.

The third type of women characterizes the woman in between. Most of Deshpande's heroines belong to this category. This woman is neither traditional nor radical in her ideas and practice. She might walk out of a home in protest against a suffering, but gradually realizes that walling out does not solve her problem. As a critic says that:

You are your own refuge
There is no other refuge

This refuge is hard to achieve. (Ramachandran 41)

They become themselves as a refuge to their society and neighbor.

Indu the protagonist of RS learns the truth about herself, dismissing all the shadows that she had thought to be her real self. The chimeras, which she has been chasing throughout her life, end with her realization that she is a writer: "That I would at last do the kind of writing I had always dreamt of doing" (RS 205). This statement of Indu is her assertion of her will and self. She can no longer cheat herself saying that she will do things for the sake of Jayant, her husband. She shall not remain a doll or a puppet but she will take decision for herself and affirm her being.

As a critic; "the more women assert themselves as human beings, the more the marvelous quality of the 'other' will die in them" (Beaviour 39). Indu keeps searching her real identity. She had lost her mother figure, she rebels against Akka who is her world and values.

Throughout the novel, the novelist uses the negative images, which suggest imprisonment and suffocation of women.

Reference to a spider painstakingly completing its work inevitably reminds the reader of the cobweb woven carefully and cautiously by the society in which woman is helplessly caught. But woman conditioned by the society creates another tortuous cell for her and lives in it ever brooding. (Rani 54)

Indu analyses her situations: "Restricting bond? Was it not I who had made it so? Torment? Had I not created my own torment?" (RS 186).

Indu is love for her husband is the strongest bar of the cage in which she is caught. Her emotional attachment leads her to dependence on him, which in turn leads to her obsessions with his thought. She knows very well that her desired to be wanted, needed, loved, desired and admired becomes the trap for her from whom she can never come out, she helplessly admits. She explores herself as a woman who loves her husband too much and is ashamed of it. Much critical controversy has been raised about the novelist's motives regarding the incestuous relation between the Indu and her cousin Naren. It is Naren to whom she tells every little details of her married life.

Naren who was so natural with her and the easy compatibility that develops between the two, makes her to take the most daring step of surrendering herself to him not once but twice in the novel. She indulges in the act

with much wild abandon and cherishes it later without any guilty consciousness.

Indu thinks:

I can go back and lie on my bed. I thought, and it will be like erasing the intervening period and what happened between Naren and me. But deliberately I went to my bed and began folding the covers. [...] I told myself in a fit of bravado (RS 168).

She resolves not to disclose their relationship between her and naren to Jayant as she thinks it had nothing to do with him. The assertion of her has sparked off contradictory remarks from the reviewers.

A society wherein a man takes sexual liberties with impunity and a woman indulging in the same is looked upon with shocks, horror and branded an adulteress and a harlot or loose lady, Deshpande probably is trying to shakes the reader of their complacency by thrusting in their face the double standards being practiced in a patriarchal social setup. Akka who got married to old men, her tender age had made it difficult for her to give birth to a living child thus making her unable to fulfill the greatest purpose of a woman's life.

Adding to the misery of failed pregnancies and being ill-treated by her mother-in-law, her husband's debauchery took a new turn with his love for a particular mistress. In spite of regular ill-treatment, beastly assaults and humiliation, Akka served her husband like a dutiful wife when he came home after a stroke. However his cry for his mistress could not shake Akka's heart, which was hardened by years of suffering.

Here Akka's satiety can be seen by her duty to her husband as a good wife. Thus the imitation of choice makes girls like Mini, uneducated and domesticated, marry whoever her parents choose even if it is an illiterate fool. The hopelessness of Mini's situation where she feels she has committed a great crime by being born a girl, gives strength to Indu, to strive and preserve what she had fortunately acquired through love and marriage. However she questions the utility of marriages such as Mini's but she feels for her.

Indu returns to her ancestral home for her soul-satiety. Piciucco highlights how S.P. Swain had explained the homecoming process lies as something that is the very base of Indu's self analysis:

The home she had discarded becomes the place of refuge, of solace and consolation. It is Akka's house that offers her ample opportunities to know herself. It is here that she is able to discover her roots as an

independent woman, a daughter, a mother and a commercial woman. (Piciucco 20)

The homecoming theme becomes a symbolic instrument and a crucial process for Deshpande's protagonist to regain her inner balance, to declare their independence, to stake out their own identity.

The visit to the parental home is a paradox one to women, the home they discarded becomes the very place of refuge. It is once again in their parental homes that both Indu in *Root and Shadows* and Saru in *The Dark Holds No Terror* acquire real independence and maturity. She also learns to see life in a fresh light.

As the house, a symbol of tradition and lineage has its own pulls on people. Indu feels happy in her parental home where she left her guiltiness. The happiness which she got from Naren, is her real result for her scourge. Indu's soul-satiety lies only because of Naren but not because of Jayant.

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BHARATHIYAR IS A ROMANTIC POET: AN INSTANCE FROM KANNAMMA YEN KATHALI (KANNAMMA MY LOVER)

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Abstract

Portray of an idealistic view of nature and the workings of the human heart, overflowing with spontaneity, great power, and inspiration. Visionary experiences of love, too, appear in the poems of the Romantics, though in a different cultural context. Romanticism was an idealistic movement; and one of the fundamental ideals that it represented was the importance of human individuality. The foundation of Romanticism is the true development of the individual nature, which depends on the thinking, culture, country, and forms of artistic expression available to any given individual. Bharathi was a true Romantic in the sense that he introduced the perfume of Romanticism into the age-long Tamil tradition, and was followed in this path by a new generation of artists and poets inspired by him. He is one of the Indian Tamil National patriotic, romantic, mystic spiritual poets, the lover of the nature. In fact, Bharathi deeply inspired by Annie Beasant, Keats Walt Whitman Byron and Shelly. He established a Shelly guild and sported the pseudonym as 'Shelly Dasan'. He savoured the beauty of each state of India and led the chariot of poetry. In his song *Sindhu Nadi* where he honoured all the Indian languages focusing the cultural unity and beauty of nature. This paper highlights the reflections of the Romantic elements in the works of Subrahmanya Bharathi and focuses about the view of Bharathi's love with nature.

Bharathiyar is a Romantic Poet

Subramania Bharati, also known as Bharathiyar (11.12.1882 – 11.09.1921) a great Indian writer, poet and journalist, and Indian independence activist and social reformer from Tamil Nadu. His famous works are *Panchali Sapatham*, *Pappa Pattu*, *Kannan Pattu*, *Kuyil Pattu*, etc. His poetry articulated a progressive, reformist ideal. His imagery and the vigour of his verse were a forerunner to modern Tamil poetry in many aspects. He was the pioneer of a forceful kind of poetry that combined classical and contemporary elements. He had a unusual output penning thousands of verses on diverse topics like Indian Nationalism, the National Flag, the Mahabharat, love songs, children's songs, songs of nature, glory of the Tamil language, and odes to prominent freedom fighters of India like Tilak, Gandhi and Lajpat Rai. He even penned an ode to New Russia and Belgium. His poetry includes works on Allah and Jesus. His insightful similes have been read by millions of Tamil readers. As Wordsworth, he used rustic people's language and subjects to deal. So the use nature elements in his poem were supreme in his time. His poetry stands out for many facets of his love for his lady love, God, motherland and love for nature. He experienced nature in all his activities; he enjoyed it through all the things. We can see his love

for nature in all the poems like his love song. Divine songs and even in patriotic songs. Here we can enjoy his nature love through his love poem for his lady love.

Nature and His Lady Love

Bharathi explores his love for nature even in his love song. In his famous love poem *Kannamma Yen Kathali* (*Kannamma my Lover*) he compares the beauty of his lover to beauty of nature. Bharathi is addressing Kannamma his sweetheart. 'Kan' in Tamil means eye and Kannamma is the darling who is as precious as the eye. Possibly this is one of the very romantic poem he wrote. Bharathi takes nature as a tool to explain his love. In *Kannamma Yen Kathali* (*Kannamma my Lover*) he explores his lady love's inner beauty and outer beauty through nature.

Paayum oli nee enakku paarkum vizhi nan unakku
Thoyum madhu nee enakku thumbiy adi nan unakku
Vaayuraikka varuguvathillai vaalinindran menmai
yellam
Thuya sudar vaanoliye suraiyamuthe
kannamma(420)

In these lines, first he uses personification; he is rushing light to her. He compares her with honey that spreads sweetness to her. And she is the honey bee to

him, Words do not form in his mouth too describe all that is good in her. And let all that is good in her flourish for ever.

Veenaiy adi nee enakku meyum viral naan unakku
Poonum vadam nee enakku puthu vairam naan unaku

Kaanumidam thorum nindran kannin oli veesuthadi
Paanudaya perarase vaalvu nilaiye kannamma(420)

In these lines we can enjoy the beauty of the nature. He calls her as "Oh my darling Kannamma". She is the shining light of the sky. she is the brimming nectar of the world,

She is the musical Veena (Indian classical string music instrument) to him.

vaana mazhai nee enakku vanna mayil nan unakku
baanamadi nee enakku paandamadi nan unakku
nyaana oli veesuthadi nangai nindran jothimugam
uunamaru nallalaghe uuru suvaiye kannamma(420)

She is the rain that pours from the sky to him. In this particular line we can realize Bharathi's possessiveness of his lady love. She is the rain which pours only to him not to the earth. She is the pretty coloured peacock to him. Other English romantic poets like Keats, Shelly and Coleridge, Bharathi also uses liquors in his poem. She is the drink to him, and he is the cup to him. Lustre of knowledge shines from her shining face.

vennilavu nee enakku mevu kadal nan unakku
pannusuthi nee enakku paattinimai nan unakku
enni enni paarthidilor ennamillai ninsuvaikke
kannin mani pondravale kattiyamuthe
kannamma(421)

As all other poets Bharathi also compares his lady love to bright moon. She is the white full moon to him. He is the spreading sea to him. Like Robert Burns he compares his lady love to melody. She is the beats of the music to him, and she is the taste of music to him. There is no limit to her taste, even when he thinks again and again; she is like the pretty eye with ever beauty. She is the nectar that is packed with full sweetness.

veesukamal nee enakku viriyumalar nan unakku
pesuporul nee enakku penumozhi nan unakku
nesamulla vaansudare ninnalaghai yethuraippen
aasai madhuve kaniye allu suvaiye Kannamma(421)

She is the breeze that flows to him. He is the flower and only it opens to her. She is the words that I speak to him, He is the words that ring in her heart, and he is asking "How will I describe your beauty?" and answers "Oh my darling, who is the ray of the sky that loves, Oh darling Kannamma who is the wine of love. And who is the endless taste"

nallavuyir nee enakku naadiyadi nan unakku
selvamadi nee enakku semanithi nan unakku
ellaiyatra peralaghe enggum nirai potchudare
mullai nigar punnagaiyai moothuminbame
kannamma (421)

In these lines he elucidates his love is not physical love but Soulful love. She is his soul, he is her beat, She like the wealth to him, he is like the fund that is saved to her. The poet next moves towards her physical beauty: her beauty which can never be measured, Oh rays of gold that spreads everywhere. Her smile is like a blossom of jasmines, she is the pleasure that beats like waves.

taariyadi nee enakku thanmathiyam nan unakku
veeramadi nee enakku vetriyadi nan unakku
tharaniyil vaanulaghil saarnthirukkum inbamellam
ooruvamaai samainthai ullamuthe kannamma(421)

In these lines we can realize that the poet's Kannamma is everything to him. She is the twinkling stars to him, and he is the cool full moon to her. She is the valour to him, and he is her victory. His Kannamma is nectar of his mind. She is the sweetness of the entire world and the heaven.

Whatever it can be Bharathi gets resemblance of his Lady love. In his another poem he portrayed as "paartha idathilellaam-unnai poalavae paavai theriyudhadi" which means (rough English translation) "Everywhere I look-your semblance emerges in everything". His Romantic love, a focus of both individuality and idealism, it has a special place in the spirit of Romanticism. Looking at Bharati from this point of view, Romanticism, as expressed in his poetry, differs greatly from classic Tamil tradition. Bharathi enjoys the nature not only in love poems, nature poem but also in his divine poem "Kakai seragineley nandhalala neenthan kariya neram thondruthada nandhalala" which means in wings of crow God's black colour appears. Not only Crow, even in trees, in the fire, sky, etc., Everywhere he enjoyed the colour and feel of the God.

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MOTHER'S SACRIFICE AND HUNGER OF LOVE IN TONI MORRISON'S *A MERCY*

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Abstract

In the United States, the women's liberation movement began in the late 1960s, in the wake of the civil rights and antiwar movements. The purpose of this Paper is to illustrate five categories of motherhood in American literature. The five categories chosen are: the self-absorbed mother, the self-martyred mother, the child-sacrificing mother, the self-sacrificing mother and the substitute mother.

Many African and American slaves were influenced by West African motherhood practices in which the individual mother is valued, but the act of mothering was a collective communal process. According to Patricia Hill Collins in her article:

The Meaning of Motherhood in Black Culture and Black Mother/Daughter Relationships, a woman has no choice but to evaluate her identity based upon motherhood: The cult of true womanhood emphasizes motherhood as a woman's highest calling. It stresses a motherhood that is confined to the home and children, under the protection of a husband. (Williams 164)

When viewing this theory through the lens of slavery, it is apparent that African female slaves had little to no chance to form a mother-identity: "the idea of the cult of true womanhood has been held up to Black women for emulation, [and] racial oppression has denied black families significant resources to support private nuclear family households" (Williams 164).

In Toni Morrison's novels sentiment becomes one of the major role, specially mother's caring upon their children, mothers commit murder of an infant internally in *Sula* and *Beloved*, accidentally in *Paradise*, severe neglect in *The Bluest Eye*, child abuse in *Tar Baby*, and outright abandonment in *The Bluest Eye*, *Jazz*, *Paradise*, and *Love*. And this is just what happens between mother and children relationship.

The five categories show how it appears frequently in texts written by people of multiple ethnicities who represent several larger American cultures. A self-absorbed woman specially mother lives for her personal pleasures. She prefers her happiness over the day to day care of the children. The self-martyred mother believes that she is responsible for all the difficulties of the world. She may believe that every action her children take is her fault. She may deny herself the love of her children believing it is neither deserved nor desired.

The self-sacrificing mother, who gives up everything to take care of her children. She will face risk her life to be sure that the children are cared for properly. She sacrifices her life personally and professionally for her children. The last category mother, the substitute mother accepts the responsibility for another woman's child. She agrees to realise that child is her own.

Most female characters in Toni Morrison's *A Mercy* pertain to motherhood in some way: some are mothers, some were mothers, some act as mothers, some long for mothers. Indeed, motherhood is so much at the core of this novel that the concept of the mother should be considered a character itself. Specific analysis of the mother character offers vast insight into the behaviours of various characters in the novel.

By applying Plato's theory of the soul to the mother character in *A Mercy*, it reveals that certain characters represent divisions of the mother character herself. These divisions of the mother character are the soul, heart,

body, and mind and are represented by Sorrow, Lina, Rebekka and Florens' mother respectively.

According to Plato "The soul is the person's essence. More than the relational self-recognition that she exists, the soul is the spiritual sense of self." A soul, Plato argues can exist without a body, which makes the distinction between the mind and the soul important. A soul is classified:

Furthermore, when a soul is embodied, it requires the harmony of three separate sections of a person's existence: logos, thymos, and eros. Logos, or mind, represents truth and knowledge. Thymos, or the heart, is driven by the "esteem of others," and so strives to be wise, just, and kind. Eros, or the body, represents desire for pleasure and physical gratification. A harmonious embodied soul requires modest truth, disciplined, yet honest emotions, and moderation of physical pleasure. These four divisions of the person must temper each other to acquire balance. (Howard 4)

Considering the concept of the mother as a character within *A Mercy* provides the opportunity for two analyses.

The first is that sorrow, Lina, and Rebekka all represent different way of the mother character, allowing us to see how each way of the mother character views motherhood and deals with loss. The second is that each mother character utterly differential in its respective character's existence. Lina not only the mother's compassion and loyalty its thymos but is also entirely dominated by her own emotions.

Rebekka not only portrays the physical appetite of motherhood, but also is entirely associated with physical events. Physical appetite generally refers, sex, and drugs. This is not true for the mother character. Lina uses a term that describes the appetite in the mother – child relationship mother hunger.

Rebekka hungers for a child just as Florens hungers for a mother, and so might be called child – hungry. The struggles of Rebekka are a crucial to her character. She suffers her dead children, a dead husband, and smallpox. Not only physical suffering but her survival extends her suffering. While her children and husband die, Rebekka must live on to endure her pain. Throughout the novel, the farm is tied to Rebekka, almost like Camelot is to King Arthur. In the beginning, Jacob seeks a wife specifically to tend to his farm; with the loss of children and the need to endure, Rebekka strengthens herself by strengthening the farm; when Rebekka is ill with smallpox, the farm immediately falls into disrepair;

when Rebekka recovers and must face life without parents, children, or husband, she abandons the farm, forcing her servants to survive outside in the rain before she sells them or gives them away.

In *A Mercy*, Sorrow, the novel's important and most ambiguous woman has come closest to a happy experience of her motherhood. She delivered prematurely her first child and the child left to die, but she gives birth easily to her second with the help of Scully and another farmhand, and afterwards she renames herself a complete. Sorrow is torn as a soul without harmony is torn, but becomes complete once she becomes a mother, just as an embodied soul is completed once the thymos, eros, and logos become harmonious.

Lina a surrogate mother to Florens, she threw herself more vigorously into the farm work a purely physical response. What Florens's mother been trying to tell her the last chapter of the novel? Her life story is, again, one of violent, vicious treatment by men: first she is brought from Africa to Barbados and gang-raped, then she is sold to the Portuguese trader, who, she has already begun to show an interest in Florens. When she sees Jacob, she trusts him immediately; "There was no animal in his heart . . . He did not want". She begged him to take her daughter because "I saw the tall man see you as a human child, not pieces of eight. I knelt before him. Hoping for a miracle. He said yes." (A M 34) In this way, an act that seemed that it happened to Florens, but she will never understand why.

Florens's mother had seen Jacob's decency, his willingness to take her child, as a near-miraculous chance, the mercy of the book's title. After Jacob's death, the women realize that their illusory family, forged by companionship and isolation, is lost. Mother hunger, in calls their longing to be one or have one. When Florens first comes to the Vaark home and sees that Sorrow is pregnant, she feels threatened: Mothers nursing greedy babies scare us. We know how their eyes go when they choose. How they raise them to look at me hard, saying something we cannot hear. Saying something important is to but holding the little boy's hand. Readers of *BeLoved* will remember that there, too, nursing plays an important role as a symbol of the mother-child connection: what Sethe finds most terrible about her assault is that the men who attacked her took her milk. And later, when Florens arrives at the blacksmith's hut and feels threatened by the boy he has taken in, the pain of that formative moment returns in a dream; "A minha mae leans at the door

holding her little boy's hand, my shoes in her pocket. As always she is trying to tell me something" (Williams 56).

The mother's emotional touch to the child is one of the brave and strong bonds humans can experience in life, but much of this connection is physical; it certainly begins so with pregnancy, birth, and breastfeeding. The bond of the emotional with physical turns the emotional needs and pains-child-hunger and heartbreak, for example. While Rebekka certainly experiences emotional pain, this is inseparable from her physical pain and her physical responses, which makes Rebekka the ideal representative for the mother character's eros.

Rebekka's suffering and pain is certainly great in the form of internally and externally. The motherhood experiences loss in different ways according to its different divisions. The eros experiences heartbreak-the physical aspect of emotional suffering and the weakening of the body from stress which common sense suggests is a likely factor in Rebekka's illness. The mind, or logos, however, approaches loss in quite a different way.

The love could never allow a mother to surrender her child. Lina's actions support this. When Lina realize the possibility of losing Florens, She obsesses over the threat of the blacksmith. Sorrow's problems are not caused by Lina, true. She comes to the Varrak household already damaged by her previous loss. However, the Varrak household comes to be her home; it is the environment where Sorrow defines herself. And yet she is an outcast, rejected by the closest thing she has to a family. It is an astonishing that her invisible friend, her other personality, is entirely unknown to the people closest to her. Even worse is the fact that this alternate Sorrow, this Twin, actively works against any potential harmony in the household, mainly by insisting to Sorrow that Lina murdered her child. It is a testament to Plato's belief that spoiled logos, a spoiled eros, a spoiled Thymos all spoil the soul.

The representations of the mother character's divisions that Morrison creates, intentionally or unintentionally, never come together in harmony. Only

Sorrow comes out better at the end of the story than she was in the beginning. In the initial, she is lost, confused, upset in soul. Her other self even works against the unity of the household, perpetuating disharmony. But Sorrow undergoes a transformation once she becomes a mother.

The conclusion of Sorrow's story at the Varrak household, where she is always the strange, dominated and rejected by the others, should not be seen as closure to her experiences there. Sorrow's transformation does not imply that a harmony between characters has been reached. Quite contrarily, the disharmony is stronger than ever at the end of the novel. So Sorrow's transformation is not the unity of the household, but rather the new possibilities of the new mother character. The only mother with children left to arise is Sorrow.

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METAPHYSICAL EXISTENCE IN KATE ATKINSON'S *A GOD IN RUINS*

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Abstract

The one who possesses the capacity of thinking is considered to be in existence in this world. Thinking shapes an individual. A thinking mind shall never care about what is happening around, instead it will focus on what is in the imagination. All that an individual thinks shall not take place in the real life. This research paper deals with the thought that ideas, objects, subjects that conceive in the mind are given metaphysical existence in the novel A God in Ruins by Kate Atkinson. Though she gives an inauthentic, metaphysical existence to the protagonist of the novel, she brings out the immortal and true feelings of a world war pilot.

Keywords: metaphysical existence, inauthentic, existence

Everything that can be seen do exist in this world. Also, there are some abstract things that are given existence such as love, time, space, life(soul), etc. According to Ortega, "The stone is given its existence; it need not fight for being what it is - a stone in the field. Man has to be himself in spite of unfavourable circumstances; that means he has to make his own existence at every single moment. He is given the abstract possibility of existing, but not the reality. This he has to conquer hour after hour. Man must earn his life, not only economically but metaphysically." (Kaufmann 153-154) Man exists only when his action or thought proves his existence. An individual should use the freedom and choice to prove one's existence.

Metaphysics is a branch of philosophy that deals with the first principles of things, including abstract concepts such as being, knowing, identity, time and space. It investigates the common nature of reality. The metaphysics develops two broad conceptions about what "world" is through a study. The strong view and the weak view of the world. The strong view traditionally assumes that the objects studied by metaphysics exist autonomously of any observer. So that the subject is the most fundamental of all sciences. The modern but weak view presumes that the objects that are studied by metaphysics exist within the mind of an observer, "so the subject becomes a form of introspection and conceptual analysis." Some logical positivists, who are philosophers and scientists reject the entire subject of metaphysics and consider it as "nothing" or "meaningless", while some

others opposes them and think that the metaphysics is justifiable. This concept of dealing with the abstract thing becomes popular among the literary writers and used mostly in the works written during later half of the 20th century. The themes that cling around the metaphysical questions are existence, objects and their properties, space and time, cause and effect, and possibility.

Atkinson does not give the plot of the story in a sequential way. The incidents are jumbled. The protagonist's war experience is given more importance in the novel. War gives a traumatic experience to the protagonist. The nostalgic experiences in the war period are focussed in the novel, as the protagonist Teddy Todd faces existential crisis. The novel talks about the being, exceeding time and space. Todd's existence beyond the real world is the story line after the climax. Atkinson gives a twist in the climax and reveals the real climax in the end of the novel.

Teddy Todd's nature is not being mentioned in the novel as man has no certain nature. Man lives in the past, present and in the imaginary world of future, which is always fake. Though man does not has nature, an individual has one's own history. History is the story of the past or the record of the past. "*Man in a word, has no nature; what he has is - history.*" (Kaufmann 157) Each one has one's own history. In today's world, even the history of a person can be erased out of the world.

Atkinson gives importance to the thoughts and feelings of Teddy Todd. Teddy thinks about his past in his present. The Teddy who is, is not the Teddy who was, as

the days go by. It emphasises the existential philosophy of Jean Paul Sartre. Continuous self-examination helps one to see that, to use Sartre's words, one is not what one is, and one is what one is not." (Golomb 21) Man's future is based on the experience of his past experiments with life. "The experiments already made with life narrow man's future. If we do not know what he is going to be, we know what he is not going to be. Man lives in view of the past." (Kaufmann 157) Past and present decides the future of man. One cannot deny the past life. The past is the evidence of an individual's existence.

When Teddy spends some time with Izzie, he is a boy of young age. But his thoughts go beyond his existence. He thinks about himself in the age of sixty, with the imagination of two grand children, named Bertie and Sunny. As imagination has no limits, it can go beyond time, space and existence. Teddy is a bomber pilot in the world war II. He does not know about his future as he cannot decide his future. He is in a Catch-22 situation. Whatever can happens to him at any time. Moreover, he cannot escape from war. Even in the transitory situation of life, Teddy imagines about his metaphysical existence. In the living present, he exists in his inauthentic future in the world of imagination.

Teddy and Izzie discuss about Skylark in the beginning of the novel. Meanwhile, Izzie confesses that she has eaten a lark before. This is just a trivial thing. Though it is not a big issue, Teddy over thinks about it and finds out her mistake. He does not leave that one lark as just a bird. He thinks beyond the time and space in his imaginary world. The novel says, "But it wasn't just the bird, was it, Teddy thought as he lay in bed waiting for sleep to find him, the nightly oblivion kept at bay by meandering thought. It wasn't just the one lark that had been silenced by Izzie. (*A mouthful.*) It was the generations of birds that would have come after it and now would never be born. All those beautiful songs that would never be sung." (51) In this case, the lark has the possibility of producing its progeny into this world of existence. Now, Izzie is to be blamed as a murderer. She does not kill just one lark, but the generations of larks yet to be born of that particular lark. The lark that is dead and gone into the stomach of Izzie years before is still consider as a being with its descendants in the fake world metaphysically.

Through this lark, Teddy understands about its inauthentic existence in future. It foretells Teddy's story to the readers. Yet, it is hard to understand by the readers, as the author uses the stream of consciousness

technique in the narration. Teddy, who is thinking about the pathetic situation of the lark, will die soon. His daughter and his grandchildren projected in the novel, disappear into the future that does not exist. "Later in his life he learned the word 'exponential', and later still the 'fractal', but for now it was a flock that grew larger and larger as it disappeared into a future that would never be." (51) The novel also tells us the story of the marriage life of Teddy and Nancy, that does not take place in Teddy's life. Neither he has a daughter Viola nor he has grandchildren Sunny and Bertie. The life after the plane crash that Teddy experiences is a fictional story! Teddy dies in that same plane crash with his own crew members. Reel versus real is there in the history of Teddy Todd. The statement, "Art for art's sake" is proved here.

Teddy thinks about the days that he spend with his own family. Happiness is there around him. Teddy feels happy and comfortable only when he spends his precious time with his family members. "They were all happy, this much at least he was sure of. Later on he realized it was never as simple as that. Happiness, like life itself, was as fragile as a bird's heart beat, as fleeting as the bluebells in the wood, but while it lasted, Fox Corner was an Arcadian dream." (58) Happiness and sadness will come to a person alternatively. Not a single moment is permanent. Everything changes. Change is the only thing that does not change in this real world. Pleasure and Satisfaction cannot be earn until a person accepts the pain and the sufferings in this real world. In metaphysical world, it is other way round. One can live the life as per one's own wish eternally in the metaphysical world. A world of mystery! Though it is unreal, it gives pleasure and satisfaction to an individual. But to get the real happiness, the individual should use the freedom of choice in right way. All the dreams of man comes true in the metaphysical world. "Spirit is dreaming in man." (Kaufmann 101) Though the spirit is not present in the thought of a person, that individual is existing in the thought as an abstract thing.

The novel also shares the difference between the real and the reel character namely, Ursula and Nancy. Though Nancy is a true character in the life of Teddy, He does not marry her in the real world. But she is his wife in his metaphysical existence. Ursula accepts the pain and suffering of this real world, whereas Nancy is found "cheerful" in the world of fantasy. This difference is brought by Atkinson through the "thought" of Teddy, which is again unreal or an abstract thing.

Comparing real with reel is not encouraged, as they are in different states of existence. This comparison is not taken into consideration in the real world. But it is accepted here by the readers because it comes under the fiction. The metaphysical fiction gives pleasure to the readers. What that cannot take place in the real life can take place in the Metaphysical Fiction or Meta-fiction. The readers accept the concept because they want to escape from the reality by reading such books.

The physical property of human beings is different from the physical property of the inanimate things. Every existing thing in this world has some physical properties of its own which determines its shape, size, state, etc. By treating a person as an object or an animal or a bird, the properties of the person gets change. Here, in the novel, Viola is objectified as an inanimate thing. "Viola like a dark cloud, appeared to take them home ..." (64) Viola herself is not a real character in this novel. She is the fictitious daughter of Teddy Todd. Though she is a fictitious human character, she is compared with "a dark cloud" in the above quoted line. A cloud has no origin and it disappears easily at a point of time. No one knows from where it starts and where it goes. The metaphysical existence of Viola is portrayed here.

Atkinson uses the freedom given to her in her existence by giving metaphysical existence to the characters in the novel.

Freedom is the central concept around which existential enquiry revolves. It can be said that the existentialist concept of freedom is not

a transcendental ideal or a mere abstract concept but it is the basic and

inherent condition of human existence and it is to be lived through responsible

decisions and actions or otherwise it becomes obscured in the inauthentic

mode of fallenness. (Deshpande 27)

Freedom is given to a person in existence. But one cannot use the freedom beyond limits. An individual's freedom exists until it touches the other person's boundary line of freedom. One's freedom should not affect another person's freedom. In case of metaphysical existence, there is no limits for freedom, as the characters are living only in thoughts.

Thought cannot be put into action always. Marcel says, "A fictitious suppression: an abstraction by which thought is denied access to being." (Lescoc 95) " 'I think I would rather just *live* my life,' Teddy said, 'not make an artifice of it.' And what on earth would he write about? If

you excluded the war (an enormous exclusion, he acknowledged) then nothing had happened to him." (128) There is nothing other than his childhood that he spends in Fox Corner, apart from the war, as his history. The war plays a major role in Teddy's life. War and Teddy are cannot be separated. So, Atkinson, to rectify the problem in Teddy life's she adds up the fiction into his unknown and unseen future. Teddy and Nancy's wedding after the war, Viola - their only daughter, Viola's marriage with Dominic (an artist), Sunny and Bertie (Viola's children), Dominic's death, and other incidents mentioned in the novel about these characters after Teddy's plane crash are fiction and not a part of the story of Teddy written in the history. "He had been reconciled to death during the war and then suddenly the war was over and there was a next day and a next day and a next day. Part of him never adjusted to having a future." (136) Teddy is given metaphysical existence through the fiction and is confirmed through these lines.

Teddy and Nancy are childhood friends. But later Teddy falls in love with her. When he goes to war, he is unmarried but has the idea of marrying Nancy. Love is an abstract thing. But it can be showed through the act of someone. Love, has its metaphysical existence which exists only in the lover. Even the abstract things can be given existence metaphysically. "Love is falling in love, the primitivity of falling in love is the genesis of love. Love does not exist as something objective but comes into being every time a man loves, and it exists only in the lover; not only does it exist only for the lover but it exists only in the lover." (Kaufmann 109-110) Love exists through the wedding of Teddy and Nancy in the world of imagination.

When the plane crashes, the fictional story of Teddy says that he escapes death and captured by the enemies as POW (Prisoner of War) and after the war ends, he gets released by them. When he leaves, he escapes the shadow of death and goes to the sunlit uplands. The "sunlit uplands" mentioned in the novel is the "Metaphysical world" that he is going to live. He is totally unprepared for the rest of his journey. Because, he cannot make it. His future is actually in Atkinson's hand. She is the one who is painting his story or history. The novel says, "Teddy had been unprepared. With the end of the war he was supposed to have moved out of the valley of the shadow of death into the sunlit uplands. He had become unready for battle." (229-230) He is not ready for the life's battle that he is going to face in his unknown future. He is unprepared means he is unarmed. He is

defenceless. Holding his nostalgic past, he stands in his unauthentic present, to face his mysterious future!

Imagination has no limits. In a single moment one can imagine lot of things. The individual can imagine whatever that cannot take place in the real world that exists. The real world is dangerous as it has many difficulties to face. When it comes to the imaginary world, it is in the thoughts of the person who imagines. Safety cannot be expected in this real world, but one can safeguard oneself in the world of fantasy. " 'There's nowhere for anyone to hide these days,' she said. 'In the imagination,' he offered. 'Even there,' Bertie said grimly, 'you're not safe.' " (250) According to Bertie, who herself is an imaginary character, an individual cannot expect safety even in the imaginary world. Because, once if the imagination stops, the characters will vanish. Therefore, existing in imaginary is inauthentic.

Viola, daughter of Teddy is compared with an arrow in the novel. Arrow is an object. Objectification is used here. Some know the landing point or the projected point before they shoot the arrow with the bow. Without a destination one cannot shoot the arrow. The novel says, "Viola was the solitary arrow they had shot blindly into the future, not knowing where she would land." (253) Viola's future is inauthentic as her existence itself is an inauthentic one. The author says that she is an arrow shoots into the unknown future. The future is not in anyone's hands. There is a supreme soul that holds the time and space. Viola is consider as a solitary arrow as she lives alone even after her marriage. Her loneliness is felt by the readers in this line. She also faces existential crisis in her life. "Viola fell into (an admittedly self-indulgent) existential gloom and was only pulled out of it when her father started to choke." (457) She felt bad when Teddy becomes weak and grows old. Alone, she has to take care of the children and her father. The "to do" things take away her freedom and choice.

The existence of God is questioned here in the novel. Man himself acts like God and starts fighting and killing each other. Ralph Waldo Emerson says, "A man is a god in ruins. When men are innocent, life shall be longer, and shall pass into the immortal, as gently as we awake from dreams." Only the supreme power has the rights to give and take lives. But here, the man starts doing it. Here, the man ruins his own life in the name of war. "We're all primitives underneath, that's why we had to invent God, to be the voice of our conscience, or we would be killing each other left, right and centre." (392) The characters in the novel do not believe in God. So,

Ursula says, "There's a spark of the divine in the world - not God, we're done with God, but *something*. Is it love? Not silly romantic love, but something more profound . . . ?" (399) The characters in the novel gives up their hope in God after the war. They face many existential crisis in their environment.

The author wants to project those sufferings and therefore, she has given the metaphysical existence to the protagonist and other characters in the novel. The divine spark that mentioned above is questioned by Ursula. She considers that the spark might be "Love", which is an abstract quality. World's love is fake and impractical. God is love. There exists God. But people forgets God, when they face many existential crisis in their life. Their faith gets shattered when what they wishes in their life to happen does not happens in their life. God is existing in a metaphysical state such as love, spark and spirit, which human mind cannot comprehend. A famous lyricist Walter Chalmers Smith expresses his understanding of God in his hymn as, "Immortal, invisible, God only wise; In light inaccessible hid from our eyes..." Even, God has given metaphysical existence.

Teddy is extolled to the heights of life. Actually, he is dead and gone. But still, he is living in the fictional world as a hero as all who died in the war are considered as great warriors and martyrs. The real life is mortal. When a character is mentioned in the fiction that person will live longer in art form. Beyond our sense, the protagonist is existing metaphysically. Metaphysical existence, though it gives an inauthentic existence to an individual, it is immortal.

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THREATENED NATURES: CELEBRATING THE FABRICS OF NON-ANTHROPOCENTRIC HUMANISM

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Abstract

In a world where that once seemed ever thriving appears gradually near to its end. All our imaginations face a challenge, a sort of radically redesigning our future scenarios in a much more inclusive way both ethically and culturally. Today with the fast moving pace of development it is responsibility of the environment whose health depends mostly on us and our ability to organize space and time as of being in the world. The process that is shaped via production, consumption and of other such transformations of diverse natural resources to their metabolic waste. This thus requires the domain of humanities as the need of the hour in addressing the contemporary massively looming environmental crisis issues. As the Americanist ecocritic Glen. A. Love opines as "teaching and studying literature without reference to the natural conditions of the world and with that of other basic ecological principles that underlie all life seems increasingly shortsighted and incongruous ..." (16). Further, while on to the other side its not to be forgotten that society is an essential structure or element of this phenomenon, which means that humanities could help out in working desired scenarios in relation to the world of nature braced by an ethical evolution of cultural discourse. Hence the paper here through such a framework tries to address an interdisciplinary approach upon literary criticism thereby using literature as a means of socio-cultural and historical awareness. In light of that an approach based on philosophy and literature could serve fruitful in attaining the desired motive. With the present scenarios of the global environmental disruption, the emerging literary theoretical domain of ecocriticism driven with the ethical ideas of literature and culture to be as 'ecological' could stand vital in communicating the ideas of responsibility towards the drastically and insidiously expanding ecological crisis. Today in such a situation of eco-crisis our responsibilities are global. The paper hence tries in addressing the seriousness of the not only vanishing natures but also the general local natures extensively.

Keywords: Landscape studies, Culture, Ecology, philosophy, Non-Human entities.

Introduction

When thinking about local natures its mostly thinking about landscapes. Whenever we look around us we witness changes that are so continuous or radical that makes these landscapes to be constantly present under a siege. Landscapes are not meant to be just scenarios but rather as a balance of nature and the surrounding human culture architecture through centuries of mutual adaptation. It bears the memory of a long term residues left over by humanity and nature. A landscape encompasses a dialectic co-presence of both human and natural life that have vitally formed a long term co-presence. Today but with the rising ecological destructions upon these landscapes in the name of development, the result of all this is a situation of great ecological gravity for both nature and society. The globally prevailing ecological crisis today is mainly due to a lack of an inclusive cultural framework of understanding landscapes in including the vital non-human entities as vital parts and entities of land.

As the renowned orientalist Edwards Said noted "the final resistance that we have against the inhuman practices and injustices that disfigure human history is to include the non-human world in the broader system of interconnectedness in our habitual-ecology..." (1112). Hence landscape ecology can offer a paradigm as in for both social and environmental of this ethical cultural co-presence in which today's traditional humanism ought to emerge. Thereby, embedding humanism into an ecological landscape paradigm means providing humans with not simply a feeling of their intellectual independence from rooted ideologies but rather with an awareness of their ecological interdependence with that of their surrounding non-human world at large.

From Singular to Plural

The segment of difference is the paramount discourse in understanding landscape culture. The theoretical roots of postmodernism as Terry Gifford points out that "the inner relativism of deconstructive

postmodernism may lead to a nihilistic attitude towards nature seen as a cultural product or as a linguistic construct. Further, the emerging trends of the reconstructive or the ecological postmodernism saw the passage beyond the breakdown of the mechanistic assumptions of modernity as a medium leading to a philosophical understanding of landscapes rather than a negative disintegration of its values including the non-human.

The postmodern thought rejected the idea of supposedly the universal representation of reality. In contrary to this landscape ecology rejected the meta-narrative of this model and criticized it to be a form of ideological centralism. As Hubert Zapf pointed out that means "breaking up closed world-views and exclusionary truth-claims in favour of plural perspectives, multiple meanings and dynamic interrelationships towards a broad understanding. Here, theoretical and political issues are set in the same frame work for to emerge an environmentally ethical debate crucial to the rise of landscape criticism. Right from 1970's landscape studies served to be an ethic aimed at overthrowing the traditional order as a subversive ethic. The concept of local gained importance and theories moved by the centre (human) towards the periphery (the non-human). Moving from centre to periphery here means extending the concept of moral subjectivity of integrating value of different subjects as a single whole. These 'subjects' are not just the ones who are rational or self-aware (humans) but also includes the non-humans such as animals, plants, landscapes or the biome as the whole. Further, this extension of the said moral-subjectivity is not just moving the singular to the plural but rather to consider society itself in ecological terms.

Landscape Narratives as Applied Ethics

Landscape narratives in the pursuit of breaking up the closed dogmatic world views lay exclusionary truth claims in favour of plural perspectives and other such vent for multiple meanings. Thus as Joseph Meeker points it out "literature, philosophy and other such cultural products can become the site of constant creative renewal of language, perception and imagination which makes landscape studies as a social pedagogy.

The combination of literature and philosophy is not new. In the landscape study framework, the representation of the non-human have a value per se in containing an ethical direction and could aid us in orienting our behavior towards a responsibility to include

the other (non-human). As perceived, landscape studies makes literature as a form of applied ethical discourse making literature a medium to speak out the language of things themselves, in this lies the power of landscape studies also in variant in the form of ecocriticism as the expressive power of literature. In this sense, the political use of literature can be the premise for a moral agency that accommodates the language of otherness in whatever form. We can hence for definitively say that landscape narratives try putting emphasis on the 'local' narratives and upon subjects that were being considered so far as the 'other'.

This is visible in what we call *interspecies literature*, a literature in which the representation of non-human animals or of the natural world is not hierarchically oriented or not exclusively presented in an anthropocentric perspective ..." (Iovino 44).

A non-anthropocentric or a landscape humanism implies a desire towards a social inclusion in disclosing new waves of the ecologies of the mind in being with that of the non-human world. It iterates the necessity of humans as being the part of the nature and never as something apart / as a ultimate dominative paradigm.

Conclusion: Towards a Non- Anthropocentric Humanism

Inventing hence a new kind of humanism, a non-anthropocentric one is especially to give voice to nature's claims that was once peripheral. As Aldo Leopold mentions how "enlarging the boundaries of a human community to include soils, water, plants and animals or collectively: the land..." (204) is the new humanism that the emerging traditions ought to follow. Nature's dignity and value with all its once counted 'otherness' (non-human world) can be vitally functional to human dignity in all forms as well. This further explains why many environmental thinkers conceive landscape culture in terms of renewed pragmatism namely in an inventory and participatory judicial attitude that relates itself to a different situation not in order to find metaphysical truths and contextual values of utility and social responsibility.

A non-anthropocentric humanism as a philosophy believes in a form of democratic public freedom that respects diversity and serves to be as a base for political construction and evolution. These philosophies tend to bring a transformative ambition into society uncovering the ideological representations and other rhetorical tricks of the power structures. Such a humanist culture is clearly the opposite of a culture, a purely human-centered that

produces massive ecological conflicts in the contemporary times.

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DOGME ELT PRACTICE FOR ENHANCING CONVERSATION

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Abstract

Conversation is the default form of language. Children acquire their mother tongue only through conversation with their parents and siblings. Conversation is therefore an interactive communication between two people and it emphasises the fact that it is social, dialogic, and dynamic. It is a means of language learning and socialization and not the end product of language learning. It is this medium through which people conduct their daily affairs. It is capable of solving most of the life issues. It is the base means for people to socially relate themselves with others and it is important for career growth. This paper argues that Dogme ELT can enhance conversational skills through certain self-motivating language tasks that demand almost nil textbook materials by instilling confidence in learners. It also locates conversational skills within General English as opposed to cognitive academic language proficiency.

Keywords: *general English, basic interpersonal communication skills (BICS), language of learning and teaching (LoLT), cognitive academic language proficiency, part II English*

Introduction

The sole objective and outcome of English language classrooms is the acquisition of communication skills in terms of listening, speaking, reading, and writing in this order. It can be promoted through involvement, interaction, and collaboration between teachers and students, and students and students. Though English is being taught and learnt for a minimum of twelve long years in the Indian school education system, the much-touted and expected outcome is not realized. However, the main barrier to the acquisition of English as language of learning and teaching (LoLT) is perceived to be over-dependence upon and obsession with materials and classroom activities. Textbooks contain hundreds of activities that can be worked mechanically and monotonously since most of them are in the nature of either 'rewriting' or 'filling-in' types. This is due to lack of proper perspectives of the difference between tasks and activities. Consequently, it leads to frustration among both teachers and students alike. Students lack a sense of purpose and achievement in English language classes where they are kept either as passive listeners or as doers of these mechanical tasks. It is not an exaggeration to note that their expectations are not met. On the other hand, teachers feel that an early return to inclusion of canonical literary texts would at least restore the humanist purpose of language education.

English for Indian learners is the language of LoLT though it is the first or primary language for only a very tiny minority of the fast disappearing community called 'Anglo-Indian.' However, Indian sociolinguistic realities are so complex that it is not possible to present a very neatly drawn classification of the status of 1652 Indian languages or 22 scheduled languages and aspiration of stakeholders. For instance, most parents would prefer English as the medium of instruction right from the primary level. Some students are socio-economically lucky enough to have English as the medium of instruction up to the secondary level. Unfortunately, the students of both mother tongue/regional medium and English medium institutions do not have the necessary proficiency to use English as the single medium of learning. English as the medium of instruction (for teachers!) is different from English as the medium of learning (for students!). Most students at the higher secondary level cannot read for meaning in their own primary language. However, they are all bilinguals in English in the sense that they either claim that they are becoming bilinguals (learning English!) or being bilinguals in English (knowing English!). But the second category of students is unable to function as bilinguals. This is chiefly because the educational system does not recognize the importance of bilingual medium of education whereby every learner can make use of both primary and English

for their seamless simultaneous development while teachers use English only.

Purposes of General English

General English curriculum (GE) is in place in most universities other than technological universities in India and it is offered in the first four semesters as compulsory courses at the undergraduate level while its counterpart or higher version of English for Specific Purposes (ESP) is preferred in technological universities. GE can be conceptualized as having two sequential components: Social proficiency in English or Basic Interpersonal Communication Skills (BICS) and Academic English or Cognitive Academic Language Proficiency (CALP). The second is a superstructure in the sense it can be developed only on the foundation of the first. CALP is supposed to take five to seven years for mastery by learners. BICS can be fine-tuned in the first semester because listening, speaking, reading, and writing skills are developed as a whole in social situations so that learners can socially interact with each other both inside the class and outside of the class. It is therefore context-embedded as it occurs in concrete social contexts. It is not cognitively demanding because language is not specialized or technical. The Dogme ELT practice claims that basic interpersonal communication skills can be developed best through conversations.

On the other hand, the remaining three courses being offered in the subsequent semesters must focus on English language skills (both communicative and linguistic competency) that learners would transfer to their subject classes as a medium of acquiring new knowledge in the chosen subjects. Students should develop the ability to use English to engage with new concepts at each subsequent level. Naturally, the English language is cognitively demanding. They develop new ideas, concepts, and language simultaneously. It means formal academic learning. Classroom tasks are context-reduced and abstract. Students need it to understand content in the classroom and acquire new knowledge through independent activities including reading in the library. Cummins' (1979) Iceberg Theory (in fact, it is a metaphor!) make the distinction clear wherein BICS relate to surface features such as social and academic conversations, comprehension, reasonable pronunciation, and of course, control of essential vocabulary and grammar. On the other hand, at the deeper level, students use CALP in English to analyze and synthesize information and to evaluate, interpret, and make

decisions. Different theorists use different labels and nomenclatures to distinguish between the two different functional values and proficiencies in English. For instance, Gibbons (1991) describes the difference as playground language and classroom language while Bruner (1975) distinguishes between communicative and analytical language. On the other hand, while Donaldson (1978) calls embedded and disembedded language, Olson (1977) refers to utterance and text. Despite different metaphorical phraseology, CALP includes all the four macro-skills that required for content materials. Concomitantly, learners develop the skills of comparing and contrasting, classifying, analyzing and applying, inferring and evaluating and finally creating.

However ELT realities in Indian universities and colleges are totally different. The ELT curriculum is totally based on (literary) textbooks and they aim at inculcating literary education with grammar and accuracy at the cost of communication and fluency. Textbooks introduce cultural shock and its contents are so adult in nature that 17 year old students could not grasp the life's problems and predicaments. They totally ignore speaking and listening skills even though reading and writing skills are not pedagogically targeted. They are full of culturally irrelevant contents and if they are relevant to students with some literary texts from Indian literature in English or in Translation, students are presented with many mechanical activities of matching or filling-in types which are worked individually and silently. They do not promote conversations, dialogues, interactions, and collaboration as a means to effective communication.

Origin of the Term and Concept

Scott Thornbury and Luke Meddings, English language teacher-trainers in Spain, got the stimulus for the Dogme ELT from the manifesto of Dogme 95. They used it as a metaphor for the kind of teaching that trainers should aim at. Dogme 95 is a filmmaking movement that questioned the films' reliance on special effects through fantasy, technical 'wizardry,' and props and sets. Instead, it focussed on the actual story and its relevance to the audience. Analogously, Dogme ELT practitioners challenge the too much of dependency on materials and technology in second language teaching. They call for a focus on the learners in the class and the content that is relevant to them.

ELT practitioners around the world feel that the outcome of ESL classes falls short of the claims of the various methods of teaching and approaches to language,

and use of materials. Sometimes, it appears that teachers and policy makers cannot identify the problem and diagnose it for course-correction in future. They tend to suspect the relevance and validity of a method or approach as soon as a new one appears on the scene either globally or locally and they start abandoning the old and embracing the new one. Some others hold fast to one or two methods for ever and are reluctant to critically view the new ones but dismiss them prematurely. Dogme ELT practitioners accuse teachers' over-reliance on materials and mechanical drills/activities at the expense of learning affordances for the failure in realizing the primary objective of learners' gaining communication competency through interaction and collaboration.

Moreover, Dogmatics charge that teachers are insincere in the sense that they just pay lip-service to communicative approaches because they use imported texts in the class, and it leads to the lowest level of involvement and engagement of learners with them. In such a scenario, students are like 'idling car engines that go nowhere.' English language teachers may not agree to the idea of moratorium on the use of textbooks altogether as radically suggested Postman and Weingartner (1967). Scott recommends that students be taken to the place where books are available like library. Streven's (1956) suggestion or recommendation assumes importance in this context: "Language is not a sterile subject to be confined to the classroom. One of two things must be done: either life must be brought to the classroom or the classroom must be taken to life." Therefore, Dogme ELT practitioners recommend the minimal and judicious use of materials in the belief that the language resources that teachers and students bring to the class can be used. Incidentally, the role of textbook as the mediator in classroom interactions can also be avoided.

Another significant contribution of Dogme ELT is the use of conversational mode of language use in the class by learners and the teacher. Teachers should not speak just textbook English. Instead, there should be spontaneous interaction between learners and teacher. Lesson is not a printed page of materials, but "a vital, unrepeatable experience" that is achieved by conversations that are not contrived but incidental. Dogme ELT practitioners believe that English language learning should enable learners to communicate their thoughts and feelings and language learning is therefore not necessarily about grammar and its companion accuracy. Meddings and Thornbury (2009:3) argue that learners are "coming with their English, not comings to us

for English." Thus, Dogme ELT stresses the importance of language proficiency. It is high time that English language teachers in India addressed the question of adequacy of imported textbooks or contents compiled in India by Indian textbook writers in developing or enhancing the literacy skills. All western literary stuff in English or in English translation does not normally aid English language learners with diverse socio-economic backgrounds to read, or write, or speak.

Dogme ELT

Dogme teaching is characterized by ten features. One, interaction replaces the scenic route called materials-mediated teaching. It is avoidable and therefore can be avoided. The direct route to learning is the interactivity between learner and teacher and between learners themselves. Two, learners should engage in the language learning processes supplied by fellow-learners and teachers. Three, learning is social and dialogic and therefore knowledge and abilities are co-constructed rather than transmitted from the textbook and or teachers. Four, teacher's talk provides scaffolding to learning and it would eventually be dismantled once learners start talking on their own. Five, the language learning classroom should provide the right condition (preferably by the teacher) so that language 'emerges' from the organic process rather than being 'acquired.' Six, teachers should direct learners' attention to the features of emergent language. Seven, learners' beliefs, knowledge, and language are valid contents in the classroom. Eight, teachers and learners are empowered by freeing the classroom from the (imported) textbooks. Nine, if textbooks are to be used, only those that have relevance to learners' contexts should be used. Finally, teachers and learners should ultimately become critical users of such textbooks. However, these ten features can be summarised to three core principles: teaching-learning should be conversation-driven; two, the whole language approached should be the target; and three, focus should be on the emergent language.

Importance of Conversation as a Mode of ESL Learning

Conversation is the basic, natural form of language. All human beings start their socialization process only through conversation. It is also the gateway to acquisition of all major four language skills. All second language learners in their life ought to follow the same route. However, it is quite unfortunate that General English

curriculum at all levels miserably fails to reflect and replicate this natural phenomenon of language emergence. Strictly speaking, children develop their ability to participate in 'proto-conversations' with their parents or siblings and therefore they do not simply acquire their mother tongue. Rather, they exhibit the emergence of language because the right condition is supplied by everyone around them. This supply is scaffolding and once children start standing on their (linguistic/communicative) leg, scaffolding is dismantled by not offering it anymore. They move from one-word-phrases to two-word phrases, then to simple structures and further to complex structures to the extent that they are eventually able to carry on conversations with others around them. The ESL curriculum in India claims to move from grammatical accuracy to conversational fluency and it is, in fact, in exactly the inverted direction from the mother tongue learning process.

Conversation is more than a sum of isolated sentences. It means the uses of longer stretches of language jointly constructed by interlocutors in cooperation and collaboration by way of negotiation of meaning. It is connected and coherent. Interlocutors build on successive utterances in response to each other. Discourse-level language teaching has gained currency for two reasons. One, production of isolated sentences has limited value in real-life contexts. Two, real-life language use occurs at the discourse level. Grammar assumes importance only when sentence-level language teaching is patronized, but it does not prepare learners for communication in real-life language and communicative contexts.

Interaction is a hallmark of a successful language classroom. When the classroom is interactive, it is automatically dialogic as well. However, there is a subtle difference between interaction and communication in the sense that the former can be independent of what the other interlocutor says, but communication demands meaningful exchange of ideas between the interlocutors. In other words, interaction can be one-way ignoring what the other person says, but communication depends on what both speakers say in a conversation. Thus, conversation is interactive, dialogic, and communicative at

the same time. Learners enhance their communicative competency while conversing. Dogme ELT believes that "when learners are communicating, communication should, first and foremost, be 'about themselves.'" (10)

Dogme ELT claims that conversation provides scaffolding for language development. Jerome Bruner coined the term 'scaffolding' to describe the learning of any skills as co-construction in the interaction between the learners and the teacher in the class, or child and parents/siblings at home. When scaffolding is provided, learners feel safe enough to take risks in order to expand their present communicative competence. Conversation assistance from parents and siblings provide a strong support base for the child at home for the development of conversational competence that leads on to further communicative competence once they start attending the school later. While contrasting 'instructional conversations' with classroom talk, Tharp and Gallimore (1988) assert the importance of conversation by equating it to teaching: "To most truly teach, one must converse; to truly converse is to teach." Such a conversational teaching is expected to have a personal touch as well.

Finally, conversation is both transaction and interaction. Even in transactional contexts, interaction/phatic communication plays an important social role. Thus it creates a discourse community wherein all interlocutors become equal participants. It blurs the question of social status and social distance in a culture that believes in hierarchy. Conversation-driven language learning classes enjoy a kind of social cohesiveness and camaraderie. Conversation is therefore viewed as the means of language learning and not the end.

Practical Tips for Conversation-driven Classrooms

Meddings and Thornbury (2011) present many activities that teachers can use in classes without any preparation and materials. They suggest a new approach to teaching English through conversation. Teachers can think of hundreds of such themes for which no material is required, but learners' English can be treated as an investment to expand their communicative competence.

No	Activity	Teacher's Role	Learners' Role
1	Significance of Learners' Names	Writes questions on the board	Let them converse with each other to find out the most unusual name and its significance
		1. Does your name have a meaning? 2. Does anyone else in your family have this name? 3. Is it popular in your region/religion/caste?	Let each of them report to the class

		Ask students to approach at least three fellow students with these questions. Let each of them report to the class how one of them got their name	As home work, let them write a short text about how they got their name or its significance
2	One-Minute Lightning talks	Teacher writes topics on the board "What I like and don't like"	Learners in pairs choose the topic
		<ol style="list-style-type: none"> 1. My room 2. My house 3. My city/village 4. My religion 5. My region 	Discuss it for 5 minutes Let each member talks to the class in one minute.
		Learners are paired and be allowed five minutes for discussion of the chosen topic	As home work, let the pair choose another topic, work in pairs, and practice their talks
3	Interviewing for Information	<p>The following questions are written on the board:</p> <ol style="list-style-type: none"> 1. When do you usually get up? 2. When do you listen to news on TV? 3. Where do you do your shopping? 4. Where did you spend your childhood? 5. How often do you eat in the canteen? 6. How well do you speak English? 7. How well do you work with computer? 8. What do you do in your free time? 9. Why do you (don't) read horoscope? 10. What kind of books do you read? 	Each student asks another student at least one student. Thus each one asks as well as answers.
		Ask students to raise them to fellow-students	Students who had very interesting info will be invited to share it with the class

Reasons for Teachers' Reluctance

English language teachers are not inclined toward offering a course on conversation for certain reasons. One, conversational fluency can not be easily testable as much as grammatical accuracy. Two, they feel that the conversation-driven method of teaching is haphazard because it is basically an unplanned teaching mode. It is therefore hardly sustainable. Three, Lessons and language emergence from out the conversation between the people in the classroom is highly unpredictable. Four, materials-free Dogme method will lack both focus and direction in the class. Finally, even experienced teachers of ESL lack native-speaker competency to the extent that they would find it extremely find it difficult to explore and extend the learners' language proficiency. Scaffolding requires greater fluency and accuracy to the extent that teachers need to be good communicators. Presently, ESL teachers are good at textbook English that they can explicate through (literary) texts. They themselves are at the disadvantage in using conversational English in places outside the educational institutions.

English language classroom without a prescribed textbook is unthinkable in certain cultures like India where teachers are revered as gurus, a status sandwiched between parents on the one hand and God on the other hand, and textbooks are treated deities to be kept in the

place meant for keeping idols at home. Most educational boards and institutions mandate the use of textbooks. However, most teachers do not have a say on their composition or choice. All stakeholders including parents expect a book in order that the entire learning experience can be objectively structured. Though both teachers and learners hate the over-reliance on texts in language classes, textbooks are indispensable in the classroom. In fact, it is the defining feature of a classroom! These textbooks consist of grammar and literary extracts and excerpts written in standard written English, followed by glossaries and mechanical exercises. It proves to be a sufficient source of de-motivation. Moreover, Dogme ELT is perceived to be an entertainment model of teaching with less or light materials. It is neither useful to young adult learners nor appropriate to adult learners at the tertiary level.

Conclusions

Dogme ELT claims to be a better, alternative approach to ESL, particularly the acquisition of conversational skills. ESL teachers in India can undertake action research on the feasibility study by improving their communicative competence and enhancing their confidence to handle classes without textbooks wherever and whenever feasible. Eventually, they should discontinue the textbook-mediated learning by exploiting

the language brought to classroom by learners and capitalizing on the interlanguage. Errors must be tolerated and treated as a learning investment without resorting to course-correction on the spot and dwelling at length on the errors committed. They should evolve pedagogical strategies to rephrase the errors in a way that encourages learners to target fluency. Let the learners be fluent enough in their conversation to seek (further) explanations on accuracy!

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ENGLISH LANGUAGE COMMUNICATION NEEDS FOR COMMERCE/BUSINESS ADMINISTRATION

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Abstract

As lingua franca of the business world, English language teaching to students of business administration and commerce is expected to be result-oriented. However, there appears to be a huge gap between demand and supply. Many students of this stream have begun to realize that if they miss English, they miss opportunities in life. They consider English as a key to the world of opportunities and a must for career promotion at work. Business communication is taught by teachers of commerce and business administration and they consider English language teachers as not qualified to teach business communication. Ironically, many of them lack fluency and accuracy in their communication and they are not qualified to teach English language communication skills. Writing business letters, reminders, plans, brochures, ads, business reports and vocabulary are some of the components of business communication syllabus. This paper attempts to demonstrate that the teaching of business communication by teachers of major departments and English language communication skills by English language teachers through tasks would yield desired results.

Keywords: Business communication forms, needs analysis, language skills, task-based instruction

Background of the Study

English is the language of international trade and commerce. Even semi-literates, business people and traders are prompted to use English to carry on conversations with people. For other states, it is a healthy exchange of ideas and views. In the present scenario, more than a business, communication is a fulcrum for all jobs. Students who lack communication they can not survive in society. English is treated as an asset in India. The highly educated and sophisticated sections of society find it more prestigious to converse in English as it boosts their image in society. A good command over the use of English is considered a social asset as it also instills self-confidence in an individual. Leaders need effective communication in working places with others on a one-to-one or group basis. People who are good at strong interpersonal skills are the successful communicator in professional and personal life. Communication skills are associated with job-related success and they can be developed and honed. Teachers ask students to listen in the classroom to what they teach not involving them in any activities. The English language classroom is not only learner need-based but also learner-centred. Learner-centred classroom hinges on learner needs. English cannot be learnt without the active cooperation and willing

participation of learners. Through certain tasks, students can easily improve and would get results in terms of acquisition of business communication because they are the future business leaders and managers.

Literature Review

Sullivan J. Jeremiah (1993) discusses an interesting dimension to the study of Business Communication. There is an underlying philosophy behind every teaching method and even a philosophical model of existence. Tucker and Anne (2001) recommend an approach of service learning, a form of experiential education for teaching presentation and conversational skills. This would be a move away from the traditional approach where students make oral presentations to their peers. Saloner Garth (2010) discusses the challenges of training managers for leadership roles. Thus, there is a strong need to work on curriculum reform, effective communication skills and leadership training and critical thinking.

Hypotheses

This study begins its investigation with the following assumptions:

- 1) Conversing with friends in the classroom leads to speaking and communication skills.

- 2) Peer-team teaching builds self-confidence and enriches business new vocabulary.
- 3) Writing business reports and letters that are the Herculean tasks can be overcome through classroom activities and practices.

Research Design

Communication is the foremost of the basic skills for business people. The emphasis on teaching communication skill is given very little attention. This study investigates communication skills of the first year and third year undergraduate students of Commerce and final year of Business Administration through tasks like conversing with friends and professors only in English, correcting pronunciation, enriching vocabulary in their major subjects, writing business letters through email, group discussion, cognitive activities, and negotiation and leadership skills effectively. The questionnaire consists of ten questions on new business vocabulary learnt or encountered, pronunciation details, and Conversational situation. Other factors that tested were concentration and giving activities to them in the classroom. 20 Commerce undergraduates and 20 Business Administration students acted as subjects for the study.

Research Questions

The following research questions were framed for investigation:

- 1) What are the effective methods to teach communication skills?
- 2) How is peer-team teaching useful for students?
- 3) What are students' attitude towards teachers and activities given in the classroom?

Discussion

Communication either in verbal or non-verbal plays an eminent role everywhere in the world. It is an active process. Communication skills are otherwise known as interpersonal skills. There are two types of communication: effective and successful communication for business purpose. Effective communication happens when the intended meaning of the speaker and the perceived meaning of the receiver are the same. Successful communication means exchanging the ideas to motivate and influence, empathizing and developing relationships, reading interpersonal situations, organizational politics and mainly to convince people with their speech. Conversation is one of the main tools to enhance speaking as well as communication skills. A

conversation is a process of exchanging information between two or more participants. The twenty first century students can learn LSRW skills and interaction inside and outside of the classroom. Moreover, using technology for language teaching is effective when activities are given in the class. In Indian context, conversational skills can be exploited and only practiced in the classroom by giving suitable situation like Employee to HR discuss the improvement of company comparing to other corporate companies. Teacher has role as a facilitator and involves students in face-to-face conversation with other persons, and share certain important things about their activities in the company. Then the teacher can directly correct grammatical mistakes or incorrect sentences after the conversation. Virtual communication or video calls are only possible in the hi-fi infrastructure engineering colleges and not in the government or aided colleges. Through conversing with fellow students/teachers in the class they can easily develop fluency, grammar, pronunciation, word and sentence stress.

Group decision enhances HOTS, negotiation, questioning, effective communication and cognitive abilities. After the discussion, students should reflect ideas or responses or raise any closed or open type questions to clarify their doubts. Collaborative and cooperative learning take place in the classroom environment. Classrooms should be participatory, exploratory and interactive with the help of teachers through activities.

Communication and computers as well technological gadgets go hand in hand. Communication through computers is becoming a reality. Writing business letters is a complex task for many students. Writing is a creative process and discovers one's own thoughts. Before starting letters students should think "why am I writing this?" and "who is the receiver?" They should also find out right words and appropriate sentences as well as usage of words. Specific business vocabulary plays a vital role in the letters. For writing letters, mobile gadgets can be very useful for the present generation. Nowadays everyone has mobile phones with 3G Internet facility and chat application. Students have their own interest to write business letters, reminders and reports using applications like Gmail, rediffmail and yahoo and other social networks. While writing business letters they should be professional, avoid jargon, pay attention to the names, titles, gender, attractive words and check twice.

Curriculum differs from university to university and they have courses like business communication,

managerial communication, corporate communication, organizational and technical communication and communication skills. Particularly, for business communication English teachers are unqualified to teach business skills as well as communication skills. By doing certificate courses they are qualified to teach communication but not business related terms or concepts. Commerce/MBA teachers can effectively teach business strategies, tricks, vocabularies like commercial, consultant, expenditure, free trade, market leader, purchase, materials, sold, shareholder and receipt. Difficult business concepts and developing language skills can be effective through peer-team teaching. Students also will get different exposure and ideas in the classroom within the help of the facilitator. Subject teachers should be professional in their area of specialization whether it can be business or communication. They should equip themselves to modify environment, meet the students' needs and desires. They are strong in subjects and not good at communication. Effective learning takes place only in the classroom through lecture method and task-based activities not through technology. 'Learning by doing' concept is suitable for the present generation. Technology can be exploited for business purposes to train person 24x7 and to save time and money. In the classroom, students are not interested to use technology but they proactively involve themselves in the classroom activities. Teachers can exploit mobile phones to teach business letter. Students improve language skills even without smart classroom and acquire business communication effectively through peer-team teaching.

Summing Up

This study practically analysed business communication skills by giving certain activities to learners. Learners show positive attitude toward using new methods. They participated actively in the classroom and responded to the questions that were raised by their fellow students as well as teachers. These methods can be considered for teaching business communication in the coming days. The hypotheses that conversation helps learners improve their speaking and communication skills and use of business vocabulary on a daily basis have been validated by the response given by learners who have taken part in the session.

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READING IN THE AGE OF WATCHING: A STUDY ON STUDENTS' ATTITUDE

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Abstract

The advent of films has marked the downfall of the fame and aura attributed to the literary writers. The focus has shifted from the creator of the story and the script towards the casting crew of the film. This in turn has resulted in the downfall of reading which was once considered as the most prominent tool in knowledge acquisition and leisure. The digital natives have a unanimous answer to the question of what should be the replacement of reading. It is watching. This has paved the way for quite a lot of suspicions on the credibility of watching and arguments advocating the superiority of reading. This paper intends to analyse the possibilities of accepting watching as the new way of reading by analysing the student's attitude towards reading and watching. The subjects for this study are 100 undergraduate students of English. Further, this course will also explore the scope for teaching critical watching by reading the visuals (Textualising the Visuals) based on the outcome of the study.

Keywords: Reading, Digital natives, Critical watching, Textualising a visual.

Introduction

The flair for reading and the number of students interested in reading has gradually gone down over the years mainly due to the advent of ever flourishing visual media. Students at the very young age are exposed to visuals before being exposed to reading. The sources for watching are easily available and also affordable. Therefore, the students believe that watching is more helpful in enhancing their knowledge and skills than reading. Though there are considerable amount of students all over the world who are still interested in reading it is high time for the literary academia to accept the reality by considering the majority to develop modules and methods that would support learning through watching.

Objective of the Study

The main objective of this study is to analyse the attitude of literature students towards reading and to explore the possibilities of teaching and learning literature through watching in the digital age.

Background to the Study

Change is inevitable in any field of study due to the development of humankind. It is witnessed by the inventions due to change in taste and affiliations and vice versa. This reflects in the vistas of learning too, thus

making improvisation in learning a continuous never ending process. Learning never gets complete but the medium of learning and ways in which learning is supported keeps changing and is updated on par with the development in the field of science and technology. This change has made the following words of Alvin Toffler more significant in the current scenario.

The illiterate of the 21st Century are not those who cannot read and write but those who cannot learn, unlearn and relearn. Toffler (1990)

Therefore, it is necessary to adapt to the changing trends and demands of the teaching learning process.

The change in itself has brought in changes in the ways in which knowledge and skills are acquired. Traditionally, knowledge is acquired through listening to the gurus, elders and teachers and later was supplemented by reading with the advent of printing press. In the present scenario, we can see prominent traces of vanishing significance attributed to reading due to the advent of visual medium. It is quite evident that watching is considered as the new medium through which knowledge is acquired.

Watching is considered simple and easy means of knowledge reception because of the obvious fact that most of the learners of this age think in images. Thus "We

are neurologically wired with an overwhelmingly visual sensory ability" Brown (2014). We the human beings have made use of pictures to record their encounters with environment for 250 centuries followed by pictograms and ideograms for the next 20 centuries and finally words for the next fifteen centuries Davies, Bathurst, and Bathurst (1990). This clearly suggests that human beings have communicated through visual means for a longer period of time.

Further, From cave drawings to the world of emojis communication has completed the full circle Marcel Danesi (2016). Human beings started communicating through symbols and signs and later developed verbal communication mainly to talk about object in their absence and now the advent of emojis and pictures are playing a vital role in minimising the usage of words. Therefore, the future of the 'language' as we traditionally perceive is in itself at risk. Thus discouraging watching in the contemporary context stands void and meaningless.

Moreover, watching or reading digitally should not be viewed as a threat to learning rather it can be considered as an opportunity to ask new questions Adam Hammond (2016). Understanding the evolution of knowledge processing over the years would make us understand how far watching can be exploited in the process of learning in the present and the future. Since watching also includes reading visually, it helps in easy access of materials and also understanding of the content is easy when compared with reading. Thus the students can be easily driven towards critical thinking and appreciation of the visuals.

Taking into account the status of communication per se in the present scenario which strongly advocates visual learning and acquisition the study on finding the position of reading in the age of watching is essential. This study would help the literary academia to equip not for the future but more importantly for the present at the earliest.

Research Methodology

Since the objective of the study is divided into two segments two different researches are conducted. Firstly, to analyse the attitude of students towards reading a questionnaire with 10 statements on a likert-type point scale from Agree, Disagree and No Idea was administered. The subjects for this study are 100 randomly chosen undergraduate students of English literature. The questionnaire was distributed to 120 subjects out of which 107 were filled in and returned to the researcher. The researcher carried out a validation

process and finally the number of samples taken into account became 100. The questionnaire also took note of the subjects' gender, year of study, inputs on their reading habit. The responses were collected and processed.

Secondly, since the processed and analysed data supported the fact that the subjects were more inclined towards watching than reading the researcher made a qualitative study on the possibilities of exploiting watching for language acquisition and honing the higher order thinking skills in terms of studying English Literature.

Research Questions

The following research questions were framed to carry out this study

1. What is the relevance of reading in the Digital age?
2. What is the attitude of students towards reading?

Review of Literature

The researcher began watching quite a few youtube videos and then started collecting a few articles related to reading in the digital age. Adam Hammond (2016) in an interview found on the YouTube clearly states that learning and research in the digital age is much easier thus visual learning should be encouraged and it should not be viewed as a threat to knowledge acquisition and production. Buzzetto, Sweat, Elobaid (2007) suggest that students find it comfortable to learn using their personal computers and internet than learning through printed textbooks. Neimann (2016) presents the statistics on the decrease in reading time and the increase in screen time among the teenagers. Moyer (2010) states that teens don't read anymore because of changing interest towards visual media. A study of all these and few more articles gave a conviction to the researcher to channelise the research to analyse the attitude of students in the researcher's locality thus validating the claims made by the previous researchers and to explore the possibilities of accepting watching as the new reading of this age.

Hypotheses

The research was started with the following hypotheses

1. Watching has occupied the space of reading
2. Students are interested in watching than reading

Discussion

The results of the study conducted among students of English literature clearly suggest that students are interested in watching than reading. The data and the interaction with students have revealed the following about the attitude of the students towards reading. Overwhelming majority of the students feel that reading is

a waste of time because they think that they can experience the same amount of pleasure or knowledge through visual media. Students also feel that watching enhances multitasking abilities which is a vital skill in the 21st century. They find joy and sense of accomplishment in watching a film adaptation of a novel or a play than reading the original text. They are aware of the fact that by watching they would miss the opportunity of visualising the text that they are least bothered with.

Most of the students feel that watching helps in enhancing their language (perhaps spoken / conversational) to a very large extent. They feel that visuals decrease the possibility of distraction and help them in being attentive throughout thus the content is easily understood. The results also suggest that students would be interested in reading if books are given to them in the electronic or audio form. There is no significant difference in responses among girls and boys and also from the students of first, second or third year of study. Some respite was shown for their teachers because at least one fourth of the total number of samples felt that classroom lectures are useful to them than the lectures found on the internet. It has been inferred that a very few students who are interested in reading despite the influence of Visual media had their Higher Secondary education from ICSE and CBSE boards. On the whole the students unanimously reflect that fact that reading is being slowly but steadily replaced by watching.

Since most of the knowledge acquisition of the 21st century learner takes place visually the future of language and literature would be in exploring the field of visual literacy. Teaching the craft of reading a visual and associating it with contemporary socio-political and literary context by comparing and contrasting it with various other visual sources would be the key to literacy in the future. Teaching to watch and critically appreciate a visual is as important as critically appreciating a literary text. Literary theories and approaches should be employed in reading visuals as it is done in criticising a canonical literary text. The academicians must understand the fact that as in the case of literacy the future of literature will also be visual literature (films and Cellular/talk-text novels).

Several researches have already been carried out in the field of exploiting visual sources in the enhancement of language skills. This research also emphasises the vitality of using visual sources in teaching English as a second/foreign language especially in places like Tamil Nadu in India, where the present study was conducted and the learners have no exposure to English other than

the classroom lectures provided that they are in English. However, English as a language skill is essential for the students of this part of the world too. The only way of exposing them to the English language is through visuals which can be carried out easily in this age of modern media and technology.

Therefore, it is evident that visual learning is the future of studying literature and it also helps in acquisition of language skills. It is left to the teachers now to equip themselves to meet the demands of the contemporary stakeholders. Though the teachers of this age are the students of the past, the very fact that they teach today's students must make them continuous learners. Teachers should involve themselves in collaborative developments by making use of the world wide platforms like the Global Staffroom because the need of the hour is to bridge the gap and address the dichotomy between different modules of teaching learning practiced in schools, colleges and universities across the globe. Since we are clear about what would be the future of learning and knowledge acquisition it is our rightful duty to equip today's students for the future.

Conclusions

The discussion on 'do visual media influence learning?' in the literary and linguistic academia is now being directed towards the discourse on how visual media influence learning? And how can it be exploited in facilitating the present students for the future? After analysing the students' attitude on reading one must come to a conclusion that changing one's attitude is something which is not academically possible and it is wise to play to their interests i.e. to accept and find ways to direct language and literature studies towards the reality, 'watching is the new reading.'

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Appendices

Presentation of data collected through the questionnaire administered among the Undergraduate Students Total number of samples = 100

Please make tick mark(s) above the appropriate choices

Gender: Male/Female Semester & Year of study:
How often do you read: Daily/ Weekly/ Occasionally/
Never

What do you read: Prescribed Textbooks/Novels & other literary texts/journals & Magazines/ Newspaper / Social Media Posts & Texts

Higher secondary board: Matric/State/ CBSE/ ICSE/ IB or others (Please mention) -

Please make a tick mark against each statement in the appropriate box

S. No	Statement	A	DA	NI
1	Reading is a waste of time	82	18	0
2	I spend more time in watching than reading	91	9	0
3	Accessing information and knowledge is made easy through watching	93	7	0
4	Watching a film adaptation is better than reading the original text	84	12	4
5	Watching the play is better than watching its film adaptation	82	14	4
6	Watching enhances language acquisition	95	5	0
7	Understanding and comprehension are made easy while watching	88	9	3
8	Watching YouTube lectures and other sites are more useful than classroom lectures	64	25	11
9	I prefer reading an Ebook/Audio Book/cellular Novels	96	4	0
10	Reading is being replaced by watching	98	2	0

Note: A - Agree, DA - Disagree, NI - No Idea

ENDURING THE UNENDURABLE PATRIARCHAL DESPOTISM: A STUDY OF FEMALE PROTAGONISTS IN BAPSI SIDHWA'S THE PAKISTANI BRIDE AND KHALED HOSSEINI'S A THOUSAND SPLENDID SUNS

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Abstract

*The paper attempts to argue, in the light of the two writers Bapsi Sidhwa and Khaled Hosseini's novels, how the patriarchy and the persistent conditions of conflict have multiplied the oppression on women in general and particularly Muslim women. Both the novels centre on the experience of the female protagonists and how their lives become transformed after a series of drastic events. In the contemporary literary scenario of the world, gender consciousness is not palpable as in the phraseology of western or eastern criticism. It desires to make it clear that the aim is not to homogenize Muslim women or women by any means. It is a fallacy which has become a recurrence when it comes to any academic or non-academic discussion about women. Generally women are not a homogenous category in any way. There are various intersections like the class, ethnicity, regional belonging, or historical situation on which the men and women tread like their counterparts in any other part of the world. In both the novels—Sidhwa's *The Pakistani Bride* and Hosseini's *A Thousand Splendid Suns*—the women share the common plight of suffering, where the male folk treat them as mere objects and subject them to extreme oppression. These two novelists rightfully depict the story of these women, who show signs of resistance and try to thwart the men order but their struggle is overwhelmed by the ideology of the male-dominated social systems. This paper focuses not only on how the women are suppressed in the name of culture and customs but also on their voices against oppressive patriarchy and their incredible stories of survival in the unique social and historical circumstances.*

In the present-day literary scenario of the world, gender consciousness is doubtful as in the phraseology of western or eastern criticism. The discrimination of gender bias starts from the childhood and has no ending. The society accepts the bliss of the male child and feels proud of having them but it is opposite in the case of female child. Writers like Bapsi Sidhwa and Khaled Hosseini with their distinctive talents, particular range of interests and individual style have proved that they are imaginative and outstanding. Their themes diverge from traditional to present situations and problems of their societies. The paper focuses not only on how the women are suppressed in the name of culture and customs but also on their voices against oppressive patriarchy and their incredible stories of survival in the unique social and historical circumstances.

Recent reports by Amnesty International and the Organisation of Islamic cooperation indicate that Muslims are long-standing victims of prejudice in the world. Today, the prevalence of Islam-phobia in western societies is a mounting concern globally. Muslim women, however, face perhaps the challenges of the Muslim population due to multiple layers of discrimination rooted in religion, gender

equality and migration. Because of their vulnerable position in its society, the Afghan women have endured a tough existence as they are under the grip of double subjugation in the form of patriarchal authority and the oppression emanating from the persistent conditions of the conflict. However, there is often a tendency to cast Afghanistan and its people in essentialist terms both in academic and non-academic endeavours. Khaled Hosseini's *A Thousand Splendid Suns* and Bapsi Sidhwa's *The Pakistani Bride* centre on the subjects of sexism, human rights and gender status. The common themes presented in these novels are the issues encountered by the women of Middle East and Pakistan

Bapsi Sidhwa, born 11 August, 1938, at Karachi in Pakistan is broadly familiar as one of the most famous Pakistani-Anglophone novelists writing today. She was brought up in the Parsi community, a religious and conservative-ethnic minority in Pakistan which practises the Zoroastrian religion. Sidhwa received a bachelor's degree from Kinnaird College for Women in 1956. Then she was married. When her first husband died, she married a businessman Noshir. R in 1963, and begot three children. In 1975, Sidhwa served as Pakistan's

delegate to the Asian Women's Congress. She immigrated to the United States in 1983, and became a naturalized American citizen in 1993.

The Pakistani Bride by Bapsi Sidhwa is one of the most successful novels, which reveals the domineering patriarchal discourse of Pakistani customs by providing an alternative image of a strong and confident character. In the midst of a very strong interest and involvement in the situation of women, she talks about the place of women in Pakistani gender-based class structure. Her work specifically refuses to accept the limitations of the patriarchal definition of woman. In simple, it interweaves Zaitoon's narrative with the story of Carol, an American woman discontentedly married to a Pakistani engineer.

Khaled Hosseini's best-selling novel *A Thousand Splendid Suns* portrays the plight of two Afghani women. Hosseini weaves the history of Afghanistan throughout the novel particularly the bloodless coup of King Zahir Shah who had ruled for forty years. This paper argues how during a critical phase in Afghanistan's history, the conditions of violence and conflict magnified the oppression on its women. By contextualising the Afghan women's experience in a specific set of historical, political and social factors, the novel offers an alternative view of the condition of Afghan women rather than the usual stereotyped descriptions.

According to Merriam-Webster Dictionary, 'Patriarchy' is "a family, group, or government controlled by a man or a group of men." The term is used to portray the society in which we live today, characterized by present and historic uneven power relations between women and men whereby women are methodically deprived and subjugated. Male sadism against women is also a key feature of patriarchy. Women in marginal groups encounter numerous oppressions in any society, as race, class and sexuality intersect with sexism.

Patriarchy has been defined as a term that "refers to those systems—Political, material and imaginative—which invest power in men and marginalize women. It manifests itself in both concrete ways such as disqualifying women a vote and at the level of imagination" ((McLeod173). The patriarchal society enforces 'the ideal womanhood' concept on women which has to be attained in any condition or circumstance. As reflected in the novel *A Thousand Splendid Suns*, in the Afghan society, it is the women who have to cultivate these ideals laid down by the patriarchy. The patriarchal society sees to it that women become the perfect accomplishments of these

ideals. This concept becomes a major instrument of oppression on women.

The long-lasting conditions of the clash in Afghanistan have taken grave duty on human life and brought enormous suffering and devastation for the country. In any conflict children and women, in any case, are always the worst sufferers because of their vulnerable positions in the society. In a society like Afghanistan where, in some instances, patriarchal customs come into view as hard and as rigid as its landscape, one is only left to wonder about the conditions of women when these customs are further entrenched by a prolonged conflict. According to Chandra Talpade Mohanty, "Women have never been secure within or without the nation - they are always disproportionately affected by war, forced migration, famine, and other forms of social, political, and economic turmoil" (514) It appears from the narrative of Hosseini's novel that women in Afghanistan have been victims both of patriarchy and the brutal situation of conflict that has ravaged Afghanistan for the duration of almost a half of century. The novel begins with the word "Haram" which means 'bastard' and this word encompasses the stigmatic existence of the lives of the two female characters, Mariam and Laila. Mariam is delineated as an outcast who is a source of disappointment and shame to her mother whom she renders as a social outcast.

The prolonged era of conflict and violence in Afghanistan seems to have aggravated the gender inequality and women's subordination because the conflict is rooted in structures which are exclusively defined by males. After the fall of Communists in Afghanistan, the Jihadi warlords, and later, the Taliban, articulated identities which were highly masculinised in which women suffered immense oppression. Taliban, in particular, patronized patriarchal practice as a marker of national culture. They imposed harsh norms of female propriety. The effect of violence is committed against women who were seen as not complying with this norm of female modesty. Since the Taliban carried out these activities at the official level, an environment was fomented in which violence on women spread across the whole society. Afghan women are not a homogenous category in any way. There are various intersections like the class, ethnicity, regional belonging, or historical situation. The form of conflicts and wars that Afghanistan has now been coping with for almost a half of century, have brought agonizing experiences for its women.

Mariam's agonies see no bounds as she suffers multiple miscarriages only to realize that nature has deprived her of the pleasures of motherhood, which in turn she relates it to the fateful incident of her own mother's suicide and a consequence of her callousness towards Nana. One of the most striking resemblances in the female characters of Hosseini's is that they are internally circumscribed in a vicious circle of guilt which they try to bridge by punishing themselves. It seems that due to such a feeling of guilt, Mariam silently endures all the harsh beatings, accusations and accepts her infertility as a curse of her mother.

The oppression against Muslim women as depicted by Hosseini is not peculiar to Afghanistan only, in fact it is commonplace across various nations and cultures although the most stringent form of subjugation of women folk is a norm in religion dominated countries such as Pakistan, Bangladesh and Saudi Arabia. Books from these countries such as *My Feudal Lord*, *The Pakistani Bride*, *The Swallows of Kabul* and *In the Land of Invisible Women* to name a few, help us explore the lives of women harrowed by religion, culture, tradition and men. All these novels are based upon real-life incidents where we see women subjected to verbal and physical torments.

Nana and Mariam appear as the archetypes of sacrificing women who have learnt to live for others without ever making any demand for their selves. Mariam although childless finds contentment and pleasure in the comradeship of Laila and Aziza and transforms herself into a prototype of selfless motherhood who for the sake of love does not hesitate to execute the murder of her husband. She feels no remorse regarding her action except for the fact that her action had deprived Zalmai of his father's affection. These deprived and aggrieved women live a crippled life. Subservience and exploitation become a customary attribute of their existence which repudiates them of respect, dignity and solemnity. The stories of women like Nana and Mariam illustrate that merely accepting the subjugation without ever establishing a defence only reinforces the tyrants to uproot and defeat humanity and gratitude.

In Sidhwa's *The Pakistani Bride*, the central character is Zaitoon; an orphan Punjabi child adopted by a tribesman Qasim and becomes her stepfather. This is a novel about a young girl who comes as a Muslim refugee from India. When she was three, her parents were dead who belonged to Parsi community, a distinctive minority people. The theme of the novel is about Zaitoon's brave emancipation for living. Her story is divided into three

parts; her childhood, married life and adventures in the hills and courageous struggle for identity. Finally, the novel ends with Zaitoon's epic struggle to find the bridge and cross it safely.

Zaitoon is very much affectionate to her stepfather. As she gets matured, her stepfather Qasim offers her to one of his tribesmen in marriage simply because he has given his word. But his neighbour, Mirriam tries to make him understand that Zaitoon cannot adapt herself to the tribal culture and code: "I tell you, she'll be a slave, you watch, and she'll have no one turn to, No one!" (TPB 93). Qasim grows furious and asserts his proprietary rights by saying, "She is my daughter and I have given my word! the word of a Kohistani" (TPB 94). To oppose this Mirriam tells Zaitoon, "tell your father you don't want to marry a tribal" but Zaitoon says, "I cannot cross my father" (TPB). Similarly, Ashiq tells Zaitoon about the problems that she might face with the tribal people and persuades her to stay with him. She refuses by saying, "It is my father's wish. I must go with him" (TPB 144). Her reply shows her immense respect for her stepfather.

On the very first night of her stay in the hills, Zaitoon had a vague recollection of an unpleasant dream anticipating an unpleasant future that destiny holds for her in the land of savage brutes. She cries in a frightened mood, "Abba, take me to the plains. If I must marry, marry me to someone from the plains ... I will die rather than live here" (TPB 157). Qasim, blinded by his promise to the tribes, threatens. The ownership and authoritative attitude of Qasim says, "I've given my word. Your marriage is to be a week from today. ... I've given my word. On it depends my honour. It is dearer to me than life. If you besmirch it, I will kill you with my bare hands" (TPB 158).

Two months after her marriage, Zaitoon is severely battered for going up to the river against the commands of her husband. The river is the boundary between the tribal territory and the army. Beyond the river is the world Zaitoon is familiar with. She longs to go back to it. Seeing her move with the Jawans across the river, Sakhi, her husband nearly kills her. Then she decides to flee from the terrifying world. Zaitoon frames her resistance in the gesture of defiance. Her escape from her husband and his family is the only act propelled by her free will; after being a victim of ineluctable fate almost throughout the narrative. Zaitoon's escape from the rigid, traditional tribal community is considered as a spirit of matriarchy which endorses a challenge to the strictures of patriarchy.

The idea of woman as a conquered land finds expression in this novel not only in the institution of

marriage but in every walk of Zaitoon's life. She is treated as an entity and a commodity of gratifying her husband's animal instinct and fulfilling her father's whims no matter at what cost. On the very first day of her marriage, she undergoes an experience of sexploitation. Sakhi behaves like a beast: "Sakhi surveyed his diffident bride with mounting excitement. Here was a woman all his own, he thought with proprietorial lust and pride" (TPB 159).

Sidhwa has presented the plight of a Pakistani woman through the eyes of an outsider. She has exposed Zaitoon as a scapegoat becomes a lioness seeking pride; not only to the proprietarily authoritative attitude of her father but also a victim of her own submissiveness and innocence. The story of Zaitoon exposed the main issue of the novel, the position and treatment of women in Pakistani society. Zaitoon's escape from her brutal marriage is a victory against the parochial patriarchal system. Her fleeing is a spirit of bravery and courage on the part of a woman which enfranchises matriarchy as a challenge to the atrocities of patriarchy. By her decisiveness, she becomes a matriarchal survivor.

On feminist perspective, women activists have campaigned for their legal rights: rights of contract, property rights, voting rights, for women's right to bodily integrity and autonomy, for abortion rights, and for reproductive rights (including access to contraception and quality prenatal care); for protection of women and girls from domestic violence. Today, these rights are on the stream of emancipation of women.

On this perspective, both the works selected for the study have common themes which have different modes in enfranchising their will to live. In this view point, these two women (Mariam and Zaitoon) characters made them as matriarchs by their will to evade the patriarchal influence out of their lives.

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ENVIRONMENT AND WOMEN IN ARUNDHATI ROY'S *THE GOD OF SMALL THINGS* AND GLORIA NAYLOR'S *MAMA DAY*

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Abstract

*Ecocriticism is the study of literature and the environment from an interdisciplinary point of view. It analyses the relationship of humans with nature in different perspectives. The ecological approach to literature helps to identify the imperative presence of nonhuman environment in the society. Reading literature from ecocentric point of view presents a better understanding about the relationship between the human and nonhuman environment. Women's writing, throughout its journey, emphasizes the concept that nature exists beyond humans. Cultural dimensions of human relationship with nature can be viewed precisely with the help of the writing of women writers. Indian Writing in English and African American writing consists of women writers who are much concerned about the environment, society and women. The writings of women writers have brought a great impact on readers in understanding nature and its role in designing the lives of humans. The present paper analyses the role of nature in Arundhati Roy's *The God of Small Things* and Gloria Naylor's *Mama Day*. The predominant role of nature found in both the works assists in understanding how the authors have effortlessly intertwined the plots and characters with nature. The setting of the novels, a fictional coastal island of America and a village in the southwestern India plays a lead role in representing nature. Arundhati Roy and Gloria Naylor are successful in recording their environmental concerns through their works and the present paper explores their works with the lens of Ecocriticism and Ecofeminism.*

Keywords: Ecocriticism, Ecofeminism, patriarchy, degradation, devastation, matriarchy, ecological balance, exploitation, oppression

Introduction

Literature celebrates women and nature and treats them as equals. Women and nature play a significant role in the substantiate growth of the society but they are not placed in the primary position. The society dominates the environment and women and exploits them for its benefit. Women and nature are ruled over and ruined for centuries and their wellbeing is not much considered by the society. The present paper analyses Arundhati Roy's *The God of Small Things* (1997) and Gloria Naylor's *Mama Day* (1988) from ecocritical and ecofeministic point of view.

The God of Small Things and Mama Day

Arundhati Roy's *The God of Small Things* presents a parallel picture of exploitation of women and exploitation of nature and its resources. The setting of the novel, Ayemenem, a village in the South India, and the river Meenachil, symbolically present the deterioration that takes place in the lives of women. Gloria Naylor's *Mama Day* presents a parallel picture of the sustained development of women and the preserved, unpolluted

nature. The setting of the novel, Willow Springs, an island, situated in the border of South Carolina and Georgia, stands as a symbol of enlightened lives of women. In *The God of Small Things*, patriarchy does not permit women to act independently and male dominance makes the women to face endless struggles that ruin their lives. The devastated condition of nature and women is the result of the negligence shown by the society. Roy says to Decca Aitkenhead in her interview that "There's no voiceless, there's only the deliberately silenced, you know, or the purposely unheard". The problems related to the environment and the struggles of women are not unfamiliar; purposely, they are ignored by the society. Roy, in her work, records the consequences of the negligence and negation shown to nature and women. In *Mama Day*, matriarchy does not permit patriarchy to rule over women. It helps the women to act independently and to protect their identity, culture and tradition. Naylor, in her novel, records the benefits that the society enjoys because of the concern shown towards nature and women.

Ecocriticism & Ecofeminism

Ecocriticism insists upon the concern to be shown towards nature and ecofeminism focuses on the relationship between nature, women and the society and the concern to be shown towards women. Ecofeminism is a movement that sees a connection between the exploitation and degradation of the natural world and the subordination and oppression of women. Ecofeministic perspective that compares the state of women and nature states that women are the victims of race, gender, religion, sexuality and disparity as nature is the victim of human greed and callousness. "Ecofeminism brings together elements of the feminist and green movements, while at the same time offering a challenge to both. It takes from the green movement a concern about the impact of human activities on the non-human world and from feminism the view of humanity as gendered in ways that subordinate, exploit and oppress women" (Mellor 1).

Cultural Ecofeminists

Arundhati Roy and Gloria Naylor can be called as cultural ecofeminists who encourage an association between women and environment. They strongly believe that women have intimate relationship with nature as they both share similarities in being responsible for survival, maintenance and development of the society. Women play a significant role in transferring tradition and culture to the next generation and when a woman is subdued, a generation is subdued like when the environment is spoiled, it does not affect only the present but also the future. Eco-imbalance pictured by Arundhati Roy in *The God of Small Things* can be compared to the suppressed women and their devastated lives. Loss of tradition, one of the themes of *The God of Small Things* proves that the society is unable to preserve its tradition when it fails to preserve the rights of its women.

Exploitation of Nature

Exploitation of the natural environment is unavoidable when the moves of the developments of the society go unchecked. Ayemenem, the setting of *The God of Small Things* is an example for it. The unpolluted land and river get polluted because of urbanization. The conversion of the history house into a luxurious hotel and other capitalist initiatives lead to destruction of nature. The river, which was once pure and serene, gets polluted because of the visitors. Environmental imbalance that takes place during the implementation of developmental projects is not considered by the capitalist patriarchy.

Ayemenem serves as an example to prove how the society, which fails to protect its natural resources, fails to prove its success. In the words of Roy,

However, walking down along the river dam, Estha witnesses the ecological degradation and toxicity caused by the state development plan: The hotel guests were ferried across the backwaters, straight from Cochin. They arrived by speedboat, opening up a V of foam on the water, leaving behind a rainbow film of gasoline. The view from the hotel was beautiful, but here too the water was thick and toxic. No Swimming signs had been put up in stylish calligraphy. They had built a tall wall to screen off the slum and prevent it from encroaching on Kari Saipu's estate. There wasn't much they could do about the smell. (TGST 119)

The changes occur at Ayemenem as development projects are backed by patriarchal capitalism and in no way they play a role protecting the environment. According to Maria Mies the concept patriarchy "denotes the historical and societal dimension of women's exploitation and oppression" (37), and patriarchy "constitutes the mostly invisible underground of the visible capitalist system" (38). After more than two decades of development projects supported by dominant power groups, the river in Ayemenem "smelled of shit and pesticides bought with World Bank loans. Most of the fish had died. The ones that survived suffered from fin-rot and had broken out in boils" (TGST 14). Two different pictures of the river, described from the point of view of Rahel, present a clear understanding about environmental degradation. "It was warm, the water green like reapplied silk. With fish in it. With the sky and trees in it. And at night, the broken yellow moon in it" (123). The same river, when Rahel returns to Ayemenem after twenty three years, "greeted her with a ghastly skull's smile, with holes where teeth had been and a limp hand raised from a hospital bed" (124). The personification of the river registers Roy's deep concern towards environmental degradation.

Patriarchy and the Subordination of Women

The ecological degradation that is depicted by Roy symbolically represents the subordination of women. The irrecoverable losses the women face in *The God of Small Things* direct the reader to compare them with the degraded ecology. The male dominated life of Ammu, the suppressed life of Ammu's mother Mammachi, the losses that Baby Kochamma and Rahel face because of the

patriarchal society can be compared with the environment which has lost its own richness because of the insensitive approach of the society. All the above mentioned women are not permitted to design their life according to their wishes and the patriarchy around them takes up the responsibility of designing their lives. Deprived education, gender disparity, male domination, domestic violence and economical dependency practiced by the male arrest the freedom of women and worsen their life. The environment and women at Ayemenem have come across colossal damages and not in the state of regaining their past glorious status.

Preservation of Nature

Gloria Naylor's *Mama Day* is set in a unique island Willow Springs, a land of rich heritage, off the coasts of Georgia and South Carolina. The island does not come under any state; neither Georgia nor South Carolina can lay claim. People in Willow Springs are united and they own a separate African American identity. 18 & 23 is deeply written in the soul of every black who stays there, because of their foremother Sapphire Wade who smothered her white master to give the land to the blacks. From the day, the island is solely ruled by the blacks; especially women hold a higher hand in nurturing the tradition and culture of the island.

Willow Springs has its own legacy of freedom and throughout the novel Naylor speaks about the "futility of the white world's attempts to control either nature or the decidedly black world of Willow Springs" (Meisenhelder 406). The city developers who come to know about the unclaimed island, Willow Springs, which "ain't in no state. Georgia and South" (MD 4), where the land and forests are unpolluted, show keen interest in buying the land. They contact the people of Willow Springs with attractive plans and try to convince them to sell their land; the people redirect them to Mama Day and Mama Day, the eighty five year old matriarch of the island, who protects the island and the people, decides not to give the land to the city developers, as it will first wreck nature and then tradition and culture which they hold strongly for centuries. The people of Willow Springs accept the decision of Mama Day, as she is considered as the mother of all in the island. Mama Day "has no biological children; she is 'everybody's mama'. In her vocations as midwife and conjure woman, Mama Day specializes in bringing and sustaining life" (Wall 1452). Mama Day's affinity towards nature helps her to predict storm and other natural calamities and the result the people of

Willow Springs are protected. The whole island enjoys the nurturing of Mama Day.

Matriarchy and Empowered Women

The balanced environment pictured by Gloria Naylor in *Mama Day* represents the empowered, independent women in the island Willow Springs. Mama Day, not only protects the people from the natural challenges but also from their other problems. She helps her great niece, Cocoa, to find a job in New York, counsels Ruby, a conjurer, to do good for the society, assists Bernice, a resident of Willow Springs, to get healed from the misuse of fertility drugs. She helps her to conceive a baby through a combination of natural medicine. She uses pumpkin seeds to invest hope in the mind of Bernice. A good deal of her effect comes from instinctive psychology that is assisted by simple things like the pumpkin seeds. Mama Day makes it possible with her knowledge on nature and human minds. Mama Day is depended on nature to help her people but she never takes nature for granted. Only the required amount of seeds, leaves, buds, flower, roots and plants are taken by Mama Day. The motherly love shown by Mama Day towards nature and women helps in preserving the ecosystem and the well being of women of the island.

Conclusion

In *Mama Day*, the support system provided by Abigail and Mama Day to all the people of Willow Springs, Cocoa's advancements in her career at New York, the love and care Bernice and Ambush Duvall share, George's love for Cocoa, the respect the people of island for their women and the unpolluted nature prove the sustenance maintained by the society in ecological and feministic point of view. The distorted lives of women in *The God of Small Things*, loveless marriages, isolated women and children, and the polluted nature prove the fall of society in respecting women and protecting environment. Arundhati Roy and Gloria Naylor, who carry a deep concern towards environment and women, through their works, state that concern should be shown towards nature and women to give an end to the degradation of nature and exploitation of women, which in turn, will bring in a balanced society.

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BRAVE WITNESS AND BITTER DIVISION IN ISAAC BASHEVIS SINGER'S FAMILY CHRONICLE *THE FAMILY MOSKAT*

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Abstract

Tradition and modernity, flesh and spirit, sex being neither romantic nor fulfilling but rather obsessive and repugnant, lust of material prosperity versus divine longing, sacred and secular, idea of death and strong desire to live, fact and fiction, faith and doubt, old world and new world are binary opposites one witnesses in the writings of Jewish American novelists. The paper attempts to trace out Isaac Bashevis Singer, a Yiddish yet Jewish American writer who was brave enough to bear witness to bitter divisions in ideology, society, culture and individual life of Jews in Poland and in America which is portrayed in his family chronicle The Family Moskat. The paper also brings out that the bitter division paving way for disintegration of familial ties and violation Jewish law and succumbing to all kinds of perversions in the novel.

Keywords: Jewish American, Jewishness, assimilation, emancipation, Messianism, American Dream

The humans of twentieth and twenty-first century live with the binary opposites – tradition and modernity, flesh and spirit, sex being neither romantic nor fulfilling but rather obsessive and repugnant, lust of material prosperity versus divining longing, sacred and secular, idea of death and strong desire to live, fact and fiction, faith and doubt, old world and new world. As Sheridan says, "They die all the time and they keep living all the time" (365). American Jewish writers have been the brave witness to these bitter divisions in their writings and they have to deal with the themes of generational problems, traditional values and ethics on the one hand, and the American Dream on the other, creating in them a new sense of optimism.

The Jewish American novelists have contributed significantly to the growth and development of American Literature and their writings have become an integral part of the American literary establishment. Since 1950s, Saul Bellow, Bernard Malamud, Philip Roth, J. D. Salinger, Norman Mailer and Isaac Bashevis Singer have defined the life of the Jewish community. Their contribution to literary world is marked by the sufferings added with pathos, humour and compassion. Daniel Walden rightly points out, "For the American Jewish writers, from cities, towns and Shtetls of Russia-Poland, arriving at a time of national reform and psychic crisis, the problem of adjustment to the new culture and reconciliation of their

old country and that of a the New World, were the problems of primary importance" (2). He further states, "as the drama of the generations was played out, Jews as Jews and as American Jews rebelled against their parents, struggled for their own identities, succeeded and failed, cried and laughed as did others" (3).

Leon Wieseltier points out that "illusion, disorder, transgression and apostasy are the important elements that are commonly found in the florid romances of Jewish experience" (6). The paper aims at providing a vivid picture of Jewish community in Poland, Russia and America, as Isaac Bashevis Singer took up pen to bear a brave witness to great adventures inherent in Jewish history such as the false Messiahs, the expulsions, the conversions, the emancipation and the assimilations in his family chronicle, *The Family Moskat*.

Isaac Bashevis Singer was born in an orthodox Jewish family in 1904. He was a Nobel Prize-winning Polish born American writer of both short stories and novels. He has written eighteen novels, twelve collections of short stories, and fourteen children's books in Yiddish language. He came to America in 1935. He was already known as Yiddish writer in Poland for *Satan in Goray* (1935), a quasi-historical novel about zealots who follow a false messiah and turn traditional religious values upside-down. His works include *The Family Moskat* (1950), *The Magician of Lublin* (1960), *The Slave* (1962), *The Manor* (1967), *The Estate* (1969), *Enemies*, a Love Story (1972),

Shosha (1978), and *The Penitent* (1983). He received the Nobel Prize for Literature in 1978.

His characters are torn between faith and doubt. They become representative of all men in their attempts to reconcile with the contradictory yearnings and needs of the individual. Dinah Pladott observes that

... they [the characters] succumb to the urgings and temptations of their flesh, they obsessively search for a sign from above. These Don Jauns constantly violate interdictions of their culture and religion, yet they await a message and proofs of sorts that there is a guardian eye ruling their universe, that evil is not arbitrary but a retribution, and that their life in this world is not mere chance or a blind event. (62)

In the family chronicle, *The Family Moskat* (1950), *The Manor* (1967) and *The Estate* (1969), Singer describes how old families are broken up by the new age and its demands, from the middle of the nineteenth century up to the Second World War, and how they are split financially, socially and humanly. "*The Family Moskat* is a plea for openness and consequently, Jewishness. It is able to describe the death of Warsaw and yet miraculously to go beyond death to hope" (Malin 21). For the characters in *The Family Moskat*, salvation seems to lie in the secular philosophies of European life with the promises of enlightenment, material prosperity and emancipation from the restriction of Jewish orthodoxy. As they embrace Darwinism, socialism and hedonism, they become alienated from their ancient faith and the Shtetl values.

The novel depicts the lives of three generations of a Polish-Jewish family and their associates from the early 1900s until 1939. Messianism and the unfulfilled hope for redemption constitute an important theme. Haike Heruniah Wiegand observes,

Bashevis presents both the traditional Jewish belief in the coming of the Messiah and modern secular models of redemption. He leaves his readers with two possible solutions, reflected in the different endings of the Yiddish and the English editions. The English ends with a modern Jewish intellectual's resigned response to the impending catastrophe, seeing messianic redemption only in death. The Yiddish edition, whose final chapter the English omits, exposes all the new secular messiahs as failures and shows the validity of traditional Judaism despite the evil awaiting the Jews in Poland. (122)

Although he seems to have rejected its values, as well as its members, the family continues to exert a powerful force on Heschel, as it does on the other characters in the novel. Susan A. Slotnick rightly points

out, "No matter how any member of the family may stray – by conversion to Christianity, immigration to America or Palestine, dissipation, adultery – he or she is inevitably pulled back to the family fold" (24). Four generations of Mushkats families move in spirals, revolving around the family core. Moving forward in time and moving inward toward the family, the family and its members sink in status, lose power and undergo moral decay.

In *The Family Moskat*, the use of the family as thematic and structural centre leads to a bitter division: "while it is the focus of artistic unity, the family is also the institution through which we witness breakup, decline and decay" (Slotnick 25). This division and tension between energy and weakness, continuity and rupture are vital to other Yiddish novels. The affairs of the patriarchal Meshulam Moskat and the unworldly Asa Heshel Bannet provide the centre of the book, but its real focus is on the civilisation that was destroyed forever in the gas chambers of the Second World War. In Warsaw, where saints mingle with swindlers, tough Zionists argue with mystic philosophers, and medieval rabbis rub shoulders with ultra-modern painters, life is inexorably changing. Singer remains a brave witness to this fact and makes it clear the bitter divisions.

Ted Hughes reveals that Asa Jeschel, the protagonist of the novel, as not only a Hassidic Jew, but a typical modern hero:

Singer ... is no longer writing specifically about Jews but about man in relationship to God. And his various novels and stories describe the various phases and episodes of this relationship, though in concrete Jewish terms. This is pretty near to saying that in Singer, the Jew becomes the representative modern man of suffering, and understanding, an exile from his divine inheritance. (9)

At the opening of the novel, two generations of the Moskat family are already old, almost finished with living. Thus the very outset of the novel is on the end or death of things, not the beginning. "Old fashioned Chassidism is passing. A bareness or nonproductive approach to life is emphasised. Meshulam Moskat is into his third marriage; but it is a fruitless union" (Field 34). Other members of the family like Koppel and Leah reflect this condition. Asa wants no children and she ends up in the hellish Warsaw Ghetto; Adele has had two abortions; Hadassah is a sterile. Abram had barren affair with Ida. "Throughout the novel there is not a single love relationship that lasts or bears any resemblance to its glowing origins" (Buchen 39). There are series mismatches. When the individual is divorced from the family, he is also divorced from God.

The Family Moskat forecasts sterility, not fruitfulness, for the Eastern European Jewish community. "The novel details the ending of Jewish community, culture, tradition, authority and faith" (Field 35).

At the beginning of *Moskat* Part II, Meshulam's granddaughter, has run away and Meshulam himself suddenly becomes seriously ill. Soon the whole living quarter is abuzz with theories and facts concerning the temper of the times:

What things had not happened in Warsaw since the revolution of 1905! Chassidic youth had cast off their gabardines, shaved their faces, become strikers, Zionists. Daughters of respectable homes had fallen in love with university students and had run off with them to New York, Buenos Aires, or Palestine. Mothers of children had discarded their matron's wigs and let the wide world see their naked hair. It was these worldly books ... that had poisoned decent people's minds. And these reformed schools, where parents were sending their daughters lately, were nothing but nests of paganism and wantonness No one could be sure of his own children any more. (*The Family Moskat* 165)

"Asa Heschel the protagonist of the novel moves from traditionalist tendency to modern wherein he undergoes states of confusion, anger, and rebellion" (Field 35). Singer has painted for his East European Jewish community. Asa Heschel rejecting Judaism explains to a friend that his system is built of both Spinoza and Malthus. What the world needs then is "more sex and fewer children" (*The Family Moskat* 497). What this means is that Asa rejects material fidelity and does not want children. He forces his first wife to have an abortion on two occasions. He never establishes a close relationship with the child that is born when she decides to bring a third pregnancy to term. As Buchen has put it: "Asa Heschel has journeyed from the centre of active obedience to the periphery of enlightened paralysis" (74). Finally Adele sees Asa Heschel as the traditional Golem:

Did his heart long for someone? She was on the point of asking him, but suddenly she knew: he was not a worldly man by his very essence. He was one of those who must serve God or die. He had forsaken God, and because of this he was dead – a living body with a dead soul. She was astonished that this simple truth had eluded her until now. (*The Family Moskat* 582)

Towards the end of the novel, I. B. Singer portrays the familial bond of Jewish community and the modern American Dream in which the protagonist establishes a stand. "As the city of Warsaw is under Nazi siege and

bombs are exploding all around, Asa Heschel Bannet is being urged to leave the city. He has done almost everything he could to outrage and offend his relatives and his in-laws, violating all their notions of proper familiar relationships in virtually every aspect of his personal life. His current lover is trying to persuade him to flee with her from the besieged city. But Heschel refuses saying, "I'm staying here ... The whole family is staying. I don't care. I want to die" (*The Family Moskat* 611).

Singer's emancipated Jews suspect both the past and the modern world. They are caught between highest aspirations and biological drives and they try to free themselves from these contradictions. They are prepared to compromise their traditional values of life in favour of their insatiable appetite for modern trends. This bitter division paves way for disintegration of familial ties. They violate Jewish law and succumb to all kinds of perversions.

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REDEFINING DIASPORA AND MIGRANCY: THE EVOLUTION OF THESE TERMS OVER THE DECADES

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Abstract

When the world changes, words change too. The term Diaspora may seem like it came into use only in the last century, but it actually dates back to at least the ancient Greek civilization. Modern research has uncovered new evidence, and suggests that the action even precedes the Greeks. The modern definition of the word Diaspora goes as such: "the migratory experience of displaced people or ethnic population in host land induced by circumstances for sad parting from homeland". In the current scenario, Diaspora must be analysed with respect to several factors that act as both cause and effect. What are the social and economic factors that cause people to leave their homeland behind and settle in a strange place? How do they deal with the inevitable feelings of alienation in the new land? Do they find it difficult to assimilate to a new culture? Many of the migrants are identified as aliens, and cannot hope to gain an equal footing as natives. They face three major issues: Aloofness, Rootlessness and Belongingness. Some of these issues have been addressed in works by noted Diasporic writers like Vikram Seth and Jhumpa Lahiri, but a closer, impersonal analysis is required to understand these factors in their entirety. This presentation attempts to address that issue, with a focus on how the contextual meaning of the words 'Diaspora' and 'Migration' has continually evolved and been redefined over the years. In doing so, it hopefully addresses the problems faced by Diasporic community from a humanitarian eye, not a statistical one.

Keywords: *Diaspora, Evolution, Rootlessness, Belongingness, Homeland*

Inspired things are penned down by writers in various forms. Literature possesses several fragments to define each stream with its wide vision and perspective; among them is Diasporic literature that occupies foremost priority. Initially the term 'Diaspora' referred to the citizens of the Grand City of Greek who migrated to conquered lands to assimilate their territory into a vast empire. Later this meaning was cut off when the Old Testament was translated to Greek and the term came to denote cultural development and ethnic population of Jews who were forced to leave Palestine. But Gabriel Sheffer in his book *Modern Politics* cites that the term had existed even before the Greeks and Jews to refer to the migration of Assyrians, Nabatheans and Phenicians. The present meaning of Diaspora which can be defined as,

"the migratory experience of displaced people or ethnic population in host land induced by circumstances for sad parting from homeland"

has been in existence since the late 20th century. In this splendid and marvellous world, each species during their life span would have experienced migration and it is evident from evolution. Many theoretical ideas and

opinions are laid upon Diaspora by critical theorists such that it is categorized into different types based on the reason for migration. It can be also said based on these categorization that the definite meaning to spot Diaspora has expanded. The primary reason for earlier migration was to work as labourers or slaves in the second world imposed by colonizers, and return to one's homeland was quite impossible due to the economic scantiness and lack of transportation. Refugees intended to migrate to their neighbouring country due to war in their native country; eg: Tamil Sri Lankans who migrated to Tamil Nadu.

New Economics and Neo-classical economics plays a vital role as the migration takes place in the circumstance of stress. Physical distance from their homeland thus became the reason for their nostalgia and psychological alienation. The primary concern was their illiteracy. First generation immigrants face more problems because of their unwillingness to assimilate with host country. To them, home is a lost place. A person may find several versions of Homeland in new 'Host land' but nothing could replace their wrenched 'Idyllic home' where their passion peaked and idealism bloomed. In such sad parting with

collective memories of culture and custom from homeland, the first barrier to encounter is cultural aloofness. They strive to assimilate with new land or culture for a problem-free life but when the reality proves it false there begins alienation.

The sole objectives for a Diaspora is quest for identity, if they do get the chance to get back to their roots the probability of attaining belongingness is still unsure due to the foremost factor of 'Change' that might have been experienced in their homeland on the account of time. Secondly, the bi-cultural pull which has intense emotion might cause the same aloofness in homeland, and if so any former bad memories interlinked to assimilation at past might worsen too. So equally it become same diasporic state in their own land with identity, which is more complicated than being in host land and hoping for good. But if the migrant experience this bicultural pull with amazing capacity then maintaining a strong cultural bond between both lands is quite easier.

Diasporic writings are classified into two layers of portrayal set by author either in terms of love shown to home culture or the reflection a migrant undergo in settled countries due to discrimination. '*Whatever happens, life has to move on*'- '*Life*' a four letter word, in four different directions of this world teaches this to its aspirants uniquely irrespective of race, nationality, caste, and creed. But for a Diaspora, bonded with emotion and feelings for the flaw happened and their yearning to be reunited as a whole results in purpose of their existence of life itself to be questioned. This emotion, a conscious experience of mortals, deals a larger aspect in human existence. Though theorists like Robert Plutchik categorize it into nine different terms and Bharata Muni defines as Nava Rasa, the ultimate aim of emotion is to characterize life. But life of a migrant was not like a bowl of cherries for gratifying memories, it was depression in condensation because the emotions might even ruin life.

Today people leave their country willingly for certain personal motives to accomplish in life. In such a state the typical question that arise would be whether the migrants experience the Aloofness, Rootlessness and Belongingness for homeland experienced by earlier migrants or do they assimilate with new land maintaining strong ties with both soils. To define this stance I quote Heraclitus who says "Change is the only constant". In this age of change in technological and global advancement, the term Diaspora itself has already lost its own meaning. In terms of emotion and feelings there are several differences between a Diaspora and Migrant. They don't

correspond to refer a unique meaning. 'Diaspora' refers to the larger semantic domains as overseas community, refugees, immigrant, and exile community.

According to William Safran, the chief characteristic to identify a Diaspora is the collective homeland memories of people; the influence of homeland probably affects their identity which clearly signifies their love for home. Migration is broadly classified into several categories namely: Internal Migration (Migration within same country), International Migration (Migration to different country), Temporary Migration (Possibility to return shortly), and International Migration (Settlement in different country with no hope for return). Migrant identities means a person who is influenced by the past migration history of his/her parents or grandparents. Alan McLeod, *Beginning Post Colonialism*-207.

The word 'Migrant' is unsatisfactory as it defines just the movement of people from one country to another but fails to capture the emotional bond of the place they left. In contrast, the word Diaspora allows to define the meaningful connection with the heritage they reside at past. Prodigious terms Passion and love has unique tenderness when associated to expound the Migrants cherished heritage to bind their love towards homeland though separated far away from root. They behold Culture and Language as two facets in life, where language is cultural element and later socially learned. First generation shares a part of total culture from their root but Second Generation portray a mixture of Complex Culture from their living space and Parental Character, they believe that the space they exist is their homeland though knowing the fact that traditional homeland of their predecessors differs. There exists a disparate culture within the diaspora itself.

"To exacerbate inter-generational frictions" Uma Parameswaran, Jain 35.

A view of their country from outside is just an exotic place of origin. This Bi-cultural pull for homeland between two generation migrants in same space arises a question that which generation migrants actually experience Alienation. Migrants of present generation do experience less aloofness prior to earlier ones. The reason behind is that we are in the age of Globalisation and this new millennium fuels migrants across the world with red carpet for Multiculturalism. Pavement for the thirst of prosperity in life is an ultimate desire for modern migrants. Secondly, unlike earlier migrants alienated by physical distance, this young generation is globally connected. In the process of assimilation, the present scenario of hostland to accommodate migrants is more flexible.

At the same time, the existence of racial and cultural degradation in host country is not entirely wiped out but reduced. This prior understanding and experience of the host world are the compliments from earlier migrants who witnessed it with raw knowledge. Also as Diaspora has been blended from its original connotation since ages there are possibilities to define the people of New community (location between two cultures) to include and relate it to the terms of Diaspora in future. Some migrants do have liking of western culture, so the separation from roots does not bother them more. Vikram Seth in his novel "Equal Music" and "The Golden Gate" portrays this liking for western Culture through the subjects of American and Europeans. Jhumpa Lahiri's "The Namesake" and "Interpreter of Maladies" illustrate the lives of both first and second generation migrants. Both earlier and present generation migrants face a unique difficulty in their migration irrespective of time, age, class, gender; it is the racial and cultural discrimination, and religious intolerance. But there are still tiny acknowledged factors migrants face in the host land left untouched and it has to be brought to light, notably the inner needs that are same to all human beings.

Though separated by distance across the world that does not imply they accept host society. It is the social alienation by no means replaced by metaphysical alienation. Today the world is more interconnected; Global economic crisis proves that it is impossible for any nation to consider itself as an 'Island'. Diaspora is now a bridge that interconnects the resources between different countries. The network of Diaspora is at present an important source for economic growth and this phenomena is the driving force for the International markets. There are different approaches to understand Diaspora. Some view it as a social formation that can be benefited economically and some as a threat to society.

The word Diaspora is derived from the ancient Greek term "Diaspeiro" which literally means "to sow or scatter from one end to the other". Based on this etymology people do migrate constantly across the world resulting in replenished old migracy and creation of new migrants. Once the flow of people was one-way (Refugees) but now two-way: (Knowledge and Finance). Throughout history Diaspora have played a significant role and it is evident from present interconnectivity of technology and communication that in future there are possibilities that Diaspora settled in host country might not return to their home country. For example: In U.S, two-third of Indians Diaspora have done their university graduation compared

to U.S. Citizens. Migrants of larger number would prefer to live in country of origin when the economies improve that probably bring back the optimism and confidence of knowledge and experience that is an asset for their home land. Now several countries realise that skilled immigrant is essential for their collaborative advantage. Ideas are gained through Diasporas. Migration allows young talents to circulate this Idea in millions of mind.

Key factor for a country's success is now relied upon the creativity of people that are to be connected for the survival. As "The Economist" states in their article "Weaving the world together", Diasporas are now connected "instantaneously, continuously, dynamically and intimately to their communities of origin: And as Diasporas grow, their networks expand and intertwine linking the world together, "No other social networks offer the same global reach or commercial opportunity". Needs and requirements may vary in every Diasporic country. It is estimated that in US, about half millions born children have at least one additional nationality. Migrant receiving countries are unhappy about this believing that people should have allegiance to one and only country. Even though many people reside outside of their country, they regard themselves as legitimate member of their home land.

An important question that arises regarding the social and policy importance are, does the Diasporic Bonding an Active or Passive state? Some argue that immigrants will never integrate if they are looking to get back home others response that by only maintaining ethnic and transnational bonds in host country an immigrant can successfully incorporate. Over the last 40 years, the population of people living outside their home country has tremendously increased from 76 million to 232 million. More than 5% of world population reside at host land. If migrants form up a single nation, then it would be the fifth largest country in the world. If migration grows in this same pace by next thirty years there could be 450 million International migrants from 215 million today.

Living as a Diaspora or a Migrant does not signify that we have severed ties to homeland, its culture and rich heritage. As the etymology of Diaspora allude, though scattered across the world in boundaries and divided oceans, it is mandatory to realize that we are sowed seeds among different parts of the world from homeland irrespective of different motives in the process of migration. But it is mandatory to spare time in analysing ourselves? Who are we actually? Where are we actually belong and what is the traditional origin? Have we jumped out from sky

to live in this wide world? If not, what is the prior identity to define oneself? Though these questions might sound conventional but to expound this as unique is difficult in recent times. Though paving for multiculturalism we fail to preserve our identity. As Roger Brubaker points out,

"If everyone is diasporic, than no one is distinctly so".

That's the practise in contemporary world. Today global advancement is mere boon as well as a curse in decline of preserving Traditional roots of human. Of course people from one juncture to another are socially interconnected but this linkage should also be maintained to develop an association between the Identity, root, culture and people. Progress in culture does not manifest the blended version of Identity and to conserve its existence today rather to discover and explore the most fascinating thing to acknowledge our own literal Identity. Awareness of Identity is just not for a basic understanding but a way of paying homage to our ancestors as we are the branches from their Great Trunks and of course that's the actual process in knowing oneself.

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EMOTIONAL INTELLIGENCE, APTITUDE AND ACHIEVEMENT IN COMMERCE OF HIGHER SECONDARY STUDENTS

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Abstract

A good quality of life can be attained only through a good quality of education. Education is an important social activity, closely bound with intellectual, economic, cultural, emotional and social life of the human action. Emotions are very important in the development of personality. An emotional need is apt to make strong and sound motivation in learning. Academic achievement depends on various factors. A student should have control over his emotions, should possess right aptitude and interest in learning. The skills associated with emotional intelligence develop throughout life. Family and educational institution play a vital role in developing Emotional Intelligence. Basic skills related to handling emotions, settling disagreements amicably and getting along can be improved upon. There is a greater need for systematically and continuously imparting and facilitating students to develop emotional competencies such as self-awareness, self-control, self-confidence, empathy and they are of listening, resolving conflicts and co-operation. The purpose of the study is therefore to know the level of Emotional Intelligence, Aptitude and Achievement of Commerce students. The method of study adopted by the investigator for the present study is normative survey. The total sample constitutes 782 students who were selected by adopting random and cluster sampling technique. Descriptive, differential and relational analysis were done using appropriate statistical methods. The result of the study is there is a significant relationship between emotional intelligence and aptitude; emotional intelligence and achievement; and aptitude and academic achievement in commerce among higher secondary school students.

Keywords: Emotional Intelligence, Aptitude in commerce, Achievement, Higher Secondary Students.

Introduction

Emotional intelligence is a type of social intelligence that involves the ability to monitor one's own and others' emotions, to discriminate among them, and to use the information to guide one's thinking and actions. Emotional intelligence involves Five domains i.e., 1. Self awareness 2. Self regulations, 3. Motivation 4. Empathy and 5. Social skills.

Aptitude is variously defined as innate learning ability, the specific ability needed to facilitate learning a job, aptness, knack, suitability, readiness, tendency, or natural or acquired disposition or capacity for a particular activity. Aptitude assessments are used to predict success or failure in an undertaking.

Achievement refers to the knowledge attained or skill developed in school subjects usually designated by test scores or by marks assigned by the teachers or by both.

Commerce refers to an organized system for the exchange of goods between the members of the industrial world. The world has shrunk with the development in science and technology, and any commodity manufactured

today, enjoys a world market overcoming all hindrances of knowledge, person, place and time.

Statement of the Problem

The investigator has taken up the topic for the present study so that it may confirm if the above factors really play a role in the achievement of students in Commerce. Hence the present problem is stated as "*Emotional intelligence, Aptitude and Achievement in Commerce of Higher Secondary Students*".

Need and Significance of the Study

A good quality of life can be attained only through a good quality of education. Education is an important social activity, closely bound with intellectual, economic, cultural, emotional and social life of the human action. Emotions are very important in the development of personality. An emotional need is apt to make strong and sound motivation in learning. Academic achievement depends on various factors. A student should have control over his emotions, should possess right aptitude and interest in learning. The skills associated with emotional intelligence develop throughout life. Family and educational institution

play a vital role in developing Emotional Intelligence. Basic skills related to handling emotions, settling disagreements amicably and getting along can be improved upon. There is a greater need for systematically and continuously imparting and facilitating students to develop emotional competencies such as self-awareness, self-control, self-confidence, empathy and they are of listening, resolving conflicts and co-operation. The purpose of the study is therefore to know the level of Emotional Intelligence, Aptitude and Achievement of Commerce students.

Synthesis of Related Studies on Emotional Intelligence, Subject Aptitude and Academic Achievement

In a study relating to Emotional Intelligence, *Raivan Bar On (1985)*, *Elias (1991)*, *Daniel Goleman (1995)*, *Finnegan (1998)* reported that increase of Emotional Intelligence helps for increase in Achievement. In yet other findings by *Richardsun and Evans (1997)*, *Passi (1997)* Emotional Intelligence are essential for personal achievement. A number of studies examined that aptitude provides an overview of the approach of *Eydogan et.al. (2008)* in the study there is significant relations were found between students' programming achievement and their general aptitudes and mathematics achievement *Sundarajan and Muthumanickam (1990)* have reported that higher secondary students' interests in commerce and their achievement are positively and significantly related. *Suresh (1993)*, *Sundarajan and Raj Mohan (1991)* have found that there is positive and significant relationship between the higher secondary students' attitudes towards the study of commerce and their achievement.

Objectives of the Study

The main objectives of the study are;

1. To find out the level of Emotional Intelligence and Aptitude in commerce among higher secondary students.
2. To find out the relationship between and among the variables Emotional Intelligence and Aptitude in Commerce and Academic Achievement.
3. To compare Emotional Intelligence and Aptitude in commerce and Academic Achievement of boys and girls.

4. To compare Emotional Intelligence, Aptitude in commerce and Academic Achievement of students of different type of school.
5. To compare Emotional Intelligence, Aptitude in commerce and Academic Achievement of students belonging to rural and urban area.

Hypotheses

1. There is no significant difference in gender, class, type of school and locality with respect to emotional intelligence of students of higher secondary schools.
2. No significant difference is found in gender, class, types of school and locality with respect to aptitude in commerce students of higher secondary schools.
3. No significant difference is found in gender, class, types of school and locality with respect to academic achievement of commerce students of higher secondary school.
4. There is a positive and significant relationship between emotional intelligence and aptitude in commerce among the higher secondary students.
5. There is a positive and significant relationship between emotional intelligence and aptitude in commerce of boys, girls, rural, urban, XI std., XII std., Government, aided and unaided higher secondary schools
6. A positive and significant relationship exists between emotional intelligence and achievement in commerce among the higher secondary students.
7. There is a positive and significant relationship between emotional intelligence and achievement in commerce of boys, girls, rural, urban, XI std., XII std., Government, aided and unaided school students.
8. There is a positive and significant relationship between aptitude and achievement in commerce among higher secondary students.
9. A positive and significant relationship exists between aptitude and academic achievement in commerce of boys, girls, rural, urban, XI std., XII std., Government, aided and unaided higher secondary students.

Research Design

Nature of study	Variable studied	Tools used	Sample	Statistics used
Normative Survey	Emotional Intelligence	Scale of Emotional Intelligence by Daniel Goleman	782 students from different Higher Secondary Schools	Mean SD
Differential	Aptitude for Commerce	Commerce Aptitude Test (Constructed by the Investigator)		't' test Chi-Square test
Relational	Academic Achievement in commerce	Achievement test scores		Correlation Bivariate Multivariate Regression

Analysis and Interpretation Descriptive Analysis

Table 1 Mean and Standard deviation of Emotional Intelligence, subject Aptitude and Academic Achievement of Commerce students (Total sample)

Variable	N	Maximum Score	Mean	Standard Deviation
Emotional Intelligence	782	50	30.61	6.227
Subject Aptitude	782	50	22.06	5.854
Academic Achievement	782	200	99.93	30.756

Table 2 Mean and Standard Deviation of the Emotional Intelligence, Aptitude and Achievement of Commerce Students

		Emotional Intelligence		Aptitude				Achievement		
Sample category		N	Mean	SD	N	Mean	SD	N	Mean	SD
Gender	Boys	357	27.99	6.836	357	22.07	5.989	357	98.22	29.203
	Girls	425	32.81	4.646	425	22.05	5.745	425	95.84	31.996
Class	XI Std.	378	30.39	5.923	378	19.74	5.192	378	91.82	30.636
	XII Std.	404	30.82	6.500	404	24.24	5.603	404	101.71	30.129
Types of Institutions	Govt.	492	31.70	5.718	492	21.57	5.656	492	96.52	31.437
	Aided	230	28.53	6.846	230	22.47	6.039	230	92.12	28.197
	Unaided	60	29.68	5.622	60	24.52	6.086	60	118.70	25.239
Locality	Rural	448	21.65	5.705	448	21.65	5.705	448	95.26	29.518
	Urban	334	22.61	6.012	334	22.61	6.012	334	99.16	32.251

Differential Analysis

Hypothesis 1. There is no significant difference in gender, class, type of school and locality with respect to Emotional intelligence of students of higher secondary schools

Table 3

Variable	Max. Score	Sub Variable	N	Mean	SD	't' value	'p' value
Emotional Intelligence	50	Boys	357	27.99	6.84	11.67	NS
		Girls	425	32.81	4.65		
		XI	378	30.39	5.92	0.196	NS
		XII	404	30.82	6.50		
		Govt.	492	31.70	5.18	6.1	S
		Aided	230	28.55	6.85		
		Govt	492	31.70	5.78	2.62	NS
		Unaided	60	29.68	5.62		
		Aided	230	28.55	6.85	1.35	NS
		Unaided	60	29.68	5.62		
		Rural	448	29.87	6.78	3.87	NS
		Urban	334	31.60	5.26		

Hypothesis 2. There is no significant difference in gender, class, type of school and locality with respect to Aptitude of students of higher secondary schools

Table 4

Variable	Max. Score	Sub Variable	N	Mean	SD	't' value	Significant level
Subject Aptitude	50	Boys	357	22.07	5.987	.050	NS
		Girls	425	22.05	5.75		
		XI	378	19.74	5.19	11.54	S
		XII	404	24.24	5.60		
		Govt.	492	21.57	5.66	1.91	NS
		Aided	230	22.47	6.03		
		Govt	492	21.57	5.66	3.55	S
		Unaided	60	24.52	6.09		
		Aided	230	22.47	6.03	2.33	S
		Unaided	60	24.52	6.09		
		Rural	448	21.65	5.71	2.29	S
		Urban	334	22.61	6.01		

Hypothesis 3. There is no significant difference in gender, class, type of school and locality with respect to Achievement in commerce of students of higher secondary schools

Table 5

Variable	Max. Score	Sub Variable	N	Mean	SD	't' value	Significant level
Academic Achievement in Commerce	200	Boys	357	98.22	29.20	1.706	NS
		Girls	425	95.84	31.99		
		XI	378	91.82	30.636	4.54	NS
		XII	404	101.71	30.13		
		Govt.	492	96.52	31.44	1.88	NS
		Aided	230	92.12	28.19		
		Govt	492	96.52	31.44	6.25	S
		Unaided	60	118.70	25.24		
		Aided	230	92.12	28.19	7.09	S
		Unaided	60	118.70	25.24		
		Rural	448	95.26	29.52	1.76	NS
			334	99.16	32.25		

Hypothesis 4 There is a positive and significant relationship between emotional intelligence and aptitude in commerce among the higher secondary students.

Table 6

Variables	N	Correlation Coefficient(r)	Level of Significance
Emotional intelligence and Aptitude	782	0.178	S

Hypothesis 5. There is a positive and significant relationship between emotional intelligence and aptitude in commerce of boys, girls, , XI std., XII std., Government, aided , unaided rural, and urban higher secondary schools

Table 7

Variables	Sub variable	N	Correlation Coefficient(r)	Level of Significance
Emotional intelligence and Aptitude	Boys	357	0.211	S
	Girls	425	0.177	S
	XI	378	0.221	S
	XII	404	0.190	S
	Government	492	0.198	S
	Aided	230	0.223	S
	Unaided	60	0.193	NS
	Rural	448	0.181	S
	Urban	334	0.154	S

Hypothesis 6. A positive and significant relationship exists between emotional intelligence and achievement in commerce among the higher secondary students.

Table 8

Variables	N	Correlation Coefficient(r)	Level of Significance
Emotional intelligence and Achievement	782	0.169	S

Hypothesis 7 .There is a positive and significant relationship between emotional intelligence and achievement in commerce of boys, girls, rural, urban, XI std., XII std., Government, aided and unaided school students

Table 9

Variables	Sub variable	N	Correlation Coefficient(r)	Level of Significance
Emotional intelligence and Achievement	Boys	357	0.239	S
	Girls	425	0.168	S
	XI	378	0.200	S
	XII	404	0.142	S
	Government	492	0.153	S
	Aided	230	0.255	S
	Unaided	60	0.057	NS
	Rural	448	0.194	S
	Urban	334	0.118	S

Hypothesis 8. There is a positive and significant relationship between aptitude and achievement in commerce among higher secondary students.

Table 10

Variables	N	Correlation Coefficient(r)	Level of Significance
Aptitude and Achievement	782	0.259	S

Hypothesis 9. A positive and significant relationship exists between aptitude and academic achievement in commerce of boys, girls, rural, urban, XI std., XII std., Government, aided and unaided higher secondary students.

Table 11

Variables	Sub variable	N	Correlation Coefficient(r)	Level of Significance
Aptitude and Achievement	Boys	357	0.299	S
	Girls	425	0.227	S
	XI	378	0.240	S
	XII	404	0.280	S
	Government	492	0.261	S
	Aided	230	0.164	S
	Unaided	60	0.481	S
	Rural	448	0.147	S
	Urban	334	0.383	S

Summary and Conclusion

Findings

1. It is found there is a significant difference in the Emotional Intelligence of boys and girls students. But there is no significant difference in the subject Aptitude and Academic Achievement of boys and girls of Commerce students of higher secondary schools
2. There is a significant difference in subject Aptitude and Academic Achievement of Commerce students of higher secondary schools. But there is no significant difference in Emotional Intelligence of XI std. and XII std. Commerce students.
3. There is a significant difference between Government and aided higher secondary school students. But it is found that there is no significant difference in Emotional Intelligence between aided and unaided, Government and unaided higher secondary Commerce students.
4. It is observed that there is a significant difference in Academic Achievement of aided and unaided, Government and unaided Commerce students of higher secondary schools but there is no significant difference between Government and aided higher secondary school Commerce students.
5. There is a significant relationship between emotional intelligence and aptitude in commerce among higher secondary school students.
6. There is a significant relationship between
 - Emotional intelligence and aptitude of boys;
 - Emotional intelligence and aptitude of girls;
 - Emotional intelligence and aptitude XI std. students.
 - Emotional intelligence and aptitude of XII std. students
 - Emotional intelligence and aptitude of Government schools students;
 - Emotional intelligence and aptitude of aided school students;

- Emotional intelligence and aptitude of unaided school students
 - Emotional intelligence and aptitude of rural students
 - Emotional intelligence and aptitude of urban students
7. There exists a *significant relationship* between emotional intelligence and achievement in commerce among the higher secondary school students.
 8. There is a *significant relationship between*
 - Emotional intelligence and achievement of boys;
 - Emotional intelligence and achievement of girls;
 - Emotional intelligence and achievement of XI std. students
 - Emotional intelligence and achievement of XII std. students
 - Emotional intelligence and achievement of Government school students
 - Emotional intelligence and achievement of aided school students.
 - Emotional intelligence and achievement of rural school students
 - Emotional intelligence and achievement of urban students school students
 - But there is *no significant relationship*
 - Between emotional intelligence and achievement of unaided school students;
 9. It is inferred that there is a *significant relationship* between aptitude and academic achievement in commerce among the higher secondary school students.
 10. There is a significant relationship between
 - Aptitude and achievement of boys
 - Aptitude and achievement of Girls
 - Aptitude and achievement of XI std students
 - Aptitude and achievement of XII std students
 - Aptitude and achievement of Government school students
 - Aptitude and achievement of unaided school students
 - Aptitude and achievement of rural students
 - Aptitude and achievement of urban school students
 2. By transferring emotional quotient skills into academic subjects we can increase performance, achievement, critical thinking and creative thinking
 3. Students need to build effective communication skills and health relationships through programme, emphasizing the emotional intelligence skills.
 4. For the promotion of healthy atmosphere, an inspirational subjects like art, literature, poetry and music help in developing an appreciation of the beautiful and sublime emotions in life.
 5. Emotions should be sublimated through constructive Activity like sports, game, dramatics and similar co-curricular activity which are of great value.

Suggestions for Further Study

1. The present study is limited to commerce students of higher secondary schools. Science and other group students are not included. Therefore, the study may extend to other group students also.
2. The present study deals with the level of emotional intelligence and aptitude. Emotional stability, self concept, interest and level of aspiration of these groups could also be examined.
3. It is suggested that the studies can be done to investigate the emotional intelligence of the B.B.A and M.B.A. students. Conducting the studies is important because they are going to be future administrators.

Conclusion

Emotional Intelligence totally depends on the environment. It is related neither to the development of some organ or to the physiological process. Secondly Emotional Intelligence plays an important role in Academic Achievement of the students. Student should be made emotionally intellectual by the experts who pave the way for the bright future of them. So the results of this study will be very useful to Commerce students to improve their Emotional Intelligence which is the need of hour.

Commerce is one of the greatest realms of human intellectual achievement which has always been held in the high esteem by every society and for that reason it has occupied a key position in almost all system of education. It demands more experience and more thinking and cumulative thought process. It is a wide and broad based subject involving the development of concepts, skills, computation and application of these in solving problems in our day to day life. The objectives of teaching commerce are to develop commercial and business knowledge, self-reliance and love for hard work, process of thinking and

Recommendations of the Study

1. Students need to be involved in skill development programme focused on the emotional intelligence skills of time management, drive strength.

reasoning and successful problem solving. Hence, Aptitude is directly related with Emotional Intelligence and Academic Achievement.

From the research, the researcher is able to find that all the variables like Emotional Intelligence, Aptitude are contributing to Academic Achievement. Emotional Intelligence plays a vital role in the development of students not only in Academic Achievement but also in all stages of life. Thus teachers, parents, schools, society should help the students in developing Emotional Intelligence

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E-TEACHING METHODOLOGIES AND ITS IMPACT ON NEW MILLENNIUM LEARNERS- A PERPETUAL STUDY AMONG UG STUDENTS

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Abstract

"Learning outcomes depend equally on pedagogy and the assessment system". With this said, the article primarily focuses on the impact of e- technology on the upcoming generation. Innovative teaching ideologies captives students with equal enthusiasm and interest hence giving rise to a forum for discussion. Today, in the modern walk of life learning with new experience is met with more attention when technology gets involved. Rather than the dull lectures and repetitive feeding off notes-technology opens a door for infinite opportunities. This paves a way to an interactive mode of communication on either side with the students gaining further knowledge and the teacher improving their skills on the subject. The youth of today is capable of more than what schools/colleges are allowing them to demonstrate, so it is high time it's treated as an opportunity for innovation rather than speeding up progress which might not bear fruit in the long run. Taking 380 samples of UG students and teachers, a well-structured questionnaire was circulated. By using descriptive analysis the results of this study shows that more than 90% of the students welcome the new methods with an open mind. This improvement in their learning may engrave their minds with diverse scopes for research.

Keywords: Innovation, e-teaching methods, opportunities.

Introduction

"Educating the mind without educating the heart is no education at all" - Aristotle.

At present education has faced a substantial transformation from what it had been over the past decade. Most of the Institutions eagerly contribute new innovative ideas of digitalized teaching, to improve the scope of education. Several initiatives have been taken to enhance teaching and learning methodologies. These important insights have triggered a virtual explosion of innovation in teaching/learning strategies and it is vital to find ways of evaluating them.

It has been proven time and again that digital instruction does more for today's young minds than traditional classroom-based learning. These can be used as little as an hour each day and still have a significant impact on the way teachers teach and what is retained by their students.

Taking the above considerations, this article proposes to study the e-teaching methods and its impact on UG students as well as the perspective from the teachers.

Objectives

1. To assess the perception of students on e-teaching methodologies.

2. To estimate effectiveness of selected teaching methods and tools by teachers.
3. To quantify the overall effectiveness of technologies into education
4. To suggest measures to improve the current situation.

Review of Literature

Mohammad (2012) examined the impact of e-learning and e-teaching in universities, from both the student and teacher perspective. It is found that e-teachers should focus not only on the technical capacities and functions of IT materials and activities, but must attempt to more fully understand how their e-learners perceive the learning environment. From the e-learner's perspective, this paper indicates that simply having IT tools available does not automatically translate into all students becoming effective learners. More evidence-based evaluative research is needed to allow e-learning and e-teaching to reach full potential.

SiminGhavifekr, Wan Athirah Wan Rosdy (2015) analyzed teachers' perceptions on effectiveness of ICT integration to support teaching and learning process in classroom. The results indicate that ICT integration has great effectiveness for both teachers and the students. Findings indicate that teachers' well-equipped preparation with ICT tools and facilities is one the main factors in

success of technology-based teaching and learning. . It was also established that professional development training programs for teachers, also played a key role in enhancing students' quality learning.

C. M. Khairnar (2015) described the innovative methods of teaching and learning. The author pronounced on uses of new pedagogies in teaching like voice thread, blogging, prezi, podcast, screen cast, social media, pooling etc can be used for teaching and learning. There are a number of ways that teachers can bypass the system and offer students the tools and experiences that spur an innovative mindset.

Research Design

Sample: A sample of 350 UG students and 30 professors' perceptions towards the usage of e-teaching methods were surveyed. Two different types of questionnaires were used to get the perception of e-teaching methods respectively.

Style of teaching	Frequency	Percentage
Conventional	32	9
Modern	318	91

Rank Analysis

Technological equipment	Mean value	ranking
Data Projector	4.6	I
Smart Phone(collpoll, whatsapp)	3.9	II
Personal Computers	3.5	III
Audio Equipment	2.8	IV
Video Conferencing System	2.3	V

It is inferred from the above table, that out of the total sample, 91% consist of female and least percentage of male students are found in the research. Regarding the year of study there is a moderate distribution of sample size. Concerning about the style of teaching, students prefer modern and contemporary method of teaching than the conventional method. In relation to technological equipment availability in the classrooms, data projector and the smart phones category occupies the first and the second positions respectively followed by others. This can be attributed to the fact that the students are more comfortable with power point presentation as it gives a clear idea on the topic with illustrations. Applications such as collpoll and whatsapp are preferred next to ppt since a path to connect both ends.

Research Methodology

This article essentially uses the descriptive analysis. All the data collected from the respondents were accumulated and analyzed using SPSS. Both primary and secondary data are used for the study.

Statistical Tools

Percentage, Rank and Chi-square analysis are used.

Results

Demographic findings of the research

Gender	Frequency	Percentage
Female	319	91
Male	31	9

Year of study	Frequency	Percentage
I Year	134	38
II Year	83	24
III Year	107	31
IV Year	26	7

Chi-square test for association

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	119.842 ^a	93	.032
Likelihood Ratio	126.374	93	.012
Linear-by-Linear Association	.005	1	.942
N of Valid Cases	350		

Source: primary data

H0: There is no association between year of study and the perception of e-teaching methods.

H1: There is an association between year of study and the perception of e-teaching methods.

Inference

It is evinced from the above table, that the p value is less than 0.05 (0.032), so we reject null hypothesis and an association between the year of study and perception about e-teaching methods exists. Thus it is proved that the effectiveness of e-teaching is linked with the year of study (age). This again depends on how the students are encouraged to use technology remarkably. This achieves the versatility of learning via various teaching techniques.

Demographic findings of the research

Age	Frequency	Percentage
25-29 years	15	50
30-39 years	8	27
40-49 years	7	23
More than 50 years	3	10
Total	30	100

Experience	Frequency	Percentage
Less than 5 years	19	63
5-10 years	7	23
10-15 years	2	7
More than 15 years	2	7
Total	30	100

Technological equipment	Mean value	Ranking
Data projector	4.6	I
Smart phone(collpoll, whatsapp)	3.9	II
Personal computers	3.5	III
Audio equipment	2.8	IV
Video conferencing system	2.3	V

Statements	Mean value	Rank
To communicate with colleagues	4.68	I
To analyze student achievement	4.33	II
To organize and manage your work	3.58	III
To support creativity	3.44	IV
To facilitate teaching specific concepts	3.33	V
To design and produce your own resources	3.33	V
To support various student learning styles and to personalize learning	3.25	VI

From the above analysis it is found that a large number of youngsters followed by teachers' experience (less than 5 years) have participated enthusiastically in this survey. It is also established on the opinion of usage of technological equipment in class rooms, both teachers and students perceive the same way.

Regarding on how far these technologies are used for their work, it is found that rank I goes for communication and rank two for the student' achievement which includes mark consolidation and such. Most importantly, the VI rank which corresponds to various styles of learning, takes the least priority. Thus it is proved that a positive improvement is needed to focus on this technology to be effectively demonstrative on teaching. The faculties had not utilized the range of technologies completely implying a low confidence in the use of e-learning in a proportion of this sample.

The "Teachers Talk Tech" survey, conducted by CDW Government, Inc. (CDW-G) to provide a forum for teachers to express their views about technology in their classrooms, found that teachers view computers as a valuable teaching tool that can improve students' academic performance and attention in class, while strengthening the

lines of communication with parents. Large majority (76 percent) of the teachers said that training is the key to increased technology use.

Chi-Square Association Experience with Perception about E-Teaching Methodology

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.872 ^a	8	.000
Likelihood Ratio	15.298	8	.000
N of Valid Cases	30		

H0: There is no association between experiences with the perception

H1: There is an association between experiences with perception

From the above analysis it is found that, the significant value is less than 0.05 so we reject null hypothesis that there is an association between the effectiveness of e-teaching methods and experience. Thus, one can say that the effectiveness of e-teaching is proportional to their experience.

Suggestions

- Cooperative learning (CL) is an instruction that involves students working in teams to accomplish an assigned task and produce a final product.
- Take the help of creative tools to stimulate originality. Include playful games or forms of visual exercises that will excite the young minds and capture their interest.
- Incorporate audio-visual materials in your sessions.
- Infusing real world experiences into your instructions will make teaching moments fresh and enrich classroom learning.
- A classroom environment that is well-decorated, fun, and engaging will help kindle a student's mind and will help think and learn better.
- Flipped class room learning can be encouraged.

Conclusion

The challenges for education systems are likely to embellish. The promotion of improved range of teaching methodologies and student centered environment is looked upon. The growth of technology came into existence since 2009, yet more focus on this drive must be done conferring with proper training, thus benefitting both students and teachers. The absence of adequate equipment

and instructional support are among the other barriers which delay effective teaching. The biggest challenge any teacher faces is seizing the students' attention, and setting across ideas in such a way that it stays with them long after they have left the classroom. A diverse range of technological tools can be used by teachers to develop a discussion forum. These tools make learning more interesting, interactive, meaningful and stimulating for the students. They are powerful as they are capable of transporting a change and reform traditional forms of learning. For this to materialize classroom experience should be redefined and innovative ideas that make teaching methods more active.

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A STUDY ON STRESS-BURNOUT AND STUDY ENGAGEMENT OF TRAINEE TEACHERS

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Abstract

Teachers make a difference in society whether it inspires a student to pursue a career in the field of study; they teach or help the community through hours of dedication to help a student succeed. Sometimes one wonders as to why do some teachers succeed in being good teachers, in continuously enhancing students' achievements, and in setting and pursuing high goals for themselves, while others cannot meet expectations imposed on them and tend to collapse under the burden of everyday stress. This research study was done to find out the Stress-burnout of teachers working in Primary schools and their Study Engagement in Bachelor of Education through Open University. Standardized questionnaire were used for the study. Utrecht Work Engagement Scale-Student (UWES S) (Schaufeli et al., 2002) and Stress- Burnout questionnaire were used. A questionnaire survey was conducted. The target population of the study included primary school teachers pursuing Bachelor of Education in Open University from Government and Non-government schools in Tamil Nadu. Random sampling technique was followed, 150 samples were collected. The study revealed that there is a significant difference in the stress-burnout of trainee teachers who work between 21-30 years of experience and there is no correlation between stress- burnout and study engagement of Open University trainee teachers.

Keywords: Stress, Burnout, Study Engagement, Trainee teachers, Open University.

Introduction

Student Engagement is when students are interested in the task at hand even when the work is challenging. Engagement is based on motivation and the idea that when students find the lesson meaningful and have a high level of interest in the tasks, they learn more effectively, tend to retain the information and are able to transfer it to other contexts. The concept of burnout was first introduced by Herbert Freudenberger in the mid-1970's who used burnout to explain the emotional exhaustion and the loss of motivation and commitment. Burnout is a state of depletion of a person's resources and energy resulting in apathetic and impassive behavior towards others, having dysfunctional repercussions on the individual and adverse effects on organizations. The profession of teaching is very demanding and thus stressful. Motivating students is one of the major challenges teachers face on a daily basis. Students' success at the university level demonstrates their ability to acquire the information and skills necessary to increase their likelihood of meeting long term personal and career goals (Kim, Newton, Downey, & Benton, 2010).

Methodology

For the research study, the researcher selected the standardized tool for the selected variable. This research was done among a selected group of Open University trainee teachers from Tamil Nadu. The total sample of 150 has been divided based on the year of experience, locality and type of institutions. The researcher had used simple statistical techniques such as Mean, Standard Deviation, t-test, ANOVA and Correlation.

Tool description and scoring procedure:

The researcher included a self- developed demographic questionnaire. The Utrecht Work Engagement Scale-Student (Schaufeli, Salanova, et al., 2002) consists of 14 statements of 7 point rating scale and a standardized tool of Stress-burnout consists of 25 statements of three point rating scale (occasionally, weekly, usually daily) was used.

Analysis and Results

Hypothesis-I

There is no significant difference in the Stress-burnout of trainee teachers based on their Work experience.

Table 1 Showing the 'ANOVA' test of the Stress-burnout of trainee teachers based on their work Experience

Source of Variation	Df	SS	MS	'F' Value	P Value
Between	2	939.490	469.745	5.887	0.003*
Within	147	11729.550	79.793		
Total	149	12669.040			

Post- Hoc Test values of the Stress-burnout of trainee teachers based on their work Experience

Management Type	N	Mean	Management Type	N	Mean	P Value
0-10	88	24.73	11-20	48	20.83	0.055
11-20	48	20.83	21-30	14	29.43	0.004*
21-30	14	29.43	0-10	88	24.73	0.105

*Significant at 0.05

In table 1, there is a significant difference between the trainee teachers with work experience of 11-20 and 21-30 years. Since the 'P' value 0.03 is lesser than 0.05. Hence the null hypothesis is rejected. From the mean value of 21-30 years experience teachers' (29.43) is greater than those with 11-20 years teaching experience (20.83). So it can be said that teachers with 21-30 years have more stress-burnout.

Hypothesis-II

There is no significant difference in the Stress-burnout of trainee teachers based on the Type of Institution.

Table 2 Showing the 't' test of Stress-burnout of trainee teachers based on the Type of Institution

Type of Institution	N	Mean	SD	't' Value	P Value
Government	93	23.31	9.381	1.032	0.304
Private	57	24.91	8.947		

In table 2, there is no significant difference between the government and private trainee teachers in their stress-burnout. Since the 'P' value 0.304 is greater than 0.05. Hence the null hypothesis is accepted.

Hypothesis-III

There is no significant difference in the Stress-burnout of trainee teachers based on their Locality

Table 3 Showing the 't' test of Stress-burnout of trainee teachers based on their Locality

Locality	N	Mean	SD	't' Value	P Value
Urban	81	24.23	10.149	0.432	0.666
Rural	68	23.59	8.108		

In table 3, there is no significant difference between urban and rural trainee teachers in their stress-burnout

since the 'P' value 0.666 is greater than 0.05. Hence the null hypothesis is accepted.

Hypothesis-IV

There is no significant difference in the Study Engagement of trainee teachers based on their Work experience.

Table 4 Showing the 'ANOVA' test of the Study Engagement of trainee teachers based on their Work experience

Source of Variation	Df	SS	MS	'F' Value	P Value
Between	2	34.084	17.042	0.129	0.879
Within	147	19464.609	132.412		
Total	149	19498.693			

In table 4, there is no significant difference between the work experience of trainee teachers in their study engagement, since the 'P' value 0.879 is greater than 0.05. Hence the null hypothesis is accepted.

Hypothesis-V

There is no significant difference in the Study Engagement of trainee teachers based on the type of institution.

Table 5 Showing the 't' test of the Study Engagement of trainee teachers based on the type of institution.

Type of Institution	N	Mean	SD	't' Value	P Value
Government	93	81.02	10.863	0.788	0.433
Private	57	79.46	12.361		

In table 5, there is no significant difference between government and private trainee teachers in their engagement since the 'P' value 0.433 is greater than 0.05. Hence the null hypothesis is accepted.

Hypothesis-VI

There is no significant difference in the Study Engagement of trainee teachers based on their Locality

Table 6 Showing the 't' test of the Study Engagement of trainee teachers based on their Locality

Locality	N	Mean	SD	't' Value	P Value
Urban	81	79.11	12.141	1.506	0.134
Rural	68	81.94	10.508		

In table 6, there is no significant difference between urban and rural trainee teachers in their Study Engagement, since the 'P' value 0.134 is greater than 0.05. Hence the null hypothesis is accepted.

Hypothesis - VII

There is a correlation between Stress burnout and Study Engagement

Table 7 Showing the correlation between Stress-burnout and Study Engagement of trainee teachers

Variable	N	'r' Value	'P' Value
Stress - Burnout	150	-0.052	0.530
Study engagement			

In table 7, there is no correlation between Stress - burnout and Study Engagement of Open University trainee teachers. Hence it shows that trainee teacher's Study engagement doesn't have a relationship with the stress-burnout.

Findings of the Study

1. There is a significant difference between the trainee teachers with work experience of 11-20 and 21-30 years. Since the 'P' value 0.03 is lesser than 0.05. Hence the null hypothesis is rejected. From the mean value of 21-30 years experience teachers' (29.43) is greater than those with 11-20 years teaching experience (20.83). So it can be said that teachers with 21-30 years have more stress-burnout.
2. There is no significant difference in the stress-burnout of teachers based on the type of institution.
3. There is no significant difference in the stress-burnout of teachers based on their locality.
4. There is no significant difference in the study engagement of teachers based on their work experience.
5. There is no significant difference in the study engagement of teachers based on the type of institution.
6. There is no significant difference in the study engagement of teachers based on their locality.
7. There is no correlation between Stress -burnout and Study Engagement of Open University trainee teachers. Hence it shows that trainee teacher's Study engagement doesn't have a relationship with the stress- burnout.

Conclusion

This research study has identified the Stress-burnout and Study Engagement of trainee teachers pursuing Bachelor of Education in Open University. The Stress-burnout level was high for the senior teachers; systematic planned work helps to reduce stress in our work place. Teachers hold the promise of our future. They are our demographic force. Working with and helping young people have always been a priority across time and cultures. But the changing times have challenged us in exceptional ways to find ways to protect and empower teachers to live happily without stress. Study engagement refers to the degree of attention, curiosity, interest, optimism, and passion that students show when they are learning or being taught, which extends to the level of motivation they have to learn and progress in their education.

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EFFECTIVENESS OF INCLUSIVE EDUCATIONAL PRACTICES FOR STUDENTS WITH SPECIAL NEEDS IN SARVA SHIKSHA ABIYAN

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Abstract

This paper focuses its attention on assessing the inclusive educational practices of children with special needs in Sarva Shiksha Abhiyan. The main objective of the study is to find out the effective inclusive educational practices for Students with Special Needs under Sarva Shiksha Abhiyan. The students with special needs in inclusive schools under SSA in Sivagangai district were sample for the study. The data were collected using the observation schedule prepared by the investigators. The result of the study observed that inclusive educational practices promote - children to develop a positive understanding of themselves and others, to develop friendship, families' visions of a typical life for their children can come true, to develop social skills and able to achieve academic skills. The study result is in line with the research carried out by Jorun Buli Holmberg and Sujathamalini(2016). This study also noted that the teachers are in need of specific competencies to handle students with special needs. The study also stressed on the teachers' collaboration and student – student collaboration. The study also showed the teachers effort on adaptation of teaching learning materials in the educational process of children with special needs is also vital. They study will be a lime light to stress on the need of in-service and pre-service teacher training programmes to handle children with special needs in inclusive educational set up. The study also warrant the need to restructure and rethink professional issues related to identification, assessment, teaching and evaluation approaches for students with special needs for effective implementation of inclusive education.

Introduction

This paper focuses its attention on assessing the inclusive educational practices of children with special needs in Sarva Shiksha Abhiyan. The main objective of the study is to find out the effective inclusive educational practices for Students with Special Needs under Sarva Shiksha Abhiyan. Worldwide persons with disabilities are marginalized. Their diversity and extent of disability need customized rehabilitation approach, which complicates the situation. As per Census 2011, there are 26.8 million (2.2 per cent of population) in India and therefore inclusive growth cannot be imagined without them.

The present paper reports on a case study of effective inclusive teaching practice for children with special needs in Sarva Shiksha Abhiyan. Even though we came a long way on inclusion still there is a gap in extending effective inclusive teaching for children with special needs.

Teaching all students in the same way no longer meets the rigorous academic demands of today's educational reforms (Hitchcock, Meyer, Rose, & Jackson, 2002). Effective teaching of diverse students requires different instructional methodology, curriculum materials, and assessment methods (Bateman & Bateman, 2002; Hitchcock et al., 2002). Students who are actively involved and engaged in planning and evaluating their own learning experiences are more likely to improve academic achievement (Choate, 2000). The independence of students with disabilities, in terms of effort and task persistence, is essential in an effective inclusive service environment (Choate, 2000; Friend & Bursuck, 2006; Gee, 2002). Students with disabilities often lack an awareness of their strengths and weaknesses (Brinckerhoff, 1994; Scanlon & Mellard, 2002) as well as skills in self-determination and advocacy (Durlack, Rose, & Bursuck, 1994; Field, 1996; Janiga & Costenbader, 2002). All

students with or without disabilities “need to learn three types of skills: 1) dispositions and habits of mind, such as inquisitiveness, diligence, collaboration, work habits, tolerance, and critical thinking; 2) content area knowledge, in science, social studies, language arts, computers, the arts, etc; and 3) basic academic skills such as reading, writing, and mathematics” (Jorgensen, Fisher, and Roach, 1997). These three types of skills should be included in the curriculum of general education classes as well as in various types of inclusive settings.

Student's collaboration, teaming and problem solving strategies in the classroom accommodating a diverse group of learners are common approaches in quality inclusive curriculum (McGregor, Halvorsen, Fisher, Pumpian, Bhaerman, & Salisbury, 1998; Tichenor, Heins, & Piechura-Couture, 1998). The need for studies on inclusive processes in classrooms has been pointed out on several occasions (Florian, 2008, Flem, Moen, and Gudmundsdottir, 2004) and it is so hard to achieve inclusive processes in practice (Abbot, 2007). To overcome this hardship it is important that teacher should play multidimensional role. The teacher should develop a plan within the curriculum that suits all the children with diversified needs. Deschenes, Ebeling, & Sprague (1994) noted a variety of instructional approaches for teachers to design curricula that accommodate a wide range of learners. They are: co-operative learning structures, Multidimensional student grouping, and multilevel instruction, Peer supports, Concrete experimental learning activities, and community based instruction.

Effective Inclusive Education is based on a multidisciplinary approach which warrants regular teachers, special teachers and other professionals' competencies. Special teachers and regular teachers work together for framing curriculum for the children with special needs. Teachers with special teaching competencies in Special Needs Education will always automatically and intuitively adapt the curriculum and instruction to meet the needs of each student. An inclusive curriculum that involves collaboration with colleagues makes this task even easier, enabling the educators to facilitate changes and adaptations (Snyder, 1999; Tapasak & Walther-Thomas, 1999; Tichenor, Heins, & Piechura, Couture, 1998). A lack of expertise and training for general and special teachers, insufficient resources, inadequate shared planning time, and the absence of administrative support are the primary barriers for inclusive efforts (King & Youngs, 2003; Scruggs & Mastropieri, 1996; Scruggs et al., 2007, Baker & Zigmond, 1995; Schumm, Vaughn,

Gordan, & Rothlein, 1994). General and special teachers' exposure to a variety of inclusive service models influences their willingness and readiness to implement inclusive practices (McLesky, Waldren, Swanson, & Loveland, 2001; Van Laarhoven et al., 2006). The present study focuses its attention on assessing the inclusive educational practices for children with special needs in sarva shilsha abhiyan. The study aims to understand the effort of special and general teachers in practicing inclusive educational services for children with special needs.

Methodology

The aim of the study is to assess the effectiveness of inclusive teaching practice for children with special needs. Observation method is suitable for complex phenomena (Stark and Torrance 2007; Yin 2002). The concept of inclusion is complex and it requires multiple direct observations to investigate the research questions from different point of view in their natural settings. Thus case study design with multiple observations is adopted to draw qualitative analysis. An important aim of the study is to find out effective inclusive teaching practice for children with special needs explicitly with the formulated criterion which leads for additional research questions concerning what are the factors that contribute for effective inclusive teaching practice for children with special needs.

Data Collection and Sample

Sivagangai district served as a locale for the study. Schools from the blocks of Sivagangai districts were selected based on simple random sampling technique. The students with special needs from first grade to fifth grade were the sample for the present study and they were observed in their inclusive classroom settings. The observations were analysed to find out the effectiveness of inclusive educational practices.

Findings of the Study

The study presents the effectiveness of inclusion educational practices for children with special needs. The investigator evinced that the special teachers visit regular schools and work with general teachers to teach children with special needs. The general teachers are suggested with the instructional procedures for children with special needs. The collaborations with special and general teachers are vital in the education for children with special needs. Thus teachers' collaboration is evinced in the study. All parents want their children to be accepted by

their peers, have friends and lead “regular” lives. Inclusive settings can make this vision a reality for many children with disabilities. Thus with the implementation of Inclusive Education in Sarva Shiksha Abhiyan the families’ visions of a typical life for their children can come true. When children attend classes that reflect the similarities and differences of people in the real world, they learn to appreciate diversity. Respect and understanding grow when children of differing abilities and cultures play and learn together. So in this inclusive education practice children develop a positive understanding of themselves and others. Schools are important places for children to develop friendships and learn social skills. Children with and without disabilities learn with and from each other in inclusive classes. The inclusive educational practice under Sarva Shiksha Abhiyan develops friendship by ensuring student – student collaborations. In inclusive classrooms, children with and without disabilities are expected to learn to read, write and do math. With higher expectations and good instruction children with disabilities learn academic skills. Thus this study evinced that Children learn important academic skills with appropriate adapted and modified teaching learning materials. Because the philosophy of inclusive education is aimed at helping all children learn, everyone in the class benefits. Children learn at their own pace and style within a nurturing learning environment. This study evinced that through this inclusive education all children learn by being together. Thus, curricular adaptation and modifications are also done by the teachers to accommodate the students’ diverse needs. Under Sarva Shiksha Abhiyan the special teachers also go for home visit where the students with severe special needs are provided with educational and therapy services. Overall, the study result is in line with the research carried out by Jorun Buli Holmberg and Sujathamalini(2016). The study evinced Student’s collaboration, teaming and problem solving strategies in the inclusive classroom for accommodating a diverse group of learners (McGregor, Halvorsen, Fisher, Pumpian, Bhaerman, & Salisbury, 1998; Tichenor, Heins, & Piechura-Couture, 1998). This study also noted that the teachers’ are in need of specific competencies to handle students with special needs. The study also stressed on the teachers’ collaboration and student – student collaboration. The study also showed the teachers effort on adaptation of teaching learning materials in the educational process of children with special needs. They study will be a lime light to stress on the need of in-service and pre-service teacher training programmes to handle children with special needs in inclusive educational

set up. The study also warrant the need to restructure and rethink professional issues related to identification, assessment, teaching and evaluation approaches for students with special needs for effective implementation of inclusive education.

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KNOWLEDGE ON SPECIAL EDUCATION AN APPROACH FOR TEACHER QUALITY AND INSPIRATION

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Abstract

Teachers play a pivotal role in the progress of a knowledge society. As a teacher, they inspire the next generation of leaders. So, it's a must to gather a series of tips, stories, and other helpful materials to keep you inspired. Successful teaching involves keeping in touch with the latest trends and modern theories and practices in education. Often teachers come across pupils with different intellectual or physical disabilities which hinder their academic progress. Teachers with knowledge on special education design and deliver lessons geared towards the individual needs and capabilities of the students to train them with physical, emotional, mental, and learning disabilities. They collaborate with others to give an integrated plan for developing the capacities of their students. They set learning goals for each student, evaluate and assess their progress by updating with the parents. It is teacher education which moulds the teachers to play their role effectively, keeping constantly in view the special needs and unique abilities of their students thus by providing a high-quality education based on a student's needs. They should get trained on how to deal with children who need special care and attention. By researches it was found that disabled students benefit socially by forming positive relationships and learning how to be more at ease with a variety of people in an inclusion classroom. Thus, teachers need to become experts in the area of special education so as to become quality and inspiring teachers for the betterment of the nation providing a holistic approach in education.

Keywords: *Teacher Education, Special Education, Prospective Teachers, Inclusion, Audio- Visual Aids, Intellectual Disabilities and Physical Disabilities.*

Introduction

Education is widely recognized as the key to the empowerment of every section of society. It is the vehicle of knowledge, self-preservation and success. It is a continuous learning experience, learning from people, learning from success and failures, learning from teachers and then growing up to be the person that one wants to be. Education not only gives one a platform to succeed, but also the knowledge of social conduct, character and self respect. For the full educational flowering of an individual, there needs to be educators for their academic growth.

The success or failure of any educational programme depends upon the quality, commitment and enthusiasm of the teacher concerned. Successful teaching involves keeping in touch with the latest trends and modern theories and practices in education. To achieve this, a teacher should always be a learner. A teacher is a torchbearer in society and has a great role to mould the future citizens of our country.

Special Education

Persons with disabilities often are excluded from the mainstream of the society and denied their human rights.

They range from discrimination, such as the denial of educational opportunities, to more subtle forms of discrimination, such as segregation and isolation because of the imposition of physical and social barriers. Effects of disability-based discrimination have been particularly severe in various fields such as education, employment, housing, transport, cultural life and access to public places and services. The diversity is not only on cultural or linguistic fronts but also on the needs of children attending schools with varying abilities or disabilities.

Often teachers come across pupils with different intellectual or physical disabilities which hinder their academic progress. Among intellectual disabilities, one can name various disorders which hamper the learning of students like autism, attention deficit disorder, dyslexia or dyscalculia. Physical impairments that impede instructional progress in a normal environment are visual, hearing or speech disabilities. Special education is the way out for these differently abled children. Most of the children receiving special education in recent years are those with various kinds of disabilities.

The term 'special education' includes all aspects of education which are applied to exceptional children -

physical, mental, disadvantaged and gifted children. It includes all those aspects of education which are specific in addition to the regular programme for all children (Sharma, 2008). It is different from general education in that it is so designed as to cater to the special requirements of children who need to be assisted to catch up with the rest of the class through the use of special gadgets or tools and instructional strategies that seek to bring out the best in them.

Special education is instruction designed for students with disabilities or talents or gifts who have special learning needs. Today's special education takes account of the fact that different students have different special needs. Some need help in dealing with the social and psychological problems they face as a result of their exceptionality. Special educational programmes not only challenge them intellectually, but also help them deal with their feelings of alienation. Other exceptional students need special services because of what they are not able to do, because some disabling condition limits their ability to learn in the typical educational programme (Yssedyke & Algozzine, 2006).

The focus of special education is on learning, not just to pass exams, but to make the child a more effective and independent learners (Krithika, 2009). The students with special learning needs require a modification of school practices or special educational services to develop to maximum capacity. As backward children and talented children need specific facilities for their development, educationists stress the importance of special education for them (Prameela, 2005). Special teaching facilities are very much needed to meet the personal and social needs of these children. Special education is quite vast in its objective, methodology and scope. It is goal-directed in the sense that it always carries purposeful instructions and well thought, well planned learning experiences to the children to help them in the realization of their needs and attaining maximum adjustment and progress as possible. It is also specialized in nature since it needs special teachers, special aids and special learning environment for making the special students learn. Also it is universal in the sense that it covers the needed education for each and every type of exceptional or special individual, without having any discrimination on the basis of age, caste, colour, sex, language, culture, socio-economic conditions, regionality or nationality (Mangal, 2007).

Knowledge of Special Education for Teachers

Teacher quality matters. In fact, it is the most vital school-related factor influencing student achievement.

Being an inspiring teacher is not rather reserved for a few elite teachers. While children in overall need plenty of love and attention from their parents and teachers, children with special needs are most promoted by people whose personality traits improve the learning process. Both passion and concern for children with special needs are required to be a good special education teacher. The categories of students with various disabilities get isolated or excluded in regular school settings in the sense that the curriculum, teaching-learning materials, examination systems, educational facilities etc are not supportive to these students. These children who are practically ignored in our curriculum need to be taken care of. It is a great challenge on the part of teachers to deal with those children with disabilities (Raja & Kumar, 2011).

The destiny of a nation lies in the hands of a teacher. They play a pivotal role in the progress of a knowledge society. It is teacher education which moulds the teachers to play their role effectively, keeping constantly in view the special needs and unique abilities of their students. It provides them with the theoretical background of the philosophical, psychological and sociological aspects of education to do their best in their school.

Teachers are expected to maintain a high standard in all their instructional activities. For this, the colleges of education need to provide the prospective teachers with the latest thinking on how classroom instruction can be imparted to children with diverse learning needs. Early identification of developmental difficulties in these children is believed to be critical to the success of treatment for these conditions. Early intervention programmes result in greater developmental gains that tend to remain with the children longer. The prospective teachers need to be provided not only theoretical knowledge but also practical skills so as to equip them with the necessary inputs to deal with the special learning problems of children at various levels of schooling. Workshops and special training will help the educators learn about latest technology in teaching the students with special needs. Pre-service training is inevitable to the educators to diagnose a child with special needs, analyse the problem, assess its nature and severity, select the proper device and use it meticulously.

The curriculum for teacher education should also be revised. At present, there are no specific provisions in the form of trained teacher educators, resource materials, and standardized inputs on learners with special educational needs in the in-service programmes of District Institutes of Teacher Education (DIETs). In the pre-service programme, the inputs are

provided only one optional paper or one unit in a compulsory paper (NCERT, 2009).

The dynamics of teaching has changed with the times. It is necessary that teachers have to change their roles and understand the psychology of every children and identify the challenges faced by them. Various educational services may help disabled learners to overcome their problems. Special educational programmes can be designed to meet the special needs of these learners. In addition, these educationally disabled students need a great deal of structured practice and immediate corrective feedback to develop their skills (Kumar & Raja, 2009 b).

Using innovative technologies may facilitate the process of learning in disabled learners. By these specialized approaches to teaching, most disabled learners can be helped to learn normally (Kumar & Raja, 2008). The prospective teachers need to be made to realize the significant parts that audio-visual aids and other multimedia equipment play in enhancing the levels of comprehension for these learners.

Recognition of a pupil's learning disability and the creation of a congenial atmosphere help the disabled learners to lessen the severity of their disability. Today's special educators are called upon to create this kind of protective learning environment in a modern school that seeks to promote inclusive education. Teachers need to provide their students with positive role models and consistently treat individual differences and needs with patient acceptance and special effort. There needs to a healthy interaction between the teachers and parents to identify the special needs of these children (Kumar & Raja, 2009 a).

Recommendations

The prospective teachers must be exposed to different kinds of studies and training undertaken by experts in special education. They gain this exposure not only through reading or study but also through seminars, symposia, national and international conferences and workshops held for the dissemination of such knowledge. They also need to be lifelong learners and do innovative experiments to corroborate the ideas they come out with.

It is necessary that special education should be included as a compulsory subject in the teacher education curriculum. The knowledge of special education will help the prospective would help the prospective teachers to get a clear picture about the various kinds of disabilities and their characteristics. They would also get an idea of how to deal with such children with special care and special methodology of teaching.

The teacher educators need to experts in the area of special education so as to train the prospective teachers for the betterment of the nation. They should turn schoolteachers into good counsellors for the context of their interaction with administrators, parents and even the peers of these special children. So the teacher educators have to train the student teachers on how to emphasize with children who need special care and attention.

Conclusion

Creation of special educational settings paves the way to empower the differently abled to cultivate their skills and make their contribution to society like their peers. If schoolteachers gain the insight into the difficulties their pupils face and help them bring out their best, these children can be enabled to integrate into the rest of society and achieve positions of eminence. The focus should be on how to convert the disabled children of a country into a resourceful population so that they could contribute their best to the society.

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CUSTOMER PERCEPTION AND SATISFACTION ON E-SERVICE QUALITY- A STRUCTURAL EQUATION MODELLING APPROACH

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Abstract

Vast studies exist in the area of customer satisfaction and e-service quality during online shopping at the time of online shopping. The reviews related with the above said topics show that most of the customers feel that there is a gap between customer perception and satisfaction when it comes to e-service quality. In this regard the researcher has made an attempt to find out the relationship between the customer perception and their satisfaction on e-service quality with structural equation modelling approach. Service quality can be measured with the help of the important and popular instrument, namely SERVQUAL. This model can be used to measure the service quality of the banking sector. Customers' perception with regard to various services rendered by the online retailers was taken for this study. Data were collected from 200 customers of online retailers like Amazon, Flipkart, Snap deal, Jabong. The customers chosen for this study are located in various parts of Chennai. In order to evaluate the association between the variables used in the model, Structural Equation Modelling (SEM) was used for data analysis. The findings of the research showed that, absolute fit indices fits the sample data and reveals that the proposed model has the acceptable fit, by way satisfying the recommended values

Introduction

"Once we accept our limits then go beyond them"

—Albert Einstein.

Till the retailers come to know the requirements (limits) of the customer they cannot satisfy their customers and until satisfying the customers, the retailers cannot succeed in business. It is identified then the retailers can play a greater role in providing variety of products along with the desired services (go beyond). When the products served along with the perceived services the customers get satisfied.

With the rapid global development of the electronic commerce (e-commerce), more and more businesses are attempting to gain competitive advantages by using e-commerce to interact with customers (Lee and Lin, 2005). Consequently, the competition among online retailers has become fiercer and fiercer (Yang et al., 2003). Electronic commerce and online business stand out among these opportunities. Most companies are establishing websites, which are regarded as a new channel to conduct business transaction, and customers can make purchase through companies' Websites. It enables companies to access a global market with low operating cost, to offer information in depth, and to provide customers electronic service (e-service) with superior quality by means of the interactivity

of the Internet, which increases the competition among companies.

E-service and E-service quality are the two concepts that have become increasingly important issues in research. E-service is different from traditional service, which is based on interactive information flow between customers and service providers. E-service quality has been regarded as having the potential not only to deliver strategic benefits, but also to enhance operational efficiency and profitability. E-service is becoming even more critical for companies to retain and attract customers. What brings online customers back to company's websites is a sense of loyalty that comes from good services offered by companies.

In e-tailing's crucial days, Web presence and low price were believed to be the drivers of success. However, no amount of presence or low price could make up for the service quality issues that became all too prevalent: consumers could not complete transactions, products were not delivered on time or at all, e-mails were not answered, and desired information could not be accessed. Electronic service quality then entered the picture as a differentiating strategy. To encourage repeat purchases and build customer loyalty, companies needed to shift the focus of e-business from e-commerce.

Literature Review

Customer Perceived Value

Perceived value has recently gained much attention from marketers and researchers because of the important role it plays in predicting purchase behaviour and achieving sustainable competitive advantage (e.g., Bolton and Drew 1991; Cronin et.al.2000; Dodds, Monroe, and Grewal, 1991; Holbrook, 1994, 1999; Woodruff 1997; Zeithmal 1988). Zeithmal (1988: p.14) conceptualized perceived value as "the consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given". In this definition, the concept is measured at the product-level. It incorporates the quality of the (physical) product itself including the additional services delivered, in comparison with its relative price. It particularly refers to the value for money consumers receive, or as (Sirohi et. al.1998) call it. "What you get for what you pay". This narrow definition excludes the shopping experience. Some researchers suggest that it is more useful to measure the perceived value experienced from the complete shopping experience; thus, measuring both product value for money and the shopping experience. The reasoning behind this is that consumers optimize the full process of decision making (procedural rationality), not just the outcomes (substantive rationality) (Simon, 1976). A broader definition is particularly useful when the product is not the focal point of interest. For example, service researchers (e.g., Gronroos, 1982; Parasuraman et. al. 1985, 1988) indicated that apart from what is delivered, the way the service is delivered is important. In a similar vein, Kerin, Jain and Howard (1992) showed the importance of the shopping experience in explaining the value perceptions of a retailer.

Previous work thus demonstrated the importance of providing customers a valuable shopping experience (Eroglu and Machleit, 1993). Consumers evaluate shopping experiences along utilitarian and hedonic dimensions (Babin,et. al.1994; Babin and Darden, 1995, 1996, Batra and Ahtola, 1991; Crowley, Spangenberg and Hughes, 1992; Hirschman and Holbrook, 1982). The utilitarian dimension reflects whether consumers achieve their shopping goals with minimum investments in time and effort; it relates to 'efficiency' (cf. Zeithmal et al., 2000). To improve utilitarian shopping value, consumers must save time and/or reduce effort by engaging in goal-directed behaviour that is instrumental, purposive, and task-specific (Hoffman, Novak and Schlosser, 2002). The hedonic dimension relates to the experiential value consumers derive from the shopping process itself, by means of social

interaction, personal security and entertainment (Alba et al., 1997). In this respect, consumers are more concerned with entertainment and enjoyment value; they engage in experiential behaviour that is likely to be hedonic, ritualized and reflects nonlinear search (Hoffman and Novak, 1996). As Mathwick et. al. (2002, p.53) state, "consumers who approach retail environments to browse (Bloch et. al.1986), or enjoy the experiential aspects of shopping (Bellenger and Korgaonkar, 1980) are motivated by the process rather than by shopping goals or outcomes (Hoffman and Novak, 1996)". Thus hedonic and utilitarian value assessments are useful to define the shopping experience, but these are distinct from outcome quality assessments, i.e. whether the product is good value for money.

This study focuses on the perceived value of buying products and services through different channels, and therefore the shopping process itself is valuable to the decision process. Consequently, the researcher has focus on the broader definition of perceived value. The researcher has start with Zeithmal's (1988) useful list to ensure that most benefits and costs are incorporated. These refer to the product/service quality, monetary (price) and nonmonetary (temporal, physical and psychological) costs.

Perceived Value

Perceived value reflects consumers' net gain obtained from their consumption behaviour; thus it is likely to be used as an indicator of purchase intention in the offline channels, as well as the online channel (Chen and Dubinsky, 2003). Researchers indicate that perceived value, being a richer evaluation criterion, is a better predictor of purchase intentions than product quality (Szybillo and Jacoby, 1974). Previous research has shown that perceived value positively influences willingness-to-buy (Dodds et.al.1991; Monroe, 1990; Sweeney et.al.1999), store patronage (Baker et al., 2002), and store loyalty intentions (Sirohi, et. al. 1998).

Customer Satisfaction

Customer satisfaction is one of the most important outcomes in the marketing literature. It serves to link processes culminating purchase and consumption with post purchase phenomena such as attitude change, repeat purchase, and brand loyalty (Suprenant and Churchill, 1982). This definition is supported by Jamal and Naser (2003) and Mishra (2009).

According to Oliver (1980), the customer satisfaction model explains that when the customers compare their perceptions of actual products/services performance with the expectations, then the feelings of satisfaction have arisen. Any discrepancies between the expectations and the performance create the disconfirmation. Oliver (1980) has identified three types of disconfirmation namely positive, negative and zero disconfirmation.

E-Service Quality

E-Service Quality can be defined as overall customer evaluations and judgements regarding the excellence and quality of e-service delivery in the virtual marketplace (Santos, 2003). Research over the past two decades has demonstrated that service quality influence consumption decisions, but only recently these findings have been applied to e-commerce (Yang and Jun, 2002; Wolfinbarger and Gilly, 2003). For example, service quality measures have been applied to assess the quality of virtual community web sites (Kuo, 2003), satisfaction with e-commerce channels (Devaraj et al, 2002), and determinants of web site success (Liu and Arnett, 2000). Complex process of online shopping can be divided into various sub-processes such as navigation, searching for information, online transactions, or customer interactions. Customers are unlikely to evaluate each sub-process in detail during a single visit to an online store, but rather will perceive the service as an overall process and outcome (van Riel et al., 2001). Furthermore, for online customers, high standard e-service quality is the means by which the potential benefits of the internet can be realized (Yang, 2001). Because it is much easier to compare product technical features and prices online than through traditional channels, e-service quality becomes a key factor for customers (Santos, 2003). Online customers thus expect equal or higher levels of service quality than traditional channels customers.

Relationship between E-Service Quality and Customer Satisfaction

The marketing literature still has not reached consensus about casual relationships between quality, satisfaction, perceived value, and repurchase/loyalty intentions (cf. Cronin et al. 2000; Dabholkar et. al.2000; Duman 2002). Perceived value and satisfaction have both been found to be predictors of repurchase or loyalty intentions (e.g. Bolton and Drew 1991; Dabholkar et al. 2000, Grewal et.al.1998). Next, some authors argue that satisfaction is an antecedent of perceived value (e.g.

Bolton and Drew 1991; Naylor 1996) by arguing that perceived value is a higher-order variable that results from post-purchase evaluations, whereas others argue that satisfaction is more strongly related to future behaviour and perceived value only acts as a predictor of satisfaction (e.g. Cronin et al. 2000). Based on the work of Oliver (1999) and Woodall (2003), it can be assumed that satisfaction and perceived value affect each other through the more or less parallel and/or transmutant existence of both constructs in the consumers' evaluation process. Marketing researchers have attempted to measure (the antecedents of) quality and value perceptions, satisfaction and loyalty in online settings. Some authors argued that online and offline environments present different shopping experiences and that existing concepts and antecedents need to be adapted to the online context (Wolfinbarger and Gilly 2003). To better understand the underlying forces that determine online purchased intentions, this study reviews the e-quality, e-perception and e-satisfaction literature regarding purchasing.

Measurement of Service Quality

This study used the revised SERVQUAL scale items to establish dimensions of e-service quality through website design, reliability, responsiveness, trust, and personalization. The relationship among the e-service quality dimensions, overall service quality and customer satisfaction is hypothesized and discussed below.

Website Design

Website Design quality is crucial for online stores (Than and Grandon, 2002). Website design describes the appeal that used interface design presents to customers (Kim and Lee, 2002). The influence of website design on e-service performance has been studied extensively.

Reliability

Reliability represents the ability of the web site to fulfil orders correctly, deliver promptly, and keep personal information secure (Parasuraman et al., 1988; Janda et al., 2002); Kim and Lee, 2002). The importance of reliability has been emphasized by the information technology-based service. Moreover, Zhu et al. (2002) argued that reliability dimension has a direct positive effect on perceived service quality and customer satisfaction by electronic banking systems.

Responsiveness

Customers expect online stores to respond to inquiries promptly (Liao and Cheung, 2002). Responsiveness describes how often an online store voluntarily provides services (e.g. Customer inquiries, Information retrieval and Navigation speed) that are important to its customers (Parasuraman et al., 1988; yang, 2001; Kim and Lee, 2002).

Trust

Online shopping context comprises the interaction between customers and online stores (Bakos, 1991). Numerous studies have emphasized the importance of online trust between customers and online stores (McKnight et al., 2002; Krauter and Kaluscha, 2003). Trust is a significant antecedent of participation in commerce generally, and especially in online settings because of the increased ease with which online stores can behave opportunistically (Reichheld and Scheffer, 2000). Moreover, trust is defined as customer willingness to accept vulnerability in an online transaction based on their positive expectations regarding future online store behaviours (Kimery and McCard, 2002). That is, trust encourages online customer purchasing activity and affects customer attitudes toward purchasing from an online store (Gefen, 2000; Gefen et al., 2003).

Personalisation

Personalisation involves individualized attention, personal thank you notes from online stores, and the availability of a message area for customer questions or comments (Yang, 2001). Previous studies have examined the influence of the customer service provided by internet retailers on customer perceptions of service quality and satisfaction (Wolfenbarger and Gilly, 2003).

Objectives

- To know the customer perception towards e-service quality offered during online shopping.

- To analyse the impact of customers' positive results of their perception towards e-service quality.
- To study the customer satisfaction towards e-service quality.

Confirmatory Factor Analysis

Confirmatory factor analysis (CFA) is a powerful statistical tool for examining the nature of and relations among latent constructs (e.g., attitudes, traits, intelligence, clinical disorders). In contrast to its analytic cousin, exploratory factor analysis, CFA explicitly tests a priori hypotheses about relations between observed variables (e.g., test scores or ratings) and latent variables or factors. CFA is often the analytic tool of choice for developing and refining measurement instruments, assessing construct validity, identifying method effects, and evaluating factor invariance across time and groups (Brown, 2006). Thus, CFA is a useful application for investigating issues of interest to most psychological researchers. Since the late-1990s, there has been a positive trend in the use of CFA, with most applications being in the area of scale development and construct validation (Brown, 2006; Russell, 2002).

CFA is part of the larger family of methods known as Structural Equation Modeling (SEM) and plays an essential role in measurement model validation in path or structural analyses (Brown, 2006; McCollum et.al., 2000). When conducting SEM, researchers often first evaluate the measurement model (whether the measured variables accurately reflect the desired constructs or factors) before assessing the structural model. As noted by Thompson (2004), "It makes little sense to relate constructs within an SEM model if the factors specified as part of the model are not worthy of further attention" (p. 110). In many cases, problems with SEM models are due to measurement model issues that can be identified with CFA (Brown, 2006). Confirmatory Factor Analysis (CFA) was selected to refine and validate the measurement scales.

Table.1 Confirmatory Factor Analysis of Service Quality, Customer Satisfaction and Retention

Variables	No. of Statements	Chi_Square Value	P Value	GFI	AGFI	CFI	RMR	RMSEA	Cronbach Alpha
Website Design	5	1.572	0.185	0.975	0.957	0.959	0.007	0.032	0.769
Reliability	5	2.975	0.083	0.987	0.962	0.971	0.015	0.069	0.791
Responsiveness	5	4.872	0.095	0.999	0.972	0.970	0.010	0.075	0.763
Trust	5	0.235	0.579	0.965	0.947	0.945	0.008	0.084	0.782
Personalisation	5	2.538	0.225	0.982	0.963	0.961	0.012	0.024	0.781
Customer Perception	5	2.813	0.738	0.958	0.931	0.925	0.006	0.088	0.756
Customer Satisfaction	5	2.578	0.193	0.949	0.923	0.922	0.014	0.049	0.774
Loyalty	5	1.846	0.218	0.968	0.941	0.936	0.003	0.093	0.787
Recommendation	5	0.899	0.098	0.981	0.965	0.963	0.009	0.027	0.793
Self-Satisfaction	5	2.637	0.285	0.959	0.937	0.927	0.017	0.031	0.791

The above table provides a summary of reporting for the P value of each variable is confirmed.

Data Collection

Data were gathered from the online retail customers in Chennai. A set of questionnaire distributed to online retail customers in Chennai. There are four Online retailers has taken into consideration for this study and the questionnaires distributed to the customers of these online retail stores. The first part of the questionnaire consists of the general information of the respondents. E-Service quality was used in the second part, which is the independent variable of this research. The third part of the questionnaire explains the customer perception and satisfaction and this is the independent /dependent variable of this research. Fourth part consists of customer loyalty, recommendation, and self satisfaction and this is the dependent variable of this research.

Structural Equation Modelling (SEM): Model Fit Assessment

Structural equation modelling was used to analyse the suitability of the model based upon the collected samples. As recommended by Anderson and Gerbing (1988), measurement model to test the reliability and validity of the survey instrument was analysed first, and by using AMOS version 18 the structural model was analysed. The structural equation model (SEM) is most useful when assessing the casual relationship between variables as well as verifying the compatibility of the model used (Peter, 2011).

Structural equation modelling evaluates whether the data fit a theoretical model. In order to evaluate the model, emphasis was given to Chi-square, P Value, CFI, GFI, AGFI, and RMSEA (Table 1). Common model-fit measures like Chi-Square, the comparative fit index (CFI), root mean square error of approximation (RMSEA), Table 3 shows

the estimates of the model fit indices from AMOS structural modelling

The Variables used in the Structural Equation Model are

Observed, Endogenous Variables

1. Website Design
2. Reliability
3. Responsiveness
4. Trust
5. Personalisation
6. Customer Perception
7. Loyalty
8. Recommendation
9. Self Satisfaction

Unobserved, Endogenous Variables

1. Customer Satisfaction

IV. Unobserved, exogenous variables

1. Service Quality
2. e1: Error term in Website Design
3. e2: Error term in Reliability
4. e3: Error term in Responsiveness
5. e4: Error term in Trust
6. e5: Error term in Personalisation
7. e6: Error term for Loyalty
8. e7: Error term for Recommendation
9. e8: Error term for Self Satisfaction
10. e9: Error term for Customer Perception
11. e10: Error term for Customer Satisfaction

Hence number of variable in the SEM

Number of variables in this model	: 21
Number of observed variables	: 9
Number of unobserved variables	: 12
Number of exogenous variables	: 11
Number of endogenous variables	: 10

Table 1 Variables in the Structural Equation Model Analysis

Variables			Unstandardised co-efficient (B)	S.E. of B	Standardised co-efficient (β)	t value	P value
Website Design	<---	E-Service Quality	2.239	0.226	0.660	9.889	<0.001**
Reliability	<---	E-Service Quality	2.299	0.205	0.726	11.218	<0.001**
Responsiveness	<---	E-Service Quality	2.556	0.208	0.775	12.262	<0.001**
Trust	<---	E-Service	2.659	0.218	0.773	12.216	<0.001**

Variables			Unstandardised co-efficient (B)	S.E. of B	Standardised co-efficient (β)	t value	P value
		Quality					
Personalisation	<---	E-Service Quality	2.724	0.230	0.756	11.859	<0.001**
Customer Perception	<---	E-Service Quality	1.792	0.245	0.515	7.306	<0.001**
Customer Satisfaction	<---	Customer Perception	0.489	0.051	0.621	9.650	<0.001**
Loyalty	<---	Customer Satisfaction	1.000	-	0.879	-	-
Recommendation	<---	Customer Satisfaction	0.964	0.065	0.857	14.927	<0.001**
Self-Satisfaction	<---	Customer Satisfaction	0.930	0.065	0.826	14.224	<0.001**

Note: ** denotes significant at 1% level

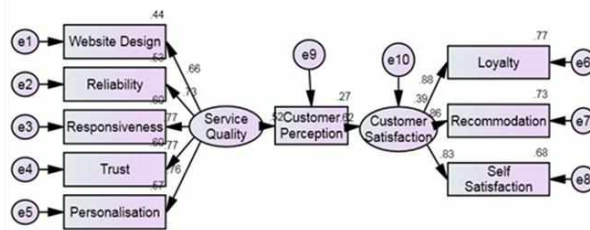


Fig 1 SEM of Customer Perception and Satisfaction on E-Service Quality

Here the coefficient of Website Design is 2.239 which represent the partial effect of Website Design on E-Service Quality, holding the other variables as constant. The estimated positive sign implies that such effect is positive that E-Service Quality would increase by 2.239 for every unit increase in Website Design and this coefficient value is significant at 1% level.

The coefficient of Reliability is 2.299 that represent the partial effect of Reliability on E-Service Quality, holding the other variables as constant. The estimated positive sign implies that such effect is positive that E-Service Quality would increase by 2.299 for every unit increase in Reliability and this coefficient value is significant at 1% level.

The coefficient of Responsiveness is 2.556 which represent the partial effect of Responsiveness on E-Service Quality, holding the other variables as constant. The estimated positive sign implies that such effect is positive that E-Service Quality would increase by 2.556 for every unit increase in Responsiveness and this coefficient value is significant at 1% level.

The coefficient of Trust is 2.659 which represent the partial effect of effectiveness on E-Service Quality, holding the other variables as constant. The estimated positive sign implies that such effect is positive that E-Service Quality would increase by 2.659 for every unit increase in Trust and this coefficient value is significant at 1% level.

The coefficient of Personalisation is 2.724 which represents the partial effect of empathy on E-Service Quality, holding the other variables as constant. The estimated positive sign implies that such effect is positive that E-Service Quality would increase by 2.724 for every unit increase in Personalisation and this coefficient value is significant at 1% level and the coefficient of Customer Perception is 1.792 and it represents the partial effect of Customer Perception on Customer Satisfaction marks, holding the other variables as constant. The estimated positive sign implies that such effect is positive that Customer Satisfaction marks would increase by every unit increase in Customer Perception and this coefficient value is significant at 1% level.

The coefficient of Recommendation is 0.964 that represents the partial effect of Recommendation on Customer Satisfaction, holding the other variables as constant. The estimated positive sign implies that such effect is positive that Customer Satisfaction would increase by 0.964 for every unit increase in Recommendation and this coefficient value is significant at 1% level.

The coefficient of Self Satisfaction is 0.930 and it represents the partial effect of Self Satisfaction on Customer Satisfaction, holding the other variables as constant. The estimated positive sign implies that such effect is positive that Customer Satisfaction would increase

by 0.930 for every unit increase in Self Satisfaction and this coefficient value is significant at 1% level.

Table 2 Model fit summary of Structural Equation Model

Indices	Value	Suggested value
Chi-square value	67.409	-
df	26	
Chi-square value/df	2.593	< 5.00 (Hair et al., 1998)
GFI	0.951	> 0.90 (Hu and Bentler, 1999)
AGFI	0.913	> 0.90 (Hair et al. 2006)
CFI	0.955	> 0.90 (Daire et al., 2008)
RMR	0.066	< 0.08 (Hair et al. 2006)
RMSEA	0.059	< 0.08 (Hair et al. 2006)

From the above table it is found that the Chi-square value/df is 2.593, which is less than 5.00 which indicates perfectly fit. Here Goodness of Fit Index (GFI) value and Adjusted Goodness of Fit Index (AGFI) value is greater than 0.90 which represents a good fit. The calculated Comparative Fit Index (CFI) value is 0.955 which means that it is a perfectly fit and also it is found that Root Mean Square Residuals (RMR) and Root Mean Square Error of Approximation (RMSEA) value is 0.066 and 0.059 respectively, which is less than 0.08 which indicated it is perfectly fit.

Conclusion

The aim of this research was to carry out an empirical analysis of how the customer perception determines the customer satisfaction on the e-service quality of services provided by the online retail stores, using a structural equation modelling. This study affirms and develops an instrument of e-service quality in the context of online retail stores, and examines the relationship among service quality, customer satisfaction and customer retention. The proposed model (SERVOQUAL) was then calibrated using the data collected from customers of online retail stores in Chennai city.

Based on the viability and statistical significance of important parameter estimates, the considerably good fit of the model (CFI, GFI, AGFI, RMSEA), it can be concluded that the three factor model shown in figure 1 represents an adequate description of SERVOQUAL structure for the online retail stores, and goodness of fit indices support the model fit and these emphasized indices indicate the acceptability of this structural model.

Definitely, this study will be useful for the online retailers to ascertain the importance given by the

customers for the various important factors pertaining to online shopping service quality. In the present competitive environment, to retain the existing customers and to enhance customer base, online retail stores have to conduct surveys at least once in three months with online shoppers to elicit their perception pertaining to various factors leading to e-service quality and satisfaction.

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CAPABILITY EDUCATION PROGRAM: A DEVICE AND TOOL TO INTERFACE LEARNING FOR KNOWLEDGE SOCIETY

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Abstract

Ever changing faces of human struggle with a quest for modernization and cultural advancement makes learning for change and change with time inevitable. The formal process of education had gone through changes with industrial, technological, and market revolution and today the iGeneration is able to surf net and web and gain easy access to information on anything and everything. With learning made easier by IT and animated gadget-assisted learning schedules, the younger crops sadly mistakes the wherewithal of merely procuring data as knowledge. Concept guided approaches and efforts to internalize ideas for critical thinking for aesthetic self expression and meaningful interaction directed towards decision-making hardly gets appreciated in classrooms. With the lopsided focus placed on content transfer, only a select few individuals and institutions remain committed to a holistic academic process which provides for personal development in consonance with common good. No doubt that our education should be trendy and updated. It must have a contemporary appeal connecting with realities of life. But a training that focuses only on skills without any relevance and subscription to egalitarian values would only do harm than good. Any knowledge that fails to ignite mind and falls short of stirring the affective domain lacking attention on peace and tranquility will only be incomplete. Therefore our educational exercises can be ambitious and but not utopian. It should be honest and modest to place learner in a real-time context and its benefits should be tangible. Among the various innovative experiments done by educationists around the world, a certain Capability Education Development Program advocated in Charles Strut University at Orange, Sydney, Australia (formerly one of the campuses of the famous University of Sydney) has a mechanism to address and assist these said principles. This paper outlines the features of the academic project that is seen working well and examines the feasibility of adopting it to customize learning and complement the Choice Based Credit System (CBCS) practiced in India.

Keywords: Change; Learning Level; Capability Development; Portfolio Management

Introduction

In these days of vigorous and rampant marketization and privatization happening world over, the perception of the objectives of education and expectations from higher learning are fast changing. It is in bid to stay afloat; performing portals of higher education are routinely and regularly involved in introspections and periodically take efforts to deal with impediments that dampen the efficacy of the system. It is a common man understanding that education in India is by far the largest enterprise which offers goods of appreciable quality in its class. Extended to a heterogeneous clientele to as many as who can afford the modest price, schools and colleges in the country claim

to work with lofty goals and ideals which suit them best in parlance with the interest of the nation.

A comparison of the curriculum and the academic practices functional in India with that of global peers shows that there is no dearth of idea. Considering the mandate given, it is heartening to note that Indian institutions do not lag too far behind others. Though the work done is commendable in precepts and practice, the outcome appears to be a cliffhanger. At the exit level our graduates do get equated with those trained in western academia. Notwithstanding the cognitive training many a times they end up underemployed if not staying unemployed. This may be because they are unconvincing in turning into a recruiter's delight. One must admit politely that our

graduates are less proactive in actively participating in the training process. It is pointed out that their engagement in acquiring skills should be stepped up.

It is here that the strategy recommended and followed in other top notch organizations of the world becomes special to lend learning. Prescriptions made by educational experts and professional trainers from institutions of preeminence constantly emphasize on qualitative and quantitative improvements (Bateson, 1979; Bredo, 1989; Fisher et al., 2001; Bloom, 2004; Cochrane et al., 2007). It is recommended that course content should be tuned in accordance with the need and teaching and learning should be combined and augmented with research and extension activities. The common theme that emerges from most premier schools of repute is that a strong interfacing of the school, society and industry is needed. Though India is also a home for certain elite institutes, many colleges including those that are autonomous to make their own academic plans and programs fall short of developing a nexus with apt terms of reference to gain from it.

It is only in recent times that industrial liaison and college-community connect are encouraged in this country. With new MHRD and NSDC initiatives, NAAC and NIRF are putting up some positive pressures to make colleges and universities to revamp their strategies. That it is likely that funding and grant disbursements are tied to innovations and progress make many autonomous institutions to sit straight and learn for others. A search had begun in almost all accredited colleges to be motivated in trying new and path breaking approaches. In this situation, a comparative note made in one special academic project tired in Charles Strut University (CSU) in its campus at small city Orange, NSW, Sydney, Australia caught the attention of authors. The novel pedagogical experiment namely Capability Education Program (CEP) introduced and found to be working good there merited a study. A brief resume of observations made on CEP is presented here as a paper.

Capability Education Program at Charles Strut University

It is an opinion of the Curriculum Design Group at CSU that most Australian University Courses in Agriculture are reductionist and anthropocentric. Though training given is claimed skill-inculcating and aimed at producing well-trained analytical thinkers, most if not all who emerge from traditional training merely end up finding routine placements in job market. Most graduates hold a strong

view that humans are at the 'center of the universe' and start spinning their career around this idea and end up doing more harm than good to nature.

Pitching their ventures only on profiteering, CSU course design group view that learners emerging from such job-seeking programs are but primitive in their capacity to be intuitive, imaginative and holistic in their thinking. The result, the educationists at CSU point that takers of these courses do not see humans as being a *link* in the chain; instead they opine that they are *THE link*. The course designers of the CEP opine that sustainability of agriculture when viewed from an anthropocentric point of view is based on a positivist framework of thinking. While this according to them represents the popular paradigm of western agriculture, they caution not to conclude that it is the best way of achieving a sustainable outcome (Cochrane et al., 2002, Raman et al., 2006).

Indeed they question whether the outcome is in fact sustainable! With such a thinking, a team of illustrious academics namely Dr. Kerry Cochrane, the Course Coordinator of the Bachelor of Ecological Agriculture at CSU, Dr Anantanarayanan Raman, a Professor in Ecological Agriculture in the School of Rural Management, Faculty of Science, CSU and Dr. Anthony McKenzie, the educational designer of the Center for Enhancing Learning and Teaching, CSU have devised a novel design of the *Bachelor of Ecological Agriculture* that we as authors of this paper feel addresses to holistic thinking.

Cochrane's group believes that

Emotional intelligence is further developed via the Capability program and the portfolio of evidence that each student maintains. A central feature of the Capability program is a portfolio of evidence that the students keep in relation to seven graduate attributes (referred to as capabilities) This portfolio is maintained over the three years of study and then at the conclusion to their degree studies students submit their portfolio of evidence demonstrating their progress in cultivating the seven capabilities. The portfolio of evidence forms the basis for a 30 minute interview by an industry representative and an academic. On the basis of this interview and the portfolio, students receive a recommendation to proceed to graduation.

In placing emphasis on social ecology in the design of the curriculum, the course designers pay cognizance to the need of students in developing their skills of scientific interpretation and decision-making. The course, therefore, requires students to study subjects like *Biological*

Environment, Applied Ecology, and Agricultural Ecology that are framed with content reflecting the real time experience and input with an altered approach. The interdisciplinary and trans-disciplinary approach complies with the tenet of what constitutes sustainability education as outlined by Moore (2005). Comprising a combination of subjects from both the hard and soft sciences, and, through subjects such as Human Ecology, the CEP is able to provide a cross disciplinary overview. This is greatly reinforced through the *Capability Portfolio* where students were able to relate well with 24 recommended subjects during their learning (Wolf, 1996; Cochrane *et al.*, 2007).

Studying back to back, the learning in seven graduate attributes that the students have chosen to consciously follow are consciously tracked and the ideals are internalized over time through personal reflections. Reiterating, the process is seen to enable students to re-contextualize their learning in a framework that the industry and the community have identified as a priority. During the course of study, the nitty-gritty involved in achieving mastery and the accomplishments needed to be made in the said type of attributes during the course of study are measured.

Systemic Thinking

North American philosopher Gregory Bateson refers to the criticality of 'finding the pattern that connects', which bears overtones of having the capacity to think holistically and systemically. He observed that to be able to think systemically, one will have to use the skills of analysis and synthesis. This will enable to find the patterns that connect. Bateson based the foundation of his theory on structural logic. He defined learning as an action that denotes change "... change itself denotes process, and processes themselves are subject to change." He built onto this definition the assertion that all learning is stochastic (i.e. involves trial and error) and created the following 'hierarchy' of learning categories (Bateson 1973):

1. Zero Learning – ... is characterized by *specificity of response*, which is right or wrong - acts that are not subject to correction.
2. Learning I – ... is *change in specificity of response* by revision of choice within a given set of alternatives.
3. Learning II – ... is *change in the process of Learning I*. It is a corrective change in the set of alternatives from which the choice is made or it is a change in how the sequence of experience is punctuated.

4. Learning III – ... is *change in the process of Learning II*. It is a corrective change in the system of *sets of alternatives* from which the choice is made.

Bateson's model was used in CSU as a meta-guide to the overall program.

Students learn about operational issues in relation to the objective world by studying a range of subjects relating to the management of soils, plants and livestock (Learning I). This level represents the default approach of most university level courses dedicated to agricultural education. The problem lay in encouraging students to explore Learning categories II and III. Subjects which foster 'self' knowledge become the vehicle for fostering a Learning II development: *Managing Yourself & Others*, with its focus on self-knowledge; *Managing Change (Inquiry Tools)* with its emphasis on soft-systems methodology for developing the ability to understand and solve complex issues; and, *Human Ecology* with its emphasis on eco-psychology and eco-philosophy (Tosey *et al.*, 2005).

The challenge, however, is with achieving Learning III and the development of holism. The pathway to this end can not be achieved by the rational and analytical modes, but through their opposite – imaginative and intuitive – modes. However the curriculum design group at CSU finds this has been achieved through the development of an assignment in *Human Ecology* in which students engage in a second person relationship with the environment ('I/'Thou') and document it using the medium they have selected for this purpose.

Learners use video, photography, music, sculpture, poetry and art to convey this relationship. Their documentation is based on the tenets of ecological literacy, similar to those of Capra (1996), but more appropriate to the course. Thus multiple activities built within the *Capability Education Program* makes the preposition a worthy experiment for manifold analysis and reflections.

Contextual need for CEP in augmenting Choice Based Credit System

A fair glance the academic programs offered in most of India's premier institutions and virtually almost all colleges in the state of Tamilnadu show that there is an inclination to follow the cafeteria model of pedagogy. Here a student exercises choice to pick, pack and learn his/ her courses interest. This model called Choice Based Credit System (CBCS) provides for both extensive and intensive learning in the sense that it allows student to move away from his/ her own majoring discipline and learn subjects

from other departments that the chances of getting cross disciplinary training are greatly enhanced.

Conceptually the learner is expected to be exposed to the know-how of packaging his / her learning experience not only to gain mastery and proficiency in the subject but also to be endowed with personal, professional and social skills that are expected of the person in posterity. The student has the option learn from diverse disciplines and centers of specialization in the academia which enables the process of development to get widened.

CBCS design followed in Tamilnadu colleges comprises four or five Part learning that spans from equipping a student with linguistic abilities, environment and ethic conscious learning, math and analytical abilities and achieving the state of art knowledge and proficiency in the majoring subject. In addition an opportunity to be equipped with an array of life skills, not necessarily confined to the major also stands ensured.

In CBCS, ideally a good space has to be created for the students to move around and interact horizontally (between departments) and vertically (among the three years of study: Year I, II & III, in each discipline) that there is scope for wider course options to be created for every student during the course of his/ her study. With fair freedom, each student is permitted to pursue studies on a personalized course milieu and therefore at the exit point each student will be different and unique in terms of claim made on competency.

Though the format suggested by the TANSCH (Tamilnadu State Council for Higher Education) provides a template with scope for all this, there are certain practical difficulties. It is unfortunate that what was given out as strategic directive has been taken up as a mandatory design to be followed and hence there was little scope for emphasis on felt local needs and there was little room for innovation and novelty.

The higher total number of courses expected to be completed by the student to earn a degree had constrained flexibility. Strictures imposed on learning schedules, teaching methodologies and evaluatory practices to be adopted prescribed to be followed robs the spirit of innovation and the charm of learning. Increased external surveillance brought to add credibility and infuse accountability is seen by veteran institution as hitch as the institution loose the freedom innovate and work with their own time honored ideals and approaches.

Ambiguity in defining the teaching- learning practices and evaluation pattern to be followed, and the lack of clear understanding on the weightage given to credit-contact

hour balance, credit conversion for finding equivalence to assist credit transfer, missing information on fixing the level of learning in case if courses are to be treated with differential scale and the recommendations to be made in defining the prerequisites for the pursuance of higher order courses dilute the approach aimed at a robust CBCS.

A cursory view of the curricula followed in different colleges in Tamilnadu show that courses are not defined at different difficulty levels and credit in general is fixed on one fit for all rule. Parameters such as difficulty level, course aims, emphasis, expectations, learning outcome and monitoring indicators are left inexplicitly addressed or not mentioned at all in most cases.

Adding to the woes, during course transaction most teachers approach the subject in content directed and text based line. Even in cases where pedagogy is claimed to be student centric, emphasis is placed only on content *per se* narrated in the learning material and not to meet the actual interests and needs of the taught. This clearly leaves the actual demands unaddressed. Therefore the learner stands completely alienated that the benefits that he/she ought to derive from the learning process stand eclipsed.

At most instances in India and third world, mastery is equated to cognizance paid to content *per se* and not quality. The common accusation is that curriculum content in schools and colleges are overloaded with data or crammed with information that have no reason. In terms of pedagogy, most colleges follow only the traditional techniques and hence the learner is neither aroused with the genuine spirit of enquiry nor challenged. Grades are given only to the cognitive understandings which in no measure a test for proficiency and tests are restricted only to the assessment of rote memory.

Traditional way of testing and evaluation do not allude to testing of skills that make the learners relate to their real-time contexts. Unmindful of checking whether or not the student had internalized his knowledge or has acquired the abilities needed to translate and interpret the assimilated knowledge on a practical note, mere content transfer takes place mechanically from the teacher to taught that the appreciation of testing the principles stands sidelined and ignored.

Under the circumstances, after decade long trial of CBCS in Tamilnadu, the question that comes to the fore is that 'Did the CBCS usher in the expected change for transforming education?' and 'What actually is to be done to make it work better?' These intriguing questions compel

one to look for alternatives and it is here that the CEP project finds its significance.

A Proposal based on CEP model

It is suggested that the project can be executed in two phases. Though capability building exercise is required for all courses, a pilot study can be envisaged on *Environmental Education* courses offered by different departments to meet the mandatory recommendation of the UGC vide directions from Supreme Court of India. It may be noted that all departments in a college in Indian University are necessarily mandated to offer an EVS course. Departments have endeared in the past to identify components that have environmental repercussions in every major and at least one course in each department is developed to be offered with an overtone imprinting environment consciousness.

In the first phase, contents of the syllabi would be subjected to analysis for ranking in the Batesonian hierarchy to fix the learning level for the course *per se*. Provisions for attempting a similar treatment will be made on every subunit of the given syllabus and an impact analysis evaluating the overall effectiveness of course in the psyche and the personality traits of the learner will be attempted. Capability growth can be measured from level zero (0) to level III.

On standardizing the strategy in this stand-alone course that by itself has specific learning targets, the departments will be encouraged to replicate the methodology for all courses (including major papers) in the second lap.

A greater impetus will be on the major papers as the departments are already familiar on what is to be expected from each paper in the curriculum. The focus here will be primarily to check if course aims, learning objectives, emphasis and the outcome are properly stated and fulfilled. Whether or not the individual's goals, ambitions and learning desires are met during the training according to the department's expectations and its vision and mission are met will be scrutinized in the process.

Capability evaluation taken up at the discipline level will strategically position the department in the larger social context. This will provide vital clues on the do's and don'ts and would offer useful leads to check if the progression is on the right path and correct pace. Results gained from the exercise will serve as pointers indicating the industrial effectiveness and societal relevance besides vouching for the academic standing of the department and the college as a whole.

As the modern trend expects to provide for diverse specializations even within every discipline, within each subject and each class, CBCS courses that add specifically and liberally to varied individual competencies can be augmented by this stated analysis. It is expected that the gross heterogeneity and diversity of the group will still be preserved in this fuzzy logic as individuals stand clearly defined while their gelling as group would still stand effective.

Capability building measures checked at this realm should speak well about the robustness of academia and on the clear cohesive links that exist within. Even though the analyses pertain to the achievement and performance of an individual, sum of parts will reflect unity in multiplicity. Though a reductionist view point can offer useful inferences on what needs to be done at microlevel, insights on the need to maintain the performance of academia can be inferred at large.

Working Mechanism

The strategy to be adhered for analysis shall be uniform in all cases.

- Students will be first apprised of the seven capabilities that they can acquire, and shall be trained to evaluate their own progress by keeping a journal.
- The portfolio of evidence that the students keep in relation to seven graduate attributes will be subjected for peer evaluation and scrutiny by the faculty.
- This portfolio would be maintained over the three years of study and hence students can collect a cohesive picture of their own academic progression.
- The students are groomed in the practice of self-check which may enable them to assess their own strengths, weakness, opportunities and threats with which they may resort to mid course corrections and make sure to stay on the track.
- Towards the conclusion to their degree studies, students submit their portfolio of evidence demonstrating their progress in cultivating the seven capabilities and such an attempt will help self-realization of the potentials and limitations that they can make appropriate choices for their career.
- The portfolio of evidence forms the basis for a 30-minute interview by an industry representative and an academic and this will inform the students about their utility from the stakeholders' point of view.
- On the basis of this interview and the portfolio, students receive a recommendation to proceed to further studies or choose the exit option. In either

case a SWOC (strength, weakness, opportunity and threat analysis) is conducted to recognize the hidden and latent talent that counseling and career guidance is provided with apt advice and mentoring.

- If the capability development feed back and the portfolio slates the student to the job market, it should be possible he/ she will be guided judiciously to make the right kind of option in choosing the trade.
- Though the portfolio analysis is a self-science concept that critic and evaluate the quality of time, money and energy invested by an individual in the graduate program, a collective analysis of individual results can provide finer directions to gauge the undercurrents of the pedagogical practices.
- Systematic evaluation of group results shall cater more to data of institutional interest. Remedial courses and academic audit can be pressed in according to the need. From the reflections gained by the analysis of the primary and the secondary data, the performance monitoring activity and the academic planning activities can be substantially and meaningfully fine-tuned.

Expected outcome

Techniques to be adapted in the study have their affiliations to a number of structural and functional aspects of pedagogy. What we seek in long term is to make our colleges academically and entrepreneurially versatile and make our institutions do well in terms of garnering attention from public, industry and clientele reflecting the multiple faces of the society. It is almost the single minded desire dream of all academics and academia to be, be it the institution or the individual, remain *numero uno*, that with such accomplishment each college in India might turn the hub of wisdom and a Center for Advanced Studies (CAS) in Curriculum design, Innovation and Planning.

The mandate envisaged at college level can be to eventually emerge and remain a

- Training center offering orientation and refresher courses for college faculty, academics and stake holders
- Repository of information with adequate tools and technique to guide and support curriculum development process at different levels
- Nodal agency to connect and facilitate functioning of autonomous colleges to stay in close quarters for work in tandem with the UGC and the ministry of education

- Data center where information pertaining to knowledge needs of the community is met through a data base and web linked interface, and a
- Retreat and the convention center to facilitate the meetings between members of industry, market and society strategic for planning. Brainstorming and exchange of notes on the nitty-gritty will be sought to constantly overhaul academic machinery.

Immediate benefits contemplated by implanting CEP can be to

- usher in robustness in the precepts and practices followed in the volunteering college as an academic community
- invigorate the Teaching-Learning, evaluation and extension activities on campus
- set up liaison between the college, community and industry, and
- tie up loose threads and tighten up the strategic planning process.

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AUGMENTED REALITY (AR): THE EMERGING TRENDS IN MASS MEDIA

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Abstract

Mass Media have now become an effective and important tool of sharing information, spreading news, advertising, marketing and entertainment. Mass media are getting more and more pervasive and inseparable part of our lives. It's a well-known truth that cutting-edge technologies in any field would make it grow drastically and make the business to stay ahead of the competition. Augmented Reality (AR) is the emerging cutting-edge technology in mass media that allows a digitally enhanced view of the real world, connecting us with more meaningful content in our everyday life. Augmented Reality enhances the audience perception by displaying additional information and it makes the environment around a person to be much more interactive and digital. It also has the power to combine the best of traditional seven mass media (Print, Recordings, Cinema, Radio, Television, Internet and Mobile Phones) with the latest digital technology. Augmented Reality is associated with our five senses and will be the new form of mass communication to move the digital device from the pocket to the body itself (e.g. Smart Glass). The transformation of the entire realm of mass communication is greatly accelerated by the adaptation of Augmented Reality. The paper proposes to discuss the recent technological developments, components and the applications of Augmented Reality in various fields. This paper also analyses and evaluates the reasons why researchers have forecasted that Augmented Reality will be the 8th mass media. Augmented Reality's scope, challenging issues, benefits, limitations, and current research are also explained in this paper.

Keywords: Mass Media, Augmented Reality, Marker-based, Markerless-based, Smart Glass, Virtual Reality.

Introduction

The primary means of communication used to reach a huge amount of audience is called Mass Media. Mass media encompasses much more than just news and it can be used for various purposes like advertising, marketing, public service announcements and emergency alerts [1]. Right now, Mass media could be classified into seven types Print, Recordings, Cinema, Radio, Television, Internet and Mobile. Each medium has its own characteristics, content types, technicians and also end users. As traditional advertising methods diminish the sales performance of existing media over time, cutting edge technologies are gathering momentum; this is where the introduction of 8th Mass Media called Augmented Reality.

What is Augmented Reality?

Due to the rapid development of society, publications also keep on developing. Today, electronic publications play a vital role in human beings because they made it possible for delivering messages in a short amount of time. If the electronic publications move from static to dynamic, and then by adding some computer generated background images such as sounds and video in order to attract more

and more audience then the concept is called Augmented Reality. Thus the view of reality is modified by computer. Augmented Reality is achieved through a sensor-packed wearable device over products and systems to enhance our interaction with the real world. Now a day, freeware software tools are available to build Augmented Reality applications. Well-funded organizations such as Mixed Reality Systems Laboratory [2] in Japan and Project ARVIKA [3] in Germany are established to focus on Augmented Reality. The virtual touch and feel is Augmented Reality's next evolution.

Augmented Reality (AR) vs. Virtual Reality (VR)

Augmented Reality and Virtual Reality are often confused with one another. The basic difference is that the surrounding environment is imaginary in VR, while in AR the surrounding environment is real. Virtual Reality is more immersive and is an artificial recreation of a real life environment. Augmented Reality gives real time feedback to user. For example in an AR cooking system, the AR device measures the temperature and weight of the food and gives the cooking stages feedback to the user. Fig 2.1 depicts the difference between Augmented Reality with respect to Virtual Reality [4].

Devices Used in Ar

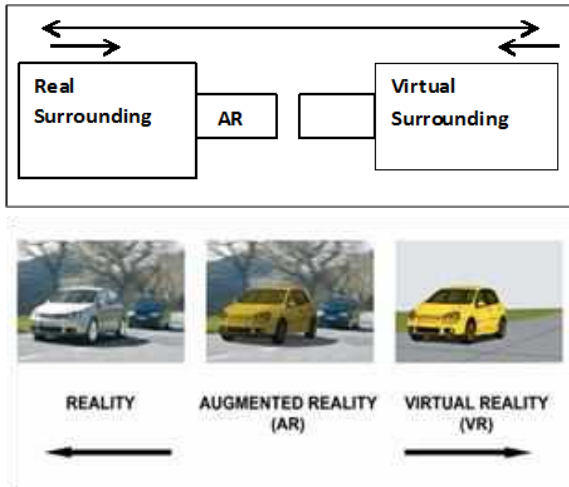


Fig 2.1 Augmented Reality vs. Virtual Reality

Augmented Reality Devices

The components required to implement Augmented Reality are Input, Display, Processor, Sensors, Scanners and GPS. Different types of displays used in Augmented Reality technology are Head Mounted Displays [HMD], Handheld displays, Spatial displays etc. [5]. These devices are either video or optically transparent. Partially silvered mirrors which pass the real world views through a lens are also used.

HMD (Head Mounted Display)

It is a display device paired to forehead. It places the images of virtual and real world to the users view. It can offer monitoring sensors with six degrees of freedom feature in order to align physical word with virtual object. In 2015, Microsoft launched a smart glass called HOLO LENS whereas Google launched GOOGLE GLASS. Both of them display information in hands free mode. An AI chip is necessary for smart glass. Fig 3.1 shows a HMD.

Handheld Displays

These devices employ a small display unit that fits in the user's hand. Handheld devices impose the first success of Augmented Reality in commercial. Both direct observations of the physical world as well as the augmented scene are available on the screen. Thus it allows for more design possibilities. Fig 3.2 shows a Handheld AR mobile.

Spatial Displays

Here digital projectors are used to display the graphical objects onto the physical objects. Since the

display is separated from the user system, this is well suited for group of people to experience Augmented Reality. Spatial Augmented Reality can be displayed on any type of surfaces. Here users can touch physical objects and have passive haptic sensation. Fig 3.3 shows architects creating a dam prototype with the aid of Augmented Reality enabled digital projector.



Fig 3.1 HMD



Fig 3.2 Handheld Displays

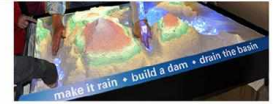


Fig 3.3 Spatial Displays

Types of Augmented Reality

When we need some background details about some places or objects, GPS system is used in Augmented Reality devices to track the location of objects or places. Two types of tracking systems used are Marker based and Marker less based (Location based).

Marker-based Tracking

It works by having software which recognizes some particular patterns and code by using camera. The target is recognized via the camera by the augmented reality application device, and then the captured barcode image is converted into a web address. From the webpage, relevant information is fetched. Since this method is simple, Marker based AR is more commonly used. Fig 4.1 shows a marker in human hand. By scanning the marker using an augmented device, a butterfly is showing on that marker.

Marker Less Tracking

Here we need to point our AR device at each picture and make the feature-detection system and scanning algorithm to identify. This method creates an information list on the image caught by the camera. If this process will be in automatic then, this method will win over marker based since real life objects are used as a marker. Fig 4.2 shows the building details of a street when the street is photo captured using an Augmented Reality device.



Fig 4.1 Marker based AR



Fig 4.2 Location based AR

Applications

Augmented Reality is used in many fields like Military, Medical, Automobile, Advertising, Architecture, and Education. In medical, Augmented Reality gives patient monitoring information to surgeon in the style of heads up display. It reduces the risk of an operation by providing sensory perception to surgeons. In military, Augmented Reality can serve as a communication system such that critical data for example location of enemy is presented to the soldier. Soldiers' navigation details can also be presented to military leaders. In Industries, Augmented Reality is used for Product Design. For example Hyundai recently created a digital car manual which shows us how to fix the issues in car. In Advertising industry, Augmented Reality makes interactive to end users, by means of marker based and location based products. In Architecture, it helps to visualize the building projects in 3D visualization. In Education, Augmented Reality makes the student to learn interactively and easily.

Augmented Reality (AR) As 8th Mass Media

In 2016, former telecoms executive and tech author "Tomi Ahonen" developed the list of seven Mass media [6]. Print is the basis of all mass media. When Cinema introduced, it was said to kill print but it didn't. Radio was supposed to kill the record industry and it didn't. And TV was supposed to kill cinema, print and radio, but it didn't [6]. All five legacy mass media still survive today but when a new mass media arrive, but they just adjusted [7]. The Internet introduced several new elements to mass media such as sharing and interactivity. Now the current champion is Mobile. Mobile media is worth about several billion dollars. Now a days Internet revenues are declining but mobile revenues are increasing rapidly. Mobile as a media is nearly twice as big as the older internet. Somebody said Augmented Reality is just a 'media format' on mobile. But AR was not only limited to mobile, it can be applied to any type of old mass media. Thus AR has the combined abilities of digital, mobile, social and virtual. So it yields a powerful comprehension of next evolving mass

medium [8]. Tomi Ahonan spoke recently at a TEDx conference in Mongkong and boldly stated "By the end of the decade over 1 billion people will be using Augmented Reality [9]. In next 5 years it seems growth of AR is expected to sky rocket as per fig.6. AR will be accessible and affordable for all users and it is expected to have 1 billion users with \$162 billion by the end of 2020[10]. As Augmented Reality will reach large audience shortly via mass communication so it is considered as 8th Mass media.

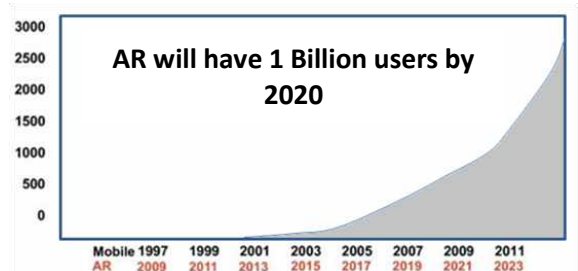


Fig 6. Global Mobile Media vs. AR consumers (in millions)

Current Research and Challenging Issues

As so many research work is going on related to Augmented Reality, the most important one is Virtual Touch and Feel. This is next evolution of Augmented Reality. Regarding virtual touch and feel, Brain Computer Interface Technology (BCI) methodology is used. BCI is a communication system that reads the signals and patterns in the brain. The first BCI prototype was created by Dr. Vidal in 1973 [11]. Since the brain contains around 110 billion neurons; the communication pattern fetch among the neurons is very difficult. Once this concept is evolved successfully, then by the application of reverse engineering, feelings can be activated without the direct use of muscles. Accurate, efficient and affordable sensors are basic requirements of Augmented Reality system. Augmented Reality system developers are facing these requirement issues. Social Rejection, Legal are other issues but these will be sort out when more organizations are participating in this field [12].

Benefits and Limitations

Due to the innovative technology of Augmented Reality, the shape of commerce will be changed shortly. These innovations leads to deep content on the product which induce huge opportunities in each and every industry sector and it boost ROI. As every technology has some limitations, Augmented Reality also has some

limitation. At first, designing cost for Augmented Reality Headset is somewhat high. Recognition technology should also be very high so that accurate mapping of virtual object is possible. Augmented Reality with pattern / image recognition leads to privacy issue.

Conclusion

Thus Augmented Reality is an emerging technology in digital age and its application will be implemented to any type of industry in future. There is no doubt, in future Augmented Reality will occupy our each and every day activities and our surrounding environment will be fully digitalized and the interaction between real and virtual object is possible. Augmented Reality will create new opportunities, new products in almost every field once its problems such as Security and Privacy issues are solved.

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SUBALTERN APPROACH: WITH SPECIAL REFERENCE TO HISTORY OF MAHAD CHOUDAR TANK SATYAGRAHA (MAHARASHTRA)

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Abstract

The present research paper attempts to study the Mahad Satyagraha led by Dr. Bhimrao Ramji Ambedkar in 1927 from the theoretical approach of Subaltern Studies. The study emphasizes the approach of untouchables and their difference in awareness before and after the Satyagraha. It signifies the role played by the supporters of Dr. Ambedkar in the success of the Satyagraha, and bringing change to fulfill the basic need of drinking water from public water resources, the history of Mahad Choudar tank Satyagraha and interpreting the views of the scholars of Subaltern Studies. Hindu religion gave rise to caste and sub-caste system. The lowest caste being the untouchable was treated inhumanly. Social reformers fought for the equal rights of the untouchables, legally and introduced the revolutionary reforms. S. K. Bole passed the resolution, i.e. the Municipal Act which forced the Municipal Corporations to keep public water resources open for untouchables. The origin of Mahad Choudar Satyagraha lies in this Act of 1923. It focuses on Satyagraha from 19 March 1927 until the victory of untouchables in Mumbai High Court (1937). Ranajit Guha in 'The Prose of Counter-Insurgency' states that for peasants, revolt was to destroy familiar signs. Similarly in Mahad Satyagraha, the untouchables, fought for their identity. Shahid Amin analyzes the peasant movement, Gorakhpur district (1921-22) points the urban intelligentsia and party activists did the ground work for the organized movement. Later were similar conditions of Mahad Satyagraha.

Keywords: Subaltern, Caste, Untouchability and Untouchables, Satyagraha

Subaltern

The Oxford Dictionary explains the meaning of the word Subaltern as, "an officer in the British army below the rank of captain". It has been originally derived from the Latin word sub-'next below'+ alternus 'every other'. However, Ranajit Guha explains that in the volumes of 'Subaltern Studies', it was used "as a name for the general attribute of subordination in South Asian society whether this was expressed in terms of class, caste, age, gender and office or in any other way." He further writes, "that subordination cannot be understood except as one of the constitutive terms in a binary relationship of which the other is dominance, for subaltern groups are always subject to the activity of ruling groups, even when they rebel and rise up."

Caste

The word Caste is a Portuguese word which means 'Purity of Race'. Dr. Ambedkar explains in the theory of "infection of imitation" that the Brahmins followed a close-door policy in the Hindu society. This was imitated by the other Varna's or the classes and led to an endogamous society. The origin of the caste can be traced to this development. He further explains that "the superimposition

of endogamy over the exogamy, created the caste." Therefore endogamy was the only characteristic of caste and hence "caste was an enclosed class."

Untouchability and Untouchables

The term Untouchability has been explained by different scholars in India. Maharshi V. R. Shinde explains Untouchability as "not just localized or religious, it is caste based i.e. nation based and is regular by nature." However, caste untouchability, common boycott, all time dependence are the three symptoms of Indian Untouchability. And therefore it is a national institution. Dr. B. R. Ambedkar defines Untouchability as "a notion of defilement pollution, contamination and the ways and means of getting rid of that defilement."

Dr. Ambedkar while writing his work 'The Untouchables' realized that at least until then there was only one authentic study done at that time on the origin of Untouchability and that was by Mr. Stanley Rice. Mr. Rice as an Anthropologist explains the origin of Untouchability in his work titled, 'Hindu Customs and their Origins'. He found that Untouchability was the outcome of two factors one was Race and the other was Occupation. However before discussing the origin of untouchability we need to

discuss the foundation of the Indian Society. Ancient Indian Historians discuss the invasion of the Aryans in India in the Ancient period. They defeated the Dravidians and therefore treated them as their sub-ordinates who eventually came to be called as fourth Varna i.e. Shudras. Mr. Rice gives simple explanation for the origin of Untouchability. He says there were two invasions that took place in India. The first invasion was by the Dravidians who defeated the ancestors of the Untouchables and the second invasion was by the Aryans who conquered the Dravidians.

Mr. Ranajit Guha while explaining Subaltern Studies refers to similar kind of subject to the activity of ruling groups, even when they rebel and rise up. Dr. B. R. Ambedkar himself explains that, "Untouchability shuts all doors of opportunities for betterment in life. It does not offer an Untouchable any opportunity to move freely in society, it compels him to live in dungeons and seclusion; it prevents him from educating himself and following a profession of his choice. Untouchability has ruined the Untouchables, the Hindus and ultimately the nation as well. If the depressed classes gained their self-respect and freedom, they would contribute not only to their own progress and to prosperity that will be able to buy their industry, intellect and courage but would contribute to the strength and prosperity of the nation. If the tremendous energy Untouchables fritter away can be put in combating the stigma of Untouchability that can save their social status and its application would promote the education and development of resources of the nation as a whole."

Satyagraha

Initially the term Satyagraha was not used for the struggle developing at Mahad. It was only referred to as the 'Kolaba District Bahishkrut Parishad' when it was held on 19th and 20th March 1927. On 20th March 1927, the touchable victimized the untouchables on their way back home. Dr. Ambedkar after two months, in May 1927 decided to launch a Satyagraha at Mahad on 25-27 December 1927. This was the first time he used the word Satyagraha for the Mahad struggle. Dr. Ambedkar explains his views on Satyagraha in his own quarterly newspaper *Bahishkrut Bharat* dated 25th November 1927, under the heading *Asprushyata Va Satyagrahachi Siddhi* meaning Untouchability and Enlightenment of Truth. He defines *Satyagraha* as "the work that organizes the people is a good deed, and *Agraha* (persistence) for that work is *Satyagraha*." He further explains that there may be different views in organizing people. Therefore where there

is equality, there is organization of people and where people are organized there is good deed, and when one who does *Agraha* (persists) for such work then it is *Satyagraha*.

Introduction

"When a peasant rose in revolt.....his subalternity was materialized by law, sanctified by religion and made tolerable-and even desirable—by tradition." The present research paper is an attempt to study the Mahad Satyagraha led by Dr. Bhimrao Ramji Ambedkar in 1927 from the theoretical approach of Subaltern Studies. The study emphasizes the approach of untouchables and their difference in awareness before and after the Satyagraha. It signifies the role played by the supporters of Dr. Ambedkar in the success of the Satyagraha, and bringing change to fulfill the basic need of drinking water from public water resources, the history of Mahad Choudar tank Satyagraha and interpreting the views of the scholars of Subaltern Studies.

Dr. B. R. Ambedkar decided to organize the first conference of 'Bahiskrut Hitakarini Sabha' of the untouchables on 19th and 20th March 1927 in Mahad to discuss the various problems of the untouchables in general and drinking water in particular. The research on Mahad Choudar Tank Satyagraha shows that it was well planned as far as its venue, the municipal act, and other probabilities were concerned. There were other such organizations were formed earlier in Maharashtra and other parts of India. The Vaikom Satyagraha in South India, contribution of Mahatma Jyotirao Phule, Gopal Baba Valankar and many others contributed for the upliftment of the untouchables in India. However, the untouchables were the voiceless people till then in Maharashtra. It was for the first time that the untouchables decided to voice for fulfilling their basic human need i.e. water. They were not allowed to drink water at common water resources by the upper caste Hindus. The water resources they used were also in such bad conditions that they were almost drank filthy water or their resources were not sufficient for the entire year and they walked for miles and miles in search of water.

It was Rao Bahadur S. K. Bole who was responsible to pass the Municipal Act in 1923, according to which the different municipalities in Maharashtra kept the public water resources open for the untouchables to use for drinking water. However, these water resources were not used by the untouchables even after the resolution was passed because they fear of bitten by the touchable. The

conditions of the untouchables was just similar to the peasants as analyzed by Ranajit Guha, that for the peasants "to rebel was indeed to destroy many those familiar signs which he (over here the untouchables) had learned to read and manipulate in order to extract a meaning out of the harsh world around him and live with it." Whereas the touchable continued following the same tradition as they followed for years and years and this resulted to Mahad Choudar Tank Satyagraha in 1927.

Hypothesis

The Mahad Satyagraha created general awareness of human rights and the successful revolt of untouchables in particular. It was a landmark in the history of Dalit Movement and leaders took inspiration from the Satyagraha. The present research paper tries to analyze that the Satyagraha was successful due to contribution of the people who participated in it. Although they were Subaltern to the caste system in India, socially, economically and politically they were backward etc. It was a unique Satyagraha in World History. This hypothesis is being tested through research. It also discusses whether the Mahad Choudar Tank Satyagraha was completely planned or partly planned.

Material & Methods

The available information related to Mahad Satyagraha is very scanty. It was therefore necessary to knit the threads of both primary sources and secondary sources together and write the authentic theoretical approach of the Mahad Satyagraha. An attempt has been made to write the topic in a narrative form for the understanding of the theory. All the above data has been codified, collated and analyzed in this paper to reconstruct a history of the Mahad Satyagraha from Subaltern approach.

Findings and Results

The meeting organized by Bahishkrut Hitakarini Sabha highlighted the views of Dr. B. R. Ambedkar and his friends in social movement that it was necessary to organize one meeting in Konkan for the untouchables. It was very difficult to achieve the trust of these people who were ignorant, and largely uneducated. Yet, the ground work was done by Rao Bahadur S. K. Bole, Mr. Chitre, Mr. Sahastrabuddhe, Mr. Tipnis and others. The Subaltern Studies help to understand that the earlier events like Rangpur dhing against Debi Sinha (1783), the Santal hool (1855) etc. shows that the revolts of the peasants were inaugurated by planned and in some cases protracted consultation among the representatives of the

local peasant masses. The mentioned loyalist's were from the upper caste namely CKP but were subaltern to the Brahmin caste. They were responsible to create the necessary background for the conference and to give the authentic information of the place and document that the Choudar tank being public. The untouchables from the other parts of Maharashtra were now becoming aware about their rights given by the Government and the Municipal Corporation or local self-government. The study shows that Dr. Ambedkar and his followers boldly faced the problem of untouchables being victimized by the touchable Hindus without much support from the government and the police department. The contemporary press somewhere seemed to be very sympathetic from the untouchable's side whereas there were some who criticized Dr. Ambedkar and tried to prove that the untouchables were hasty in their decision of bringing social change in the Hindu community in general. The police case was filed against those who victimized the untouchables, therefore it shows how difficult it was for Dr. Ambedkar as a leader and lawyer to collect the proofs against these people as they belonged to higher caste and nobody was there to speak against them from the untouchable and touchable section. Finally Dr. Ambedkar took the decision to formally organize the Satyagraha at Mahad Choudar tank.

It is necessary to understand the period after the first conference of Mahad Choudar tank Satyagraha i.e. from 21st March 1927 up to 24th December 1927. This was the period wherein the British Government, the contemporary newspapers, the narrow minded Hindu editors of the newspapers with Hindu ideology played a very prominent role against Dr. B. R. Ambedkar and the untouchables. It answers the questions like what forced the leader Dr. Ambedkar and his followers waited in Mahad for two more days after the first conference of Bahishkrut District Parishad got over on 20th March 1927. Secondly what was the action taken by the District Police Superintendent and Police department when the Untouchables were beaten black and blue by some of the touchable Hindus? It analyzes the role played by the District Magistrate, because although he was present in Mahad when the untouchables were victimized and beaten by the touchable on Mahad streets, he did not take any action. The confidential letters of the District Magistrate, Mr. Hood written to his Senior Officers and to the Governor General Lord Irwin helps us to know his 'neutral' attitude towards the Satyagraha. However, it shows that the Governor General warned the District Magistrate for the 'neutral'

attitude he had. Editors of *Bhala*, *Times of India*, *Bombay Chronicle*, *Bahishkrut Bharat*, and *Kolaba Samachar* also played a prominent role during this period. There were some who criticized the act of Dr. Ambedkar and some answered to the criticism. However, it helps us to fill the gap in-between the first conference of Mahad Choudar tank Satyagraha and the actual or the second conference of Mahad Choudar Tank Satyagraha. The significant action of Dr. Ambedkar of burning the sacred book of the Hindus i.e. *Manusmriti* during the conference was itself the action taken by the leader and the untouchables against their subalternity in the society. The book has all the rituals and day to day pattern of behavior of every individuals belonging to different caste of Hindus. During the time of the second conference Mr. Hood the then Collector of Kolaba District had convinced Dr. Ambedkar to withdraw the Satyagraha. However, shows the British government now being aware about the strength of those who so called downtrodden in the society for years together. Mahad Satyagraha court case was fought in three different courts i.e. Mahad, Thane and Mumbai High Court. However, it was a great challenge to fight the case in three different courts during a long period of ten years i.e. 1927-1937. This was possible only because the untouchables voiced and converted every argument of the upper caste Hindus into unethical and unauthentic with proper sources to win the case in all three courts. The contribution of the leaders in Mahad Satyagraha, the success of the Satyagraha would have been impossible without their hard work and dedication. However, there were supporters not only from the untouchable class but also from the upper caste Hindus. The contribution of the people like Mr. S. K. Bole who did not actually physically participated in the Satyagraha but he was the one who forced the government to pass the resolution in 1923. It was because of the resolution that was forcefully brought by Mr. Bole that Dr. Ambedkar could legally fight for the rights of the untouchables. The other leaders like Mr. Sambhaji Tukaram Gaikwad, Mr. A. V. Chitre, Mr. Surbanana Tipnis, Mr. V. Sawadkar, Mr. Jagannath Bhatankar, Mr. S. N. Shivtarkar, Mr. Ghadge, Mr. More, Mr. Rajbhoj and many more such touchable and untouchable leaders contributed for the Satyagraha. There were some untouchable leaders without whom the Satyagraha would have not taken place. There were people like Mr. Chitre who came up with the idea of going to Choudar tank and drinking water.

Interpretation & Discussion

Shahid Amin analyzes the peasant movement, Gorakhpur district (1921-22) points the urban intelligentsia

and party activists did the ground work for the organized movement. Later were similar conditions of Mahad Satyagraha.

Conclusion

In the conclusion I would like to quote Gautam Bhadra, Gyan Prakash and Susie Tharu i.e. "Can the discipline of History and its forms of writing, which have traditionally depended upon the notions of a located subject, deal adequately with the experience of dislocation and dispossession?"

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EPIDEMIC DISEASES AND VACCINATION IN THANE DISTRICT DURING BRITISH RULE 1800 – 1900

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Abstract

Thane is one of the most populous metropolitan cities in India. Thane is the headquarter of the taluka and if the district. The main concept of Diseases related to the people who are unable to fulfill their health requirement problem. Health is Humiliating problems of Development. Tribal group is yet neglected. Tribal group's face lot of problem such as drinking water facility, health care. Hence the economy condition of tribal's is worst. Vaccination Policy of British under the Bombay Presidency Municipal Act 1872 handles the road repair, sanitation & education. Internal Migration, Superstition about diseases in Thane District. This research paper is explored on the health of tribal people in Thane district of Maharashtra which called schedule tribes.

Keyword:-Diseases-Demography-Statistical-Ratio-Vaccination.

Introduction

Thane in Island the district is well watered and wooded. Thane can be best desire under the two divisions of coast and island. Water borne diseases like Diarrhea, Typhoid and Viral Hepatitis affected people and death recorded. A sizeable number of people where venerable to diarrhea due to Unsafe water, Poor sanitation, malnutrition in Thane.

Materials and Methods

Primary data-Report, File Secondary data-Books, Articles. The interdisciplinary method used for the research work.

Finding and Result

Rainfall and water density of thane district, Death Rate of Infected Diseases, Drought & Famine in Thane district, natural and antibiotic vaccination, Find out Statistical data of British dispensary and hospital in thane district during British rule.

Thane is most popular state in Maharashtra, India. Thane is located eastern side Arabian Sea to the Western Side. To the Northern part of the district are deep forests. The world famous Mumbai city is situated to the south. There are 13 block and 15 Talukas in this district Thane, Kalyan, Ulhasnagar, Ambarnath, Bhiwandi, Vasai and Palghar Taluka are as located to other talukas-Shahapur, Murbad Wada, Jawar, Mokhada, Dahanu, Vikramgad, and Talasari are mostly hilly in nature and rural population in

this Taluka comprises mostly schedule tribes and other minorities.

Geo-Historical Background

The rest of British India had all the social, economic and material ingredients for the proliferation of epidemic diseases. Its population lived in the most unsanitary condition consumed contaminated water, and was crowded for space living in wretched houses, Poverty, sunk in dept and suffered from food shortage and malnutrition. The rain filled the tank, lakes, ponds that were used principally for dry land agriculture. All though the British were more interested in the hard wood teak for commercial profit forest endowed with a diverse variety of flora and fauna. The Thakur, Katkari had leaved in this forest since time in memorial. They hunted fished for supplement their daily diet. Forest were a source of food medicine grass fuel wood and non timber forest resources for the plain people. Forest provided cover to tied over the crises. Forest attracted monsoon winds and sustain the environment or the region this were the sacred groves and shrines that were protect by the village community.

Climate Health

The low level of the plains of the district, its heavy rainfall, and the large are of salt marsh, forests, and rice fields, make the climate hot, damp and feverish. when, after the south-west monsoon is over and under a powerful sun, decaying vegetable matter produces an atmosphere charged with fevers and throat and bowel affections.

Disease

Social, economies and material conditions in thane were ripe for the spread of disease. The people of thane had to cope with on sanitary condition contaminated water poverty, indebtedness and severe food shortages. It was not surprising that innumerable epidemic diseases were common here particularly cholera smallpox, fever (Malaria), bowel- complaint dysentery and diarrhea and plague.

The Malaria was associated with water logging and the material condition of the poor. Stagnated in ditches where innumerable species of trees once stood, creating a breeding ground for mosquitoes. From their breeding ground in the forest the mosquitoes caused havoc among the forest dwellers and against rural population in thane. The chief diseases is malarial fever complicated by enlarged spleen and enlarged liver malarial bloodlessness. Poverty, Illiteracy, Indebtedness was rampant even in the forest region of thane. The forest department had displaced the Thakar, Katkari dwellers in a bid to commercialize hand wood trees.

Cholera

Cholera was seen during the rainy season. The diseases assumed activity with commencement of the monsoon and increase in intensity till it reaches maximum in August, September when the temperature is comparatively low. The cause of cholera unsanitary conditions due to the absence of proper food, high walls around the village which prevented the disease from being eradicated. Cholera was endemic in thane there is no conclusive evidence to suggest whether the disease was endemic or epidemic.

Miasmatic Theory

The European missionaries, and the English capitalist class promoted the scientific miasmatic theory. The miasma theory (also called the miasmatic theory) is an obsolete medical theory that held that diseases—such as cholera, chlamydia, or the Black Death—were caused by a miasma (μίασμα, ancient Greek: "pollution"), a noxious form of "bad air", also known as night air. The theory held that the origin of epidemics was due to a miasma, emanating from rotting organic matter. Though miasma theory is typically associated with the spread of disease.

Cholera

The Diseases spread to Bhiwandi, Kalyan, Sahapur, Karjat, Bassein, Mahim, and Dhanu, Vada, Palghar,

Umbargaon, Gholvad, Panvel, Salsettee, Murbad. The disease as mostly confined to Mochis, Dublas, Varlis, Kamlis, Mangelas and Dheds who are generally poor, badly fed, much given to liquor-drinking and whose habits are dirty.

In 1878 & 1881 cholera prevailed throughout the year. The largest number of death cause recorded in July and the smallest in December. The largest number of cases having been registered in August and smallest in October and April. The diseases began among the fisherman of kelve mahim in thane town &. A few cases occurred in Thana jail. It thus appears that cholera is almost never absent from the Thana district that now and then it assume epidemic form and that the progress of the epidemic since to depend on the frequency of human intercourse not on neighborhood.

Other Disease

The people of the district are under-fed and under-clothed, and indulge freely, some of them excessively, in country liquor. This fondness for liquor is one of the causes of the poor physique and meager appearance of many of the lower classes in Thana. Syphilis, gonorrhea, and skin diseases are common. Children suffer from intestinal worms, which are generally round, though the thread-worm is also common. Guinea worm is endemic and gives rise to various affections of the cellular tissue which last for months. Epidemics of cholera used to be frequent.

Malarial Fevers

A total of 95,005 admission in 1879 and 94,017 in 1880, 26,307 or 26.8 per cent were for malarial fevers. Repeated attacks of malarial fever not uncommonly produce intense bloodlessness or anemia which sometimes proves rapidly fatal. During the five years ending 1870 the number of deaths returned from fever averaged 5393. In 1871 it rose to 12,763 or nearly four times the number in 1867. During the ten years ending 1881 deaths from fever averaged 14,352, the total varying from 17,109 in 1881 to 11,678 in 1875.

Bowel Affections

During the year 1879 - 15,541; Year 1880 - 15,905 admissions for bowel affections. Of these 5151 in 1879 and 4834 in 1880 were for diarrhea. Among children many bowel diseases are due to round worms, a disease from which grown men. This affection seems to prevail chiefly among the poorer classes who give their children crude molasses. Natives who can afford to use purified crystal

sugar seldom suffer from round worms. Apart from the irritation they cause to the whole intestinal canal these worms indirectly cause congestion of the liver, jaundice, fever, and other affections. The disease is well treated by native practitioners who are generally successful in killing the worm by using santonine.

Skin Diseases

The chief skin diseases are scabies, eczema, and ringworm. All skin diseases were complicated with an eczematous condition showing that the skin is deficient in nerve tone. Few of these skin diseases are cured without constitutional treatment by iron, cold-liver oil, and nutritious diet. There were 6665 admissions in 1879 and 6156 in 1880 for affections of breathing organs.

Heart disease is rare. A large number of men suffers from gonorrhea and syphilis which are often terribly neglected. Leprosy and phthisis also prevail to about an equal extent. The chief cause of affections of the cellular tissue is guinea worm which is endemic in the Thana. The entrance of this worm into body of man is the direct result of bathing or washing in or wading through streamlets and ponds containing its minute germs. The stagnant waters after the rains are doubtless filled with the germs of these parasites and with countless other earth-worms whose structure is closely like that of the guinea worm.

Bombay is the large hospital accommodation and the highest surgical skill. Accidental injuries were treated in Thana.

Small-Pox

In 1877 of 27, 369 deaths from small pox in Bombay presidency 1301 were registered in Thana. In the year 1873 the death rate in the Thana district was 33.22 per thousand though the year was elsewhere healthy: in 1876 in the whole of the district it was 19.42 per thousand and in 1877, 27.86 per thousand: in 1878 it was 24.74 in 1879, 20.66 and in 1880, 20.22. In the Sanitary Commissioners report for 1880 the mean annual mortality for the previous fourteen years is given as 17.53 per thousand. The greatest mortality is from fevers. This in 1879 was as much as 16.76 and in 1880 as much as 17.70 thousand. During the fourteen years ending 1880 the deaths from fever averaged 12.74 per thousand.

Material Condition (Consequence of Disease)

- **A Bowler Complaint:** Close on the heels of fever, bowel complaint was the biggest killer in thane death registered under "Boel" – Complaints" have always

been higher than in neighboring provinces of the central provinces

When it come to identifying the cause of bowel complaint the medical establishment concurred that the two principal reasons for it where the consumption of an wholesome grains and contaminated water. Due to large around export of fresh grain and the lack of storage facilities the poor were often compelled to buy the most inferior quality grains that were.

- **Peo Grain:** Available ill The consumption "Peos" grains were not a traditional custom of the proving, it was an act of desperation during colonial period. Peos were pits that dug in the ground to the store grain for long period of time. Often bowel complaint was further compliable by a simultaneous attack of cholera, small pox or malaria fever. As result the diseases proved to be fatal as the physical condition of the victim had been vacated by under nourishment often the poor restored to scavenging an eating the meat of diseases and dead cattle.
- **Infrastructure & Diseases:** The railway construction became the site of the cholera epidemic. as gang laborer moved along the railway lines in temporary encampment huts, there were susceptible to cholera. Weekly bazaars and pilgrim centers were particularly susceptible to cholera because the lack of adequate water and sanitary facilities. The diseases were intimately associated with colonial modernization. The British imperial medical establishment continued to blindly add here to the non-contagion miasmatic ideology. When the imperial states created hundreds of miles of roads railways diseases like cholera, malaria, diarrhea, plague, influenza etc. Travelled and proliferated everywhere. The absence of proper infrastructure response from the imperial establishment made this epidemic even more deadly.

Export of Food Grains/Famine

The welfare of the people, however, was not the priority of the Government. On the contrary it facilitated the export of food grains not only during, period of non-famine, but also during famine. In study of late nineteenth century famine in India, the vice Roys Lytton & Elgin issued strict instruction to the British India not to interfere in the export trade of Food Grains. This was despite the fact that millions were dying from hunger, starvation & diseases.

Subjection & Sanitation

The sanitary state of the village is very bad-worse than most native villages, stagnant water in every street,

cow dung and kutchera (Garbage) lying about water supply from wells and rivers, and drainage deficient. The worst affected by these unsanitary conditions were the village poor. The worst victims of inadequate water supply and food were the poor and desperate. These classes were vulnerable to disease as well.

The chief causes of disease are impure air, scanty and impure water, scanty and improper food, and scanty clothing. As regards food, rice is often taken in excessively large quantities causing chronic dyspepsia and swelling and weakening of the stomach. The working in the fields without covering from the sun in the hot months or with only a blanket or leaf-shade to ward off the raw damp of the south-west monsoon severely try the constitutions of the peasantry.

Medicine

Neem Plant, Alum Block (Fitkari), Babool, Kadu Kiraita, Paratees, Dhatura, plants were commonly used for vaccination in thane.

Municipalities

There are Nine Municipalities, Seven of them Thana, Kalyan, Bhiwandi, Panvel, Bassein, Mahim and Uran established under Act XXVI of 1850. These municipalities are administered by a body of commissioners with the collector as president and the assistance or deputy collector in charge of the Sub-division as vice-president was manage people facilities.

Miasmatic Theory

The ancient Miasmatic Theory (Pollution) is an absolute a medical theory that held diseases. The theory held the origin of epidemic was due to a miasma emanating from rotting organic matter. Though theory is typically associated with a spread of diseases by inhaling the odor of food the miasma theory was accepted from ancient time in Europe and China. The theory was eventually given up by scientist an physician after 1880 replace by the germ theory of diseases. However cultural beliefs about getting rid of order made the clean-up of waste a high priority city.

Hospitals and Dispensaries

- Shantaram kamat posted to Bhiwandi from Bombay and given a charge of dispensaries after 1872.
- Tribhudandas Shah run dispensaries kalwa in thane
- The efforts of J.M Cursetiji district deputy collector Bhiwandi who had frame nineteen rules for

establishment of a sanitary board without a aid of Government legislation and called for funning from the Government.

- The Tribal's from thane was believed to be in possession of specific vegetable origin of highly efficacious character.
- Dispensaries came to be recognized located at Bhiwandi, Kelwa Mahim, Sahapur, chinchani, and Panvel, were established.
- The Rustomjee Wadiya dispensaries, open in thane, The Rukhminibai dispensaries at came kalyan, D'souza dispensaries at uran. The Balwantrao Naik Dispensaries at bassein housed in building gifted by Yashwantrao.
- The Thana civil hospital was established in 1836.
- The Balvantar Hari Naik Bassein dispensary, established in 1872, though conveniently situated, is in bad repair.
- The Bhiwandi dispensary, establishment in 1866, is held in a hired building.
- The Kelva Mahim dispensary, established in 1872, is conveniently lodged in a hired building in good repair.
- The Shahapur dispensary, established in 1877, has a building of its town.
- The Panvel dispensary, established in 1873, is held in a hired building.
- The Sakurbai Chinchni dispensary, called after Sakurbai the wife of Mr. Dinshaw Manekji Petit, was opened in 1878. It has a building of its own.
- The Rustomji Wadia dispensary at Thana was established in 1865. It has a building of its own.
- The Rukmanibai dispensary, called after lady Mangaldas Nathubai, at kalyan was established in 1865 by Shree Mangaldas Nathubai, C.S.I. it is a large handsome building of which details are given in the account of kalyan.
- The Mithibai Dispensary at Kurla called after Mithibai the mother of Mr. Bomanji Hormasji Wadia was opened in 1855.
- The P.DeSouza dispensary at Uran, called after the wife of Mr. M. DeSouza, was established in 1859.
- The Government dispensary at Matheran was opened about 1856. It is held in a part of the Superintendent's office.

Cholera

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Umbargaon, Gholvad. The disease as mostly confined to Mochis, Dublas, Varlis, Kamlis, Mangelas and Dheds who are generally poor, badly fed, much given to liquor-drinking and whose habits are dirty.

In 1878 cholera prevailed throughout the year. In the begging of the year it was in Salsette, Panvel, and Karjat. The largest number of death cause recorded in july and the smallest in December. In 1879 cholera began in April in bassein and continued till the close of the year. In june it travelled through dhanu and salsette, in august through mahim, bhiwndi, panvel, and the town of thana. In 1881 cholera prevailed from april to November, the largest number of cases having been registered in august and smallest in October and april. The diseases began among the **fisherman** of kelva mahim in april and prevailed in bassein from may to july, when also it appeared in bhiwndi and kalyan. In august and September it prevailed in thana town and in dhokati, majevdeh and rabodi, villages to the north of thana. A few cases occurred in thana jail. During the year (1882) Cholera visited salsette and panvel, Kalyan and Karjat in February, bhiwndi, panvel, karjat, murbad. It thus appears that cholera is almost never absence from the thana district that now an then it assume epidemic form and that the progress of the epidemic since to depend on the frequency of human intercourse not on neighborhood.

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Vaccination

The following abstract shows the sex, religion, and age of the person vaccinated:

Thana Vaccination Details, 1869-70 and 1881-82.

Years	Persons Primarily Vaccinated									Total
	Sex		Caste					Age		
	Males	Females	Hindus	Musalmans	Parsis	Christians	Others	Under One Year	Above One Year	
1869-70	5911	5373	10,357	326	38	459	104	4507	6777	11,284
1881-82	12,165	11,561	21,069	824	66	1264	503	11,489	12,237	237,726

The municipalities of Thana, Panvel, Uran, Kalyan and Bhiwndi for the entertainment of three vaccinators.

Births and Deaths Detail are

Years	Cholera	Small-Pox	Fevers	Bowels Compalints	Injuries	Others Causes	Total Death	Total Births
1866	66	71	4082	245	271	972	5707	-
1867	18	251	3861	301	332	981	5744	-
1868	469	925	5388	349	321	1076	8528	-
1869	1816	421	6191	347	297	1227	10,299	-
1870	181	62	7446	356	297	1375	9717	-
1871	379	252	12,763	683	312	2268	16,657	15,427
1872	313	780	15,471	551	417	2038	19,560	14,818
1873	-	1,117	13,907	508	365	1934	17,331	17,318
1874	-	258	11,788	378	446	1555	14,425	16,725

1875	5969	286	11,678	462	430	2505	21,030	18,803
1876	693	708	12,609	340	391	1716	16,457	16,773
1877	3337	1301	15,746	502	483	2242	23,611	18,804
1878	1809	81	16,017	346	505	2204	20,962	16,464
1879	770	5	14,199	216	420	1887	17,497	20,442
1880	70	5	14,997	188	398	1473	17,131	23,461
1881	531	16	17,109	239	404	1871	20,170	26,442
Total	16,421	6539	1,83,252	6011	6089	27,014	2,45,326	2,05,477
Average	1026	408	11453	375	380	1688	15332	18679

Conclusion

After 100 Years Development work of Municipality, Medicines, vaccination, treatment, and infrastructure development there is a low death rate in Thane District.

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LAND DONATIONS TO EARLY BUDDHIST COMMUNITIES IN WESTERN INDIA [WITH SPECIAL REFERENCE TO DONATION OF FARMLANDS IN MAHARASHTRA]

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Abstract

Charity constituted an important feature of the prevailing Indian religions but the nature of charity went under several changes giving rise to different charity patterns. Western India received the message of Buddha during his own lifetime. After the third Buddhist Council at patliputra (around 250 B.C.) with the missionary efforts made by Theravada Sangha, Buddhism must have spread rather extensively and by 200 B.C. Due to the geographical features of Maharashtra, the Buddhist communities chose excavation of rock cut shrines and dwellings instead of structural brick Stupas and Viharas. Out of nearly. The distribution and location of these excavated sites throw light on the spread of Buddhist communities in this region. The early Buddhist communities secured the support of a lay community of diverse occupations. The support was in form of food, clothing and other donations. Donation or the gifts varied in nature. At the beginning, donations were made for the creation of the monuments or its part. Afterwards, gifting of land, either a field, or a village for the maintenance of the Buddhist fraternity was seen. It reflects the increased interest in agriculture and the fact that land was more lucrative than other objects. Present paper attempts to throw light on nature of charity endowments to the Buddhist establishments in general and donation of farmlands in particular. The specific purpose behind donation of Farmlands for tree or horticultural plantation will also be examined.

Keywords: Buddhist Monasteries, Charity Endowments, Land donations.

Western India received the message of Buddha during his own lifetime. From the literary sources, we get ample evidence about the existence of the Buddhist communities in western India. An archaeological excavation at Pauni near Nagpur in Vidarbha has yielded the remains at site, brick stupas and inscriptions are claimed to indicate a period much before Ashoka.

Ashoka's patronage to Buddhism resulted into the expansion of Buddhism practically all over India. After the Pataliputra Council, the missionary efforts made by Theravada Sangha Buddhism must have spread rather extensively and by 200 B.C., the Buddhist communities began to use excavated dwellings in the hilly regions of Maharashtra. It gave an impetus to the expansion of already existing nuclear communities in Maharashtra. Pali chronicles state that the Theravadin Sangha sent missions to various parts of India and to Ceylon. It mentions that Yonarakkhita was sent to Aparanta [Northern Konkan] and Mahadharmarakkhita to Maharatta plateau part of Maharashtra].

The spread of Buddhism and Jainism in western India resulted into the evolution of rock cut architecture. Due to

the geographical features of Maharashtra, the Buddhist communities chose excavation of rock cut shrines and dwellings instead of structural brick Stupas and Viharas. Out of nearly. Hence from about the first century B.C. we begin to get archaeological evidence in the form of excavated Buddhist Chaityas and Viharas. Earliest phase of this excavation activity, patronized by the Satavahanas, continued with certain interruptions until about the middle of the third century A.D. a period over 400 years. Further, under the Vakatakas, again this activity gained importance and continued for a long period until the time of the Rashtrakutas. Thereafter, hewn of caves subsided and construction of the temples came in the forefront. While Buddhism and Jainism were spreading in western India, the Satavahanas and the Vakatakas who themselves were Brahmins, were promoting Brahmanism. Therefore we find several epigraphic records giving grants to the Brahmin Priests and Temples.

The study is based mainly on the primary sources which include the inscriptional data available for the study of present research work. The data collected from epigraphs is thoroughly studied and analysed. The

interpretations are based on this data and corroborative evidences in form of literary sources are dealt with. The researcher has adopted historical, analytical and interpretative methods.

Patronage to Buddhist Communities: The spread of Buddhism is attested by the rock cut excavations i.e. the Chaityas and Viharas in Western India. It received the royal patronage but, most interesting part was that it was largely supported by the lay community, and people from different walks of life came forward. They made donations to the Buddhist establishments and recorded it in form of the lithic inscriptions. Besides the inscriptional records of the ruling dynasties, there are numerous inscriptions recording charity endowments and land donations, made to the Buddhist fraternity. Though, many of these records do not mention the ruling dynasty specifically, on the basis of the paleography of the script used for engraving the text, it is assigned to the period between 200 B.C.-250 A.D. or little later [i.e. the period covering nearly 450 years].

The distribution and location of the Buddhist excavated dwellings and shrines give us some idea of the spread of Buddhist communities in Maharashtra territory of Western India. B.G. Gokhale has grouped these monuments into six groups:

1. Pitalkhora, Ajanta
2. Junnar, Nasik
3. Bhaja, Karle, Bedsa, Kondane, Shelarwadi
4. Kanheri, Magathana, Kondivate
5. Kuda, Mahad, Kol, Dabhol, Nadsur, Chiplun
6. Shirwal, Wai, Karad

Most of the inscriptions record its purport, the most common of which appears to be that donations were made for gaining merit for himself or his family or for the welfare of the society. In a way it appears to be the exchange of *dana* [i.e. gift] with the merit.

These donations or the gifts varied in nature. **At the beginning, donations were made for the creation of the monuments** or its part such as Cave dwellings i.e. Viharas, Stupas i.e. the Place of worship Chaityagrihas, i.e. the Prayer hall, cells in caves, water cisterns, pillars, halls, Mantapa i.e. porch lattice windows, Monastery, refectory, wells, lake, reception halls etc. **Afterwards, gifting of land, either a field, or a village for the maintenance of the Buddhist fraternity** was seen.

Land Grants- Although Buddhist Monastic dwellers are known to have lived on begging, they did not depend

solely on that. Gindallian Mangvungh opines that in the initial stage, when the Buddhist community was not very large, they might have depended upon begging. Also they did not have the lands of their own. But when the membership of the Sangha increased it was no longer feasible for the petty villages to feed the monastic dwellers. Therefore, an alternative was sought out whereby the monastic dwellers could help themselves. As a result, gifts were made to Sangha in form of lands, fields, villages and money. The monastic dwellers tilled these lands and produce was given to the Sangha. Some of these lands were specifically assigned for the monks; so they are known as *bhikshuhala*. The monks lands were safeguarded by certain rules. An inscription from Nasik cave records that donated land should not be entered by royal officers, it should not be touched by any of them, it should not be dug for salt and there should not be any interference by the district police, and that it should enjoy all kinds of immunities. We come across certain donations which were made by either the gardeners or donation of farmlands specially made for specific plantation

Though, we get records of land grants during the Satavahana era, gifting of the lands and its handing over to the donee along with issue of the copper plate charters began in post Satavahana period. The land donations to the Buddhist monasteries were generally recorded on the stone slabs. After that, the excavation activity received a setback for some time and the records of land donations were found on the metallic plates i.e. the copper plate charters. The land grants have been assigned a key role in the socio economic history of early medieval India. In later phase, they have contributed in the transition from ancient to medieval. The period of present research (200B.C.-250 C.E) was the first phase of the land donations and do not throw much light on its nature. However, we may assume that in case of donation of a plot of farmland, the agricultural products were either to be utilized by the monastic communities dwelled in the rock cut caves or the in case of the village grants, the revenues collected from that village was to be spent on the these monastic communities. Though the land grants are many in number, below is the select inscriptional data for the present research.

Table 1 Donation made by the Gardners

Sr. No	Place	Script and Language of the Inscription	Donor	Type of Donation	Purpose of the donation
1	Kuda	Brahmi Prakrit	A Gardner viz. Sivapirit, son of gardner Vadhuk	A Cave	-----
2	kuda	Brahmi Prakrit	A Gardner viz. Muguda	A water cistern	-----

Table 2 Donation of Plots of Land for procuring food

Sr. No	Place	Script and Language of the Inscription	Donor	Type of Donation	Purpose of the donation
1	Junnar	Brahmi Prakrit	Palap	15 Nivartanas of land in Village Puvanad	For the use of Monks of Aparajita Sect
2	Nasik	Brahmi Prakrit	Ushavdata, Son in law of Kshaharat kshatrap Nahapan	Donation of coconut trees	Obviously the plot/farm where Plantation was there
3	Nasik	Brahmi Prakrit	Royal edict of Satavahana Ruler Gautamiputra Satkarni	200 Nivartanas of land in west of village Kakhadi	To the monks
4	Nasik	Brahmi Prakrit	Royal edict of Satavahana Ruler Gautamiputra Satkarni	In spite of land in village. Kakhadi land in the bounadry of Vill. Govardhan	For the monks of Trirshmi Monestary.
5	Nasik	Brahmi Prakrit	Upasak Bodhgupta	Revenues of a farm in	For the provision of the chivaras.s

Table 3 Land donation for plantation of specific trees

Sr. No	Place	Script and Language of the Inscription	Donor	Type of Donation	Purpose of the donation
1	Junnar	Brahmi Prakrit	Vahat Vacheduk	2 Nivartanas of land	Plantation of Mango trees
2	Junnar	Brahmi Prakrit	Unknown	2 plots of Farmland	For Plantation of Karanj Trees
3	Junnar	Brahmi Prakrit	-----	3 plots of land 1plot at the west of Vasarikhadak 1 plot for Plantation And 1 plot in village Kodak.	1 plot specifically for plantation of Jambu Trees
4	Junnar	Brahmi Prakrit	Upasak Aduthum	20 Nivartanas of landin Village Vadalika & 9 nivartanas of land in village Katputak	For Plantation of Karanj Trees. For Plantation of Banyan Trees
5	Nasik	Brahmi Prakrit	Ushavdata, Son in law of Kshaharat kshatrap Nahapan	Donation of coconut trees	Obviously the plot/farm where Plantation was there

Besides there are references to **Bhikshuhala** i.e. the monks land. These were specifically assigned for the monks and these were safeguarded by certain rules and it should not be entered by royal officers, it should not be touched by any of them, it should not be dug for salt and it should not be interfered by the district police and that it should enjoy all kinds of immunities.

It has been observed than almost all land donations are measured in **Nivartana**. The plots of land vary from smallest plot of two nivartanas to largest field of 29 nivartanas. Though Land donations are reported from many places such as Nasik, Karle, Kuda, Junnar, Mahad and Kanheri, land measurement in nivartanas is reported only from Junnar and such donations from other places are

mentioned just as a field, or a viilge grant without exact measurement.

The monastic dwellers tilled these lands and the produce was given to the Sangha. Maximum land donations are reported from Junnar and these are fourteen in number. Four inscriptions from Junnar record donation for plantation. One inscription from Nasik records donation of coconut trees by Ushavdat, the son in law of Kshaharata ruler Nahapan.

Mango tree (*Mangifera Indica*) is a tree of great reverence and it has ritual significance in Indian culture. The Lleaves of the tree symbolise auspicious occasions and festivals. Moreover, its fruits are very fondly eaten.

Jamun (*Syzigium communni*) a fruit of pungent flavour is very unique. It is praised by Ayurveda for having medicinal properties to cure many a deseases. Its seeds are also recommended in many major ailments like diabetes, hipertensionand so on. It is natures unique gift to mankind. As a matter of fact, the peninsula was known as Jambudvipa i.e. the land of Jamun groves. India gets its identificaaion as Jambudvipa by its foreign visitors in ancient literary texts. It is attested by an inscription n the Grand Chaitya from karle. Ancient literary texts signify the fact that it was a popular fruit from ancient times and so the land was donated for the plantation of these fruits.

Coconut plantation: (*cocos Nucifera*) Needless to say about it as it has a great universal significance. Almost all the parts of coconut are useful for human existence. And no wonder the Buddhist Sangha received coconut plantations.

Banyan Tree (*Ficus Bengalensis*)As related to size of the tree, the name also matches its magnitude. A tree of great significance from ancient times. The shadow is revered as a place of god. The shadow is very cool and probably the land donated for plantation of Banyan trees was for this purpose.

Karanja (*PongamiaGlabra*) We come to know of these oil seeds as a matter of great significance. Specially, the oil extracted from its seeds was used by the monks for lighting the lamps in their viharas and chaityagrihas. Its medicinal qualities are manyfold. Consumption of Karanja oils is supposed to have health benefits.

The fact that the monastic community did not depend solely on begging the food and devoting their time only in religious deeds. It appears that they also began to take active part even in agrarian activities. In the records, donation of land to the Sangha, references to bhikshuhala, horticultural plantations etc. show that the monastic

community must have enjoyed a settled life. Though the monks remained wandering, the Sangha as an institution must have enjoyed stability and further, the monasteries in western India came to be associated with the mercantile communities and there was a close relation between Monastery and guild.

Source

1. Such as the story of Bavari and his disciples found in the preamble to the Prayagavagga who were the residents of Assaka[in deccan]; the verses in Theragatha attributed to three elders, Punna, Isidinna, and Vaddha who hailed from Sopara, Sunaparanta and Bharucaccha respectively etc.
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16. E.I (Luders Appendix), Vol.10, 1909-10, insc. No.1162
17. E.I (Luders Appendix), Vol.10, 1909-10, insc. No. 1129
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EDUCATIONAL DEVELOPMENT IN RAIGAD DISTRICT FROM BRITISH RULE: A RESEARCH STUDY

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Abstract

According to the act of Doctrine of laps the Princely state of Colaba was dissolved and unified in 1869, we find the formation of Raigad district with the change of administration. Before the advent of Britishers the education was less. Teachers were appointed from Brahmin Community and their salary was given to them by the head of village. Lord Bentinck made the education department independent. The first Government school in the Colaba District was established in 1840, in Mahad. The level of literacy before Britishers came here barely visible. In 1901, the literacy in males was 9.05% and in females was 0.27%. In order to develop Primary education compulsory schools were started in the Mumbai presidency. In 1922, 379 primary schools were established. Due to the compulsion of English Education private schools closed down. Untouchables students were made to sit separately. Due to such a cruel practice with the help of the teachers from S.C. cast separate school was started in Mahad. In 1902-03, four Grantable Secondary schools were established. Raigad district did not have the facility of higher education, but due to the efforts educational, social and political leaders and activists, we find the establishment of Janata Shikshan Mandal in, Alibag, People's Education Society's Dr.B.R. Ambedkar College in Mahad. Along with Primary and secondary education, training in industrial and vocational courses gave with to skillful personnel in district. We see that development and progress of education in Raigad district from pre-independence period. The educational degree rose higher quantitative as well as qualitative. The spread of engineers, technical, vocational was seen in the tribal areas. From the advent of Britishers till today, we find that compulsory primary education, educational scholarship's, for backward classes and spread of some private institution increases to growth of education in Raigad District leading to the change in behavior.

Keywords: British, Princely States, Literacy, Vernacular, Technology

Introduction

Colaba district (Today's Raigad District) was established in 1869. Britishers who were ruling the Mumbai region captured this area for the first time in the year 1756. After the decline of the Maratha Power in 1818 places like Sakshi, Rajpuri and Raigad came under the rule of Britishers. 'After the death of Kanhoji II in 1839, who was the governor of Colaba district according to the Doctrine of Laps, Britishers brought this area under their rule and we see that from 1844 onwards Britishers also established law and order.' According to the Doctrine of Laps Act of 1853, Lord Dalhousie dissolved and unified the Princely State of Colaba with change in administration. We find the formation of Raigad district in the year 1869. Before the advent of Britishers the spread of education was in lower degree. Under the British Empire the administration system was handled by the Britishers. Britishers received revenue from the land revenue, education and registration fees etc. other taxes. In 1869 first collector was appointed for Raigad District.

Material and Methods

During the British period the condition of education was backward in Raigad District. Neither the Raigad District had any contact with any other city nor did its existence was known. But it was only after the coming of the Britishers and with the help of the activists Raigad saw its educational progress. These resulted in spread of education in tribal and rural areas. Who were refrained from getting educated therefore, the social change of Raigad District was certain.

Research methodology like historical research methods and Survey method have been used to bring out the truth and credibility to the research work.

1. Historical Research Method: In bringing about the truth various sources have been referred such as, Educational documents, Government and Non-Government Documents.
2. Survey Method: Survey on Primary and Secondary schools, Colleges, Principals, Professors, Teachers, non-teaching staff and students were conducted.

Topography of Raigad District

Raigad District stretches from 17°51' North to 19°80' Northern Latitude, 72°51' East to 73°40' Eastern Longitude from the Arabian coast. The length from South –North is 150 km. and the breadth from East-West is 24 to 48 km. The area of the district calculates up to 7148 sq. km.² To the east we find the borders of Pune whereas in the west is Arabian sea, on the southern border situates Ratnagiri and on south west is Mumbai, on north is the Thane district and on north west we find Satara district.

Position of Education in Raigad District:

Before the advent of Britishers the spread of education was to a lesser degree. Teachers were appointed from the Brahmin community and their salary were given to them by the head of village. 'A students mess was run and expenditures were handled during by Angre Empire in Colaba district in Alibag'.³ During 1869 as Britishers started to capture the schools, their effect were left on private schools which on led to their closure.

Lord Bentick made the work of education department independent. New Government schools were opened which gave rise to the spread of primary education. 'The first government school in the Colaba district was established in Mahad in the year 1840. Second school was started in the year 1866, Nagothane. In 1861 the first primary school for girls was established. As Britishers found the usefulness of English education, many English private schools were opened in every nook and corner'.⁴

During 1865-66 period, English Education schools were started in Alibag, Pen, Roha, Mahad. In Panvel, Anglo-Vernacular school, urdu school and Girl's school was started in the year 1879-80. Gulamsaheb Raut started urdu school at his residential place in 1872. During the year 1881-82, Persian school had 122 students whereas Dalit school had 44 students. 'During the year 1854 in Uran, Uran school member 1, in 1871 Girl's school number 2, in 1892 Native Institute, Uran English School and in 1904 Urdu school were established'.⁵

Free Mission Church started first English school in Alibag in the year 1879. Till 1882, there was trace of another English school apart from the above mentioned school in Colaba district. 'In June 1882, schools for Dalit community was started in Mahad. Murud, a place in the princely state of Janjira, the first Government school was started in the year 1870. and status as a secondary school was denoted to it in the year 1871'.⁶ Christian Missionary started to spread their tentacles through educational institutions.

After Free Church started English School, in order to show their opposition towards Britishers in 1917 Colaba students or Konkani Education Society, Pen Education Society (1910), Abhinav Dyanmandir, Karjat (1935), Alibag Shikshan Prasarak Mandal (1957), Mangaon Taluka Education Society, (1945), Khalapur Taluka Shikshan Prasarak Mandal, (1957), Panvel Education Society, (1960), and Indapur Vibhag Shikshan Prasarak Mandal, (1960) were established during the British period that helped in the spread of education. The school which were established by Vitthal Laxman Kotwal and Bhausaheb Raut did the work of imparting nationalism to the students. Whereas in other school the system of education differed. In 1949 Sudhagd Education Society of Pali started educational work in adivasi areas of Bhor Princely State.

Persons Who Work for Betterment of Education during Pre-Independence Period

People who worked for education during the pre-independence period are as follows: 'Chimanrao Kulkarni, Keshav Sitaram Thakaray, D.V. Purohit, D. K. Kunthe, V. G. Ranade, K. R. Athavale, Dattaji Khanvilkar, G.D. Tillo, N.N. Patil, Bhausaheb Raut, Bhai Kotwal, Keshav Govind Limaye'.⁷

According to Primary Education Act, 1923 Primary Education was made compulsory in rural areas. In accordance to this Act District school Board was established and working related to education was handed over to them. 'In 1902-03, 178 primary schools (8398 students), 4 Secondary schools (327 students), and one higher secondary school (213 students) were seen in Raigad District. Two Anglo-Vernacular and 53 National schools (2076 students) and 12 girls schools (689 girl students) were seen'.⁸

Literacy

Before the coming of Britishers the literacy rate was to a lower degree. There were very few people from higher class who were literate. 'In 1872 Colaba District among the population of 350,405 only 15,295 were literate. In Panvel taluka among the population of 96,714 only 4553 and in Karjat among 77,150 population only 2,642 persons were literate'.⁹

Chart No. 01 Percentage of Literate Male and Female in Raigad District (Figures in Thousand)

Year	Total	Male	Female
1901	4.68	9.05	0.27
1911	4.90	9.23	0.64

1921	5.28	9.30	1.31
1931	6.79	11.73	1.76
1941	13.19	21.57	4.95

(Censuses of Bombay Presidency, General Report, 1901-1941)

In the above chart No.01, we see that the percentage of literacy rate of males and females have increased in the 40 years. The Male literacy rate increased from 9.05% to 21.57 % and that of Female Literacy rate increased from 0.27% to 4.95%.

Primary Education

In the year 1840 first Government Marathi school and in the year 1869 first girl's primary school were established gradually the numbers of schools increased from 1881-82 There were 82 schools. where as in the year 1902-03, there were 151 schools. In 1921 -22, the number of schools escalated upto 369. In order to increase and spread primary education, Mumbai Government sanctioned a law related to Compulsory primary education.

Secondary Education

During the year 1856-66, in order to impart English education private schools were set up in Alibag, Pen, Roha and Mahad but they closed down as students couldn't afford high amount of fees. Students of untouchables were made to sit separately and therefore with the help of teachers from this caste opened a school in Mahad for their communities in June 1882. Free Mission Church established English school in Alibag in year 1879 and also set up a school in Panvel. One Government school (with 213 Students) and four pre-secondary schools based on their mother tongue (327 students) were started in 1902-03. Amongst the four schools, three were affiliated to District Local Board. In 1921-22, five government high schools (795 students) and 2 mother tongue pre-secondary schools were established. Around 1895-96, in an English school in Janjira 150 Students studied. There were no schools to be found in Mhasala till 1961. We find that there were maximum number of schools i.e. 18 of them in Alibag. After the year 1961 to 1962 years we see an increase in number of secondary schools.

Chart No.02 Number of Secondary schools between 1961-1988

Year	Schools	Students	Teachers
1961-62	42	11770	475
1971-72	110	29109	1254
1981-82	149	70618	2568
1987-88	202	104084	3632

Report of Colaba District Local Board.¹⁰

In the chart No. 02, the number of secondary schools in the year 1961-1988 has been shown. In this period we find the increase in number of secondary schools. In 1969 there were around 42 schools which later increased to 202 in the year 1988. Because from 1972, the Government started to take serious note of the need in education leading to the rise in number of students.

Higher Education

Till 1960 there was no higher educational facility in Raigad district. As Mumbai was near students would travel to Mumbai for educational purposes. Christian Missionaries along with Britishers set up hospitals, religious schools, they tried to attract common people for attaining their purpose. In the year 1961 due to the effort of educational, political and social leaders and activists there was establishment of Janata Shikshan Mandal in Alibag, People's Education society Dr. B. R. Ambedkar college in Mahad. In 1971-72 there were three colleges but in 1990-91 we find an increase in number of colleges upto 17.

Technical Education

We find the establishment of Konkan Education Society's Industrial High School in Alibag on 3rd June 1924. In this school along with secondary education, there were subjects like printing, carpentry and hand loom, amongst these one subject was made compulsory. Post independence, first separate technical school was started in the year 1955, Mahad. 1985 onwards we find schools based technical education were started in Pen, Roha, and Shrivardhan.

Students were given industrial training which help in growth of industries. Aiming to utilise the human endowments government started in Panvel (1963), Uran (1980), Mahad and Nagothane (1984) and non-government Industrial Training Institute in Murud (1978). Because of these above industrial institutes the necessity in providing upto skill requirements were created by them. Dr. Babasaheb Ambedkar Engineering University was established in the year 1989 at Lonere.

Conclusion

1. The development and progress of education commenced during the British period in Raigad District.
2. The degree of education rose higher quantitatively as well as qualitatively.

3. As the number of institutes increased in Raigad district, the progress of education also increased at the higher rate ,this can be seen by the growing numbers of students.
4. Due to Industrial training skilled human endowment were provided.
5. The Spread of engineering and technical educational was done easily in the tribal areas.

Summary

The formation of Colaba District took place in the year 1869(now Raigad District) During the 19th century this district was brought under the British rule. During this period the spread of education was less. The first Government school in Colaba district was started in the year 1840 at Mahad. During the year 1856-66,in order to impart English educational schools were started in Pen, Roha ,and Alibag. In 1941,the literacy rate in the district was 13.19% but due to various educational facilities the rate increased to 53.81%in 1991.We find compulsory primary education, scholarships to backward classes and spread of some private institutions were the reason of increased in literacy rate .Today, we find that the development in education that is the growth of primary, secondary, higher education ,technical engineering ,medical and law are the resultant fruits of hard work since

the British period .Development in education has led to the overall transformation in man and in Raigad district.

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MISSIONARY ENDEAVOURS OF EVA MAY SWIFT IN MADURAI 1884-1943

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Abstract

The ancient Tamil Society suffered due to social evils like caste system, dowry problem, devadasi system, superstitious beliefs and suppression of women. Rural women could not enjoy the fruits of education as it was given only to men. American Missionaries who came to Madurai for preaching Christianity, engaged in educational, medical and social services. One of the women missionaries, Eva May Swift came to Madurai and worked for the development of women especially widows and destitute women. She was able to educate them and teach employable skills like sewing, weaving, embroidery, needle work and agriculture at Rachanyapuram in Madurai. Thus she served for the empowerment of women and her institute became a refuge for suppressed women.

Keywords: American missionaries, Women empowerment, Madurai, Eva May Swift.

Introduction

Madura country, one of the largest regions of the Madras Presidency was subjected to varied political fortunes in the hands of Pandyas, Muslims, Nayaks, and the British. Though, known well for its Sangam literature, its society underwent deterioration because of the social evils like caste system, superstitious beliefs and the suppression of women. Education, being restricted only to the children of upper castes and that too for the boys alone worsened the situation further. The American missionaries, who came to Madurai during 1834, toiled for alleviating these perils by offering the good news, education, medical service and social work. Among them, Eva May Swift who came in her young age developed reformatory measures in her own way with the principle of women for women's work.

Missionary Call

Born in Huntsville, Alabama on 3 May 1863, Miss Eva May Swift tasted the sufferings as her widowed mother had to look after a small daughter and two sons when her father died at the end of American Civil War.¹ She prepared for teaching, by attending public schools in Atlanta, Georgia and a woman's school at Sherman, Texas.² Though she was not a Christian in her early days, she met with a conversion experience during a Bible reading in Dallas, Texas led by Scofield. As Doe records, "She simply received God's word-unquestioningly; it was the end of controversy with her- and that is the secret of

her striking growth in knowledge in God's word."³ Convinced of a call to missionary work, she joined the American Madura Mission (AMM) in 1884.⁴ She reached India on 12 July 1884 and arrived at Madurai on 16 July which were later celebrated as Rachanyapuram Days.⁵ Historically she records as, "My grandfather was born the year the American Board of Commissioners for Foreign Missions (ABCFM) was established. My mother was born the year the American Madura Mission was founded. Just after the Jubilee of the mission I set sail for India".⁶ She left her home in Texas for India in March 1884⁷ at the age of twenty two and she was the youngest missionary ever to be sent to a foreign field by the ABCFM.⁸

Mission Field

Immediately after her arrival, she could engage herself in preparatory duties including learning the Tamil language and leading some Sunday school classes.⁹ As Swift observes, "The greatest disability under which a young missionary labours is his want of the language. And possibly, if the opinions of a large number of the older workers could be voiced, they would still say "the language is the greatest barrier between us and the people".¹⁰

Mission Schools

In the Girls' High and Training School, Swift organized the normal department by which the Middle school classes were included as normal classes and the lower classes as the practicing school which made the school to be

recognized as the Madura Female Normal School by the Government. In 1886, it was established as a separate department under the control of Swift.¹¹ The School had three departments, the normal, middle and primary with twenty seven girls in 1888 and in 1890, when Swift went on furlough, she handed over the charges to Miss Bessie Noyes. She recorded as, "We believe that the time is come when we must heed the call for higher female education, and the almost imperative demands of parents by adding higher classes."¹² In 1885, the AMM voted to manage the four elementary schools for Hindu girls, the Girls Boarding School, and the new Normal Training School by Swift.¹³ She opined that the preaching of the Gospel, the salvation of the unsaved and the instruction of the church as the first stages of missionary enthusiasm.¹⁴ She was able to show great wisdom and foresight in materializing her plans for the missionary work.¹⁵ Her first goal was to favour the conversion of heathens to Christianity and to accept them in the church community.¹⁶ Swift writes as, "We are trying by these meetings and by personal work with individuals to do the good ... to accomplish the great work for which as I have said the educational work is but a means".¹⁷

Mission Bible School

Later, Swift went on a furlough from 1890 to 1892, during which she could reflect on her work and absorb current theological trends in America.¹⁸ In September 1892, after her return to Madurai, she took charge of the city Bible-Women, whose work included house-to-house visiting, teaching, preaching and singing the Gospel in the homes of the people.¹⁹ When she felt about the need of training them as they establish personal contact with all classes of people, she started the Lucy Perry Noble Bible School (LPNBS) in December 1892.²⁰

The school was named after the wife of the pastor of Union Park Church in Chicago who had the wish of not spending the money for flowers at her death but to donate it for human lives. The women of Indiana had also given some fund which made the building possible.²¹ The main objective of the school was to train women in Bible for two years so that they can preach the Gospel to the suppressed women of the Madurai region. Initially four students were enrolled in this school.²² Swift emphasized personal contacts by the missionaries and the Bible women either individually or in small groups since the social customs and religious belief prevented most of the women from attending public meetings.²³ She also wanted the building of the school to be located in a place which offers easy access to heathen women.²⁴

The Bible women students used to teach about eighty to two hundred and fifty Hindu women annually as a part of their preparation and some of them preached the gospel to sweeper caste people during evangelistic campaigns. In the pavilion of such campaigns, Hindu women of all castes entered to hear the Gospel especially the story of the Samaritan woman.²⁷

The students of the school entered the profession of nurses, matrons of schools or teachers while most of them became Bible women. They got employment in and around Madurai and some of them joined the Church of England, Wesleyan, Scotch and London Missions.²⁸ Swift considered church membership for converts as a desirable one but not absolute when she discovered hundreds of hidden Christians in Madurai. When mentioning about the Brahmin women having faith in Christ, Swift writes, "I shall not mention Paraganayagi as confessing Christ in the East-Gate church, but I believe I shall meet her in heaven".²⁹ Fearing persecution, Hindu women were reluctant to make public confession and entry into the church since it required renouncing of caste, hereditary duties, societal status, occupation and livelihood. Loss of place in the family and society was very difficult for women as, women were inexperienced, uninformed, easily intimidated. Family relationships marked the boundaries of their life and thought. The mother's heart was bound up with her children; her will was subjected to her husband. Her father or brothers were the acknowledged authorities.³⁰ She records, "The losses, trials, and difficulties, even the dangers that confront many converts in this country are not unknown to you. I myself have suffered trouble and turmoil, perplexity and expense and no small degree of danger; but I feel all three could be more easily borne were there some adequate provision for the care, protection, training and employment of such women as are called upon to incur loss and face dangers because of their confession of Christ."³¹ She kept the moulding of the characters of individual girls as a priority and stressed the upbuilding of the Christian character of girl students.

Mission at Rachanyapuram

In 1912, Swift tried for moving the Lucy Perry Noble Bible School (LPNBS) Rachanyapuram in the outskirts of Madurai with the addition of extension work department. As the existing place of the school was in unsanitary conditions and limited space, Swift located about thirty one acres near the horizon of the Alagar range and bought it with the benevolent donations from converts and friends in

America.³² The new place named as Rachanyapuram, meaning place of salvation, was situated in the middle of the Kallar country, an area dominated by a caste group known for its robbery.³³ Swift, due to her effective management cultivated their own paddy and vegetables, made their own clothes and furniture and ran a school and a dispensary for the neighbouring population. In due course, the school became a refuge for abandoned women, widows and recent converts. The single school had four departments viz., academic, industrial, home-life and Bible School and disseminated knowledge and skills for both earthly and spiritual life.

In this, the women were taught on employable skills of sewing, weaving, embroidery, needlework and agriculture.³⁴ She started the Industrial Department at LPNBS in June 1912. It continued lace making, prepared jams, jellies and marmalade and equipped the desperate women with industrial skills to lead a social life with confidence. The land for a separate Industrial school was purchased near Rachanyapuram campus with the money donated by Women's Board of Missions of the Interiors (WBMI) and the first industrial school was started with sixteen pupils in 1916. As it is recorded, "Some heard Collector Mr. Knapp say that three-fourths of what was worth showing or seeing in Madurai was the work of missions."³⁵ Swift decided to undertake this large project after observing the depressed state of women in Tamil Nadu especially that of women converts.

Mission for Destitute

Swift could recognize the problems of women and hence took efforts to provide refuge for widows and destitute women. When Hindu women embraced Christianity, her family members or relatives will not help her and she will be left alone. Hence she had to look after her needs of food, clothing, shelter and care during sickness by her own. But if she remained in the family as a secret Christian, she can't worship the family idol, evening lamp and her mind would rouse against many of the practices and customs of Hinduism. Commenting about their desperate state, Swift records, "The women must live, but there is no shelter for them; they must not be idle, but there is no work for them. Were there work they still need training. They are often in serious danger and need protection."

Birdsnest

As the Tamil society was filled with superstitious beliefs and evil customs the people especially the women

and children were much affected. Hence they established an organization called 'Birdsnest', which served as an abode and refuge for the destitute women and children. 'Birdsnest' picked up abandoned children from gutters and from the floors of courts and hospitals as unclaimed properties, left in the streets and crowded market places or brought in by friends and good Samaritans. Usually the children didn't know their parentage. Some of the girls even witnessed their mothers murdered by their own fathers on infidelity. Some of them had their parents as beggars, coolies, bonded labourers, prisoners, tribals and repatriates.³⁸ The orphan babies and children of the hospital were maintained in the 'Birdsnest'.⁴⁰ In 1921, when the whole town of Madurai was ravaged by the incidence of plague, 'Birdsnest' gave protection to newborn babies found alive in drainage.⁴¹ Through this compassionate service the missionaries stood witness for the Gospel they preached and this kind of acts helped them reach the people, which made their work effective and easier.

In spite of her busy schedule in teaching and supervising, acting as architect and contractor of buildings, Swift could find time for writing a number of books. She brought her mother who was of eighty years of age during her final furlough and took efforts to caring her mother. Her services to the community especially to women caught the attention of the Government of India, which presented her with *Kaiser-I-hind* medal. As she loved the people of Madurai much, she desired to receive the medal from the District Collector in Madurai instead of receiving it from the Provincial Governor in Madras. The valuable services rendered by her to the women of Madurai and Ramnad districts proved much useful which improved the health of women in physical, mental, social and spiritual realms.

Eva May Swift, the youngest missionary came to India as a missionary and dedicated totally for the upliftment of women in a unique manner by establishing school for Bible women, industrial department and extension classes. Her institute served as a refuge for destitute women, widows and new women Christian converts.

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RELIGIOUS SYMBOLS, CONTESTED MEANING AND ITS SOCIO-POLITICAL SIGNIFICANCE IN INDIA

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Abstract

In 21 century, where we say that world is getting smaller and terminology like 'Global Village' is used frequently on the various platforms, it is very surprising to see the respect and emotions people still have with certain symbols. The concept of auspicious and good luck symbols is yet so important. Hence, researcher feel a need to look into the socio cultural importance of religious symbols in the lives of the people. The development of religion has taken many forms in various cultures, with continental differences. Apart from their elite authorship and normative nature, some of them are difficult to date. Innumerable religious symbols exists in India like Swastika, Om, Star, Tree, Lotus, Sun, Moon, Kalash, Hexagram etc. Hence in the following research the efforts will be made to focus on few significant popular religious symbols in India. We will also see that there are several religious symbols that were not specifically associated with a specific religious tradition but were an enduring feature of popular religion over many centuries. At the same time, the relationship between different religious symbols could also take the form of competition and conflict. This study poses a question as to what extent symbols played an important role in Indian religions. An attempt will be made to focus upon the various symbols adopted in India from time to time and its impact on Indian politics, art and culture. The symbols used by political parties can be studied and the influence they have on the voting patterns. The symbols used in the development of Indian art i.e. key chains, jewellery, show pieces, decorative articles etc can be studied as variations of the influences that have contributed to art over the past centuries.

Keywords: Religious symbols, politics, swastika, Omm, star.



To present religion rationally in the present century the symbolical religious character was always stressed over. The researchers of psychology and mythology has even considered the symbolic aspect of religion as the main characteristic of religious expression. Religious symbolism was interpreted about in great abundance by Scholars of ethnologists, and psychologists.

Innumerable religious symbols exists in India like Swastika, Om, Star, Tree, Lotus, Sun, Moon, Kalash, Hexagram etc. Hence in the following research the efforts will be made to focus on few significant popular religious symbols in India. We will also see that there are several religious symbols that were not specifically associated with a specific religious tradition but were an enduring feature of popular religion over many centuries.

Depending on cultural contexts, the meaning of religious and political symbols, often charged with emotion, are likewise. Many time even when the same or similar signs are employed across cultures carries same meanings.

Personal practices related to communal faith and to group rituals and communication stemming from shared conviction are often referred as the term "religion". Religion

is more socially defined than personal convictions, and it entails specific behaviors, respectively and "Religion" is sometimes used interchangeably with "faith" or "belief system". The development of religion has taken many forms in various cultures, with continental differences. Although Indian religions are connected through the history of India, they constitute a wide range of religious communities and Indian religions are not confined to the Indian subcontinent **Swastika** - On the planet, among practically every group of humans, the swastika symbol has been used for thousands of years. "Cross of Thor", as it was known to Germanic tribes. It is interesting that the Nazis preferred to use the Indian term "swastika" and did not use that term, which is consistent with German history. Long before Hitler the "Cross of Thor", the symbol was even brought to England by Scandinavian settlers in Lincolnshire and Yorkshire,.

The swastika's spectrum of meaning is centered around *power*, *energy*, and *migration*. It is closely associated with  and , thus with tribal migrations.

The **swastika** (from Sanskrit स्वस्तिक *svastika*, from *su* "well", and *asti* "being", thus "good fortune" or "well-being")

is an equilateral cross with its arms bent at right angles in either left-facing (卐) or right-facing (卞) direction. The swastika is a sacred symbol in Hinduism, Buddhism, Jainism and Odinism.

The swastika has appeared in different forms, in different places and for different reasons, in human culture since pre-historic times. The meaning has been a "Wheel of Life," a "Sun-Wheel," the four points of the compass, the four winds. Its wide distribution in so many varying cultures shows quite conclusively that it is neither an "Aryan" nor a non-"Aryan" symbol. The Oriental interpretation has been that of a "Sun-Wheel," with the right-handed version being for "life" or the Sun, and the left-handed version being for "death" or the Moon. "The Swastika" is the oldest cross and emblem in the world. It forms a combination of four "L's" standing for Luck, Light, Love and Life. It has been found in ancient Rome, excavations in Grecian cities, on Buddhist idols, on Chinese coins dated 315 B.C., and our own Southwest Indians use it as an amulet.

The word is associated with auspicious things in India - because it means 'auspicious'. In India, both clockwise and counterclockwise swastikas were used, with different meanings. Since the swastika is a simple symbol, it has been used, perhaps independently, by many human societies. The counterclockwise one is associated with the goddess Kali and magical practice, (associated with the Moon), and the clockwise one is associated with Ganesha (associated with the Sun). In Zoroastrian Persia, the swastika symbolized the revolving sun (*Garduneh-e Khorshid*), Mithra's Wheel (*Garduneh-e Mehr*), fire, infinity, or continuing recreation. There is no reference to the swastika in the Vedas, the term *svastika* first appearing in Epic Sanskrit, but the symbol rose to importance in Hinduism and Buddhism in Maurya and Gupta India. The use of the swastika by the indigenous Bön faith of Tibet, as well as syncretic religions, such as Cao Dai of Vietnam and Falun Gong of China, is thought to be borrowed from Buddhism as well. Similarly, the existence of the swastika as a solar symbol among the Akan civilization of southwest Africa may have been the result of cultural transfer along the African slave routes around AD 1500.

Hinduism

All Hindus considered The swastika as extremely holy and auspicious and is regularly used to decorate all sorts of items to do with Hindu culture. The swastika is found all over Hindu temples, signs, altars, pictures and iconography where it is sacred. It is used in all Hindu

weddings, festivals, ceremonies, houses and doorways, clothing and jewelry, motor transport and even decorations on food items like cakes and pastries.

Buddhism

A swastika marks the beginning of many Buddhist scriptures. The swastikas (in either orientation) appear on the chest of some statues of Gautama Buddha and is often incised on the soles of the feet of the Buddha in statuary. Because of the association with the right facing swastika with Nazism, Buddhist swastikas (*outside* India only) after the mid-20th century are almost universally left-facing: 卐. This form of the swastika is often found on Chinese food packaging to signify that the product is vegetarian and can be consumed by strict Buddhists. It is often sewn into the collars of Chinese children's clothing. The swastika used in Buddhist art and scripture is known in Japanese as a *manji* (which literally just means "the Chinese character for eternity" 万字), and represents Dharma, universal harmony, and the balance of opposites. As such, it was placed over the heart of the Buddha, stamped on the breasts of departed initiates and planted wherever Buddhists have left their mark. It is regarded as the symbol of Buddhism and the mark of a perfectly evolved being whose soul (or spirit) has entered Nirvana or liberation from the world of matter. The image of the Buddha's foot or Sri-Pada, shows the swastika on each of the toes. The symbol is seen on the underpads in a left-handed or anti-clockwise configuration, which would become a right-angled or clockwise image if an imprint of the foot was imagined.

Jainism- Jainism

Gives even more prominence to the swastika than Hinduism. It is a symbol of the seventh Jina (Saint), the *Tirthankara* Suparsva. It is considered to be one of the 24 auspicious marks and the emblem of the seventh arhat of the present age. All Jain temples and holy books must contain the swastika and ceremonies typically begin and end with creating a swastika mark several times with rice around the altar. Jains use rice to make a swastika (also known as "Sathiyo" in the state of Gujarat, India) in front of idols in a temple. Jains then put an offering on top of this swastika - this offering is usually a fruit, a sweet (mithai), a dried fruit or sometimes a coin or currency note.

In post-Independence India, electoral ballot papers have been stamped with a round swastika. Thus, that variant of the symbol is connected with political elections. Its use as a symbol of wealth, prosperity and good luck is

important in India, and in most traditional Hindu homes and most religious ceremonies the symbol is used as a decorative motif. Many businesses and other organisations, like the Ahmedabad Stock Exchange, use the swastika in their logos.

Hexagram

Found on ancient South Indian Hindu temples, the hexagram is a mandala symbol called *satkona yantra*. It symbolizes the *nara-narayana*, or perfect meditative state of balance achieved between Man and God, and if maintained, results in "moksha," or "nirvana" (release from the bounds of the earthly world and its material trappings).



Usage by Hinduism and Eastern Religions

Diagram showing the two mystic syllables Om and Hrim. Six pointed stars have also been found in cosmological diagrams in Hinduism, Buddhism, and Jainism. The reasons behind this symbol's common appearance in Indic religions and the West are lost in the mists of antiquity. One possibility is that they have a common origin. The other possibility is that artists and religious people from several cultures independently created the hexagram shape, which after all is a relatively simple and obvious geometric design.

Within Indic lore, the shape is generally understood to consist of two triangles—one pointed up and the other down—locked in harmonious embrace. The two components are called 'Om' and the 'Hrim' in Sanskrit, and symbolize man's position between earth and sky. The downward triangle symbolizes Shakti, the sacred embodiment of femininity, and the upward triangle symbolizes Shiva, or Agni Tattva, representing the focused aspects of masculinity. The mystical union of the two triangles represents Creation, occurring through the divine union of male and female. The two locked triangles are also known as 'Shanmukha' - the six-faced, representing the six faces of Shiva & Shakti's progeny Kartikeya. This symbol is also a part of several yantras and has deep significance in Hindu ritual worship and history.

Buddhism

In Buddhism, some old versions of the Bardo Thodol, also known as The Tibetan Book of the Dead, contain a

hexagram with a Swastika inside. The Shatkona is a symbol used in Hindu yantra that represents the union of both the male and feminine form. More specifically it is supposed to represent Purusha (the supreme being), and Prakriti (mother nature, or causal matter). Often this is represented as Shiva - Shakti.

The Shatkona is a hexagram and looks exactly like the Star of David in Semitic lore. The hexagram may be found in some Churches and stained-glass windows. An example of this is one embedded in the ceiling of the Washington National Cathedral. Because a similar-looking sign called the encircled pentagram is used in occultism, it was not used in church architecture until Christian architects, both Protestant and Catholic, began to accept the notion that the Star of David is an old Jewish sign. In Christianity it is often called the star of creation.

Islam

In various places in the Qur'an, it is written that David and King Solomon (Arabic, *Suliman* or *Sulayman*) were prophets and kings and therefore they are revered figures by Muslims. The Medieval pre-Ottoman Anatolian beyliks of the Karamanoğlu and Candaroğlu used the star on their flag. The symbol also used on Hayreddin Barbarossa flag. Even today, the star can be found in mosques and on other Arabic and Islamic artifacts.

Professor Gershom Sholem theorizes that the "Star of David" originates in the writings of Aristotle, who used triangles in different positions to indicate the different basic elements. The superposed triangles thus represented combinations of those elements. From Aristotle's writings those symbols made their ways into early, pre-Muslim Arab literature.

Jewish Flags

In 1354, King of Bohemia Charles IV prescribed for the Jews of Prague a red flag with both David's shield and Solomon's seal, while the red flag with which the Jews met King Matthias of Hungary in the 15th century showed two pentagrams with two golden stars. The Star of David is a widely recognized symbol of the Jewish religion. The legend surrounding the origins of this symbol in Judaism relies on the belief that this emblem was used by the biblical King David of Jerusalem as a shield, hence the Hebrew name "Magen David" meaning star or shield of David. It is sometimes referred to as the Seal of Solomon, a ring used by King Solomon for protection against demonic forces. The historical and archeological origins of the Star of David have been linked to the origins of the

Pentagram, which with the cross and the swastika, represents one of the oldest form of religious symbolism used among societies.



OM Hindi and Sanskrit words are written in Roman as well as in Deva Nagari Alphabet. It is the smallest mantra. It is also called pranav-mantra. A mantra is a word or a phrase used for meditation and chanting. It is a

common practice to begin other mantras with 'Om'.

According to 'Hinduism', 'Buddhism', 'Sikhism' and 'Jainism', 'Om' is the main sound. Religious minded Hindus believe that 'Om' is the ultimate, hyper or super-natural sound. The origin of the syllable OM is lost in the misty past. Its not being specific to any one country or civilization is indicative of its being an universally perceptible sound for the human race. This reason for this universal perceptibility possibly lies in the fact that AAAH is the most natural sound that issues from the human larynx. This is evident when a man cries out naturally in extreme pain, anger or fear. When emotions reach an extreme pitch the articulate sounds evolved by man are not the ones that are heard, but the syllable natural to man which is AAAH

The Aum mantra first came to light in the Vedic Tradition of Hinduism, and is also considered to be holy in Buddhism, Sikhism, and some new religious movements such as Eckankar. The popularity of Aum beyond these Eastern religions seems to be fairly easily understood when we pay attention to modern physics, which has found rhythmic waves and vibrations from circular motions of particles in the world, and also when we look at more insightful aspects of the monotheistic religions where God is seen as a dynamic God of the vibration of love.

Indeed, the entire cycle of the universe and all it contains is said by Hindus to be symbolized in 'Aum.' Thus, 'Aum' is not simply one sound among many, according to Hinduism, but is said to be the most sacred sound that encompasses all sounds.

Aum / Om in Buddhist tradition

Since Buddhism arose out of Hinduism, it is not surprising that the mantra 'Aum' was absorbed into the Buddhist tradition; however, Buddhists almost never transliterate it as 'Aum,' but use 'Om' instead.



The mantra "Om mani padme Hum" in Tibetan script. There are many Buddhist mantras that incorporate the

sound of 'Om' into their formulation. Probably the most famous of these is the six-syllabled mantra, *Om Mani Padme Hum*. The common translation of this mantra is, "Hail the jewel in the lotus" ('Aum' = Hail, 'Mani' = Jewel, 'Padme' = Lotus and Hum). However, the scholar Donald Lopez, in his book *Prisoners of Shangri-La: Tibetan Buddhism and the West*, challenges this conventional translation, which he claims to be an interpretation supported by neither linguistic analysis nor Tibetan tradition.

Om in Sikh tradition

The Sikh Mantra, *Ek Onkar* The concept of 'Om' continues to play a prominent role in Sikhism. The Sikh prayer, known as the Mool mantra, begins with the expression, *Ek Onkar* (meaning "God is one"). *Ek Onkar* is the root basis of all Sikh sacred thought, and the first phrase of the Sikh Guru embodied in scripture, the Guru Granth Sahib. The

Sanskrit word *omkāra* (from which came Punjabi *onkār*, literally "OM-maker") has a twofold meaning: 1) Brahma in his role as creator, and thus a word for "creator"; 2) writers' term for the 'Om' sign. Guru Nanak, the founder of the

Sikh religion, placed the number "One" in front of *Onkar*, to propagate the basic principle of Sikhism—that the creative, sustaining and destructive energies are all embodied in the One Almighty.

Om in Jain Tradition

In Jainism, 'Om' is regarded to be a condensed form of the five *parameshthis*. 'Om' is said to be made from the initials of the five *parameshthis*. It has been said: "*Arihanta, Ashiri* (i.e. *siddha*), *Acharya, Upadhyaya, Munis (sadhus)*." For Hindus, Buddhists, Sikhs and Jains, the syllable of Aum is so sacred and laden with the vibration of spiritual energy that it should only be pronounced with complete concentration and proper motivation to be efficacious. This insight by these Eastern religions seems relevant to modern physics, which understands the whole reality of the cosmos to be permeated with the vibrations of creative energy. The scope of the subject is very wide, it touches all the aspect of the life like religious, social, cultural and here we are going to emphasis more on the political culture of the country. This external and highly politicized approach to religion fills the void left when direct spiritual experience is impossible, and religious symbols become signs devoid of real spiritual power. For the spiritual person, religion is much more than having the

right beliefs, or a supportive community who all believe the same thing as you. It is about employing belief, religious ritual, and group or private contemplative practices to generate charged religious symbols which can open up deeper layers of reality so that faith matures into direct spiritual experience. Political symbolism is symbolism that is used to represent a political standpoint. The symbolism can occur in various media including banners, acronyms, pictures, flags, mottos, and countless more. Many an election symbol in India, where religion is intrinsic to the way of life, can be associated either with God or his elements. Can these symbols be used by political parties without being accused of wooing voters in the name of religion, which is a grave electoral malpractice? This question came up before the Supreme Court on Monday as a PIL filed by 'Youthmen Hindu Association' questioned the use of the 'rising sun' symbol used by DMK in Tamil Nadu. Though ironically DMK did not believe in the existence of God, it was accused by PIL petitioner's counsel K Biju of falling foul of Section 123(3) of the Representation of People Act which prohibited wooing of voters by means of religion or religious symbols.

The symbols which have some religious connotation are -- elephant which is the election symbol of BSP, lotus (BJP), bow and arrow (JMM), conch (BJD). Apart from the national and state parties, there are 1,000 registered unrecognised parties in India, the latter being asked to choose from 59 free symbols. A similar unsuccessful attempt was made by one Shaheen Parvez before a Bench headed by CJI to challenge the 'lotus' symbol allotted to BJP. Her contention was that lotus was a national symbol and no political party could make use of it. If the present research is successful to prove that religious symbols do play important role in mobilizing the public opinions in deciding about the voting pattern then the data will can be provided to Election commission. It will help Government to take decision regarding using the religious symbols for political parties. Hence the research document will help Election Commission in taking policy decision.

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அந்நியமாதலும் தொடர்ந்து வாழ்தலுக்கான சிக்கலும் (ALIENATION AND SURVIVAL PROBLEM)

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இக்கட்டுரைக்கு அசோகமித்திரனின் '18ஆவது அட்சக்கோடு' எனும் பிரதி இவ்வாய்வுக்கெனத் தேர்ந்து கொள்ளப்படுகிறது. இக்கதைக்கான களம் நிஜம் மன்னர் ஆட்சி காலத்தில், ஹைதராபாத் மற்றும் செகந்தராபாத் முதலான இடங்களில் (ஏறக்குறைய 1950களில்) நடந்ததாகும். இக்கதையில் வரும் மைய மாந்தராக இடம்பெறுகிற சந்திரசேகரன், இந்தியா சுதந்திரம் அடைந்து 2 வரும் கழிந்தும், ஹைதராபாத் சமஸ்தானம் இந்தியாவுடன் இணையாத சூழலில் ஏற்படும் கலவரமும் பதட்டமும் நிறைந்த சூழலில் அறிமுகப்படுத்தப்படுகிறான். மொழி, உணவு, வாழ்விடம், மதம், கல்வி, உடை, வேலை, விளையாட்டு, சாதி போன்ற பல காரணங்களால் இவன் அந்நியப்பட்டுப் போகிறான். தான் வாழும் ஊரில் ஏற்பட்ட கலவரத்தினால், பிறருடன் நல்ல உறவு வைத்துக் கொள்ள முடியாத நிலையில், தொடர் சிந்தனையில் அவதிப்படுகிறான். இந்து-முஸ்லிம் கலவரத்தில் பார்ப்பனத் தமிழன் என்ற நிலையில் இவன் 'பொம்மன்' என அழைக்கப்படுகிறான். கலவரத்தால் பலரும் ஊரைவிட்டு வெளியேறுகிறார்கள். இச்சூழலில் சந்திரசேகரன் அந்நியப்பட்டுப் போய்விடுவதால் தொடர்ந்து அப்புலத்தில் வாழ்தல் என்பது அவனுக்குச் சிக்கலாகிப் போகிறது. தனக்கு இயல்பாக எழுகிற பயத்தையும் மீறி, இரவு நேரத்தில் தனியாக ஊரைச் சுற்றுவதல், பால் வயது நிமித்தம் எழுகிற பெண்கள் மீதான மோகம், திடீரென்று ஓடல், தன் காலைத் தரையில் ஓங்கி அடித்துக் கொள்ளல் போன்ற பல அசாதாரணமான உணர்வுகளுக்கும் திடீர் திடீர் என ஆட்படுகிறான். இவற்றிலிருந்து இறுதிவரை அவன் விடுபட முடியாத சூழலில், பிறருடன் முற்றிலும் பேச்சைக் குறைத்தல், தன் பெயரைக் கேட்டால்கூட உடனே சொல்ல முடியாமல் மாற்றிச் சொல்லுதல், பிறர் கேள்விக் கேட்டால் அதற்குப் பதில் சொல்லத் தாமதித்தல், பேசுகிறவர்களைப் பேச விட்டு விட்டு, அவர்களின் முகத்தை மட்டும் பார்த்துக் கொண்டே இருந்து விட்டு, அதன் மீதாகத் தன் கருத்தைக் கூறாமல் மௌனம் சாதித்தல் என்கிற நிலையில், பெருந்தோர் உளவியல் சிக்கலுக்கும் ஆளாகிறான். ஹைதராபாத் சமஸ்தானம் இந்தியாவுடன் இணைய நடந்த போராட்டத்தில், கல்லூரி மாணவன் என்ற நிலையில் சந்திரசேகரன் கலந்து கொண்டாலும், அதில் இவன் ஏமாற்றப்பட்டதை அறிந்ததும் மனம் புளுங்குகிறான். இத்தகையச் சூழலில்தான் சந்திரசேகரன் சமூகத்தால் அந்நியப்படுத்தப்பட்டு, தொடர்ந்து அவன் வாழ்தல் என்பதில் விதவிதமான சிக்கல்கள் பலவற்றுக்குள் தள்ளப்படுகிறான்.

முன்னுரை

அசோகமித்திரனின் 18வது அட்சக்கோடு எனும் நாவலில் இழையோடியுள்ள 'அந்நியமாதல்' எனும் சிந்தனையின் அடிப்படையம்சங்களைக் கண்டறிவதாக இக்கட்டுரை அமையப் பெறுகிறது. 1940-களில் நடந்த நிகழ்வுகள் 1970-களில் நாவலாகப் பதிவு செய்யப்பட்டுள்ளது. இந்நாவல் இந்தியா சுதந்திரம் அடைவற்கு முன்னும் பின்னும் இருந்த அரசியல் காட்சிகளை முன்வைக்கிறது. ஹைதராபாத் நிஜாமின் அரசு இந்தியாவுடன் இணைய வேண்டிய சூழலில் ஏற்பட்ட அவசரநிலைப் பிரகடனம், ஊர்க்கலவரம், பதற்றம், கொள்ளை, கொலை, தீக்கிரையாக்கல், இராணுவத்தின் வருகை, மக்கள் ஊரைவிட்டு வெளியேறுதல் போன்ற பல நிகழ்வுகள் நாவல் முழுவதிலும் ஒருவிதப் பீதியை ஏற்படுத்துகின்றன. இத்தகையப் பின்னணியில் சந்திரசேகரன் எனும் கல்லூரி மாணவன், தாம் வாழும் சூழலிலிருந்து அந்நியப்பட்டு, தொடர்ந்து வாழ்தல் எனும் செயல் நிகழ்வில் தேங்கி, அதிதீவிரச் சிக்கலுக்கு ஆளாகின்றான்.

"அந்நியமாதல் அனுபவம், இதுவரை இல்லாத அளவுக்கு 20-ஆம் நூற்றாண்டில் தான் அதிகம் பரவலாகி, தீவிரமாக நிலைகொண்டு உள்ளது. கரிசனை அல்லது உளநிலையில் புகுத்து ஆராய்வது

அந்நியமாதல் உணர்வு தோன்றாமலிருக்கத் தேவைப்படுகிறது. இலக்கியம், இறையியல், தத்துவம், வரலாறு, உளவியல், சமூகவியல், மானுடவியல், பொருளாதாரம், அரசியல், அறிவியல், கல்வி எனும் தளங்களில் விரிவான அர்த்தத்தைத் தருவதாக இருப்பினும், சில இடங்களில் இச்சொல் ஒரே வகையான அர்த்தத்தைத் தராத காரண காரியத் தொடர்புக்கு அடங்காத ஒன்றாகவே உள்ளது. இருப்பினும், நவீன காலத்தில் இச்சொல் முன்னுக்குப்பின் முரணாயும், மயக்கத்தைத் தரக்கூடியதாயும் உள்ளது."¹

"பழங்காலத்தில் அந்நியமாதல் என்ற சொல் 'பித்துப்பிடித்தவன்' என்ற பொருளில் பயன்படுத்தப்பட்டது. யடநெ என்று பிரெஞ்சிலும், யடநெ நயெனழ என ஸ்பெயினிலும் உளவியல் சார்ந்த சொல்லாக இது புலப்பாடு பெறுகிறது. 19-ஆம் நூற்றாண்டில் ஹெகல், மார்க்ஸ் போன்றோரால் 'சுயமுறிவு' என அர்த்தம் கொள்ளப்படுகிறது."² பிரான் ஜான்சன் குறிப்பிடுகிறார். 18வது அட்சக்கோடு எனும் இந்நாவலில் முதன்மை மாந்தராக இடம்பெறுகிற சந்திரசேகரன், அந்நியமாதல் உணர்வுக்கு ஆட்பட்டு, தன்னைத் தானே அயலவனாகவும், தன்னிலிருந்து முற்றிலும் விடுபட்டவனாகவும் உணர்கிறான். எப்படியெனில்,

தமிழ்நாட்டிலிருந்து, ஆந்திராவிற்கு இரயில்வேயில் வேலைபார்க்கும் தன் தந்தை இடம் பெயர்ந்த காரணத்தால் மொழி, அரசியல், உடை, உணவு, விளையாட்டு, கல்வி, காதல், பொருளாதாரம், ஆன்மீகம் போன்ற பல பின்புலங்களில் ஏற்பட்ட சிக்கலால் இவனுக்குத் தொடர்ந்து வாழ்தல் மீதான சிக்கல் ஏற்படுகிறது.

மொழி

இந்தியா பல்வேறு மொழிபேசுகின்ற மக்கள் நிறைந்த நாடு. நிஜம் அரசு இந்தியாவின் ஒரு பகுதி என்றாலும், உருது பேசுகிற மக்களும் தெலுங்கு பேசுகிற மக்களும் நிறைந்த இடம். ஒருவன் தாய்மொழியில் பேசமுடியாமல் இருப்பதே அந்நியமாதலுக்குக் காரணமாகிவிடும். கிரிக்கெட் விளையாட்டின் போது கேப்டன், “முழுக்க முழுக்க உருதுவில் பேசித் தொலைப்பான். தெரிந்த கொஞ்சம் வார்த்தைகளைக் கொண்டு அவனிடம் ஒரு விசயத்தையும் உடனே புரியும்படி செய்ய முடியாது.”³ மேலும், சட்டைக்காரப் பையன்கள், முஸ்லீம் பையன்கள் இருந்தாலும் “அவர்களோடு எந்த மொழியிலும் பேச முடியாது”⁴. மேலும், ‘பொம்மன், பொம்மன் என்று கத்துவார்கள். அவர்கள் தெரிந்த மொழி பேசாவிட்டால் யாராயிருந்தாலும் அவர்களுக்கு பொம்மன்”⁵ தான். அதுபோல, துலுக்கனைப் ‘பாதிக்காரர்கள்’ எனக் கூறுகிறார்கள். “வேண்டுமென்றே வேண்டுமென்றே தெலுங்கு பேசும் பையன்களிடம், முழுக்க முழுக்கத் தமிழ்ப் பேசி அவர்களைப் பலவித இம்சைகளுக்கு”⁶ உட்படுத்திடும் நிகழ்வும் அரங்கேறி உள்ளது.

சந்திரசேகரன், தன் பள்ளிப் பருவத்திலேயே மொழியினால் ஏற்படுகின்ற சிக்கல் என்ன என்பதைப் புரிந்து கொள்கிறான். “நூற்றுக்கணக்கான தெலுங்கு, துலுக்க மானவர்கள் மத்தியில் அவன் மற்றெல்லாத் தமிழ்ப் பையன்கள் போல திசைதவறிய ஆடு போலத்தான் இருப்பான்.”⁷ தமிழனுக்குத் தமிழ்மொழியில் கருத்துப் பரிமாற்றம் செய்ய முடியவில்லையென்றால், ஆங்கிலம் கைகொடுக்கும். ஆனால், சந்திரசேகரனுக்கோ ஆங்கில அறிவு குறைவு என்று தன்னைத்தானே குறிப்பிடுகின்றான். அவன் சட்டைக்கார நண்பர்களுடன் ஆங்கிலப் படம் பார்க்கச் செல்கிறான். ஆனாலும், அவர்களுடன் அவனால் ஒன்றவே முடியவில்லை. துலுக்கப் பையன்கள் எதற்கெடுத்தாலும் ‘ஸாலா’ (மச்சான்) என்று பேசும்போது, சந்திரசேகரனின் நண்பன் ரங்கராஜனால் தாங்கிக்கொள்ள முடியவில்லை. சந்திரசேகரனுக்கு ஆங்கில இலக்கணம் தெரியவில்லை. ஆங்கில வகுப்பும் பிடிக்கவில்லை. ‘ரெ:பூஜிஸ்’ என்பதற்கு என்ன ஸ்பெல்லிங் என்று யோசித்தாலும் கூட அவனுக்கு ஞாபகம் வரவதில்லை.

இங்ஙனம், தாய்மொழியில் உரையாடல் நிகழ்த்த முடியாமல் போகும் போதுதான் பேணிவளர்க்க

வேண்டிய உறவுமுறை (Nurturing Relationship) தோன்றிட வாய்ப்பு இல்லாமல் போய்விடுகிறது. எனவே, பேச்சைக் குறைத்து தனக்குள் தானே பேசுகிறவனாக, சிந்திக்கிறவனாக மாறுகின்றான். “நம்முடைய முக்கியமான பல அறிவு சார்ந்த, சமூகவியல் சார்ந்த திறமைகளுக்கு ஒன்றுக்கொன்று தொடர்புகொண்டு செயல்படுகின்ற உணர்ச்சிமயமான உறவுகள் அவசியமாகும். மேலும் மனம், உணர்வு அறிவு சார்ந்த வளர்ச்சிக்கு உணர்ச்சிமயமான உறவுகள் மிகவும் முக்கியமானவை”⁸. இதற்கு இடையூறாக வாழுகின்ற இடத்தில், தாம் பயன்படுத்தும் மொழியை அறியாது இருப்பது என்பது அந்நியமாதல் உணர்வுக்கு ஆளாக வித்திட்டு விடுகிறது. அவ்விடத்தில், தொடர்ந்து வாழ்வதில் சிக்கலும் ஏற்படுகிற சூழல் தோன்றுகிறது.

பொதுவாகவே, தமிழர்கள் தாங்கள் வாழும் இடத்தில் ஒரு குட்டித் தமிழகத்தை உருவாக்கி விடுவார்கள். அதுபோல் டெண்ட் சினிமாவில் தமிழ்ப்படம் பார்த்தல், சிகந்திரபாத் ஆர்யபவன் ஹோட்டலில் இட்லி, காபி, வடை சாப்பிடல், ஜோஸ்யம் பார்த்து ஏழரை நாட்டுச்சனி சந்திரசேகரனுக்கு இருப்பதாகக் கூறல், பாட்டுக் கற்றுக் கொள்ளல் என்ற நிலையில், தமிழ்ப் பிராமணக் குடும்பச் சூழலை இப்புதினமானதில் சித்திரிப்பதைக் காணலாம். இதுவே, மொழி சார்ந்த அடையாளங்களாகவும் சித்திரிக்கப்படுகின்றன.

‘Where are you going’ என்று கேட்ட கேள்விக்கு, உடனே பதில் சொல்லாமல் ரீழ்ரளநஇ ரீழ்அந என எதைச் சொல்வது என ஓரிடத்தில் சந்திரசேகரன் தயங்குகிறான். தாய் மொழியில் சிந்திப்பதையே அவன் அதிகமும் விரும்புகிறான். தமிழ்ப்பாட்டுப் பாடக் கற்றுக் கொள்ளும்போது, “எங்கள் ஊர்த் தமிழர்கள் கலையுணர்வைத் தட்டி எழுப்பினார்”⁹ எனும் போது, தமிழர்களின் மொழியுணர்வைப் பாராட்டாமல் இருக்க முடியாது. ஆனால், . சந்திரபாகவதர் ஊரை விட்டுப் போகும்போது, “பால்காரன், மளிகைக்கடை, வீட்டு வாடகை எல்லாம் பாக்கி”¹⁰ வைத்து விட்டு போகிற நிலையைக் காணமுடிகிறது. இதுபோலத் தான் பிற மாநிலத்தில் வாழும் தமிழர்களுள் சிலர், தமிழர்களையே ஏமாற்றி விடுகிறார்கள். தமிழர்கள் நாணயக் குறைவு உடையவர்களாக இருப்பதைப் பிற படைப்பாளிகளின் படைப்புகளிலும் காணலாம்.

கல்வி

சந்திரசேகரன் படிக்கும் பள்ளியில், தமிழ்நாட்டிலிருந்து வந்த சரியான தமிழ்ப்பிரியரைத் தலைமையாசிரியராக நியமித்தார்கள். ஆயிரம் மாணவர்களில் 100 தமிழர்கள் இருந்தார்கள். ஒவ்வொரு வாரமும் ஒரு வகுப்பு ஜனகணமன..... பாடவேண்டும் என்பதையும் எல்லாவற்றிற்கும் மேலாகத் தமிழ்மன்றம் நிறுவப்பட்டதையும் அறியலாம். “இந்தத் தமிழ்மன்றக் கூட்டங்களுக்கு எல்லா மாணவர்களும், அதாவது தெலுங்கு, உருது

மாணவர்கள் கூட வரவேண்டும் என்று உத்தரவிட்டார்.”¹¹ ஆனால், “எங்களுடில் அந்த மாதிரித் தமிழ்ப் பேசி நாங்கள் கேட்டது கிடையாது.....ஜல்திவா.....பேஜாராப் போச்சி.....ஜீதம்”¹² என்று பேசுவது, என்பது சந்திரசேகரனுக்கு ஒருவித மொழியின் மீதான ஏமாற்றத்தை ஏற்படுத்துகிறது. முழுமையாகத் தன்தாய்மொழியில் மனம்விட்டுப் பேசக்கூடிய வாய்ப்பை அவன் இழந்து விடுகிறான்.

பள்ளியில் ‘கடவுள் வாழ்த்துப்’ பாடலைப் பாடி, தமிழ் மாணவனான சந்திரசேகரனை அழைக்கும் போது, அவன் பலரும் வற்புறுத்தியும் தன்னை முற்றிலும் அந்தச் சூழ்நிலையிலிருந்து விடுவித்துக் கொண்டவனாகச் செயல்படுகிறான். “மொழி அல்லது பேச்சு மனஎண்ணங்களை, வாய்வழிச் சொல்லாடலாக மாற்றவே கண்டுபிடிக்கப்பட்டுள்ளது.”¹³ என்பது இங்குப் பொருத்தமாக உள்ளது. நாவலில் சந்திரசேகரனின் உரையாடல் குறைவாக உள்ளது. அவன் பேசுவதைக் காட்டிலும் தொடர் சிந்தனையில் (வுசயடை மூக வாழரபாவன) மூழ்கிச் சுகம் கண்டவன். தான் எங்கு இருக்கிறோம் என்பதை முற்றும் மறந்தவனாக, அடுத்தகட்ட நடவடிக்கையைப் பற்றி யோசிக்காமல் பேதலிக்கிறான். பல நிர்ப்பந்தங்களுக்கு இடையில் மேடை ஏறியவுடன், “ஒவ்வொரு ஜோடிக் கண்ணும் என்னைக் கிழித்துக் குதறிக் கொண்டிருந்தன. கிருஷ்ணசாமியின் கண்கள் விஷத்தைக் கக்கிக் கொண்டிருந்தன..... பல்வந்த சிங் முறைத்து பார்த்த வண்ணம் இருக்கிறான். என்னுடைய இக்கட்டைக் கண்டு பரிதாபமா, என்னுடைய திமர் முக்கியத்துவத்தைக் கண்டு பொறாமையா, நட்பா, எதிர்பார்ப்பா, கேலியா.....”¹⁴ என்று, தொடர்சிந்தனைக்கு ஆளாகித் தவிக்கின்றான். எந்தவித உணர்வும் இல்லாமல் பாடியதாகக் கூறும் சந்திரசேகரன், தன்னைப் பற்றி விமரிசிக்கும் போது, “அன்று முழுக்க நான் ஏதோ பிசாசு அடித்தவன் போல, கண்களைக் கொட்டாமல், பார்வையை எதன் மீதும் நிலைகுத்த முடியாமல் அல்லாடிக் கொண்டிருந்தேன்”¹⁵ எனப் புருங்குகிறான். ‘யூங்’ என்னும் உளவியல் அறிஞர், “சுயம் (Self) ஒன்றுசேரும் போது, சுய நினைவுடன் இருக்கிற தனிமனிதப் பண்பும், நனவுநிலை மனத்தின் தனிமனிதப் பண்பும் இணைந்து, மையமாக இருப்பது எப்போதெனில், சராசரி மனம் (நுபழ) சுயநினைவுடன் இருக்கிற தனிமனிதப் பண்புடையவனின் மையமாக இருக்கும்”¹⁶

மேலும் சந்திரசேகரன், “எவ்வளவு தூரம் மற்றவர்களிடம் தொடர்பு இல்லாமல் இருக்கிறானோ, அவ்வளவுதூரம் தன்னிடமிருந்தும் தொடர்பு இல்லாமல் இருக்கிறான்.”¹⁷ எனவேதான், முதல்வர் அழைத்துப் பெயர் என்ன எனக் கேட்கும்போது, வேறு ஒருவனுடைய பெயரைக் கூறுகிறான். தமிழ் நாடகம் போடவேண்டும் எனும்போது, “எனக்குச் சம்பந்தமே

இல்லாத பேச்சைக் கேட்க வேண்டியிருப்பது போல நின்று கொண்டிருந்தேன்”¹⁸ எனத் தன்னுடைய இயலாமையை வெளிப்படுத்துகிறான்.

அவன் நிஜம் கல்லூரியில் சேர்ந்த போதும், அதே போன்ற மாறாத சூழ்நிலையில், சந்திரசேகரனின் சிந்தையிலும் எந்தவித மாற்றமும் ஏற்படவில்லை. தமிழ்மன்றத் துவக்க விழாவில் பாடிய பாட்டின் மூலமாகச் சந்திரசேகரன் ஒரு புரட்சியாளனாகச் சிலரால் நினைக்கப் பெறுகிறான்.

பேராசிரியரின் விரிவுரை அவன் மூளையில் பதியவில்லை. இருந்தாலும் இறுதியில் கல்லூரிக்குப் போகவேண்டும் என்ற ஏக்கம் அவனுக்குள் வருகிறது. ஆனால், தமிழ் மன்றத்திற்குக் கூட்டமே கல்லூரியில் இருக்காது தமிழ் வித்துவான் தவிர யாருமே அங்கு வரமாட்டார்கள் என்று எண்ணும்போது வெறுமையை உணர்கிறான்.

இத்தகைய சூழ்நிலையில், கல்வி கற்கும் இடம் பல மொழி பேசுபவர்களை ஒன்று சேர்க்கும் இடமாக இல்லாமல், அவனைத் தனிமைப்படுத்துகிற இடமாக மாறுகிறது. நாவலின் தொடக்கத்தில் கல்லூரிக்குப் போனால், துலுக்கன் அடிக்கிறான் என்று சொன்னாயே எனக் கேட்ட தாயின் வார்த்தையை அவன் பொரிதாக எடுத்துக்கொள்ளவில்லை. எனவே, அவன் செல்லுகிற இடமெல்லாம் மூளையில் மந்தநிலை ஏற்படுத்தி, முற்றிலும் அவன் அந்நியமாதல் உணர்வுக்கு ஆட்பட்டவனாக மாறுகிறான்.

காதல்

இளமையான பிராயத்தில் ஓர் இளைஞன் உள்ளத்தில் பெண்களைப் பார்த்தால் பரவசம் ஏற்படுவது என்பது இயல்பு. ஆனால், அந்நியமாதல் உணர்வுக்கு ஆட்பட்டு, தொடர் சிந்தனையால் அவதிப்படுகிற சந்திரசேகரனின், பெண்கள் மீதான மோகம் விநோதமானது. சட்டைக்காரப் பெண் மாரியின் அக்கா, “ஐந்து நிமிஷத்துக்கொருமுறை முத்தம் தருவாள். எனக்கு அவள் குறித்த சங்கடம் கிடையாது.”¹⁹ முஸ்லிம் வீடுகளில், சாக்குத் துணியிலான திரையைத் தாண்டிப் போகக் கூடியவனாகத் திகழ்கிறான். பியாரி பேகம், நாகரத்தினம், குசினப் பறச்சேரி போன்ற பல பெண்களின் அறிமுகம் கிடைக்கிறது. தான் பயிலுகிற பள்ளியில், பெண்களின் நாடகத்தைப் பார்த்திடும் போது “பயம், கூச்சம், எதிர்பார்த்தல், திருட்டுத்தனம், வெட்கம், மகிழ்ச்சி, கிளர்ச்சி, ஆவல் எல்லாம் ஏதோ விசித்திரக் கலவையில் அவனை நிலைகொள்ளாமல் செய்தன.”²⁰ பருவ வயதிற்சூரிய கிளர்ச்சியானது தோன்றாமல், பல்வித உணர்ச்சிகளுக்கும் ஆளாகி வருந்துகிறான். “காலைத் தரையில் உதைத்துக் கொண்டான்”²¹ எனும்போது, பெண்கள் அவனுடைய எண்ணங்களுடன் புருந்து துன்பப்படுத்துவதாக எண்ணி வருந்துகிறான். தன் மனதிற்சூன் சென்று ஆட்டிப் படைக்கும் பெண்களாகவே அவர்களை எண்ணுகின்றான். இங்ஙனம் தான் நினைப்பதை யாரும் அறியவில்லை என்றே தீர்மானமாகச் சிந்திப்பதைத் தவிர்க்க முடியாதவனாக இருக்கிறான்.

சந்திரசேகரன் ஆங்கிலத் திரைப்படத்தைப் பார்க்கும்போது, அதில் வரும் நடிக்க, 'என்னைப் பிடிக்கிறதா உனக்கு' எனத் திரையை விட்டு, அவனிடம் வந்து கேட்பது போல் உணர்ந்து, 'நீ பேசுவது எனக்குப் புரியவில்லை' என ஆங்கிலத்தில் பதில் சொல்லத் தெரியாமல் திகைக்கிறான். நீச்சல் உடையில் இருந்த அவருடன், அவன் நீச்சல் குளத்தில் இறங்கியதாகக் கண்ட கனவு, வெட்கத்தையூட்டியதோடு பயமாகவும் இருப்பதாக உணர்கிறான். கனவு ஏற்படுத்தும் கூச்சம், வாலியப் பையனாகிய சந்திரசேகரனை இறுக்குகிறது. மனப்பிரமைக்கு ஆளாகிப் போன நிலையில், இரவில் ஊர் அடங்கி இருக்கும் வேளையில், லாராவை அனைத்து மகிழ்கிறான். அதுவும் நீண்ட நேரமல்ல அவள் அக்காவையும் தழுவிக்கொள்ளும் வாய்ப்பு ஏற்படும் போதும் அவனுக்குப் பயம்தான் தொற்றிக் கொள்கிறது. "பெண்கள் தொல்லை. தொல்லை தெரிகிறது. ஆனால் பெண்கள் பற்றித் தொடர்ந்து மூளை வேலைசெய்ய மாட்டேனென்கிறது ஒழுங்காக ஒரு முகமும் நினைத்துப் பார்க்க முடியவில்லை."²¹ இங்கு, இயல்பாக எழ வேண்டிய காதலும் கூட அவனை அச்சுறுத்தும் ஒன்றாக மாறிவிடுகிறது. நாகரத்தினம் ஊரைவிட்டுப் போகும்போது, "இனிமேல் எனக்குப் பெண்களே அவசியம் இல்லை..... இனிமேல் எனக்குப் பெண்கள் எந்தக் கிளர்ச்சியும் ஏற்படுத்த மாட்டார்கள்"²² என்பதே அவனுடைய தொடர்சிந்தனையில் அவ்வப்போது திடீர் திடீரென்று மாற்றம் ஏற்படுவதைக் காண முடிகிறது.

இந்நாவலின் இறுதியில், தூக்கம் கொள்ளாமல் வெளியே செல்லும்போது ஏற்பட்ட கலவரத்தில், இவனைத் தவறாகப் புரிந்து கொண்டு, இவனிடமிருந்து தன்னைக் காப்பாற்றிக் கொள்ள, ஒரு பெண் தன் பைஜாமா நாடாவை அவிழ்த்து விட்டு நிர்வாணமாகத் தோன்றும் போது, அவனுக்குள் காம உணர்வு தோன்றவில்லை ஐயோ எனக் கத்தி வாந்திவருவது போல் உணர்கிறான். இங்ஙனம், காதல் என்று எந்தப் பெண்களிடமும் இல்லாமல், அந்நியமாதல் உணர்வுக்கு ஆளானதால் மனப்பிரமைக்கும் (paranoid), பயவுணர்வுக்கும் (phobia) ஆளாகிச் சிரமப்படுகிறான். காதல் என்பது இவனுக்குக் கிளர்ச்சிவூட்டுவதாக இல்லை. ஆனால், அதையும் மீறி அவனுக்கு அச்சத்தைத் தருவதாகவே உணர்கிறான்.

விளையாட்டு

பலரையும் பிரிவினை உணர்விலிருந்து விடுவித்துக் குதூகலம் தருமிடமாக விளங்குவது விளையாட்டு என்பதுதான். ஆனால், சந்திரசேகரன் விளையாடும்போது மொழி, சமய வேறுபாட்டினால் பழிவாங்கப்படுகிறான். இவை சொந்த நாட்டில் இருந்தாலும் நேரிடக் கூடியதே. பல்வேறு இனத்தவரும் வசிக்குமிடமாக இந்தியா இருக்கும்போது, இதுபோன்ற சிக்கல்கள் நேரிடுவது

இயல்பு. துலுக்க, சட்டைகாரப் பையன்களுடன் போலி விளையாடுகிறான். கல்லூரி கிரிக்கெட் குழுவில் இருக்கிறான். விளையாட்டில் ஏற்பட்ட மோதலால் "தெருவில் விருவிரென்று நடந்தேன். எப்போதும் ஒரு உஷார் நிலையில் இருந்தேன்"²³ என, சாதாரணமான ஒன்றைக்கூட மிகப்பெரிய சிக்கலாக உருவகப்படுத்துகிறான். கிருஷ்ணசாமி சகோதரர்கள் தனக்கு இழைத்த துரோகத்திற்குப் பழிவாங்க சதித்திட்டம் தீட்டுகிறான். கற்பனையில் அவர்களை ஒவ்வொருவராக ரயிலில் கடத்தி, பம்பாய்க் கப்பலில் ஏற்றித் தென்னாப்பிரிக்காவுக்கு அனுப்புவதாகவும், செத்தால் எப்படி பைசல் செய்வது, ஆங்கில நாவலில் வருவது போல உடனடியாகத் தண்டிக்காமல் 20, 30 ஆண்டுகள் கழித்து, வஞ்சம் தீர்த்துக் கொள்வது எனத் தன்னை என்றும் ஒரு பீதியில் ஆழ்த்திய அவர்களைக் கற்பனையில் பழிவாங்குவது போல, சாகச உலகில் வாழ்ந்தும் வருகிறான்.

கிரிக்கெட் ஒன்றுதான் நண்பர்கள் இருவரை இணைக்கும் சங்கிலி என உணர்ந்தாலும் ஒருவிதமான கோபவுணர்வுடனே திரிகிறான். நண்பர்களுடன் சேர்ந்து விளையாடுவதில் மகிழ்ச்சிக்குப் பதிலாக, வேண்டுமென்றே தங்கனிடம் வம்பு இழுப்பதாக எண்ணி, விளையாட்டாகச் சீட்டினாலும், அதனைப் பெரியளவில் மனத்திற்குள் கொண்டுபோய், அதையே நினைத்துக் குழம்பிப் போய்விடுகிறான். சட்டைக்காரப் பெண்களுடன் மொனப்பலி ஆட்டம் ஆடுகிறான். தெலுங்குப் பையன்களுடன் கேரம்போட்டு, பாட்மிண்டன் விளையாடுகிறான். இத்துடன், மரக்குரங்கு ஆட்டம், சவாபர் கோலி ஆட்டம், முஸ்லீம் பையன்களுடனான ஹாக்கி ஆடுகிறான்.

இவ்வாறு, விளையாட்டில் கூட வஞ்சம் தீர்த்துக் கொள்கிற பாங்கினைக் காணலாம். இந்து-முஸ்லீம் என்கிற பிரிவினைவாத உணர்வு இலைமறை காயாக வெளிப்படுவதை இதன்வழி அறியமுடிகிறது. முஸ்லிம்கள் விளையாடும் போது, வேண்டுமென்றே ஹாக்கிப் பந்தைத் தமிழர்கள் விளையாடுகிற பக்கமே அடித்ததால், சந்திரசேகரன் நண்பன் பத்பநாபன் தங்கள் பக்கம் விழுந்த பந்தை வேறு திசையில் தூக்கி எறிந்துவிடுகிறான். முஸ்லீம்கள் கோபம் கொண்டு பத்பநாபன் மண்டையில் அடித்து ரத்தக் காயம் வரும்படி செய்துவிட்டனர். மேலும், கிரிக்கெட் விளையாட்டில் எப்பொழுது விளையாடினாலும் அதற்குள் ஓர் அரசியல் இருப்பதாக எண்ணி, நண்பர்கள் இல்லாத வட்டத்திற்குள் சென்றும் திணறுகிறான். இரு கோஷ்டியாகக் கிரிக்கெட் ஆடி தாங்கள் வெற்றி பெற்றாலும், தோற்றதாகக் கூறி எழுதி வாங்கி, அநீதி செய்வதை அறிந்து பேசாமலே இருந்துவிடுகிறான். இதில் எந்தவித எதிர்ப்பு உணர்வையும் காட்டாமல் போட்டியில் அவர்கள் வென்றதாக எழுதிக் கொடுத்தும் விடுகிறான்.

எனவே, மனம் நொந்த சந்திரசேகரன் கல்லூரியில் நாஸிர் அலிகான் எனும் கிரிக்கெட்

கேப்டன், “என்னை ஒருவனையே மணிக்கணக்கில், இந்தக் கூண்டில் கிரிக்கெட் ஆட்டத்தின் சகல இழிவுகளுக்கும் உட்படுத்தித் தீர்த்த பிறகுதான் விடுவானா? என்ன ஆணவம்டா எங்கனோடு சமதை கொண்டாடிக் கொண்டு ஆடவருகிறாய் என்று சொல்லிக்காட்டாமல், செய்கையில் காட்டுகிறனர்..... கேலி செய்கிறானா?..... பகிரங்க அவமானம் செய்கிறானா.....”²⁴ என்று கூறி இறுதியில் இனி விளையாடப்போவதில்லை என முடிவு எடுக்கிறான்.

எதுவுமே தற்செயலாக நடப்பதாக அந்நியப்பட்டுப் போன ஒருவனுக்குத் தோன்றவே தோன்றாது, வேண்டுமென்றே திட்டமிட்டுச் செய்வதாக, முன்கூட்டியே தீர்மானித்துக் கொள்கிறான். இந்தியாவின் எந்த மூளையில் இருந்தாலும் இத்தகைய சூழல் வருவது இயல்பு. ஆனால், நடுராத்திரியில் கிரிக்கெட் ஆடுகிற நினைவால், ஆரமத்தடியில் தனியாக நிற்கும்போது அவனுக்குப் பயவுணர்வு தோன்றுகிறது. இப்படி மகிழ்ச்சி, கலகலப்பு, சிரிப்பு என்று ஏதும்ல்லாமல் எப்போதுமே ஒருவிதத் திகிலுடன் நாட்களைக் கழிக்கிறான். ஊர்க்கலவரத்தால் “கிரிக்கெட் விளையாடுவதெல்லாம் மறந்துபோய் எவ்வளவோ நாட்களாகி விட்டது. ஆடுவதற்கு இப்போது பையன்கள் கிடையாது. ஒன்று ஊரைவிட்டுப் போய்விட்டார்கள். அல்லது வெளியே விளையாட உற்சாகமும், பெரியோர் அனுமதியும் கிடையாது”²⁵ இதனால் விளையாட்டு நட்பு, புரிந்து கொள்ளல், மகிழ்ச்சி என்பது மாறி எப்போதுமே ஒருவித அச்சத்தை ஏற்படுத்துவதாகவே உள்ளது என்பதே தெளிவு. ஒற்றுமை, ஒருமைப்பாட்டு உணர்வைத் தரக்கூடிய விளையாட்டு பேதத்தையும் பிரிவினையைத் தூண்டக் கூடிய ஒன்றாக மாறிவிடுகிறது.

உடை

இந்தியாவில் தாங்கள் சார்ந்துள்ள சாதி, மதம் சார்ந்த உடைகள் அணிவது உண்டு. “ஒரே மாதிரி டை காலர், சர்ட், நிஜார் அணிவதிலிருந்து ஜாதியை ஒரு மாதிரி நிர்ணயிக்கலாம். ஹிந்தி முஸ்லிம் பையன்கள், நிஜார் அல்லது பைஜாமா பாண்ட் மீது சட்டையைத் தொங்கவிட்டு கொள்வார்கள். சட்டைக்காரப் பையன்கள் சட்டையை இடுப்பில் நிஜார் அல்லது பாண்டுக்குள்ளேயே செருகிக் கொள்வார்கள்.....குடியேறிய தமிழர்கள்.....முழுக்கைச் சட்டை, சட்டையை உள்ளே செருக்கிக்கொண்டு, கச்சம் வைத்த வேஷ்டி, கோட், தலைக்கு மணி, அப்பரானாலும், ராகவாச்சாரியானாலும், கோவிந்தசாமி நாயுடுவானாலும், விளாகபணிமுதலியரானாலும் தமிழ்நாட்டிலிருந்து அங்கு சென்றிருந்தவரானால், தொப்பி ஒன்று கட்டாயம் இருக்கும். வக்கில்கள், கல்லூரிப் பேராசிரியர்கள் தலைப்பாகை கட்டிக் கொள்வார்கள்”²⁶ புஷ்கோட்டு அணிந்துவரும் இளைஞர்களும் உண்டு. இங்ஙனம், அக்காலத்தில்

ஆடையே சாதியம் சார்ந்ததாக இருப்பது தெரியவருகிறது.

ஹைதராபத்திலுள்ள கல்லூரி மாணவர்களின் ஊர்வலத்தில் பங்கு கொண்டவர்கள், தங்கள் வேற்றுமையை வெளிகாட்ட, ஒருவித ஒற்றுமையுடன் இருப்பதைத் தங்கள் ஆடைகள் மூலமே வெளிப்படுத்துகின்றனர். “மாணவர்கள் கல்லூரியை விட்டு வெளியேறும் போது, கலீடாஸ் கோப்பில் வண்ணங்கள் பிரிந்து மறுசேர்க்கை செய்து கொள்வது போலச் சில நிகழ்கின்றன. ஷேர்வானியெல்லாம் சிதறி இருந்தது சேர்ந்து கொள்கின்றன. சட்டை கோட் பைஜாமாவெல்லாம் வேறு மூலையில் சேர்ந்து கொள்கின்றன.”²⁷ தங்கள் உடையிலே பிரிவினையை வெளிப்படுத்திய தருணங்களிலும் சந்திரசேகரன் மலைபோல் இருக்கும் பெரிய சிக்கலில், தான் ஒரு புள்ளி. தான் என்ன செய்ய முடியும் என அறிந்து, கூட்டத்தினரோடு போகும்போது, பரிச்சயமில்லாத பல முகங்களைக் கண்டு, வேறு தேசத்துக்கு வந்தது போல் அஞ்சுகிறான்.

கலாச்சாரத்தை வெளிப்படுத்தும் பாண்ட் போன்ற பைஜாமா தைத்து மாட்டிக்கொண்டு, .புல் ஓபன் ஷர்ட் உடையைத் தானும் தைத்து, தன்னை ஜின்னாவாக நினைத்துக் கொள்வதாகக் கூறுகிறான். இதிலிருந்து வேறுபாடுகள் நிறைந்த பண்பாட்டின் அம்சங்களைப் புரிந்து, அனுசரித்துப் போகிறான் என்பதும் தெளிவாகிறது.

உணவு

இந்தியா சுதந்திரம் பெற்று, யுத்தம் முடிந்து 2 வருடங்கள் ஆனாலும்கூட, நிஜாம் சமஸ்தானத்தில் பலரும் வந்து குடியேறுகிறார்கள். மீண்டும் போகிறார்கள். இந்நிலையில் உணவுப் பொருட்கள் கிடைக்கச் சிரமம் ஏற்படுகிறது. மழை இல்லாமல் ஒருபுறம் வறட்சியும் நிலவுகிறது.

பிராமணக் குடும்பமாக இருந்தாலும் தாங்களே பசுமாட்டிற்குப் பதிலாக, எருமை மாடு வாங்கி, தாங்களே பால் கறந்து, சாணியை எடுத்துப்போட்டு, எல்லா வேலையும் செய்து காபி குடிக்கிறார்கள்.

ஓரிடத்தில் சந்திரசேகரன் தென்னிந்திய இட்லி, காபி, வடை சாப்பிட விரும்புகிறான். ஆனால், அதற்குள் பாழாய்ப்போன தொடர்சிந்தனை வருகிறது. அப்படியே மறந்து விடுகிறான். “இப்போ தேசத்திலே எங்கேயுமே பஞ்சமாத்தான் இருக்காம்”²⁸ என்பதைச் சந்திரசேகரனும் புரிந்துகொண்டு சோள ரொட்டியையும், கீரையையும், சீத்தாப்பழமும், கத்தரிக்காய்க் கூட்டு, சாப்பிடுகிறான். ரேசன் அரிசியும் சர்க்கரையும் இல்லை. இருந்தாலும் தன் தாய்க்கு உதவியாக மிளகாய்ப் பொடி இடித்துக் கொடுத்தல், மாட்டைக் கட்ட, உணவு கொடுக்க, புல் வாங்க அலைதல் போன்ற, எல்லா வேலைகளையும் செய்கிறான். குடும்பத்தில் அவனைப் பொருத்தவரை உணவுக்கான தேவை இருப்பினும், அதைப் பொருட்படுத்தாமல் இயல்பாகவே எடுத்துக்கொள்கிறான்.

வேலை

பத்மநாபன் கிரிக்கெட் விளையாடும் போது அவன் தலையில் முஸ்லீம் ஒருவன் அடித்தபோது, அவன் அப்பா பெரிய அதிகாரியாக இருந்தாலும், முஸ்லீம்களைப் பகைக்க முடியாது என அறிந்து, சந்திரசேகரன் எதிர்பார்த்த எந்தவித எதிர்ப்பையும் அவர் காட்டாமலேயே இருந்து விடுகிறார்.

சந்திரசேகரனின் அப்பாவுடைய அலுவலகத்தில் ஏகப்பட்ட சிக்கல். மேலதிகாரியாக ஒரு முஸ்லீமை நியமிக்கிறார்கள். இன்னும் பம்பாய், பாட்னாவிலிருந்து வந்த அவர்கள் உருது பேசுகிறார்கள். ஆங்கிலம் தெரியவில்லை. முன்பு ரயில்வே தனி ராஜ்யமாக இருந்தது இப்போது அதிலும் பல வித்தியாசமான உருது பேசுகிற முஸ்லீம்கள் வேலைக்கு அமர்த்தப்படுகிறார்கள். “எது என்னது என்று குறிப்பாகச் சொல்ல முடியவில்லை. ஆனால் பயந்து கொண்டிருந்தார்”²⁹ மேலும், கைத்தடி கொண்டு நடக்கும் போது, காவல்காரன் அதைப் பிடுங்கி, பயங்கர ஆயுதம் எனக் கூறி, அவரை மிரட்டி அனுப்புகிறான். “அப்பா இப்போது அதிகம் வெளியே போவதில்லை. வீட்டில் யாருமே அதிகம் வெளியே போவதில்லை. இங்கே ஊரிலேயே யாரும் அதிகம் வெளியே போவதில்லை”³⁰ அரசாங்க உத்தியோகம் செய்பவர்கள் என்றாலும் முஸ்லீம் அல்லாதார்கள் சிரமப்படுகின்றனர்.

ரயில்வே குவார்ட்ஸில் காசிம் தங்கள் வீட்டுக்குத் தண்ணீர் சரியாக வரவில்லை. என்பதற்காக, எந்தவித முன்னறிவுப்பு இன்றி சந்திரசேகரனின் வீட்டிற்குள் நுழைந்து, “இது என்ன உன் சொந்த ஜாகீர் என்று நினைத்தாயா? இங்கே ரயில்வே குவார்ட்ஸில் எப்படி மாடு வைத்துக் கொள்வாய்? இதையே ரிப்போட் பண்ணி, இரண்டு நாட்களில் சட்டி பாணையெல்லாம் இங்கேயிருந்து தூக்கி எறியச் செய்வேன்.”³¹ எனும்போது, தன்னுடைய உத்தியோக அதிகாரத்தைக் காட்டாமல், முஸ்லீம்கள் அரசியல் அதிகாரம் உடையவர்களாக இருப்பதை உணர்ந்து, அவனும் நியாயமாகத்தான் சொல்கிறான் ஏன் குழாயை எப்போதும் திறந்து வைத்து இருக்கிறீர்கள் என்று அவர், தங்களது குறையாக அதனை எண்ணி சமாளிக்கிறார்.

அலுவலகத்தில் சாதிய அரசியல் நிலவுவதை, வீட்டில் வைத்து நல்லகுட்டா சையது பேசுகிறபோது, “ஒரே ரெட்டிகளும் நாயுடுகளுமாச் சேர்ந்து உள்ளே நுழைய முடியாதபடி பண்ணாங்களாம்.....மாயவரத்திலேயும் கடலூரிலேயும் இருந்தா என்னை இந்த வயசிலே எவனாவது மதிப்பான.....வேலைக்கு என்னடா குறைச்சல்? மெட்ராஸ்காரன் மாதிரியா? இந்த நாட்டிலே வரவங்களுக்கெல்லாம் வேலை இருக்கே”³² என்கிறார். மேலும், அவசரநிலைப் பிரகடனம் படுத்தப்படும் போதும், சந்திரசேகரனின் அப்பா அலுவலகத்திற்குச் செல்ல வேண்டிய நிர்ப்பந்தம் ஏற்படுகிறது. மேலும், சையது குழாயடிச் சிக்கலைப் பற்றிப் பேசும் போது சந்திரசேகரனின் அப்பா, தன் பேச்சைமாற்றிப்

பேசுகிறார். தன் அப்பாவின் அப்பாவித்தனத்தையும், இயலாமையையும் சந்திரசேகரன் புரிந்து கொள்கிறான். இரயில்வே வேலையை வைத்து பாலில் சினிமா பார்ப்பது, ஊரைச் சுற்றுவது போன்ற பல சலுகைகளை அனுபவிக்கிறார்கள். ஆனால், நிஜம் அரசின் சார்பில் இயங்கும் சுங்கப் பரிசோதகரைக் கண்டால் வயிற்றைக் கலக்குவது போல உணர்வு தோன்றுகிறது. வாங்கிக் கொண்டு வந்த பொருட்களைச் சோதித்துவிட்டு, ஒரு சீப்பு வாழைப்பழம், மாம்பழம் இவற்றை எடுத்துக் கொண்டு சென்று விடுவார்களாம். மேலும், எவ்வப்போதெல்லாம் வெளியூர் சென்று திரும்பும்போது, எல்லாப் பொருட்களையும் நிஜம் சமஸ்தானத்திற்குள்ளேயே வாங்கினதாகச் சொல்ல வேண்டுமாம்.

இங்ஙனம், வேலை பார்க்கும் இடமும் தன் தந்தைக்குச் சோர்வைத் தருவதாகவே சந்திரசேகரனுக்குத் தோன்றுகிறது. “அப்பாவும் சங்கடப்படுவது போலத்தான் இருந்தது. அப்பாவைப் புரிந்து கொள்ள முடியவில்லை. இந்த இரண்டு மாதத்தில் அப்பா எண்ணிப் பத்து வார்த்தைகளுக்கு மேல் பேசியிருக்கமாட்டார். இன்றைக்குக் கூட இரண்டு வார்த்தைக்கு மேல் பேசவில்லை.”³³ இச்சூழலில் எதிர்க்கலாச்சாரத்தைச் சாராமல் அமைதியாகவே இருக்கவேண்டிய நிர்ப்பந்தம் அவனுக்கு ஏற்படுகிறது.

சமயம்

இந்நாவலைப் பொறுத்தவரை இந்து-முஸ்லீம் பிரச்சினைத் தீவிரமாக இருந்தாலும் கோயில்களை இடிப்பது, கொள்ளையடிப்பது போன்ற செயலில் ஈடுபடவில்லை. ஆத்தமார்த்தமாக இறைவனை வழிபட்டு, அமைதியான சூழல் ஏற்படும் என்ற நம்பிக்கையிழந்த நிலையைக் காணலாம். சந்திரசேகரன் வீட்டில் சுலோகம் சொல்வது, சடங்கு செய்வது போன்ற குறிப்புகள் இல்லை. ஊர்ச்சூழலில் ஏற்பட்ட விரக்தியே கூட இதற்குக் காரணமாக இருக்கலாம். ஆனால், சமயரீதியான வேற்றுமை இருந்தாலும் “கோயிலில் கும்பல் மிகவும் குறைவாகத்தான் இருந்தது. அதன் பக்கத்தில் மகுதி. அதனால், எல்லா நாட்களிலும் கோயிலில் ஜாக்கிரதையாகத்தான் இருப்பார்கள். பெரிதாக மணி அடிக்கமாட்டார்கள். பாடுவதோ, வாத்தியம் வாசிப்பதோ கிடையாது. இப்போது ஜாக்கிரதையுணர்வு இன்னும் அதிகமாக இருந்தது. மிக அந்தரங்கமாக ஏதோ சொல்லுவது போலப் பிள்ளையாருக்கு அஷ்டோத்திரம் கூறப்பட்டது.”³⁴ ஆன்மீகப் பிடிப்போ, வேற்றுமையுணர்வோ இல்லாமல், நடக்கிற நிகழ்வுகளை உன்னிப்பாகக் கவனித்து, தன்னால் ஒன்றும் செய்யமுடியாத நிலையை உணர்ந்து, அமைதியாக இருக்கிறான். எந்தவொரு சிக்கலும் தன் கட்டுக்குள் இருக்கும்போது சரி செய்யலாம். ஆனால், கட்டுக்கு மீறியதை ஒன்றும் செய்யமுடியாது என்பதில், அசைக்க முடியாத நம்பிக்கை வைக்கிறான். தங்களது பக்தியுணர்வைச் சுதந்திரமாக வெளிப்படுத்துவதில் உள்ள சிக்கல் பிரமிப்பை ஏற்படுத்துகிறது.

அரசியல்

பொதுவாக, சமயம், கல்வி, மொழி, அரசியல், பொருளாதாரம், சமூகம் இவற்றுள் ஏதாவது ஒன்றில் தாக்கம் ஏற்பட்டாலும், ஒன்று மற்றொன்றைத் தாக்கும். இச்சூழலை இப்புதினத்தின் கதை விரிவாகத் தெரிவிக்கிறது. சந்திரசேகரனை முழுக்க முழுக்க ஹைதராபாத், செகந்தரபாத் மற்றும் இந்தியா முழுமையிலும் ஏற்பட்ட அரசியல் தாக்கமானது பெரிதும் தாக்கத்தை ஏற்படுத்துகிறது.

தாம் வசிக்கும் இடத்தில் இராணுவப்பயிற்சி நடைபெறுவதைப் பார்க்கும்போது, சந்திரசேகரனுக்கு அடிவயிற்றில் கலக்கம் ஏற்படுகிறது. திடீரென்று எங்கும் பார்த்திராத முகங்கள் அவனுக்கு அந்நியமாதல் உணர்வையே ஏற்படுத்துகின்றன. நிரந்தரமான பக்கத்து வீட்டார்கள், நிரந்தரமான தெருமக்கள் எனும்போது, தொடர்ந்து வாழ்தலுக்கான விருப்பத்தை ஏற்படுத்தும். ஆனால், திடீரென்று தங்குகிறார்கள், ஊரைவிட்டு கூட்டமாகக் காலி செய்கிறார்கள். நிரந்தர நண்பர்கள் என்றும் யாருமில்லை. இந்நிலையில் அரசியல் காட்சிகள் நாளுக்கு நாள் மாறிக்கொண்டே போகின்றன. எனவேதான், “வேற்றுமொழி ஊரில் தனித்தனியாக இருப்பது எனக்குப் பழக்கமாகிப் போய்விட்டது.”³⁵ என்று கூறிய சந்திரசேகரன், நரஸிம்ஹராம் என்ற போலி மனிதனை இனம் காணத் தெரியாமல் ஏமாறுகிறான். துலுக்கனுடன் விளையாடக்கூடாது என்பதற்குக் காரணமாக, ராஜாக்கர் சைக்கிளுக்கு லைட் போடவில்லை. தெருத் தெருவாக, கத்தி கபடா தூக்கி அலைகிறார்கள். அவர்களைப்

பிடிக்காததற்குக் காரணம் “இங்கே போலிஸ்காரங்கல்லாம் யாருடா? ஒருத்தன் பாக்கியில்லாமே முஸ்லீம் தானே?”³⁶ இத்தகைய அரசியல் பேசுபவன் வீட்டில், பாதி உருது பாஷை பேசுகிறவன். தெலுங்கு முகமுடையவன் ஆந்திராக்காரன் என்றால் கோபம் வரும். தெலுங்குக்காரன் எனக் கூப்பிட விரும்புகிறான். இறுதியில், இதே நரசிம்ஹராம் ‘ஜாயின் இந்தியன் யூனியன் டே’ இல் சேர, இரத்தக் கையெழுத்து வாங்கிவிட்டு, சந்திரசேகரனைக் கல்லூரிக்குப் போகவிடாது ஆக்கிவிட்டு மறைந்து கொள்கிறான். அரசியலில் இத்தகைய போலிமுகங்கள் காணப்படுவது இயற்கை. ஆனால், இளைஞர்களைச் சரியாக வழிநடத்திச் செல்ல தலைமை இல்லை என்பது ஒரு பெரிய குறையே.

போலீஸ் தடியடி, ஊர்வலங்கள், கைது இதன் தொடர்ச்சியாகப் பள்ளிக்கூடங்களுக்குப் பையன்கள் போகவில்லை. முஸ்லீமின் மாவரைக்கும் ஒரு மிஷினை அடித்தால், மூன்று இந்துக்களின் தையல் கடையைத் தவிடுபொடியாக்குகிறார்கள். இத்தகைய பதட்டமான நிலை தொடர்ந்து இருப்பதினாலே சந்திரசேகரன், “அந்நியமாதல் உணர்வினால் ஆட்பட்டு, தன்னைத்தானே அயலவனாக எண்ணுகிறான். தன்னிலிருந்து முற்றிலும் விடுபட்டவனாகிறான். அவனுடைய உலகத்தின் மையமாகத் தன்னைத்தானே எண்ணாமல், அவன்

நடத்தைகளுக்கெல்லாம் தன்னை ஒரு மையமாக எண்ணுகிறான்”³⁷ இந்நிலையில், பொம்மன் என்று கூறி, அவனை அடிக்கும்போது வலியில் துடித்தாலும் எதிர்ப்பைக் காட்டவில்லை. ஏனெனில், இந்துக்கள் வருவதைப் பார்த்ததும் கலவரக்காரர்கள் ஓடி விகிறார்கள்.

கீழ்ச்சாதியினரான குசினிப் பற்ச்சேரி, மொழி, இருப்பிடம், வேலை, உணவு, அத்துடன் அவர்கள் பேசும் தமிழ் என முழுக்க வேறுபாடு உடையதாக இருப்பதை எண்ணி அருவருப்பு அடையவில்லை. ஆனால், சினிமா அரசியலைப் புரிந்து கொள்கிறான். “தெலுங்கு சினிமா ‘கொல்லபாமா’. இதில்தான் அஞ்சலிதேவி முதன் முதலாக நடித்து நாட்டியமாடித் தெலுங்குப் பிரதேசத்தையும், அதற்குப் பின் தமிழ்நாட்டையும் ஒரு கலக்குக் கலக்கினாள்.”³⁸ தேசியஒருப்பாட்டைப் பறைசாற்றுகிற ஒரே துறை திரைப்படத்துறை. இதில் மொழியரசியல் இல்லாத நிலையைக் கண்டு ஆச்சரியப்படுகிறான்.

வீட்டின் ஒட்டடையைப் பார்த்துப் பயப்படுகிற சந்திரசேகரன், நடுநிசி வேளையில் ஊரைச் சுற்றிப் பார்க்கிறான். “அந்நியமாகிப் போனவன் தன்னிடமிருந்து முற்றிலும் விடுபட்டு, மெதுவாக மற்றவர்களிடமிருந்தும் விடுபட்டுப் போகிறான்.”³⁹ அன்றாட வாழ்க்கைச் சுழற்சியிலிருந்து தன்னைத் துண்டித்துக் கொண்டு, யாரும் புழங்காத நடுநிசியைத் தேர்வு செய்கிறான். தான் வெளியே சுற்றியது என்பதுதான் மன அழுத்தத்தைக் குறைத்திருப்பதாகக் கூறுகிறான். மேலும், நிலையான நண்பர்கள் இல்லாததால் மருண்டு போன சந்திரசேகரன், தொடர்சிந்தனைக்கு ஆட்பட்டு, சுகம் காணுகின்றான். இந்தியத் தலைவர்கள், மூவர்ணக்கொடி, டி.கே.பட்டம்மாள், சுதந்திரப்பாட்டு, ஜாயின் இந்தியன் யூனியன் டே, போலிஸ்காரர்களின் கலக்கம், ராஜாக்கர், ரெப்பூஜிஸ் போன்ற நிகழ்வுகள் எல்லாம் அவனது விழி வழியாகவே அவனது தொடர்சிந்தனை மூலம் அரசியல் சாட்சிக்களாகப் பதிவு செய்யப்படுகின்றன.

அவனுடைய அரசியல் பிரவேசத்தில் எந்தவிதமான தீவிர உணர்ச்சியுமில்லை. அவன், தான் வாழுகின்ற காலத்து அரசியல் சூழ்நிலையில், அதிகமாக ஒன்றியே போகவில்லை. அரசியல் சூழ்நிலைக்கு ஏற்ப தன்னைத் தாரை வார்த்துக் கொடுக்கவும் இல்லை. “உலகப் போர்கள் பொதுவுடைமைக் கோட்பாள்களின் கற்பனை, அரசியல் அமைப்பின் தோல்வி, அணுஆயுதத் தயாரிப்பு, வேதியியல் மற்றும் உயிரியல் ஆயுதங்களால் திடீரென்று ஏற்பட்ட விபத்தின் முடிவாகும். இவைகள் அவர்களுடைய சொந்த மதிப்புகளை மானுடத்தின் நம்பிக்கையைச் சிதறும்படிச் செய்து, தொடர்ந்து வாழ்தல் என்பதிலான சிக்கல்களைத் தோன்றும்படிச் செய்கின்றன.”⁴⁰

சந்திரசேகரன் ஒரு சூழலில் ஹைதராபாத் பிரதேசக் காங்கிரஸ் தலைவரைச் சந்திக்கிறான். அவர் துண்டுபிரச்சுரத்தை அவனுக்குக்

கொடுக்கின்றார். சத்தியாக்கிரகம் பண்ணப் போவதாகத் தன் ஆசிரியரிடம் கூறும்போது மிரட்டப்படுகிறான். இவற்றின் வழி அரசியல் களத்தில் குதிக்கும் எழுச்சிமிக்க, உணர்ச்சி மிக்க இளைஞனாக இவனைக் காணமுடியவில்லை. ஆனால், மிகப்பெரிய அரசியல் கடலில் துரும்பாக மந்த நிலையில், பீதியும், பயமும் நிறைந்தவனாகவே அடையாளங் காட்டப்படுகிறான். காந்தி இறந்தவுடன் அவனுடைய ஒட்டுமொத்தமான இயலாமை, பிறரிடம் பகிர்ந்து கொள்ள முடியாமை எல்லாம் இணைந்து, 'காந்தி' என்று கத்தி, சம்பந்தமில்லாமல் தறிகெட்டு ஓடுகின்றான்; தரையைக் குத்துகிறான்; வெறியில் ஓடுகின்றான்; ஒலிகளை எழுப்புகின்றான்; உடை கிழிந்த நிலையில் கீழேயும் விழுகின்றான்; வெறி தணியவில்லை. யாரோ மோசம் செய்து விட்ட உணர்ச்சியானது கோபமாக, துக்கமாக வெளிவர விம்மி அழுகின்றான்.

விடுகளில் வெளிச்சம் இல்லை. ரேடியோ, செய்தித் தாள்களில் முழுவதும் அறிந்து கொள்ளமுடியவில்லை. பதட்டமான சூழ்நிலையில் தினசரித்தாள் வாங்கி, காந்தியின் இறப்பை ஊர்ஜிதம் செய்து கொள்கிறான். இரத்தம் சூடேறிய நிலையில் 10 அல்லது 100 முஸ்லீம்களைக் கொல்ல எண்ணுகிறான். எல்லாமே அவனது நினைவிலே தோன்றி, சாம்ராஜ்யம் பண்ணி மறைகின்றன. இவ்வாறாக, ஆக்கப்பூர்வமான எந்தச் செயலும் செய்ய இயலாத அந்நியமாதல் உணர்வுக்கு அவன் ஆட்படுகிறான். தன்னை அறிக்கும் தொடர்சிந்தனைக்குக் காரணமான அரசியலை, "எல்லாத் தமிழர்கள் போலத் தலைமுறை தலைமுறையாக அங்கு வாழ்ந்தாலும் விருந்தாளிக்கான பொறுப்பின்மையோடும், அக்கறையின்மையோடும் காலத்தைக் கழித்துவிடலாம். எந்தச் சிக்கலும் அது வீட்டுச் சிக்கலானலும் நாட்டுச் சிக்கலானலும் கூட, காலப்போக்கில் அதுவாகத் தீர்ந்துகொள்ளும்."⁴¹

என்றும், "தானும் கிறிஸ்தவனாகவோ, சட்டைக்காரனாகவோ இருந்தால் எவ்வளவு நிம்மதி"⁴² என்றும் நினைத்து, தொடர்சிந்தனையின் பாதிப்பிலிருந்து விடுபட முயல்கிறான். ஆனால், வெள்ளம் போன்ற அரசியல் சிக்கலில், தானொரு துரும்பு என்பதைத் தாமதமாக உணர்ந்து, இறுதியில் அசமந்தமாகவே காட்சி அளிக்கின்றான்.

நாகரத்தினத்தின் அப்பா ஊர்விட்டுச் செல்லும்போது, உன் முஞ்சி ஏன் இப்படி ஏதோ பயங்கரமாக மாறிப்போய்விட்டது எனும்போது அவனுடைய வெளிப்பாடு, "யாராவது பேசினால் அவர்களுையே பேசவிட்டு விடுவது, அவர்கள் முகத்தையே பாத்துக்கொண்டு இருப்பது"⁴³ என்பது, பழக்கமாகி விட்டது. ஆனால், சந்திரசேகரனின் தோற்றப் பொலிவு எந்தவொரிடத்திலும் வர்ணிக்கப்படவேயில்லை. ஆனால், அவன் மந்தவணர்வு மற்றும் தொடர்சிந்தனையும் கொண்ட வாலிபனாகவே நாவல் முழுக்க வலம் வருகின்றான்.

"அடுத்து பலதரப்பட்ட கற்பனைக் காட்சிகள் வரும்வரைக்கும் முதல் கற்பனைக் காட்சி தொடர்ச்சியாக இயங்கிக் கொண்டிருக்கும். கனவில் வருவதுபோல இத்தொடர்சிந்தனை இருக்கும். அது அவனைக் கட்டாயப்படுத்தி, ஒரு குறிப்பிட்ட திசையில் தொடர்சிந்தனையைக் கொண்டுவந்து எப்போது என்றால், வேறொரு தொடர்சிந்தனை குறுக்கிடும் வரையாகும்."⁴⁴ அரசியலில் ஏற்பட்ட தாக்கம் "ஊர் நிலவரம் எப்படி எல்லாம் வீட்டு வாழ்க்கையையும் உருமாற்றி விடுகிறது"⁴⁵ என அங்கலாய்க்கிறான். கைக்கடிகாரம், சைக்கிள்கூட வாங்க முடியாத பொருளாதார மந்தநிலையிலும் ஊரடங்குச் சட்டம், தபால், தந்தி, பத்திரிகை நின்றபோன சூழலில், இரவு முழுக்க ஓடி தன் மனஅழுத்தத்தை யாரிடமாவது பேசித் தீர்க்காமல், விடியும் வரை ஓடியே அதனைக் குறைத்துக் கொள்கிறான்.

முடிவுரை

உருது, தெலுங்கு, ஆங்கிலம் முதலான மொழிகளில் சரளமாகப் பேச முடியாமல், மொழிப்பரிமாற்றம் என்ற நிலையில் முற்றிலும் அந்நியப்பட்டு போகிறான்.

ஊர்சூழல் காரணமாகக் கல்வியில் நாட்டம் இல்லாதவனாகச் சித்திரிக்கப்படுகின்றான். எனினும், தமிழர்கள் எங்கு சென்றாலும் தங்களது மொழியுணர்வை மதிக்கிறார்கள் இதன் வாயிலாக என்பது வெளிப்படையாகிறது.

அழகியல் உணர்வு இல்லாத வெறிச்சோடிய வாழ்க்கையில், எல்லாவித வாலிபர்களுக்கும் வரக்கூடிய காதல் உணர்வு என்பது காதலாக மாறாமல், வெறும் தொடர்சிந்தனைக்குள் அகப்பட்டு, அதனால் பாதிக்கப்பட்டவனாகவே சந்திரசேகரனைக் காணமுடிகிறது. அவனுடைய தோற்றப் பொலிவைப் பற்றி வாசகன் ஓரிடத்திலும் அடையாளம் காணமுடியவில்லை.

திறமையான உடல்வாகு கொண்ட விளையாட்டு வீரனாக இல்லாமல், பொழுது போக்குக்கு விளையாடி, அதன்வழி நேரத்தைக் கழிக்கின்ற இளைஞனாகவே இதில் காணலாம்.

இத்துடன், இதனில் இடம்பெறுகிற பல்வேறு உடையானது, பல்வேறு இனத்தைக் குறிப்பதாகச் சித்திரிக்கப்பட்டிருக்கிறது. மேலும், இவை ஒற்றுமைக்குப் பதிலாக வேற்றுமையுணர்வையே தூண்டுகிறது.

ஹட்சி மற்றும் ஊர்நிலவரத்தின் காரணமாக, இதில் இடம்பெறுகிற மக்கள் தமக்குக் கிடைக்கின்ற உணவைக் கொண்டே காலம் கழிக்கின்றனர். எதையும் பழித்துப் பேசாமல் சூழலைப் புரிந்து நடக்கிற நிலையையும் உரைமுடிகிறது.

அசாதாரண சூழ்நிலையானது தன் தந்தையினுடைய வேலையில் ஏற்பட்டதை உணர்ந்து வருந்தினாலும், ஒரே நாள் இரவில் இம்மாற்றம் சரியாகிவிடும் என, தன் மனதைத் தேற்றவும் முடியாது அமைதியாகி விடுகின்றான்.

இந்துக்களோ, முஸ்லீம்களோ தீவிரமான கடவுள் வழிபாட்டைப் பேணவில்லை. அமைதியற்ற போர்க்காலச் சூழலில் பக்தியுணர்வுக்கு இடமில்லாமல் போனது என்பது வருத்தத்திற்குரியதாகிறது.

மேற்கண்ட மொழி, கல்வி, காதல், விளையாட்டு, உடை, வேலை போன்றவற்றில் ஏற்பட்ட அச்சுறுத்தல்களுக்கெல்லாம் காரணம் அரசியல் சூழ்நிலைதான் என்பது இதன்வழித் தெளிவாகிறது. போர்க்காலச் சூழலில் தனிமனிதனும் அவன் சார்ந்த குடும்பமும், சமூகமும் பாதிப்புக்கு உள்ளாவதை இந்நாவல் ஆழமாகப் பதிவு செய்கிறது.

சந்திரசேகரன் எந்தவித எதிர்க் கலாச்சாரத்திற்கும் வித்திடவில்லை. காலம் போகிற போக்கிலே சென்று, தங்களின் இயலாமையை எண்ணி, தன்னைச் சூழ்நிலைக்கே தாரை வார்த்துக் கொடுக்கின்றான்.

அவசரநிலைப் பிரகடனம், ஊர்க்கலவரம் காரணமாக ஏற்பட்ட பீதி, பயம், தொடர்ந்து ஓடல், கனவு, நிழலிடம் பேசுவது, தன்னைத்தானே வருத்திக்கொள்வது போன்ற பல உளவியல் சிக்கலுக்கு ஆளாகி, பிறருடன் பேணிகாக்க வேண்டிய உறவு முறையைத் துண்டித்து, தொடர் சிந்தனையில் சுகம் காண்கிறான். இதனால், அந்நியமாகிப் போன அவனது மனம், தொடர்ந்து வாழ்தலுக்கான சிக்கலை ஏற்படுத்தத்தான் செய்கிறது. 1950-இல் நடந்த அரசியல்சார் கலவரக் காட்சிகளுக்குப் பிரதிநிதியாகச் சித்திரிக்கப்படுகின்றான். லம்பாடிக் கலவரம், இராஜாக்கர்களின் இருத்தலுக்கான சண்டை, கூட்டமாக ஆட்கள் தங்குவது, மீண்டும் வெறிச்சோடிகிடப்பது போன்ற போர்க்காலச் சூழல்களானவை அந்நியமாதல் தோன்றக் காரணமாகிவிடுகின்றன. இவை வாழ்தலுக்கான சிக்கலை ஏற்படுத்தத்தான் செய்கின்றன. இருப்பினும், இதனுள் அகப்படம் நாயகன் இவற்றை அனுசரித்துச் செல்கின்றானா, தொடர்ந்து வாழ்கின்றானா என நாவலின் முடிவு கூறுமவதாக அமையவில்லை. ஆனால், இதனில் விடிவு என்ற சொல் வந்துள்ளதால் முடிவு ஒன்று வந்ததாக நாம் அர்த்தம் எடுத்துக் கொள்ளலாம்.

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வாய்மொழி மரபும் பனுவலாக்கமும் சங்கத் தொகைப் பாடல்கள் குறித்த ஆய்வுரைகள்

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முன்னுரை

சங்கப் பாடல்களில் காணப்படும் வாய்மொழிப் பண்புகளைக் கைலாசபதி ஆய்வு செய்திருக்கிறார். கிரேக்கப் பாடல்களுடன் ஒப்பிட்டுத் தன் ஆய்வு முடிவுகளைத் தந்திருக்கிறார். ஹோமரின் (Homer) காப்பியங்களில் திரும்பத்திரும்பத் பயின்றுவரும் தொடர்கள், சொற்கள் போன்றவை வாய்மொழிக்குரிய பண்புகள். அக்காப்பியங்கள் ஒரு காலத்தில் வாய்மொழியாகப் பாடப்பட்டு வந்ததை அவை எடுத்துரைக்கின்றன என்று ஆல்பர்ட் லார்டு என்னும் அறிஞர் நிறுவியுள்ளார். ஹோமரின் காப்பியங்கள், அவை காப்பியங்களாக அறியப்படுவதற்கு முன்பு வாய்மொழிக் கதைகளாகவே சொல்லப்பட்டு வந்தன. மக்கள் கூடியிருக்கும் இடங்களில் அவர்கள் கேட்டுக்கூட உரக்க வீரக் கதைகளைச் சொல்வார்கள் கிரேக்கப் பாணர்கள். அப்படித் கதை சொல்பவர்கள் அந்தக் கதைகளில் குறிப்பிட்ட தொடர்களையும் அடைமொழிகளையும் திரும்பத்திரும்பப் பயன்படுத்துவார்கள். ஒவ்வொருமுறை நிகழ்த்தும்போதும் அந்தத் தொடர்களும் அடைமொழிகளும் அவர்களால் பல்வேறு விதங்களில் பயன்படுத்தப்படும். இவற்றை ஒருவித வாய்பாடு (formula) என்கிறார் லார்டு. அவை பெரும்பாலும் கதையின் நாயகர்களின் தன்மைகளைக் கூறுவதற்காகவோ, அவர்களைப் புகழ்வதற்காகவோ அமையும் (Lord (1960) 1971: 30-67). இவ்வாறு பாடுவது வாய்மொழிப் பண்புகளுள் முக்கியக் கூறாக அறியப்படுகிறது. கிரேக்கப் பாடல்கள் போன்ற தமிழ்ப் பாடல்களிலும் இந்தப் பண்புகள் - தொடர்கள், அடைமொழிகள் ஆகியன திரும்பத்திரும்ப வருதல் - காணப்படுகின்றன என்றும் அவை சங்கப் பாடல்களின் வாய்மொழிப் பண்புகளுக்கான எடுத்துக்காட்டுகளாய் உள்ளன என்றும் லார்டின் முறையியலைப் பின்பற்றிக் கைலாசபதி நிறுவியுள்ளார் (Kailasapathy 1968: 135-186). இதன்மூலம் சங்கப் பாடல்கள் வாய்மொழியாகப் பாணர்களால் பாடப்பட்டு வந்தவை என்பதைத் தெளிவாக்கியுள்ளார். கைலாசபதியின் முடிவுகள் பற்றி இந்தக் கட்டுரை எந்த விவாதங்களையும் எழுப்பவில்லை. சங்கத் தொகைப் பாடல்கள் ஒரு கட்டத்தில் பாணர் பாடல்களாய் இருந்திருக்கவேண்டும். ஆனால், அவை இப்போது இருக்கும் வடிவில் இருந்திருக்காது. அந்தப் பாடல்கள் பின்னர் யாப்பு மரபிற்குள், அதாவது புலவர் மரபிற்குள் சொண்டுவிட்டிருக்கவேண்டும். இந்தப் பனுவலாக்கம் எப்படி நடந்திருக்கும் என்பதை இக்கட்டுரை இனங்காண முயல்கிறது. மேலும்,

வாய்மொழி மரபு பனுவல் மரபாக மாற்றம் பெற்றபோது நிகழ்ந்த செயல்பாடுகளின் அமைப்பை முன்மொழிகிறது இந்தக் கட்டுரை.

புலவர் வாரியாகப் பாடல்கள்

சங்கத் தொகைப் பாடல்களைப் பல வகைகளில் பகுக்கலாம். அகப்பாடல்கள் என்றும் புறப்பாடல்களும் என்றும் பிரிப்பது ஒரு வகை. திணை வாரியாகப் பாடல்களை வகுத்து, இவை குறிஞ்சித் திணைக்குரிய பாடல்கள், இவை நெய்தல் திணைக்குரிய பாடல்கள் என்று ஐந்திணைகளுக்கும் பாடல்களைக் கொடுக்கலாம். இது இன்னொரு வகை. தனித்தனி நூல்களாகவும் அவற்றை வகுக்கலாம். உதாரணமாக: குறுந்தொகை, நற்றிணை, ஐங்குறுநூறு. இவ்வாறு நூல்களாகப் பிரிக்கும்போது அடிகளின் எண்ணிக்கை முக்கியத்துவம் பெறுகின்றன. இந்த வகையான பிரிப்பு முறையே பெரும்பாலும் பின்பற்றப்படுகின்றது. சங்கத் தொகைப் பாடல்களைப் புலவர் வாரியாகப் பிரிப்பதும் ஒரு வகை. சங்க இலக்கியத்தைப் புலவர்களின் அடிப்படையில் பதிப்பித்துச் சைவ சித்தாந்த மகாசமாஜம் வெளியிட்டுள்ளது. சங்க இலக்கியம்: எட்டுத் தொகையும் பத்துப் பாட்டும் (பதிப்புக் குழு 1940) என்பது அதன் தலைப்பு. தமிழறிஞர் வையாபுரிப் பிள்ளையின் பெருமுயற்சியால் அந்தப் பதிப்பு சாத்தியமானது. தமிழ்க் கல்விப் புலங்களில் புலவர் வாரியாகச் சங்கப் பாடல்கள் அதிகம் பயிற்றுவிக்கப்படுவதில்லை. மற்றப் பிரிப்புகளைவிட இந்த வகையில் சங்கப் பாடல்களைக் அணுகும்போது சில ஆய்வுக் களங்கள் விரிவடைகின்றன. மொத்தப் பாடல்களையும் அந்தந்தப் புலவர்களுக்குக்கீழ் கொண்டு வந்து பார்ப்பது சில பண்புகளைக் காண உதவும். ஒவ்வொரு புலவரின் எடுத்துரைப்பு முறையைக் காணமுடியும். அவர்கள் பயன்படுத்தும் சொற்றொடர்கள் சிறப்புக்குரியனவாக இருக்கும். அகப்பாடல்களைப் பாடிய புலவர் ஒருவர் புறப்பாடல்களையும் பாடியிருப்பார். அகம்-புறம் என்ற பகுப்பையும் தாண்டிச் சில கேள்விகளைக் கேட்க இந்தப் புலவர் உதவுவார். புலவர்தம் பெயர்கள் சிறப்புக்குரியனவாக இருக்கும். புலவர்கள் சிலர் செய்யும் தொழிலைத் தன் பெயருக்கு முன்னால் வைத்திருப்பார்கள். சிலர் ஊரை வைத்திருப்பார்கள். சிலர் குடி மரபை வைத்திருப்பார்கள். தெய்வத்தின் பெயரைச் சிலர் கொண்டிருப்பார்கள் அல்லது தன் பெயரோடு சேர்த்துச் சொல்லியிருப்பார்கள். தந்தையின் பெயரைத் தன் பெயரோடு சேர்த்து

வைத்திருப்பார்கள் சிலர். பெண்பாற் புலவர்கள் இருப்பார்கள். அவர்களின் பெயர்களிலும் சில தன்மைகளை இனங்காண முடியும். இந்தப் பண்புகள் தவிர புலவர் - பாடல் என்ற அடிப்படையில் வாய்மொழிக் கூறுகளையும் பனுவலாக்க மரபுகளையும் அணுகமுடியும். அதையே இக்கட்டுரை செய்யமுயல்கிறது.

புலவர் பெயரும் பனுவலாக்கமும்

ஹோமரின் இலியத் (Iliad) மற்றும் ஒடிசி (Odyssey) காப்பியங்களில் காணப்படும் பண்புகள் பற்றி மிக ஆழமான ஆய்வுகள் செய்தவர் கிரிகோரி நகி (புசநபழசல யேபல) என்னும் ஆய்வாளர். லார்டைத் தொடர்ந்து ஹோமரின் காப்பியங்களை ஆராய்ந்தவர். இவர் ஹார்வர்ட் பல்கலைக்கழகத்தில் செவ்வியல் இலக்கியப் பேராசிரியராக உள்ளார். தொடர்ந்து வாய்மொழி பண்புகள் பற்றி இவர் செய்துவரும் ஆய்வுகள் பல முடிவுகளைத் தருகின்றன. வாய்மொழியாகப் புழங்கி வந்த ஒரு கதை, எழுத்து மரபிற்குள் வரும்போது அடையும் மாற்றங்களை கிரிகோரி நகி ஆய்வு செய்திருக்கிறார். இலியத், ஒடிசி ஆகிய இரண்டும் கதைகளாகப் பல நூற்றாண்டுகள் சொல்லப்பட்டும், பல்வேறு மக்கள் முன்னிலையில் உரக்க படிக்கப்பட்டும், நிகழ்த்தப்பட்டும் வந்திருக்கின்றன. அந்தக் கதைகள், வரலாற்றின் ஒரு கட்டத்தில் 'ஹோமரின்' இலியத் மற்றும் ஒடிசி காப்பியங்களாக மாற்றமடைகின்றன. அதாவது, கிரேக்கக் கதைப் பாடல்கள் பலரால் சொல்லப்பட்டு மட்டும் வந்த ஆசிரியரல்லாத புலவரல்லாத (ஹோமர்அல்லாத) கதைகள், ஹோமருடையதாகவும் பெருங்காப்பியங்களாகவும் மாற்றம்பெற்றபோது என்ன நிகழ்ந்திருக்கும் என்பதையும் எப்படி அந்த மாற்றம் நிகழ்ந்திருக்கும் என்பதையும் விரிவாக கிரிகோரி நகி ஆய்வு செய்கிறார் (Nagy 1989: 35-38) அவரது ஆய்வின் சில முடிவுகளைச் சுருக்கமாகப் பார்க்கலாம்.

1. கிரேக்கக் கதைப்பாடல் பாடுபவர்களை சுயிளமுனந் என்று அழைப்பார்கள். இவர்கள் பழந்தமிழ் மரபில் காணப்படும் பாணர்கள் போன்று ஒரு வகையான நிகழ்த்துனர்கள். இவர்களே இலியத் மற்றும் ஒடிசி கதைகளை மக்களுக்கு நிகழ்த்திக்காட்டி வந்தவர்கள். இவர்களைக் கிரேக்கப் பாணர்கள் என்று அழைக்கலாம்.
2. 'ஹோமர்' என்ற பெயர் வாய்மொழியாகச் சொல்லப்பட்டு வந்த கதைகள் எழுத்தாக்கம் பெறுவதற்கு முன்னரே சூட்டப்பட்டிருக்கிறது. 'ஹோமர்' என்ற பெயரைக் கிரேக்கக் கதைப்பாடல்களே சூட்டுகின்றனர்.
3. கிரிகோரி நகியைப் பொறுத்தவரை, ஒவ்வொரு நிகழ்த்துனரும் ஒரு ஹோமர். அதாவது கதைப்பாடல்களே அந்தக் கதைக்குச் சொந்தமானவர்கள். அதை அவர் இப்படி விளக்குகிறார்: A என்னும் கிரேக்கப் பாணர் (Rhapsode) கதையை நிகழ்த்துகிறார் என்று வைத்துக்கொள்வோம். இந்தக் கதை அப்போது A யினுடையது. பின்னர் அது B என்னும் கிரேக்கப் பாணரிடம் மரபு வழியில் கையளிக்கப்படுகிறது (transmission). இந்தக் கதை இப்போது B யினுடையது. அவர் அதை நிகழ்த்துகிறார்.

அவருக்குப் பின்னர் C என்னும் கிரேக்கப் பாணரிடம் அந்தக் கதை கையளிக்கப்பட்டு நிகழ்த்தப்படுகிறது. இப்படியே D-E-F-G-H என்று கிரேக்கப் பாணர்கள் வம்சாவளிக்கு வரிசையாகக் கதைகள் கையளிக்கப்பட்டு வருகின்றன. இது பல நூற்றாண்டுகளாக நடந்து வருகின்றது. ஒவ்வொரு முறையும் நிகழ்த்துவவரே அதற்கான ஆசிரியராக உள்ளார்.

இப்படிப் போய்க்கொண்டிருந்த சங்கிலித் தொடரில், ஒரு கட்டத்தில் அந்த வரிசையில் வந்த ஆ என்னும் கிரேக்கப் பாணர் கதையைத் தன்னுடையதாகக் கொள்ளாமல் தனக்கு முன் பாடிய L என்னும் கிரேக்கப் பாணருடையது என்று அந்தக் கதைக்கான ஆசிரியரை அடையாளப்படுத்தத் தொடங்குகிறார். M க்குப் பிறகு N-O-P-Q-R எனப் அவருக்குப் பின்வரும் பாணர்கள் அந்தக் கதை தங்களுடையது அல்ல அது L என்னும் கிரேக்கப் பாணருடையது என்றே கூறிக் கதையை நிகழ்த்திவருகின்றனர். இப்போது L என்னும் கிரேக்கப் பாணர் ஹோமர். M என்னும் கிரேக்கப் பாணரிடமிருந்து அது ஹோமருடைய காப்பியமாக N-O-P-Q-R ஆகியவர்களால் பாடப்பட்டு வந்திருக்கின்றன.

L என்னும் கிரேக்கப் பாணருடைய வரலாற்று அடையாளங்கள் ஒவ்வொரு முறை மற்றவர்களால் நிகழ்த்தப்படும்போதும் நீக்கப்பட்டு, அவரது பெயர் ஓர் இனத்துக்குரிய ஒன்றாக - பொதுவான ஒன்றாக மாற்றம் அடைகிறது என்கிறார் கிரிகோரி நகி. இப்படிக் கையளிக்கப்பட்டு வந்ததையே ஹோமருடைய காப்பியமாக பனுவலாக்கம் (textualization) செய்தனர். அந்தப் பனுவலாக்கம் ஏதென்ஸ் நகரில் நடந்த ஒரு விழாவில் செய்யப்பட்டது. இதை கிரிகோரி நகி 'பரவல்' (diffusion) என்கிறார். பரவல் என்பதே 'மையப்படுத்தப்பட்ட செயல்பாடு' (centralization) என்கிறார் அவர். அதாவது பாடலின் நிகழ்த்துதலும் நிகழ்த்தும்போது புதிதாக இட்டுக்கட்டப்படுதலும் நிறுத்தப்பட்டுத் தரப்படுத்தப்படுகிறது. இதுவே பனுவலாக்கம். இந்தப் பனுவலே பரவுகிறது பரப்பப்படுகிறது. இந்தப் பரவலில் இரண்டு போக்குகள் இருக்கின்றன என்கிறார். ஒன்று, மையத்தை நோக்கிச் செல்கிற போக்கு (centripetal force). இதில் பல வகையான அவையினருக்காக ஒரே இடத்தில் (மையத்தில்) பல்வேறு கதைமரபுகள் குவிமையப்படுத்தப்படுகின்றன. ஹோமர் தரப்படுத்தப்படுகிறார். மற்றொன்று, மையத்திலிருந்து புறம் நோக்கிச் செல்கிற போக்குடையது (centrifugal force). இதில் மையப்படுத்தப்பட்ட இடத்திலிருந்து ஒற்றைத் தன்மை உடைய ஓர் இலக்கியமாக - ஹோமரின் பனுவலாக - பரவத் தொடங்குதல் (Nagy 1996: 43, 2001: 110-111). ஹோமர் என்பவர் ஒரு தொல் புலவர் (proto poet). இந்தச் சிந்தனை பாணர்களிடமிருந்தே வருகிறது.

தமிழ்ப் பாணர்கள்: பெயரும் செவ்வியல் பண்புகளும்
கிரிகோரி நகியின் முடிவுகளைச் சங்கத் தமிழ் பாடல்களுக்கும் பொருத்திப் பார்க்கலாம். கபிலருடைய பாடல்கள், பரணருடைய பாடல்கள்

போன்றவற்றை எடுத்துக்காட்டுகளாகக் எடுத்துக்கொள்ளலாம். கபிலர், பரணர் போன்ற பெயர்கள் எல்லாம் பாடலை நிகழ்த்தும்போது இருந்த பெயர்களாக இருந்திருக்கமுடியாது. கிரிகோரி நகியினுடைய முறையியலை இப்படிப் பொருத்திக் காட்டலாம்: A என்னும் தமிழ்ப் பாணர் ஒரு பாடலைப் பாடி வந்திருக்கிறார் என்று வைத்துக்கொள்வோம். அந்தப் பாடல் இப்போது A யினுடையது. பின்னர் அது B என்னும் தமிழ்ப் பாணரிடம் கையளிக்கப்படுகிறது. இப்போது அந்தப் பாடல் B யினுடையது. அவர் அதை நிகழ்த்துகிறார். அவருக்குப் பின்னர் C என்னும் தமிழ்ப் பாணரிடம் அந்தப் பாடல் கையளிக்கப்பட்டு நிகழ்த்தப்படுகிறது. இப்படியே D-E-F-G-H என்று தமிழ்ப் பாணர்கள் வம்சாவளிக்கு வரிசையாகக் கதைகள் கையளிக்கப்பட்டு வந்திருக்கின்றன. இது பல நூற்றாண்டுகளாக நடந்து வருகின்றது. ஒவ்வொரு முறையும் நிகழ்த்துபவரே அதற்கான ஆசிரியராக உள்ளார். ஒரு கட்டத்தில் அந்த வரிசையில் வந்த M என்னும் தமிழ்ப் பாணர் அந்தப் பாடலைத் தன்னுடைதாகக் கொள்ளாமல் தனக்கு முன் பாடிய L என்னும் தமிழ்ப் பாணருடையது என்று அந்தப் பாடலுக்கான ஆசிரியரை - புலவரை அடையாளப்படுத்தத் தொடங்குகிறார். ஆக்குப் பிறகு N-O-P-Q-R எனப் அவருக்குப் பின்வரும் தமிழ்ப் பாணர்கள் அந்தப் பாடல் தங்களுடையது அல்ல அது L என்னும் தமிழ்ப் பாணருடையது என்றே கூறிப் பாடலைப் பாடிக் கையளித்து வருகின்றனர். இப்போது L என்னும் தமிழ்ப் பாணர் கபிலர். M என்னும் தமிழ்ப் பாணரிடமிருந்து அது கபிலருடைய பாடல்களாக பின்வந்த N-O-P-Q-R ஆகியவர்களால் பாடப்பட்டு வந்திருக்கின்றன. இப்படியே புலவர்கள் பலருக்குப் பொருத்திக்காட்டலாம். மதுரை அறுவை வணிகன் இளவேட்டனார் என்ற ஒரு புலவர் உள்ளார். அவரது பெயரும் இப்படி உருவாகியிருக்கலாம். மதுரை அறுவை வணிகன் இளவேட்டன் என்பவருடைய பாடல் (L என்னும் தமிழ்ப் பாணர்) என்று கூறி M என்னும் தமிழ்ப் பாணர் பாடத்தொடங்கி பின்வந்த N-O-P-Q-R ஆகிய தமிழ்ப் பாணர்களால் மதுரை அறுவை வணிகன் இளவேட்டனுடைய பாடல் என்றே பாடப்பட்டு வந்திருக்கவேண்டும். இங்கு மதுரை என்பது ஊர்ப்பெயர். மதுரையைச் சேர்ந்த பாணர்களுடைய பாடலாக அது இருக்கலாம். தங்களுக்குள் அவர்கள் பாடலைக் கையளித்து வந்திருக்கலாம். அந்த வம்சாவளியில் வரும் இளவேட்டன் என்பவருடையது இது என்பதை அவருக்குப் பின்வந்த மதுரையைச் சேர்ந்த பாணர் ஒருவர் தரப்படுத்தத் தொடங்கியிருக்கவேண்டும். இங்கு ஒரு சிக்கலை மனங்கொள்ளவேண்டும். கிரிகோரி நகி கூறுவதுபோல் ஒரு பாணரின் வரலாற்று அடையாளங்கள் நீக்கப்பட்டுப் அவர் பொதுவானவராக சங்கத் தொகையில் மாற்றப்படவில்லை. இந்த முறை அங்குச் சாத்தியம். காரணம், அவர் எடுத்துக்கொள்வது கிரேக்க மொழியின் நீண்ட காப்பியம். அந்தக் காப்பியமும் நீண்ட கதை கூறும் மரபிலிருந்து வந்தது. அவருடைய ஆய்வின் அடிப்படை கதையே தவிர பாடல் அல்ல. ஆனால், தமிழில் கிடைப்பதோ தனிப்பாடல்கள். கதைகள்

அல்ல. பாடல்கள் பல. பாடியவர்களும் பலர். ஒற்றைத் தன்மை - நீண்ட கதை - என்பது கிடையாது. அனைத்துப் பாடல்களையும் ஒரு பெயரின் கீழ் அடக்கிவிடவும் முடியாது. அடக்க வேண்டிய தேவையும் இல்லை. ஒவ்வொரு பெயரிலும் ஒரு வரலாறு மறைந்திருக்கிறது. வரலாற்றைப் பெயரில் 'மங்கலான நினைவுகளாக' வைத்திருக்கிறார்கள் தமிழ்ப் பாணர்கள். தமிழ் மரபில் பின்பற்றப்பட்ட நுட்பமான முறையியலை ஆராயவேண்டும். மேலே காட்டிய மதுரை அறுவை வணிகன் இளவேட்டன் என்னும் பெயரை எடுத்துக்கொள்வோம். அறுவை வணிகன் என்பது தனித்துக்காட்டுவதற்கான ஓர் அடையாளமாகப் பயன்படுத்தப்பட்டிருக்கலாம். புலவர் பெயருடன் தனித்துக்காட்டும் அடையாளங்கள் நிறைய தமிழ் மரபில் இருந்திருக்கின்றன. மதுரையைச் சேர்ந்த புலவர்கள் பலர் சங்கத் தொகை நூல்களில் காணப்படுகின்றனர். அவர்களின் எண்ணிக்கை முப்பத்தியேழு ஆகும். மதுரை இளங்கெளசிகன், மதுரைக் கணக்காயன், மதுரைக் கூத்தன், மதுரைக் கொல்லன் புல்லன், மதுரைக் கவுணியன் பூதத்தன், மதுரைத் தமிழ்க் கூத்தன் ஆகிய பெயர்களைக் குறிப்பிட்டுச் சொல்லலாம். மதுரை இளங்கெளசிகன் என்னும் புலவரின் பெயரில் காணப்படும் கெளசிகன் என்பது கோத்திரப் பெயர். இது மதுரையைச் சேர்ந்த அறுவை வணிகன் என்னும் பாணர் குழு அடையாளத்திலிருந்து வேறுபட்ட பாணர் குழு என முடிவுக்கு வரலாம். அதற்கான இடத்தை அந்தப் பெயர்கள் கொடுக்கின்றன. இரண்டு குழுக்களும் மதுரையில் இருந்திருக்கின்றன. அதேபோல் மதுரை கவுணியன் பூதத்தன் என்பது இன்னொரு புலவர் பெயர். கவுணியன் என்பது கோத்திரப் பெயர். இது மேற்கூறிய மதுரைப் புலவர்கள் பெயர்களிலிருந்து வேறுபட்ட மதுரையைச் சேர்ந்த வேறு பாணர் குழு எனலாம். தொழிலை அடையாளமாகப் பயன்படுத்திப் பெயர்கள் அமைக்கப்பட்டிருக்கின்றன. உதாரணமாக, உறையூர் மருத்துவன் தாமோதரன், செய்தி வள்ளுவன் பெருஞ்சாத்தன் ஆகிய பெயர்களைக் குறிப்பிடலாம். இன்னாருடைய மகன் என்று சொல்வதும் உண்டு. அண்டர் மகன் குறுவழுதி, ஆவூர் கிழார் மகன் கண்ணன், காவிரிபும்பட்டினத்துப் பொன் வாணிகன் மகன் நப்பூதன். பொதுமையில் கிழார் மகன். உறவு முறையைச் சொல்லும் இந்தப் பெயர்களிலேயே பாணர்களின் பெயரிடுதலின் கவனம் தெரிகிறது. :பூக்கோ (Foucault) ஒவ்வொரு படைப்பின் ஆசிரியர் பெயரே ஒரு செயல்பாடு (function) என்கிறார். அந்தச் செயல்பாடு ஒரு சமூகத்திற்குள் உலவும் சில சொல்லாடல்களின் இருத்தலையும் தகுதியையும் பறைசாற்றுகின்றது என்கிறார் (Foucault 1977: 123-124). கிரேக்கர்களுக்கு ஹோமர் என்பது 'தொல் புலவர்' என்றால் தமிழ் மரபில் ஒவ்வொரு சங்கத் தொகைப் புலவர்களும் 'தொல் புலவர்கள்' தான். தமிழ் மரபில் பெயர்களுக்கும் தொன்மங்களுக்கும் நெருங்கிய தொடர்பு உண்டு. அகத்தியர் என்பது வெறும் பெயராக மட்டும் தமிழ் மரபில் எடுத்துக்கொள்ளப்படுவதில்லை. அந்தப் பெயருக்குள் ஒரு வரலாறு தொன்மமாய் மறைத்து வைக்கப்பட்டிருக்கிறது (Shulman 2016: 25-30). தொல்காப்பியர் என்னும் பெயரும் ஆய்விற்கான

களத்தை அமைத்துக்கொடுக்கின்றது. .பூக்கோ சொல்வதுபோல் பெயர் ஒரு செயல்பாடாக இங்கு உள்ளது. பாணர்களால் பெயர்கள் காப்பற்றப்பட்டு வந்திருக்கவேண்டும். தமிழ்ப் பாணர்களின் நீண்ட மரபு பண்டைய காலத்தொட்டு இன்றளவும் தொடர்ந்து வருகிறது என்பதையும் நினைவில் இருத்தவேண்டும் (பாரதி 2012).

சங்கப் பனுவலாக்கம் : இரண்டு நிலைகள்

கிரிகோரி நகியினுடைய முறையியலைப் பொருத்திக்காட்டிச் சில முடிவுகள் மேலே காட்டப்பட்டன. அடுத்து, அவர் கூறும் பனுவலாக்கக் கோட்பாட்டைக் கொண்டு சங்கத் தொகை பாடல்களின் பனுவலாக்கம் (textualization) பற்றி ஆராயவேண்டும். சங்கப் பாடல்களைத் தொகுத்த செயல்பாட்டை நேரடிப் பனுவலாக்கம் என்று கூறமுடியாது. அது ஏற்கனவே பனுவலாக்கப்பட்ட ஒன்றைத் தொகையுட்படுத்தியிருக்கிறது (Canonization). பழந்தமிழ்ப் பனுவலாக்கத்தில் இரண்டு படிநிலைகள் இருந்திருக்கின்றன என்று கூறலாம். தொகையுட்படுத்துதல் என்பது 'இரண்டாம் நிலை பனுவலாக்கம்' (textualization 2) எனலாம். இதற்கு முன் ஒரு பனுவலாக்கம் நடந்திருக்கவேண்டும். இதை 'முதல் நிலை பனுவலாக்கம்' (textualization 1) என அழைக்கலாம். முதல் நிலை பனுவலாக்கமே கவனிக்கப்படவேண்டிய, முக்கியமான ஒன்றாகும். ஒரு மரபில் வரும் பாணர் பாடல்களை யாப்பு வரையறைக்குள் உட்படுத்தி அதைச் செய்யுளாக்கி விடுவதை முதல் நிலை பனுவலாக்கம் என்று கூறலாம் பாணரிடமிருந்து புலவர்கள் அதைச் செய்யுளாக்கியிருப்பார்கள். கபிலர் பாடல்கள் என்று பாடப்பட்ட வந்த பாடலை அந்த வம்சாவளியில் வந்த பாணரிடமிருந்து பெற்றுச் செய்யுளாக்கியிருப்பார்கள். அவை யாப்பு வரையறைக்குள் வந்த கபிலர் பாடல்கள். இந்த முதல்நிலை பனுவலாக்கம் இரண்டு வகையில் நடந்திருக்கலாம். ஒன்று, பாணரிடமிருந்து வாங்கி, செய்யுள் அறிந்த ஒருவர் செய்யுளாக்கியிருக்கலாம். செய்யுளாக்கியவர் வெறும் செயல்பாட்டாளர் மட்டுமே. அவரது பெயர் இடம்பெற்றிருக்காது. மேலும், கபிலர் என்பது ஒரு பாணர் குழுவின் அடையாளம். அந்த அடையாளத்தை யாப்பு வரையறைக்குள் கொண்டு வந்து பாதுகாத்திருக்கிறார்கள் என்று கூறலாம். அந்த அடையாளத்தை அழிக்காமல், வேறு பெயர் கொடுக்காமல் பாதுகாத்திருக்கிறார்கள். பின்னர் அந்தச் செய்யுள் மனனம்செய்யப்பட்டுப் புழக்கத்தில் இருக்கும். மற்றொரு வகையையும் காட்டலாம். பாணர் குழுவின் புலவர்களாகப் படிநிலை வளர்ச்சிப் பெற்று அதை யாப்பு வரையறைக்குள் கொண்டு வந்திருக்கலாம். அரசவை அங்கீகாரம் பெற்றிருக்கலாம். இந்த முறையில் பாணர் குழுவின் ஒரு பகுதியினர் மட்டுமே புலவராக மாறியிருப்பர். மற்றவர்கள் பாணர்களாகவே இருந்திருப்பர். கபிலர் பாடல்கள் ஒரே சமயத்தில் செய்யுளாகவும் இருந்திருக்கும். வாய்மொழிப் பாடலாகவும் தொடர்ந்து பாடப்பட்டு வந்திருக்கும். ஆக, முதல் நிலை பனுவலாக்கம் காலத்தால் முற்பட்டது. பின்னர் இரண்டாம் நிலை பனுவலாக்கம் நடந்திருக்கவேண்டும். இரண்டாம் நிலை பனுவலாக்கம்தான் கிரிகோரி நகி கூறும் 'பரவல்'

(diffusion) செயல்பாடாகும். கிரேக்கத்தின் ஏதென்ஸ் விழாவில் மையப்படுத்துதல் நடந்ததுபோல் தமிழகத்திலும் ஏதோ ஒரு பகுதியில் மையப்படுத்துதல் செயல்பாடு நிகழ்ந்து பரவலுக்கு வழிவகை செய்திருக்கவேண்டும். அநேகமாக அந்தச் செயல்பாடு பாண்டிய நாட்டில் நிகழ்ந்திருக்கலாம். அவர் கூறும் மையப்படுத்துதலின் இரண்டு போக்குகளும் - மையத்தை நோக்கிச் செல்கிற போக்கு (Centripetal force), மையத்திலிருந்து புறம் நோக்கிச் செல்கிற போக்கு (Centrifugal force) - தொகையுட்படுத்தப்பட்டுத் தற்குப் (textualization 2) பிறகே நடந்திருக்கவேண்டும்.

பாணர்களும் பயிற்சிப் பாடல்களின் தொல் எச்சங்களும்

சங்கத் தொகை நூல்களில் இன்னொரு சிக்கலையும் எதிர்கொள்ளவேண்டியுள்ளது. ஆசிரியர் - புலவரின் பெயர் கிடைக்காத பாடல்களும் உள்ளன. அப்படிப்பட்ட பாடல்களுக்குப் புலவர் பெயர் சூட்டுவதில் ஒரு முறையைப் பின்பற்றியுள்ளனர். அந்தப் பாடலில் பயின்றுவரும் சிறப்பான அடியை எடுத்து அதனுடன் 'ஆர்' என்னும் உயர்வுப் பன்மை விசுவதியைச் சேர்த்து அந்த அடியையே ஆசிரியர் பெயராக்கியுள்ளனர். இவர்கள் 'தொடரால் பெயர் பெற்றவர்கள்', 'உவமையால் பெயர் பெற்றவர்கள்' எனப் பலவாறாக அடைவுபடுத்தப்பட்டிருக்கின்றனர் (அரங்கசாமி 2014) சங்க தொகை நூல்களில் இவ்வாறு பெயரிடப்பட்ட இருப்பத்தியேழு புலவர்கள் காணப்படுகின்றனர். தொடரால் - உவமையால் பெயர் பெற்றப் புலவர்களின் பாடல்கள் என அறியப்படும் பாடல்களுக்கு உண்மையில் அதற்குரிய ஆசிரியர்களின் பெயர்கள் கிடைக்கவில்லை. அவர்கள் பயன்படுத்திய சிறப்பான, மற்றப் புலவர்களால் பயன்படுத்தப்படாத தொடர்களும் உவமைகளும் அவர்களது இயற்பெயர்களாக ஆக்கப்பட்டுள்ளன. அணிலாடு முன்றிலார் என்பது ஒரு புலவரின் பெயர். இதற்குக் காரணமாய் அமைந்தது அவர் பயன்படுத்திய 'மக்கள் போகிய அணிலாடு முன்றில்' என்ற தொடர். இம்மென்கீரனார் என்பது இன்னொரு புலவரின் பெயர். இது 'நும்மோன் செய்த கொடுமைக் கிம்மென்று' என்ற அவர் பயன்படுத்திய தொடரால் வந்தது. இப்படியே இருபத்தியேழு புலவர்களின் பெயர்கள் சூட்டப்பட்டிருக்கின்றன. இரும்பிடர்த்தலையார், ஊட்டியார், ஓற்றிப்பிச்சையார், ஓரேருமுவர், கங்குல் வெள்ளத்தார், கல்பொரு சிறுநுரையார், கவைமகள், காலெறி கழகையார், குப்பைக் கோழியார், குறியிறையார், கூகைக் கோழியார், கூவன்மைந்தனார், கொட்டம்பலவனார், கோவேங்கைப் பெருங்கதவனார், செம்புலப் பெயனார், தனிமகனார், தும்பி சேர் கீரனார், தேய்புரிப் பழங்கயிற்றினார், தொடித்தலை விழுத்தண்டினார், நெடுவெண்ணிலவினார், பதடி வைகலார், மீனெறி தாண்டிலார், விட்டக் குதிரையார், வில்லக விரலினார், விழிக்கட் பேதை பெருங்கண்ணார் ஆகியன மற்றப் புலவர்களின் பெயர்கள். இப்படிப் பெயர் சூட்டுதல் இரண்டாம் நிலை பனுவலாக்கத்தின்போது நடந்திருக்கலாம்.

1. விவாதிக்கவேண்டிய முதல் கேள்வி: ஏன் ஆசிரியர் பெயர் இல்லை? இந்தக் கேள்விக்கான

அவசியமும் உள்ளது. பாடலாசிரியரின் பெயர் (புலவர் பெயர், பாணர் பெயர்) என்பது வெறும் பெயர் அல்ல. மேலே காட்டியதுபோல் ஒரு சங்கிலித் தொடரின் எச்சம். ஒரு பாணர் குழுவின் அடையாளம். அவர்களின் கையளிப்பு முறை நுட்பங்களின் வெளிப்பாடு. ஒவ்வொரு பெயரும் ஒரு மரபு அழிந்துபோகாமல், நினைவில் இருத்தவேண்டி சூட்டப்பட்டவை. நீண்ட வரலாற்றைக் குறியீடுகளாக அவை சுமந்துகொண்டிருக்கின்றன. பின்வந்தோரால் புரிந்துகொள்ளமுடிகிறதா இல்லையா என்பன பற்றிக் கவலைப்படாமல் அவை வரலாற்றைச் சுமந்துகொண்டிருக்கின்றன. இப்படியிருக்கும்போது இயற்பெயர்களைச் சாதாரணமாகத் தெரிந்துதெடுத்துப் பயன்படுத்திவிடமுடியாது.

2. பெயரற்ற பாடல்கள், பாணர்களின் அறுந்துவிட்ட குடிவழியைக் காட்டி நிற்கின்றன எனலாம். வரலாற்றின் ஒரு கட்டத்தில் எங்கோ அந்தத் தொடர்பு அறுந்துவிட்டிருக்கவேண்டும். அந்தப் பாடல்களுக்குரிய குழு புலவர் இல்லாமல் அழிந்துபோயிருக்கலாம். இன்னொரு குழு அவர்களின் பெயர் தெரியாமலேயே போற்றிப் பாதுகாத்து வந்திருக்கலாம். அந்தப் பாடல்கள் முதல் நிலை பனுவலாக்கத்திற்குள் வரும்போது பெயரற்று வந்திருக்கவேண்டும். பெயரற்றே பனுவலாக்கப்பட்டிருக்கவேண்டும். இதை முதல் கேள்விக்கான விடையாகக் கொள்ளலாம்.

1. ஆனால், முதல் கேள்விக்கான விடை தற்காலிகமானதுதான். கேள்வி எதிர்பார்க்கும் முழுச் சமாதானத்தையும் அந்த விடை தந்துவிடவில்லை. காரணம், முதல் கேள்வியினூடாக வரும் அடுத்த கேள்வி: அந்தந்தப் பாடலுக்குரிய புலவருக்கு இயற்பெயர் சூட்ட முடியாது என்றால் அப்படியே புலவரற்ற பாடல்களாகவே அவற்றைத் தொகுத்திருக்கலாமே? தொடர்க்களையும் உவமைகளையும் ஏன் பயன்படுத்த வேண்டும்? பெயரற்றே பாடல்கள் இருந்திருக்கலாம். ஆசிரியர் பெயர் தெரியவில்லை என்று குறிப்பிட்டே தொகுத்திருக்கலாம். அவ்வாறு செய்யவில்லை. அந்தப் பாடலின் தொடர்களே ஏன் பயன்படுத்தப்பட்டிருக்கின்றன என்பதை ஆராயும்போது பாணர் தொடர்பு அறுந்து பெயரற்றப் பாடலாக இருந்திருக்கவேண்டும் என்ற எளிதான விடையைக் கூறமுடியாது. பெயரில்லாமல் எந்தப் பாடலும் இருந்திருக்க வாய்ப்பில்லை. அப்படியென்றால் பெயரற்ற - பின்னால் பெயர் கொடுக்கப்பட்ட: 'இயற்பெயர் இல்லாத - இவற்றை எப்படி புரிந்துகொள்வது?'

2. இப்பாடல்கள் எல்லாப் பாணர் குழுவிடமும் புழக்கத்திலிருந்திருக்கவேண்டும். அவற்றை அவர்கள் தங்கள் கவிதை பயிற்சிக்காகப் பயன்படுத்தியிருக்கவேண்டும். இவை மொத்த பாணர் குழுவின் முன்னோர்களுக்குரியவை எனலாம். வரலாற்றின் முந்தைய காலத்தின் ஒரு பகுதியில் வாழ்ந்த பாடல் கற்பிக்கும் ஆசிரியர், ஆசிரியர்களுடையதாக இருக்கலாம். ஓர் இலக்கணக்காரனின் பாடலாக இருக்கலாம்.

3. அணிலாடு முன்றிலார் பாடலை எடுத்துக்கொள்வோம். இது இவரது இயற்பெயர் அல்ல. 'மக்கள் போகிய அணிலாடு முன்றில்'

என்ற தொடரை அந்தப் புலவர் பயன்படுத்தியுள்ளார். இந்தத் தொடரின் பொருள் சிறப்புக்குரியது. முற்றத்தில் (விட்டின் முன்புறத்தில்) அணில் ஆடிக் கொண்டிருக்கிறது என்ற பொருள்பட இத்தொடரை அந்தப் புலவர் பயன்படுத்தியுள்ளார். அணில் இயல்பிலேயே பயந்த குணம் உடையது. முற்றத்தில் எப்போதும் மக்கள் இருப்பார்கள். மக்கள் இருக்கும் இடத்தில் அணில் அதிகம் புழங்காது. ஆனால், புலவர் குறிப்பிடும் விட்டின் முற்றத்தில் அணில் விளையாடிக் கொண்டிருக்கிறது. அதாவது, விட்டில் யாரும் இல்லை. தனிமையை அல்லது இழப்பைக் கூறவந்த புலவர் இந்தத் தொடரைப் பயன்படுத்தி அதை உணர்த்த முயல்கிறார். அதேபோல் செம்புலப் பெயனீரார் என்ற பெயருடைய புகழ்பெற்ற பாடலை எடுத்துக்கொள்ளலாம். காதலைச் சொல்லிடும் உவமை. சிவந்த நிலத்தில் மழை கலப்பது பற்றியது. குப்பைக்கோழியார் என்ற இன்னொரு புலவர். குப்பை மேட்டின் மீதோ, குப்பைக் குவியலின் மீதோ பேர் புரியும் கோழிகள் பற்றியது இவரது பாடல். யாரும் காணாமல் அவை பேர் புகிகின்றன. அந்தப் பேர் அவற்றுக்கு ஆபத்தாக முடிகிறது. அதுபோல் தலைவியின் வேதனை யாரும் பார்க்காமலேயே அளவுக்கதிகமாகிறது. அதுவே அவளுக்கு ஆபத்தாக அமையும் என்கிறார். விட்டக் குதிரையார் என்ற புலவர் பயன்படுத்திய 'விட்ட குதிரை விசைப்பின் அன்ன' என்ற தொடர் கட்டிலிருந்து அவிழ்த்து விடப்பட்ட குதிரைகள் துள்ளி ஓடுவதைப்போலக் காற்றால் வளைந்த பசும் முங்கில்கள் வானத்தைத் தொட எழுவதைக் குறிக்கின்றன (அரங்கசாமி 2014: 21-23, 39-41, 34-37, 46-48).

இந்த வகையான பாடல்களைக் கூர்ந்து நோக்கினால் சில தன்மைகளைக் கண்டறிய முடியும். இவை அனைத்தும் ஒரு காட்சியை விளக்குகின்றன. காட்சியைப் பட்டியலிடாமல் ஒரே தொடரில் காட்சி முழுவதையும் சொல்கின்றன. காட்சியின் கூறுகளையும் அதன்மீது உணர்வுகளையும் அடக்கி ஒரே தொடர் கூறுகிறது. அணிலாடு முன்றில் என்பதில் தனிமையின் கொடுமை மட்டுமல்ல. வீடு, அதன் வெறிச்சோடிய தன்மை போன்றவை பிம்பங்களாக அந்தத் தொடரில் மறைந்திருக்கின்றன. உணர் மட்டுமே முடிகிற வெறுமையை இந்தத் தொடர், காட்சிப்படுத்தி உள்ளடக்கியிருக்கிறது. 'விட்ட குதிரை விசைப்பின் அன்ன' என்ற தொடர் கட்டிலிருந்து அவிழ்த்து விடப்பட்ட குதிரைகள் துள்ளி ஓடுவதைப்போலக் காற்றால் வளைந்த பசும் முங்கில்கள் விரைந்தெழுந்து வானத்தைத் தொடுகின்றன என்ற காட்சியை உள்ளடக்கியிருக்கிறது. தொடர்கள் வற்றைத் தொடர்புபடுத்துகின்றன என்பதைக் காட்டிலும் தொடரின் பொருளே - காட்சிப்படுத்தும் நிகழ்வே - மிக முக்கியமானதாகப்படுகிறது. இம்மாதிரியான தொடர்கள் பயிற்சிக்காக பாணர்கள் மத்தியில் தனிச்சுற்றில் இருந்திருக்கவேண்டும். எந்தப் புலவருடையதாகவும் இருந்திருக்கமுடியாது அல்லது தொடர்களை, 'அடிகளை மனனம் செய்வதற்காகத் தொல் பாணர் ஒருவரால் கட்டப்பட்டதாக இருக்கலாம். பயிற்சிக்காகப் புனையப்பட்ட

பாடல்களின் எச்சங்கள் இவை. அடிகளின் முக்கியத்துவம் கருதி அடிகளையே புலவரின் பெயர்களாக வைத்திருப்பது அடிகளுக்கான முக்கியத்துவமே அன்றி புலவருக்கானது அல்ல. பாணர்களுக்குள் செயல்பட்ட ஒரு பொதுப் பரிமாற்றத்தை உணர்த்தி நிற்கின்றன இந்தப் பாடல்கள். சங்கப் பாடல்களை ஆராய்ந்த ஜார்ஜ் ஹார்ட் என்னும் அறிஞர் சங்கக் கவிதைகளில் காணப்படும் அடிக்கருத்துக்கள் இந்தோ ஆரிய மொழிகளில் பயின்று வருகின்றன என்று கூறி, வடமொழியில் அமைந்த 'புத்த சரித்திரம்', காளிதாசரின் காப்பியங்கள், 'சுட்டசி' என்னும் பாடல்கள், பிற வடமொழி நூல்கள் ஆகியவற்றைக் குறிப்பிட்டு அவற்றில் சங்க அடிக்கருத்துக்கள் பயின்று வந்துள்ளதைப் பட்டியலிட்டுக் காட்டியுள்ளார் (ரியசவ 1975: 285-290). தொடர்கள் பொதுவானவை. கற்பதற்குரியவை. அந்த வகையான தொடர்கள் உள்ள பாடல்கள் பயிற்சிக்கானவை. அதனாலேயே அவை தொடர்களைக் கொண்டு பெயர் சூட்டப்பட்டுள்ளன என்ற முடிவுக்கு வரலாம். புலவர்களுக்கிடையேயும் பாணர்களுக்கிடையேயும் பரிமாற்றங்கள் நிகழ்ந்திருக்கின்றன என்பதையும் மறுப்பதற்கில்லை.

முடிவுரை

சங்க தொகைப் பாடல்கள் வாய்மொழி மரபிலிருந்து எழுத்து மரபிற்கு வந்த செயல்பாடுகளை இந்தக் கட்டுரை ஆராய்ந்துள்ளது. இவை மேலும் ஆய்வுக்குரியன. பழந்தமிழ் பாடல்களின் வாய்மொழிப் பண்புகளையும் அவற்றை எழுத்தாக்க மரபிலிருந்து எப்படி அணுகுவது என்பதைக் குறித்தும் இந்தக் கட்டுரை சில முடிவுகளைத் தந்துள்ளது. இவ்வாய்வுரை சங்க தொகைப் பாடல்கள் குறித்த ஆய்வை வளப்படுத்துவதற்கான முன்னெடுப்பாக அமையும்.

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தனிப்பாடல்கள் : புலமை மரபின் மீட்டுருவாக்கமும் சமூகப்பொருத்தப்பாடும்

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முன்னுரை

தமிழிலக்கிய மரபில் நெடுங்காலம் செல்வாக்குச் செலுத்திய கவிதைப் பாய்வுகளில் முக்கியமானவை தனிப்பாடல்கள் ஆகும். கவித்துவ உணர்வுகளும் அதன் பரப்பெல்லைகளும் சங்கப் பிரதிகள் தொடங்கி, அண்மைக் கால நவீனப் பிரதிகள் வரை அகன்ற வாசிப்புத் தளத்தில் பன்முகமான எடுத்துரைப்புகளாக மீட்டுருவாக்கம் செய்யப்படுகின்றன. ஆனால், இலக்கிய வரலாற்றியல் நோக்கில் தனிப்பாடல்கள் குறித்த கருத்து நிலைகள் விரிவாக முன்வைக்கப்படாமல் இருப்பதையும் அவை பிரத்யேகமாகத் தமிழ்க் கவிதைச் சூழலிலிருந்து விடுபட்டு ஓர் தனித்த தடத்தில் பயணிப்பதையும் அவதானிக்க முடிகிறது. சங்கப் பாடல்கள் பெரும்பாலும் தன்னுணர்ச்சி மிக்க தனிப்பாடல்களே என்றாலும் சங்க மரபுக்குப் பின்னர்த் தன்னுணர்ச்சி மிக்க கவித்துவச் சுவை தனிப்பாடல்களில் வெளிப்படுவதையும், அவை சமூக அதிகாரக் கட்டமைப்பின் முரண்களை மீறுவதையும் மறுக்கப்பட்ட சொல்லாடல்களால் தமது புலமை மரபை எங்ஙனம் கட்டமைக்கின்ற விதத்தையும் குறிப்பாக, நிலபிரபுத்துவ ஷ ஜமீன்தாரிய வளர்ச்சியுடன் தனிப்பாடல்களின் தன்மையினையும் இணைத்துப் பார்க்க வேண்டியதன் அவசியம் குறித்து இக்கட்டுரை அணுகுகிறது.

தனிப்பாடல்களும் தொகுப்பு முயற்சிகளும்:

தனிப்பாடல்கள் என்பது ஒரே காலத்தில் ஒருவரால் பாடப்பட்ட தொகுப்பு அன்று. ஏறத்தாழ கி.பி.10ஆம் நூற்றாண்டு முதல் கி.பி.19ஆம்நூற்றாண்டு வரை வாழ்ந்த பல்வேறு புலவர்கள் பல்வேறு சூழல்களில் பாடிய பாடல்களின் தொகுப்பே தனிப்பாடல் திரட்டு என வழங்கப்படுகிறது. ஆனால், மிக அதிகமான பாடல்கள் கிடைத்ததன் அடிப்படையில் தனிப்பாடல்களின் காலத்தை கி.பி. பதினான்காம் நூற்றாண்டிலிருந்து தொடங்கலாம் என்பார் பெருமாள் முருகன். மேலும், தனிப்பாடல்களால், தனிப்பாடல்களால், தனிச்செய்யுட் சிந்தாமணி என்னும் பெயர்களில் பதிப்பிக்கப்பட்ட தொகுப்பு முயற்சிகள் பல. புறத்திரட்டு, தமிழ் நாவலர் சரிதை, பன்னூல் திரட்டு போன்ற பெயர்களிலும் தொகுப்புகள் வெளிவந்தன. இருபதாம் நூற்றாண்டின் முற்பகுதியில் பேராசிரியர் மு.இராகவையங்கார் 'பெருந்தொகை' என்ற பெயரில் ஒரு தொகுப்பினை வெளியிட்டார். இராமநாதபுரம் பொன்னுச்சாமித் தேவர், தில்லைபுர சந்திரசேகர கவிராச பண்டிதர் ஆகியோர் தனிப்பாடல் திரட்டு உருவாவதற்குக் காரணமாக இருந்தார்கள். தவிர,

மு.ரா.கந்தசாமிக் கவிராயர் மேலும் பல பாடல்களைத் திரட்டி, முன் வெளியான தனிப்பாடல் திரட்டுடன் சேர்த்துத் 'தனிச்செய்யுட் சிந்தாமணி' என்ற பெயரில் நூலை வெளியிட்டார். "தனிப்பாடல்களுக்கு வெவ்வேறான பதிப்புகள் இருப்பினும் இவற்றில் ஒருமை இல்லை என்பதோடு ரசனைக்கும் ஆராய்ச்சிக்கும் உகந்த விஷயங்களை இப்பாடல்கள் கொண்டிருக்கின்றன" (பெருமாள் முருகன், ப. 22) என்ற கருத்து தனிப்பாடல்கள் மீதான வாசிப்பின் நுட்பமான பதிவுகளைப் புலப்படுத்துகிறது.

புலமை மரபின் தொடர்ச்சியும் செல்நெறியும் :

தமிழ்ச் சமூகத்தின் நெடிய பண்பாட்டு உருவாக்கத்தில் ஊர் சுற்றும் இயல்பினராக பாண்குடியினரும் புலவர்களும் விளங்கினர். தமது அனுபவங்களையும் வாழ்வின் சகல கூறுகளையும் வாய்மொழி மரபில் அதீத எடுத்துரைப்புகளுடன் வெளிப்படுத்துவதாக இவர்களது கவிப்புலமை அமைந்திருந்தது. பரிசில் தேடிச் செல்லுவதை மட்டும் நோக்கமாகக் கொள்ளாமல் ஒரு நிலத்திலிருந்து இன்னொரு நிலத்திற்குக் கலைகளை எடுத்துச் செல்வதைக் குறிக்கோளாகக் கொண்டனர். என்றாலும் ஒவ்வொருவரும் தங்களுக்கான வாழ்வு முறையைத் தனித்தனியாகக் கொண்டிருந்தனர். காலப் போக்கில் குறுநில மன்னர்களும், சிற்றூர் மன்னர்களும் அழித்தொழிக்கப்பட்டுப் பேரரசின் விரிவாக்க எல்லைக்குள் கொண்டு வரப்பட்ட நிலையில் அரசனை எப்போதும் விலகாமல் அணுகியிருப்பதும் தயை பெறுவதும் புலவருக்குரிய உரிமையாக மட்டும் மாறுகிறது. மேலும், அரசன் ஒருவன் தனது வஞ்சினத்தை நிறைவேற்றத் தவறினால் புலவன் ஒருவனின் பாடலுக்குத் தான் உரியவன் அல்லன் என்று கூறுரைப்பதும் நிகழ்கிறது. இதன் தொடர்ச்சியாக அறிவு மரபின் ஊற்றுக்கண்ணாக விளங்கிய பாண்குடியினர் தனித்த குழுவினராக இனங்கொள்ளப்பட்டு தங்களது தனித்துவமான அடையாளங்களை நிறுவுவதற்காகக் காலதேசங்களைக் கடந்து பயணம் செய்தனர் என்பது வெளிப்படை... அதாவது, "பண்டைத் தமிழரின் செவ்வியல் கால வாழ்வில் பாண் சமூகத்தினர் ஐந்து திணைகளிலும் வாழ்ந்த நிலைகுடிகளை அண்டி வாழ்ந்த அலைகுடியினராக இருந்துள்ளனர்" (பக்தவத்சலபாரதி, ப. VII) என்றாலும் பாடலியற்றும் புலமை மரபின் தோன்றல்களாக கவிஆளுமைகளாக விளங்கினர்.

தனிப்பாடல்களைப் பெரும்பாலோர் இலக்கியச் செழுமையுள்ள பாடல்களாகக் கருதுவதில்லை.

அதனைச் சமூக ஒழுக்கச் சிதைவுகளுக்கு உரிய பாடல்கள் என்றும் ஆடம்பர வாழ்க்கையின் அந்தஸ்து கொண்ட நிலப்பிரபுத்துவ சிறு சிறு சமஸ்தானங்களை நம்பி எப்போதும் அவர்களைச் சார்ந்து தமது கவிப்புலமையால் அன்றாட வாழ்க்கையை நடத்தும் அவல நிலை தனிப்பாடல் புலவர்களுக்கு இருந்தது எனவும் கூறுகின்றனர். ஆனால் சங்க மரபில் இருந்த புலமை மரபின் தொடர்ச்சியை இப்புலவர்களிடமும் காணமுடிகிறது.

பாட்டியல் நூல்கள் புலவர்களின் வகைப்பாடு பற்றியும் கவித்துவ மரபு பற்றியும் விளக்கும் போது கவி, கமகன், வாதி, வாக்கி, ஆசகவி, மதுரகவி, சித்திரக்கவி, வித்தாரக்கவி என்று புலமையுடையோரை நிரல்படுத்துகிறது. அதாவது, கவிஞன் (கவி), எந்நூலுக்கும் பொருளை விரிவாகக் கூறக்கூடியவன் (கமகன்), தாம் எடுத்துக் கொண்டதை வாதத் திறமையினால் நிலை நிறுத்தக் கூடியவன்(வாதி), அறம் முதலான நாற்பொருளையும் கேட்போர் விரும்பும் வண்ணம் இனிமையாக கூறுபவன் (வாக்கி), இவ்வெழுத்து, இச்சொல், இப்பொருளில் பாடுகின்றவன் விரைந்து பாடும் ஆற்றலுடையவன் (ஆசகவி), ஓசையும் பொருளும் வெளிப்பட இனிதாய்ப் பாடுபவன் (மதுரகவி), பல விகற்பங்களால் ஓசை கெடாமல் குற்றங்களறப் பாடுபவன் (சித்திரக்கவி), பல செய்யுட்கள் கூடி அடிகள் மிகுந்து வரும் தொடர் நிலைச் செய்யுள் இயற்றுவான் (வித்தாரக்கவி) என்று பாட்டியல் நூல் தரும் விளக்கங்களை ஆராயும் போது மேற்சொன்ன புலமை சார்ந்தோருக்குரிய முக்கியத்துவம் விரிந்த நூலைப் பாடும் (அகலக்கவி) புலவனுக்கு இல்லை என்பதும் புலமைத் தொழிலின் சிறப்பும் கவிமாக்கத்தின் மேன்மையும் எங்ஙனம் பார்க்கப்பட்டது என்பதும் தெரிய வருகின்றது.

பாட்டியல்கள் முன்வைக்கும் தனித்த புலமை அடையாளங்களைத் தனிப்பாடல்கள் பாடியோரிடத்துக் காண முடிகிறது. கவி காளமேகம், வசைகவி ஆண்டான், அதிமதுரக்கவி, அமுதக்கவி, ஆசகவி, அந்தகக்கவி, நையாண்டி, சுந்தர கவி, திவ்ய கவி, துரித கவி, போன்ற சிறப்புகள் அவர்களுடைய பாடல்களால் வெளிப்பாடு பெறுகின்றன. மேலும், புலவனின் தொழிற்பாட்டை விதிமுறையாக நூல்கள் எடுத்துரைப்பினும் இச்செல்நெறி ஒரு குறிப்பிட்ட சமூக மட்டத்தையே அடிப்படையாகக் கொண்டிருந்தது என்பதையும் அறியலாம். பெரும்பாலும் அரசனது பேரவையில் இடம் பெறாத கவிப்புலமையுடையோர் செல்வந்தர்கள், நிலக்கிழார்களின் ஆதரவினைப் பெற்றுத் தங்களது புலமை இருப்பை வெளிப்படுத்திக் கொண்டனர்.

இப்பாட்டு மரபில் புலவர் - புலவல் உறவினை நோக்கும் போது பெரும்பாலும் பாடுபவர் நோக்கில் பாடல்கள் அமையும் நிலையே தெரிகிறது. இவை இயல்பான வாழ்க்கையின் வெளிப்பாட்டினைப் பகடி செய்கின்றன. தனிமனிதர்களின் குறைகளை - அவர்களின் வெவ்வேறான குணங்களை ஒளிவுமறைவின்றிப் பதிவு செய்கின்றன. எளியவர்களின் பெயர்கள், தொழில், உணவு முறைகள் ஆகியவற்றைச் சுட்டுகின்றன. வட்டாரத் தன்மையில் இரு பொருள்பட அமையும் சொற்களும் தாசிகள் பற்றிய குறிப்பும் பாலுறவு பற்றிய விவரணைகளும் குறியீட்டு மொழியால் கட்டவிழ்கின்றன. புலமைப் போட்டியால் நேரும் கருத்து மாற்றத்தைப் பெரும் எதிர்ப்புகளாக

வெளிக்காட்டுகின்றன. இவ்வாறு தனிப்பாடல்கள் சித்திரிக்கும் பதிவுகள் சாதி அடிப்படையிலான சமூக அதிகாரப் படிநிலைகளுடன் இணைந்து இருப்பதைக் காண்கிறோம்.

ஒட்டக்கூத்தர் - கம்பர்: பிரதியும் மீள்பொருண்மையும்:

தனிப்பாடல் திரட்டில் கம்பர் பாடியனவாக 73 பாடல்கள் உள்ளன. பால்ய பருவத்தில் பாடத்தை மனம் செய்ய முடியாமல் பயந்து சிவன் கோவிலில் சென்று அடைக்கலம் தேடியவருக்கு இறையருளால் கவித்துவம் கிடைத்ததென்றும் கம்பங்கொல்லையில் மேய்ந்த குதிரை இறக்கவும் உயிர் பெற்று மீளவும் பாடல் புனைந்தார் என்றும் சோழ அரசவைப் புலவன் ஒட்டக்கூத்தரைத் துமியென்ற சொல்லால் தோற்கடிக்க அம்பிகை அவருக்கு அருள் புரிந்தார் என்றும் கம்பரைப் பற்றிய புனைவுகள் பலவுண்டு. படைப்புலகில் எளியவனாய்ப் பிரவேசித்துத் தனக்கான இடத்தை ஸ்திரிப்படுத்திக் கொண்டு கவிச் சக்கரவர்த்தியாக வல்லமை பெறும் சாத்தியம் எல்லாப் புலவரிடத்தும் இருப்பதில்லை. ஆனால் கம்பருக்கு மட்டும் இது சாத்தியமாகிறது. ஒட்டக்கூத்தரும் கம்பரும் உடன்காலத்தவர் என்றும் அவர்களிடையே புலமைப் போட்டி இருந்ததென்றும் கூறுவர். கூத்தரை விடக் கம்பர் இளையவர். என்றாலும் தனக்குச் சார்பானவற்றை வலிமைப்படுத்திக் கொள்ளும் நுட்பம் கம்பருக்கு இருந்தது.

கைக்கோளர்களின் வெட்டுப்பட்ட தலைகளை ஒட்டி உயிர் பெறப் பாடிய ஒட்டக்கூத்தர் கம்பரின் கவித்துவ சாதாரியத்தை எதிர்கொள்ள முடியாமல், தான் முழுமையாக எழுதிய இராமாயணப் பிரதிகளைக் கிழித்துப் போட்டுவிட, எஞ்சிய பகுதிகள் கம்பரின் இராம கதைக்குப் பிற்சேர்க்கையாகின்றன. இதுவும் ஒட்டக்கூத்தருக்குக் கம்பரால் கிடைத்த அங்கீகாரம் என்றே சொல்லலாம். தம்மைக் காட்டிலும் பெரும்கவி வல்லமை எவருக்குமில்லை என்ற புலமைப் போட்டியில் ஒட்டக்கூத்தரின் பகை காரணமாகச் சிறைப்பட்டிருந்த புகழேந்திப்புலவர் அங்கிருந்த வேளாளன், கருமான் முதலான அறுவர்களுக்குப் கவிதை இயற்றும் பயிற்சியளித்து ஒட்டக்கூத்தருக்கு எதிராகப் புலவர்களை உருவாக்குகிறார். கைக்கோளர் சமூகத்தைச் சார்ந்த கூத்தருக்கு எதிராக வேளாளன், கருமான், நாவிதர், குயவன், தச்சன், தட்டான் ஆகியோர் அறிவுசார் புலமைமிக்கவர்களாக இருப்பதைத் தனிச்செய்யுட் சிந்தாமணி நூலில் குயவன் முதலிய அறுவர் எனும் பகுதி விளக்குகிறது. இதில்,

“கொல்லன் கவியைக்குறை சொல்லு வோரைக் குறுகொண்டு பல்லைப்பிடுங்கிப் பருந்தாட்டம் ஆட்டிப் பகைவர்முன்னே அல்லும் பகலும் அடிப்பேன் இரும்பாணி கொண்டே” (பாடல் எண்: 23)

என்று கருமான் கோபத்துடன் பாடுகிறார். மேலும்,

“கண்பொட்டை யாயினும் அம்பட்டன் நான்கவி வாணர்முன்னே பண்பட்ட செந்தமிழ் நீயும் திடுக்கிடப் பாடுவனே” (பாடல் எண்:24) என்று நாவிதர் பின்னிரண்டு அடிகளைத் தொடுத்து ஒட்டக்கூத்தரின் பாடலை முடித்து வைக்கிறார். இதனைவிடச் சற்றுக் கடுமையாக ஒட்டக்கூத்தரைச் சாடும் தச்சன் பாடலொன்றும் உண்டு. “உண்ணப் போல் பாடலை எல்லோராலும் இயற்ற முடியும். அதனால் நீ ஆணவம்

கொள்ள வேண்டாம். ஆனால் என்னுடைய பாடலை ஒருவர் இகழ்ந்தால் மரம் வெட்டும் கருவியால் அவருடைய வாயைப் பிளந்து செவிகளில் என் பாட்டாகிய ஆப்பினைச் செலுத்துவேன்” (பாடல் எண்: 26) என்று அப்பாடலின் பொருள் அமைகிறது. இதனை ஒட்டக்கூத்தரின் சோதனைக் காலம் என்றே சொல்லலாம். இதன் தாக்கத்தைத் தொடக்கத்தில் அறிந்திராத கூத்தர், கம்பர் வருகைக்குப் பின்னர் அதனை உணர்ந்திருக்க வேண்டும். அதனால்தான்

“இன்றல்லோ கம்பன் இறந்த நாள்? என் கவிதை இன்றல்லோ ராசபைக்கு ஏற்கும் நாள்”
(பாடல் எண்:4)

என்று கவி பாட வைக்கிறது. அந்த அளவிற்குக் கம்பரின் புலமை மீதான வன்மம் வெறும் கவிதை சார்ந்ததாக மட்டும் இருக்க முடியாது. இதனை “செட்டிமக்கள், செக்காரப் பொட்டி மக்கள், பார்ப்பார் ஆகியோர் குடியிருக்கும் தெருவில் நான் செல்வதில்லை. எக்காலத்திலும் எம்மைக் காப்பவர் வேளாளர்களே” (பாடல் எண்: 45) என்ற கம்பர் கூற்றின் பின்புலத்திலும் ஆராய்வதற்கு இடமிருக்கிறது.

இனி கம்பரின் பிரதிகள் குறித்த பதிவுகளை அணுகுவோம். கம்பர் தன்னுடைய இராம கதையை அரங்கேற்றம் செய்வதற்கு பட்ட சிரமம் அநேகம். தமது பாடலைத் திருவரங்கத்தில் அரங்கேற்றுவதற்கு முன்பாகத் தில்லையிலுள்ள தீட்சீதர்கள் ஒன்றாகச் சேர்ந்து அப்பாடலைக் கேட்க வேண்டும் என்ற காரணத்திற்காகப் பல காலம் அவர் காத்திருக்க வேண்டியிருந்தது. அதனால் ஏற்பட்ட நெருக்கடியும் கோபமும் தீட்சீதர்களுக்கு எதிரான ஒரு பாடலாக மாறுகிறது. “தில்லையில் சிவனின் திருவருளைப் பெற்ற தம்பிகளான் என்ற நாவிதனிடம் தேடிச் சென்று முடி மழித்தற்காகத் தலையைக் குனியாதவர்கள் இங்கு எவரும் இல்லை. அதன் பொருட்டு தமது இரு கைகளையும் தலைக்கு மேல் தூக்கி அவனை வணங்காதவர்கள் எவருமில்லை” (பாடல் எண்:9) என்பது இப்பாடற்பொருள்.

கவிச்சக்கரவர்த்தியைப் பெண் பித்தராகச் சித்திரிக்கும் பிம்பங்கள் உள்ளன. (பாடல்எண்: 64,65) இதில் தாசியரோடு உறவு கொள்ளாதலும் முறைபிறழ் உறவில் சிக்கல் உருவாகும் போது தப்பித்தலும் சமூகம் உருவாக்கி வைத்திருக்கும் கட்டுப்பாடுகளை மீறுதலுக்கான கவிமனத்தின் வெளிப்பாடே ஆகும். ஒரு நிலையில் அரசனுக்கு எதிராக அமையும் குறையைக்கு இது அடிப்படையாக அமைகிறது. கம்பர் பொன்னியென்னும் தாசிக்கு தான் எப்போதும் அடிமை என்று ஒலையெழுதிக் கொடுக்க, இதைக் கேள்வியுற்ற சோழ மன்னன் கம்பரின் செயலைக் குறை கூறுகிறான். அதனைக் கேட்டு சினமுற்ற கம்பர்

“மன்னவனும் நீயோ? வளநாடும் உன்னதோ?
உன்னை அறிந்தோ தமிழை ஒதினேன்? -
என்னை விரைந்தேற்றுக் கொள்ளாத வேந்து
உண்டோ? உண்டோ குரங்குஏற்றுக் கொள்ளாத
கொம்பு?” (பாடல் எண்:41)

என்று பாடுவதுடன் உன் நாட்டைத் தவிர தான் தங்குவதற்கு வேறு நாடுகள் இல்லாமலில்லை என்ற உறுதியுடன் கொங்கு நாட்டுக்குச் செல்கிறார். ஆனால் கொங்கு நாட்டில் தம் புலமைக்கு மரியாதை கிடைக்காததால் அந்நாட்டையும் மக்களையும் இழித்துப் பாடுகிறார்

“நீரெலாம் சேற்று நாற்றம் நிலமெலாம் கல்லும்
முள்ளும் ஊரெலாம் பட்டி தொட்டி உண்பதோ
கம்பஞ்சோறு பேரெலாம் பொம்மன் திம்மன்
பெண்களோ நாயும் பேயும் காலுலாம் கொங்கு
நாட்டைக் கனவிலும் நினைக்கொணாதே”

இதன் கருத்து பின்வருமாறு: “நீரெல்லாம் சேற்று நாற்றம் அடிக்கும்: நிலமெங்கும் கல்லும் முள்ளும் நிறைந்திருக்கும்: பட்டி,தொட்டி என்ற பெயரில் ஊர்கள் இருக்கும்: மக்கள் உண்பதோ கம்பஞ்சோறு உணவு: மக்களின் பெயர்கள் பொம்மன்,திம்மன் என்று அநாகரிகமாக வழங்கப்படும்: பெண்கள் நாயையும் பேயையும் போன்று கூக்குரலிட்டு அலைந்து திரிவர்: அப்படிப்பட்ட மேகம் தவழும் கொங்கு நாட்டைக் கனவிலும்கூட நினைக்கக் கூடாது” (பாடல் எண்:43) என்ற முழக்கம் கொங்கு பகுதிகளில் குடியேறிய பிறமொழியினரின் ஆதிக்கத்திற்கு எதிரான குரலாகவும் பதிவாகிறது.

காளமேகமும் வசையும்

கவிமரபில் காளமேகப் புலவர் தனித்துவம் மிக்கவர். அவர் ஒரு ஊர்சுற்றி. எந்தவிதமான கட்டுப்பாடும் இல்லாதவர் சமூகம் வரையறுத்த ஒழுக்க நியதிகளை, மரபுகளை மீறியவர். அதே சமயம் கவிபாற்றல் இயல்பாக வரப்பெற்ற, மிகப்பரந்த,விஸ்தார புலமை கொண்டவர். “காளமேகம் ஒரு மகாகவியாக பரிணமித்திருக்க வேண்டியவன். ஆனால், அவனுடைய காலச்சூழல் அல்லது அவனுடைய அலட்சிய இயல்பு ஒரு குறிப்பிட்ட எல்லையோடு நிறுத்தி விட்டது” என்னும் பெருமாள் முருகனின் கருத்து காளமேகத்தின் கவிமனப்புவத்திற்கு உண்மை வெளிச்சம் பாய்ச்சுகிறது எனலாம்.

தனிப்பாடல் திரட்டில் காளமேகப் புலவர் பாடிய ஆறு வசைப் பாடல்கள் இடம் பெற்றுள்ளன.

1. திருமலைராயன் நாட்டில் பொய்யும் வஞ்சகமும் பெருக மண்மழை பெய்து அந்நாடு அழியப் பாடுதல்
2. ஏரி உடைந்து வெள்ளநீரில் அரச அதிகாரிகளும் வேளாளரும் அழியப் பாடுதல்
3. உன்னைக் கொடுப்பாய் என்ற தாயின் குழந்தை இறக்கப் பாடுதல்
4. பொருள்களை அதிக விலைக்கு விற்பவர்களை வசை பாடுதல்
5. வழிபாட்டின்போது காலதாமதம் ஆனதால் திருவாரூர்த் தியாகராசரின் கழுத்து வயிர மாலை அற்றுப்போகப் பாடுதல்
6. இஞ்சிக்குடியில் வாழும் தாசி கலைச்சிமேல் வசை

மேற்கூறியவற்றின் அடிப்படையில் காளமேகத்தின் வசைப் பாடல்களை அணுகும் போது கிடைத்துள்ள நிகழ்ச்சிகளுள் அழிவு நிகழ்ச்சிகளே மிகுதி எனலாம். காளமேகத்தின் சிலைடைத்திறத்திற்குள் சொல் விளையாட்டு, எதிர்ப்புணர்வு, பாலியல் என எத்தனையோ காரணங்கள் இருக்கலாம். அவற்றையெல்லாம் மீறி வசைப்பாடுவதையே தனது கருத்தியல் தளமாகப் பரிணமித்துக் காட்டுகிறார். இந்த அடிப்படையிலேயே அவருடைய கவிமரபை அணுக முடிகிறது. காளமேகத்தை ஆதரித்த திருமலைராயன் தமது அவைக்களப் புலவராய்

அதிமதுரகவிராயரை நியமிக்க, காளமேகப் புலவர் அவரோடு செய்த புலமை வாதத்தை விரும்பாததையே அநேகப் பாடல்கள் காட்டுகின்றன. இதனால் திருமலைராயனை வசை பாடுவதற்காக, அவன் முன் பொருத்தமில்லாத பொருட்களைப் பொருத்தமானதாக இருப்பதாக (சான்றாக: வைக்கோல் ஓ யானை) சிலேடைப் பாடல்கள் மூலம் அமைத்துக் காட்டுகிறார். இந்தக் கவிநுட்பத்தின் ஒரு பகுதியே வசையாக மாறுகிறது.

“கோளர் இருக்குமர், கோள்கரவு கற்றணர்
காளைகளாய் நின்று கதறுமர் - நாளைபே
விண்மாரி அற்று வெளுத்து மிக்ககறுத்து

மண்மாரி பெய்க இந்தவான்” (பாடல் எண்: 149)

என அமையும் ஒரு வசைப்பாடல். அதாவது, திருமலைராயன் ஊரில் கொலை செய்பவர்கள், புறங்கூறுபவர்கள், வஞ்சகர்கள், பொறுப்பில்லாமல் சண்டையிடும் இளைஞர்கள் நிறைந்திருக்கின்றனர். எனவே, மண் மறை பொழிந்து நகரம் அழிந்து போகட்டும் என்று அவரால் வசைப்பாட முடிகின்றது. இன்னொரு பாடலில், ஏரி முற்றும் உடைந்து பெருகி வரும் நீரில் திருமலைராயனுக்கு துணைபோகும் அதிகாரி நாரணனும் வேளாளர்களும் அடித்துச் செல்லப்பட்டு அவர்கள் உயிர்மாண்டு போக வசை பாடுகிறார். (பாடல் எண்: 177)

மக்கள் உணவுக்காக அலைந்து திரியும் காலத்தில் அவர்களுக்குத் தேவையான உண்டியும் உறைவிடமும் தரவேண்டியது ஆட்சிப்புரிபவர்களின் பொறுப்பாகும். அதே சமயம் குறைந்த விலைக்கு விற்க வேண்டிய பொருட்களை அதிக விலைக்கு விற்பவர்களையும் பொருட்களைப் பதுக்குபவர்களையும் தண்டிக்க வேண்டியதும் அரசின் கடமை. அது நிறைவேறாத தருணங்களில் கவிஞரின் உள்ளக்கிடக்கையில் அதிகாரத்தில் இருப்பவர்களின் மீது கோபமும், உணவுக்காக அலைந்து திரியும் மக்களிடம் அனுதாபமும் ஏற்பட்டு வசையாக மாறுகிறது. “தண்டாங்கூரில் வாழுகின்ற மக்களே, உங்களை நல்ல குணம் கொண்டவர்கள் என நினைத்தேன். ஆனால், நீங்களோ பொருட்களை ஏற்ற விலைக்குத் தராமல் அதிகமான விலைக்கு விற்பதோடு பொருளின் அளவையும் குறைவாகக் கொடுத்து அநியாயம் செய்கிறீர்கள். உங்களுடைய இந்தச் செயலால் ஒரு வருடம் முழுவதும் உங்கள் வீட்டுப் பெண்களை உணவுக்காக ஒவ்வொரு தெருவிலும் அலையச் செய்து விட்டீர்களே” (பாடல் எண்: 122) என்று வசை பாடுகிறார். இப்பாடல் திருமலைராயன் ஆட்சிமுறைக்கு எதிரான பதிவாக அமைகிறது.

காளமேகம் ஒரு பந்தியில் உணவு அருந்திக் கொண்டு இருக்கும் போது, எதிரில் அமர்ந்த சோழிய பிராமணனின் குடுமி அவிழ்ந்து இலையில்விழ, அப்போது புலவர்,

“சுருக்குஅவிழ்ந்த முன்குடுமிச் சோழியா,
சோற்றுப் பொருக்குஉலர்ந்த வாயா புலையா -

திருக்குடந்தைக் கோட்டானே, நாயே, குரங்கே,
உணைஒருத்தி போட்டாளே வேலைஅற்றுப் போய்”

ஏன்று சமாராதனையில் எதிர் அமர்ந்து உண்ட சோழிய பிராமணனை வசை பாடுகிறார். வைணவ குலத்தில் இருந்து சைவ குலத்திற்கு மாறிய காளமேகப் புலவர் சோழிய பிராமணனை வசை பாடுவதை எதிர்த்த நிகழ்வின் பின்னணியில் எழுந்த வசையாகப் பார்க்க இயலாது.

நிறைவாக

இது காரும் ஆராயப்பட்ட தனிப்பாடல்களின் பொருண்மைகளை நோக்கும் போது சில முடிவுகளுக்கு வர முடிகின்றது.

1. சங்க மரபில் இருந்த புலமை மரபின் தொடர்ச்சியைத் தனிப்பாடல் புலவர்களிடமும் காணமுடிகிறது.
2. தனிப்பாடல்கள் கவிஞர்கள் பெரும்பாலும் ஊர் ஊராகச் சுற்றித்திரியும் இயல்பினர்.
3. தன்னுணர்ச்சி மிக்க கவித்துவச் சுவை தனிப்பாடல்களில் வெளிப்படுவதோடு, அவை சமூக அதிகாரக் கட்டமைப்பின் முரண்களை மீறுவதோடு மறுக்கப்பட்ட சொல்லாடல்களால் தமது புலமை மரபைக் கட்டமைக்கிறது.
4. அரசர், வள்ளல்கள், நிலக்கிழார், செல்வந்தர்கள் மற்றும் ஏனையோர் தம்மைப் புறக்கணித்தபோதும், அவர்களால் பாதிப்பு ஏற்படும் போதும் தனிப்பாடல்கள் தோன்றுகின்றன.
5. சமூகத்தில் கற்பிக்கப்பட்டு வந்த புனிதங்களைப் சொல் விளையாட்டுகளில் பகடி செய்வதோடு, எதிர் விளையாற்றும் கலக மனம் கொண்ட புலமையின் வெளிப்பாடாக தனிப்பாடல்கள் திகழ்கின்றன.

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Remarks on Nano Irresolute Functions

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Abstract

The aim of this paper is to present a new class of irresoluteness. The notion of nano irresolute functions is introduced and studied their characterisations in terms of nano semi-closed sets, nano semi-closure and nano semi-interior.

Keywords: Nano topology, nano semi-interior, nano semi-closure, nano irresolute functions.

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1 INTRODUCTION

The concept of continuity is connected with the concept of topology. Some researchers studied weaker and stronger forms of continuous functions in topology using the sets stronger and weaker than the open and closed sets. In 1963 N. Levine introduced semi-continuous functions using semi-open sets. Crossley and Hildebrand[2] introduced and investigated irresolute functions which are stronger than semi continuous maps but are independent of continuous maps. Since then several researchers have introduced several strong and weak forms of irresolute functions. The notion of Nano topology was introduced by Lellis Thivagar[4], which was defined in terms of approximations and boundary region of a subset of an universe using an equivalence relation on it. He has also defined nano closed sets, nano-interior and nano closure. In this paper, we have introduced a new functions on nano topological spaces called nano irresolute functions and derived their characterisations in terms of nano semi-closed sets, nano semi-closure and nano semi-interior.

2 Preliminaries

Definition 2.1 [5]: Let \mathcal{U} be a non-empty finite set of objects called the universe \mathcal{R} be an equivalence relation on \mathcal{U} named as the indiscernibility relation. Elements belonging to the same equivalence class are said to be indiscernible with one another. The pair (\mathcal{U}, R) is said to be the approximation space. Let $X \subseteq \mathcal{U}$.

(i) The Lower approximation of X with respect to R is the set of all objects, which can be for certain classified as X with respect to R and it is denoted by $L_R(X)$. That is,

$$L_R(X) = \left\{ \bigcup_{x \in \mathcal{U}} \{R(x) : R(x) \subseteq X\} \right\},$$
 where $R(x)$ denotes the equivalence class determined by x .

(ii) The Upper approximation of X with respect to R is the set of all objects, which can be possibly classified as X with respect to R and it is denoted by

$$U_R(X) = \left\{ \bigcup_{x \in \mathcal{U}} \{R(x) : R(x) \cap X \neq \emptyset\} \right\}$$

(iii) The Boundary region of X with respect to R is the set of all objects which can be classified neither as X nor as not X with respect to R and it is denoted by

$$B_R(X) = U_R(X) - L_R(X).$$

Definition 2.2 [5]: Let \mathcal{U} be the universe, R be an equivalence relation on \mathcal{U} and $\tau_R(X) = \{\mathcal{U}, \emptyset, L_R(X), U_R(X), B_R(X)\}$ where $X \subseteq \mathcal{U}$ and $\tau_R(X)$ satisfies the following axioms.

- (i) \mathcal{U} and $\emptyset \in \tau_R(X)$
- (ii) The union of elements of any subcollection $\tau_R(X)$ is in $\tau_R(X)$.
- (iii) The intersection of the elements of any finite subcollection of $\tau_R(X)$ is in $\tau_R(X)$. That is $\tau_R(X)$ forms a topology \mathcal{U} called as the nano topology on \mathcal{U} with respect to X . $(\mathcal{U}, \tau_R(X))$ as the nano topological space. The elements of $\tau_R(X)$ are called as nano open sets. A set A is said to be nano closed if its complement is nano open.

Definition 2.3 [5]: If $(\mathcal{U}, \tau_R(X))$ is a nano topological space with respect to X where $X \subseteq \mathcal{U}$ and if $A \subseteq \mathcal{U}$, then nano interior of A is defined as the union of all nano open sets contained in A and its denoted by $\mathcal{N}Int(A)$. That is $\mathcal{N}Int(A)$ is the largest nano open subsets contained in A .

The nano closure of A is defined as the intersection of all nano closed sets containing A and its denoted by $\mathcal{N}Cl(A)$. That is $\mathcal{N}Cl(A)$ is the smallest closed set containing A .

Definition 2.4 [5]: Let $(\mathcal{U}, \tau_R(X))$ be a nano topological spaces and $A \subseteq \mathcal{U}$ then A is said to be nano semi-open if $A \subseteq \mathcal{N}cl(\mathcal{N}Int(A))$.

Definition 2.5 [6]: Let $(\mathcal{U}, \tau_R(X))$ and $(\mathcal{V}, \tau_{R'}(Y))$ be nano topological spaces. Then a mapping $f : (\mathcal{U}, \tau_R(X)) \rightarrow (\mathcal{V}, \tau_{R'}(Y))$ is nano continuous on \mathcal{U} if the inverse image of every nano-open set in \mathcal{V} is nano-open in \mathcal{U} .

Definition 2.6 [5]: Let A be a subset of a nano topological space $(\mathcal{U}, \tau_R(X))$. An element $x \in A$ is said to be a nano semi-interior point of A if $G \subseteq A$ for some nano semi-open set G such that $x \in G$. The set of all nano semi-interior points of A is called the nano semi-interior of A and is denoted by $\mathcal{N}Sint(A)$.

Definition 2.7 [5]: The nano semi closure of a subset A of \mathcal{U} is defined as the smallest nano semi-closed set containing A and is denoted by $\mathcal{N}Scl(A)$.

Definition 2.8 [3]: Let (X, τ) and (Y, σ) be topological spaces then the function $f : X \rightarrow Y$ is said to be irresolute if $f^{-1}(B)$ is semi-open in \mathcal{U} , for every semi-open set B in \mathcal{V} .

3 NANO IRRESOLUTE FUNCTIONS

Definition 3.1 : A function $f : \mathcal{U} \rightarrow \mathcal{V}$ is said to be nano irresolute if $f^{-1}(B)$ is nano semi-open in \mathcal{U} , for every nano semi-open set B in \mathcal{V} .

Example 3.2 : Let $\mathcal{U} = \{a, b, c, d, e\}$, with $\mathcal{U}/R = \{\{a, b\}, \{c\}, \{d, e\}\}$ and $X = \{a, c\} \subseteq \mathcal{U}$ then $\tau_R(X) = \{\mathcal{U}, \emptyset, \{c\}, \{a, b, c\}, \{a, b\}\}$,
 $\tau_R SO(X) = \{\mathcal{U}, \emptyset, \{c\}, \{a, b\}, \{c, d\}, \{c, e\}, \{a, b, c\}, \{a, b, e\}, \{c, d, e\}, \{a, b, c, d\}, \{a, b, c, e\}\}$

Let $\mathcal{V} = \{x, y, z, w\}$ with $\mathcal{V}/R' = \{\{x, y\}, \{z, w\}\}$, $Y = \{x, y\} \subseteq \mathcal{V}$, then $\tau_{R'}(Y) = \{\mathcal{V}, \emptyset, \{x, y\}\}$ and $\tau_{R'}SO(Y) = \{\mathcal{V}, \emptyset, \{x, y\}, \{x, y, z\}, \{x, y, w\}\}$, Define $f(a)=x, f(b)=f(c)=y, f(d)=z, f(e)=w$. Hence $f^{-1}\{x, y\} = \{a, b, c\}$, $f^{-1}\{x, y, z\} = \{a, b, c, d\}$, $f^{-1}\{x, y, w\} = \{a, b, c, e\}$, $f^{-1}\{\mathcal{U}\} = \{\mathcal{U}\}$, $f^{-1}\{\emptyset\} = \{\emptyset\}$. Hence the inverse image of every nano semi-open set in \mathcal{V} is nano semi-open set in \mathcal{U} .

Theorem 3.3 : If $f : \mathcal{U} \rightarrow \mathcal{V}$ be nano continuous and nano open, then $f^{-1}\mathcal{Ncl}(A) = \mathcal{Ncl}(f^{-1}(A))$.

Theorem 3.4 : Let $f : \mathcal{U} \rightarrow \mathcal{V}$ be nano continuous and nano open, then f is nano irresolute.

Proof: Let B be a nano semi-open set in \mathcal{V} , then there is an nano open set V in \mathcal{V} such that $V \subseteq B \subseteq \mathcal{Ncl}(V)$. By Theorem 3.3, $f^{-1}(\mathcal{Ncl}(V)) = \mathcal{Ncl}[f^{-1}(V)]$. Also, $f^{-1}(V) \subseteq f^{-1}(B) \subseteq f^{-1}(\mathcal{Ncl}(V)) = \mathcal{Ncl}[f^{-1}(V)]$ and since f is nano continuous, $f^{-1}(V)$ is nano open. Thus $f^{-1}(B)$ is nano semi-open.

Remark 3.5 : A nano continuous and nano irresolute function need not be nano open, which can be shown by the following example.

Example 3.6 : Let $\mathcal{U} = \{a, b, c, d, e\}$, with $\mathcal{U}/R = \{\{a, b\}, \{c, e\}, \{d\}\}$. Then the set $X = \{a, d\} \subseteq \mathcal{U}$, Then $\tau_R(X) = \{\mathcal{U}, \emptyset, \{d\}, \{a, b, d\}, \{a, b\}\}$ and $\tau_RSO(X) = \{\mathcal{U}, \emptyset, \{d\}, \{c, d\}, \{d, e\}, \{a, b\}, \{a, b, d\}, \{a, b, c, d\}, \{a, b, d, e\}, \{a, b, e\}, \{c, d, e\}, \{a, b, c, e\}\}$ and Let $\mathcal{V} = \{x, y, z, w\}$, with $\mathcal{V}/R' = \{\{x, z\}, \{y, w\}\}$, $Y = \{x, z\} \subseteq \mathcal{V}$ and $\tau_{R'}(Y) = \{\mathcal{V}, \emptyset, \{x, z\}\}$, $\tau_{R'}SO(Y) = \{\mathcal{V}, \emptyset, \{x, z\}, \{x, y, z\}, \{x, z, w\}\}$ and Define $f : \mathcal{U} \rightarrow \mathcal{V}$ as $f(a) = z, f(b) = z, f(c) = w, f(e) = y, f(d) = x$. Now $f^{-1}\{\mathcal{V}\} = \{\mathcal{U}\}$, $f^{-1}\{\emptyset\} = \emptyset$, $f^{-1}\{x, z\} = \{a, b, d\}$. Hence the inverse image of every nano open set in \mathcal{V} is nano open in \mathcal{U} . Thus f is nano continuous and also $f^{-1}\{x, z\} = \{a, b, d\}$, $f^{-1}\{x, y, z\} = \{a, b, d, e\}$, $f^{-1}\{x, z, w\} = \{a, b, d, c\}$. Hence the inverse image of every nano semi-open set in \mathcal{V} is nano semi-open in \mathcal{U} . Hence f is nano irresolute. But $f\{d\} = \{x\}$ and $f\{a, b\} = \{z\}$, which are all not nano open in \mathcal{V} . Hence f is not nano open. Thus a nano continuous and nano irresolute function need not be nano open.

Remark 3.7 : Nano irresolute functions are not necessarily nano continuous which can be shown by the following example.

Example 3.8 : Let $\mathcal{U} = \{a, b, c, d, e\}$, with $\mathcal{U}/R = \{\{a, b\}, \{c\}, \{d\}, \{e\}\}$ and $X = \{a, b\} \subseteq \mathcal{U}$, Then $\tau_R(X) = \{\mathcal{U}, \emptyset, \{a, b\}\}$ and $\tau_RSO(X) = \{\mathcal{U}, \emptyset, \{a, b\}, \{a, b, c\}, \{a, b, d\}, \{a, b, e\}, \{a, b, c, d\}, \{a, b, d, e\}, \{a, b, c, e\}\}$ and Let $\mathcal{V} = \{x, y, z, u, v\}$, with $\mathcal{V}/R' = \{\{x, y, z\}, \{u, v\}\}$, $Y = \{x, y, z\} \subseteq \mathcal{V}$ and $\tau_{R'}(Y) = \{\mathcal{V}, \emptyset, \{x, y, z\}\}$, $\tau_{R'}SO(Y) = \{\mathcal{V}, \emptyset, \{x, y, z\}, \{x, y, z, u\}, \{x, y, z, v\}\}$. Define $f : \mathcal{U} \rightarrow \mathcal{V}$ as $f(a) = x, f(b) = y, f(c) = u, f(d) = v, f(e) = z$. Now $f^{-1}\{\mathcal{V}\} = \mathcal{V}$, $f^{-1}\{\emptyset\} = \emptyset$, $f^{-1}\{x, y, z\} = \{a, b, e\}$, $f^{-1}\{x, y, z, u\} = \{a, b, c, e\}$, $f^{-1}\{x, y, z, v\} = \{a, b, d, e\}$. Thus the inverse image of every nano semi-open set in \mathcal{V} is nano semi-open in \mathcal{U} . Hence f is nano irresolute. But $f^{-1}\{x, y, z\} = \{a, b, e\}$ which is not nano open in \mathcal{U} . Hence inverse image of every nano open set in \mathcal{V} is not nano open in \mathcal{U} . hence f is not nano continuous.

Theorem 3.9 : A function $f : \mathcal{U} \rightarrow \mathcal{V}$ is nano irresolute iff for each point $p \in \mathcal{U}$ and each nano semi-open set B in \mathcal{V} with $f(p) \in B$, there is a nano semi-open set A in \mathcal{U} such that $p \in A$ such that $f(A) \subseteq B$.

Proof: \Rightarrow : Let $p \in X$ and $B \in NSO(\mathcal{V})$ such that $f(p) \in B$. Let $A = f^{-1}(B)$. Since f is nano irresolute, A is nano semi-open in \mathcal{U} . Also $f^{-1}(B) = A$ as $f(p) \in B$. Also, we have $f(A) = f(f^{-1}(B)) \subseteq B$.

\Leftarrow : Let $B \in NSO(\mathcal{V})$, let $A = f^{-1}(B)$. We prove that A is nano semi-open in \mathcal{U} . For this let $x \in A$. It implies that $f(x) \in B$. Then by hypothesis, there exists $A_x \in NSO(\mathcal{U})$ such that $x \in A_x$ and $f(A_x) \subseteq B$. Then $A_x \subseteq f^{-1}(f(A_x)) \subseteq f^{-1}(B) = A$. Thus $A = \bigcup_{x \in A} A_x$.

It follows that A is nano semi-open in \mathcal{U} . Hence f is nano irresolute.

4 Characterizations

Theorem 4.1 : *A function $f : \mathcal{U} \rightarrow \mathcal{V}$ is nano irresolute iff for every nano semi-closed set subset A of \mathcal{V} , $f^{-1}(A)$ is nano semi-closed set in \mathcal{U} .*

Proof: \Rightarrow : If $f : \mathcal{U} \rightarrow \mathcal{V}$ is nano irresolute then for every nano semi-open set B of \mathcal{V} , $f^{-1}(B)$ is nano semi-open in \mathcal{U} . If A is any nano semi-closed subset of \mathcal{V} , then $(\mathcal{V} - A)$ is nano semi-open. Thus $f^{-1}(\mathcal{V} - A)$ is nano semi-open, but $f^{-1}(\mathcal{V} - A) = (\mathcal{U} - f^{-1}(A))$ so that $f^{-1}(A)$ is nano semi-closed.

\Leftarrow : If for all nano semi-closed subset A of \mathcal{V} , $f^{-1}(A)$ is nano semi-closed in \mathcal{U} , and if B is any nano semi-open subset of \mathcal{V} , then $(\mathcal{V} - B)$ is nano semi-closed. Also $f^{-1}(\mathcal{V} - B) = \mathcal{U} - f^{-1}(B)$, is nano semi-closed. Thus $f^{-1}(B)$ is nano semi-open.

Theorem 4.2 : *A function $f : \mathcal{U} \rightarrow \mathcal{V}$ where \mathcal{U} and \mathcal{V} are nano topological spaces is nano irresolute iff for every subset A of \mathcal{U} , $f(Ncl(A)) \subseteq Ncl(f(A))$.*

Proof: \Rightarrow : Let A be any subset of \mathcal{U} , then $Ncl(f(A))$ which is nano semi-closed in \mathcal{V} . Thus by Theorem 4.1, $f^{-1}[Ncl(f(A))]$ is nano semi-closed in \mathcal{U} . Further more, $A \subseteq f^{-1}(f(A)) \subseteq f^{-1}[Ncl(f(A))]$, hence by definition of nano semi-closure, $Ncl(A) \subseteq f^{-1}[Ncl(f(A))]$ and consequently, $f[Ncl(A)] \subseteq f[f^{-1}[Ncl(f(A))]] \subseteq f[Ncl(A)] \subseteq Ncl[f(A)]$.

\Leftarrow : If B is nano semi-closed in \mathcal{V} , consider $f^{-1}(B)$, $f(Ncl(f^{-1}(B))) \subseteq Ncl(f(f^{-1}(B))) = Ncl(B \cap f(S)) \subseteq Ncl(B) = B$. Hence $Ncl f^{-1}(B) \subseteq f^{-1}(B)$, so that $Ncl f^{-1}(B) = f^{-1}(B)$. Hence $f^{-1}(B)$ is nano semi-closed. Thus f is nano irresolute.

Theorem 4.3 : *A function $f : \mathcal{U} \rightarrow \mathcal{V}$ is nano irresolute iff for all $B \subseteq \mathcal{V}$, $Ncl[f^{-1}(B)] \subseteq f^{-1}[Ncl(B)]$.*

Proof: \Rightarrow : Let $Ncl(B)$ is nano semi-closed in \mathcal{V} , so that $f^{-1}[Ncl(B)]$ is nano semi-closed in \mathcal{U} . Since $f^{-1}(B) \subseteq f^{-1}[Ncl(B)]$, by the definition of semi-closure, $Ncl[f^{-1}(B)] \subseteq f^{-1}[Ncl(B)]$.

\Leftarrow : If B is nano semi-closed in \mathcal{V} , then $B = Ncl(B)$, then $f^{-1}(B) \subseteq Ncl[f^{-1}(B)] \subseteq f^{-1}(Ncl(B)) \subseteq f^{-1}(B)$. That is $f^{-1}(B) = Ncl[f^{-1}(B)]$, hence $f^{-1}(B)$ is nano semi-closed, therefore $f : \mathcal{U} \rightarrow \mathcal{V}$ is nano irresolute.

Theorem 4.4 : *A function $f : \mathcal{U} \rightarrow \mathcal{V}$ is nano irresolute iff for all $B \subseteq \mathcal{V}$, $f^{-1}[NSInt(B)] \subseteq NSInt[f^{-1}(B)]$.*

Proof: \Rightarrow : Let $B \subseteq \mathcal{V}$. Since $NSInt(B) = \mathcal{V} - NScl((\mathcal{V} - B))$. Hence $f^{-1}(NSInt(B)) = f^{-1}(\mathcal{V} - NScl((\mathcal{V} - B))) = f^{-1}(\mathcal{V} - f^{-1}(NScl(\mathcal{V} - B))) = \mathcal{U} - f^{-1}((NScl(\mathcal{V} - B)))$. Since f is nano irresolute, we have $NScl(f^{-1}(\mathcal{V} - B)) \subseteq f^{-1}[NScl(\mathcal{V} - B)]$. Hence $f^{-1}(NSInt(B)) \subseteq \mathcal{U} - NScl[f^{-1}(\mathcal{V} - B)]$. Thus $NScl[f^{-1}(B)] \subseteq f^{-1}[NScl(B)]$. $f^{-1}(NSInt(B)) \subseteq \mathcal{U} - NScl[f^{-1}(\mathcal{V} - f^{-1}(B))]$. Therefore $f^{-1}(NSInt(B)) \subseteq \mathcal{U} - NScl[\mathcal{U} - f^{-1}(B)]$. Hence it follows that $f^{-1}[NSInt(B)] \subseteq NSInt[f^{-1}(B)]$.

\Leftarrow : Let $B \in \mathcal{NSo}(\mathcal{V})$. Then clearly $B = \mathcal{NSInt}(B)$. So by hypothesis, $f^{-1}(B) \subseteq \mathcal{NSInt}f^{-1}(B)$. But we know that $\mathcal{NSInt}f^{-1}(B) \subseteq f^{-1}(B)$. Thus $f^{-1}(B) = \mathcal{NSInt}(f^{-1}(B))$. Hence $f^{-1}(B) \in \mathcal{NSo}(\mathcal{U})$. Therefore, f is nano irresolute.

Theorem 4.5 : *If $f : \mathcal{U} \rightarrow \mathcal{V}$ and $g : \mathcal{V} \rightarrow \mathcal{W}$ are both nano irresolute, then $g \circ f : \mathcal{U} \rightarrow \mathcal{W}$ is nano irresolute. The composition of two nano irresolute is a nano irresolute.*

Proof: Let B be any nano semi-open subset of \mathcal{W} , then $g^{-1}(B)$ is nano semi-open in \mathcal{V} , and $f^{-1}(g^{-1}(B))$ is nano semi-open in \mathcal{U} , since f and g are nano irresolute, $(g \circ f)^{-1}(B) = f^{-1}(g^{-1}(B))$ is nano semi-open in \mathcal{U} , for every nano semi-open set in \mathcal{W} . Hence $g \circ f$ is nano irresolute.

Example 4.6 : *Let $\mathcal{U} = \{a, b, c, d, e\}$ with $\mathcal{U}/R' = \{\{a, b\}, \{c\}, \{d\}, \{e\}\}$. Let $X = \{d, e\} \subseteq \mathcal{U}$, $Y = \{c, d, e\} \subseteq \mathcal{U}$, $Z = \{a, b, d, e\} \subseteq \mathcal{U}$. $\tau_R(X) = \{\mathcal{U}, \emptyset, \{d, e\}\}$, $\tau_R(Y) = \{\mathcal{U}, \emptyset, \{c, d, e\}\}$, $\tau_R(Z) = \{\mathcal{U}, \emptyset, \{a, b, d, e\}\}$. $\tau_R SO(X) = \{\mathcal{U}, \emptyset, \{d, e\}, \{a, d, e\}, \{b, d, e\}, \{c, d, e\}, \{a, b, d, e\}, \{a, c, d, e\}, \{b, c, d, e\}\}$, $\tau_R SO(Y) = \{\mathcal{U}, \emptyset, \{c, d, e\}, \{a, c, d, e\}, \{b, c, d, e\}\}$, $\tau_R SO(Z) = \{\mathcal{U}, \emptyset, \{a, b, d, e\}\}$. Define $f : \mathcal{U} \rightarrow \mathcal{V}$ as $f(a) = b, f(b) = c, f(c) = a, f(d) = d, f(e) = e$ and $g(a) = b, g(b) = c, g(c) = a, g(d) = d, g(e) = e$. $f^{-1}\{c, d, e\} = \{a, d, e\}$, $f^{-1}\{a, c, d, e\} = \{a, b, d, e\}$, $f^{-1}\{b, c, d, e\} = \{a, c, d, e\}$, $g\{a, b, d, e\} = \{a, c, d, e\}$ $g \circ f^{-1}\{a, b, d, e\} = f^{-1}(g^{-1})\{a, b, d, e\} = f^{-1}\{a, c, d, e\} = \{a, b, d, e\}$ which is nano semi-open in \mathcal{U} . Hence $g \circ f$ is nano irresolute.*

Conclusion: Functions and of course Nano irresolute functions stand among the most important and most researched points in the whole of mathematical science. Various interesting problems arise when one considers nano irresoluteness. Its importance is significant in various areas of mathematics and related sciences. We hope that the results in this paper will help researchers to enhance and promote the further study on nano topology to carry out a general framework for their applications in practically.

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CONNECTED EDGE DETOUR NUMBER OF AN EDGE DETOUR GRAPH

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Abstract

For any two vertices u and v in a connected graph G , the *detour distance* $D(u, v)$ is the length of a longest $u - v$ path in G . A $u - v$ path of length $D(u, v)$ is called a $u - v$ *detour*. A set $S \subseteq V$ is called an *edge detour set* if every edge in G lies on a detour joining a pair of vertices of S . The *edge detour number* $dn_1(G)$ of G is the minimum order of its edge detour sets and any edge detour set of order $dn_1(G)$ is an edge detour basis of G . A connected graph G is called an *edge detour graph* if it has an edge detour set. A *connected edge detour set* of an edge detour graph G is an edge detour set S such that the subgraph $\langle S \rangle$ induced by S is connected. The minimum cardinality of a connected edge detour set of G is *connected edge detour number*, denoted by $cdn_1(G)$ of G and any connected edge detour set of order $cdn_1(G)$ is called a *connected edge detour basis* of G . In this paper certain general properties of these concepts are studied. Its relationship with the detour diameter is discussed and it is proved that for each pair of integers k and n with $3 \leq k \leq n$, there exists a connected edge detour graph G of order n with $cdn_1(G) = k$. Also, it is shown that for any three positive integers R, D, k such that $k \geq D$ and $R < D \leq 2R$, there exists an edge detour graph G with $rad_D G = R$, $diam_D G = D$ and $cdn_1(G) = k$.

Keywords: detour, detour number, edge detour number, connected edge detour number.

AMS Subject Classification: 05C12.

CONNECTED EDGE DETOUR NUMBER OF AN EDGE DETOUR GRAPH2

1 Introduction

By a *graph* $G = (V, E)$, we mean a finite undirected connected simple graph. The order and size of G are denoted by n and m respectively. For basic definitions and terminologies we refer to [1, 4].

For vertices u and v in a connected graph G , the *distance* $d(u, v)$ is the length of a shortest $u - v$ path in G . A $u - v$ path of length $d(u, v)$ is called a $u - v$ *geodesic*. For a vertex v of G , the *eccentricity* $e(v)$ is the distance between v and a vertex farthest from v . The minimum eccentricity among the vertices of G is the *radius*, $rad\ G$ and the maximum eccentricity is its *diameter*, $diam\ G$ of G .

For vertices u and v in a connected graph G , the *detour distance* $D(u, v)$ is the length of a longest $u - v$ path in G . A $u - v$ path of length $D(u, v)$ is called a $u - v$ *detour*. For a vertex v of G , the *detour eccentricity* $e_D(v)$ is the detour distance between v and a vertex farthest from v . The *detour radius*, $rad_D\ G$ of G is the minimum detour eccentricity among the vertices of G , while the *detour diameter*, $diam_D\ G$ of G is the maximum detour eccentricity among the vertices of G . These concepts were studied by Chartrand et.al [2].

A vertex x is said to lie on a $u - v$ detour P if x is a vertex of P including the vertices u and v . A set $S \subseteq V$ is called a *detour set* if every vertex v in G lies on a detour joining a pair of vertices of S . The *detour number* $dn(G)$ of G is the minimum order of a detour sets and any detour set of order $dn(G)$ is called a *detour basis* of G . A vertex v that belongs to every detour basis of G is a *detour vertex* in G . If G has a unique detour basis S , then every vertex in S is a detour vertex in G . These concepts were studied by Chartrand et.al [3].

In general there are graphs G for which there exist edges which do not lie on a detour joining any pair of vertices of V . For the graph G given in Figure 1.1, the edge v_1v_2 does not lie on a detour joining any pair of vertices of V .

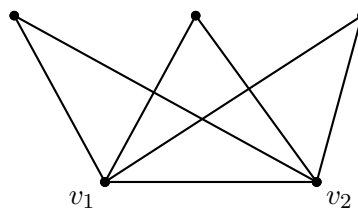


Figure 1.1

CONNECTED EDGE DETOUR NUMBER OF AN EDGE DETOUR GRAPH3

A set $S \subseteq V$ is called a *edge detour set* of G if every edge in G lies on a detour joining a pair of vertices of S . The *edge detour number* $dn_1(G)$ of G is the minimum order of its edge detour sets and any edge set of order $dn_1(G)$ is called a *edge detour basis* of G . A graph G is called an *edge detour graph* if it has an edge detour set. These concepts were studied by A.P.Santhakumaran and S.Athisayanathan [5].

The following theorems are used in sequel.

Theorem 1.1. [3] *Every end-vertex of a non-trivial connected graph G belongs to every detour set of G . Also if the set S of all end-vertices of G is a detour set, then S is the unique detour basis for G .*

Theorem 1.2. [5] *Every end-vertex of a non-trivial connected graph G belongs to every edge detour set of G . Also if the set S of all end-vertices of G is an edge detour set, then S is the unique edge detour basis for G .*

Theorem 1.3. [5] *If T is a non-trivial tree with k end-vertices, then $dn_1(T) = k$.*

Theorem 1.4. [5] *Let $G = (K_{n_1} \cup K_{n_2} \cup \dots \cup K_{n_r} \cup kK_1) + v$ be a block graph of order $n \geq 5$ such that $r \geq 2$, each $n_i \geq 2$ and $n_1 + n_2 + \dots + n_r + k = n - 1$. Then G is an edge detour graph and $dn_1(G) = 2r + k$.*

Throughout this paper G denotes an edge detour graph with at least two vertices.

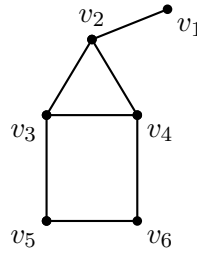
2 Connected Edge Detour Number of an edge detour Graph

Definition 2.1. *Let $G = (V, E)$ be an edge detour graph with at least two vertices. A set $S \subseteq V$ is a connected edge detour set of G if S is an edge detour set of G and the subgraph $\langle S \rangle$ induced by S is connected. The connected edge detour number $cdn_1(G)$, of G is the minimum order of its connected edge detour sets and any connected edge detour set of order $cdn_1(G)$ is called a connected edge detour basis of G .*

Example 2.2. *For the edge detour graph G given in Figure 2.1, it is clear that no three elements subset of V is a connected edge detour set of G .*

CONNECTED EDGE DETOUR NUMBER OF AN EDGE DETOUR GRAPH4

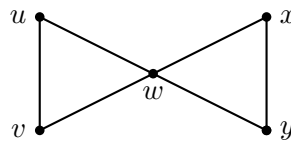
The set $S = \{v_1, v_2, v_3, v_5\}$ is a connected edge detour basis of G so that $cdn_1(G) = 4$. Thus G is a connected edge detour graph. Also the set $S_1 = \{v_1, v_2, v_4, v_6\}$ is another connected edge detour basis of G . Thus there can be more than one connected edge detour basis for a graph G .



G

Figure 2.1

Remark 2.3. Every connected edge detour set is an edge detour set but the converse is not true. For the graph G given in figure 2.2, the set $S = \{u, v, x, y\}$ is an edge detour set but not a connected edge detour set of G . Hence $dn_1(G) = 4$ and $cdn_1(G) = 5$. Thus the edge detour number and connected edge detour number are different.



G

Figure 2.2

Example 2.4. For the edge detour graph G given in Figure 2.3, the set $S_1 = \{v_1, v_2, v_4\}$ is a connected edge detour basis for G so that $cdn_1(G) = dn_1(G) = 3$.

Theorem 2.5. For any edge detour graph G of order $n \geq 2$, $2 \leq cdn_1(G) \leq n$.

CONNECTED EDGE DETOUR NUMBER OF AN EDGE DETOUR GRAPH5

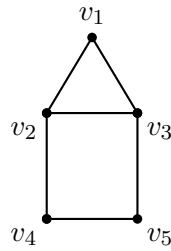


Figure 2.3

Proof. A connected edge detour set needs at least two vertices so that $cdn_1(G) \geq 2$ and the set of all vertices of G is a connected edge detour set of G so that $cdn_1(G) \leq n$. Thus $2 \leq cdn_1(G) \leq n$. \square

Remark 2.6. The bounds in Theorem 2.5 are sharp. For the complete graph K_2 , $cdn_1(K_2) = 2$. The set of all vertices of path P_n ($n \geq 2$) is its unique connected edge detour set so that $cdn_1(G) = n$. Also the inequalities in Theorem 2.5 can be strict. For the graph G given in Figure 2.1, $n = 6$, $cdn_1(G) = 4$ so that $2 < cdn_1(G) < n$. Thus the complete graph K_2 has the smallest possible connected edge detour number 2 and the non-trivial paths have the largest possible connected edge detour number n .

Definition 2.7. A vertex v in an edge detour graph G is a connected edge detour vertex if v belongs to every connected edge detour basis of G . If G has a unique connected edge detour basis S , then every vertex in S is a connected edge detour vertex of G .

Example 2.8. For the edge detour graph G given in Figure 2.4, $S = \{u, v, w, x, y\}$ is the unique connected edge detour basis so that every vertex of S is a connected edge detour vertex of G .

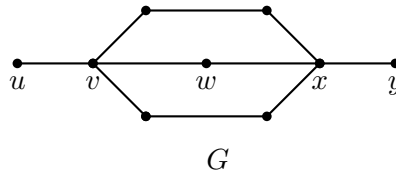


Figure 2.4

Example 2.9. For the edge detour graph G given Figure 2.5, $S_1 = \{u, s, w, t, v\}$, $S_2 = \{u, s, x, t, v\}$ and $S_3 = \{u, s, y, t, v\}$ are the connected edge detour bases of G so that u, s, t and v are the connected edge detour vertices of G .

CONNECTED EDGE DETOUR NUMBER OF AN EDGE DETOUR GRAPH⁶

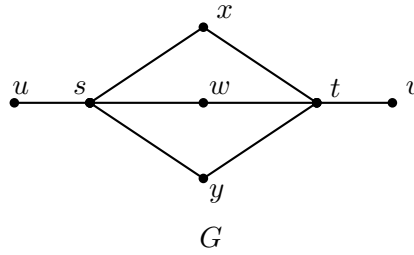


Figure 2.5

In the following theorems we show that there are certain vertices in a non-trivial connected edge detour graph G that are connected edge detour vertices of G .

Theorem 2.10. *Every end-vertex of an edge detour graph G belongs to every connected edge detour set of G .*

Proof. Let v be an end-vertex of G and uv an edge in G incident with v . Then uv is either an initial edge or the terminal edge of any detour containing the edge uv . Hence it follows that v belongs to every connected edge detour set of G . \square

Theorem 2.11. *Let G be an edge detour graph with cut-vertices and S a connected edge detour set of G . Then for any cut-vertex v of G , every component of $G - v$ contains an element of S .*

Proof. Let v be a cut-vertex of G such that one of the components, say C of $G - v$ contains no vertex of S . Then by Theorem 2.10, C does not contain any end-vertex of G . Hence C contains at least one edge, say uw . Since S is a connected edge detour set there exists vertices $x, y \in S$ such that uw lies on some $x - y$ detour $P : x = u_0, u_1, \dots, u, w, \dots, u_t = y$ in G . Let P_1 be the $u - v$ subpath of P and P_2 be the $u - y$ subpath of P . Since v is a cut-vertex of G , both P_1 and P_2 contain v so that P is not a detour, which is a contradiction. Thus every component of $G - v$ contains an element of S . \square

Theorem 2.12. *Let G be an edge detour graph with cut-vertices. Then every cut-vertex of G belongs to every connected edge detour set of G .*

Proof. Let G be a connected graph and v be a cut-vertex of G . Let G_1, G_2, \dots, G_k ($k \geq 2$) be the components of $G - v$. Let S be any connected edge detour set of G . Then by Theorem 2.11, S contains at least one element

CONNECTED EDGE DETOUR NUMBER OF AN EDGE DETOUR GRAPH7

from each component G_i ($1 \leq i \leq k$) of $G - v$. Since $\langle S \rangle$ is connected it follows that $v \in S$. \square

Corollary 2.13. *All the end-vertices and the cut-vertices of an edge detour graph G belong to every connected edge detour set of G .*

Proof. This follows from Theorems 2.10 and 2.12. \square

Remark 2.14. *For the edge detour graph G given in Figure 2.2, $S = \{u, v, w, x, y\}$ is the unique connected edge detour basis. The cut vertex w belongs to the connected edge detour basis so that the cut-vertex w is the unique connected edge detour vertex of G .*

Corollary 2.15. *If T is a tree of order $n \geq 2$, then $cdn_1(T) = n$.*

Proof. It follows from Corollary 2.13. \square

Corollary 2.16. *For any edge detour graph G with k end-vertices and l cut-vertices, $\max\{2, k + l\} \leq cdn_1(G) \leq n$.*

Proof. This follows from the Theorem 2.5 and corollary 2.13. \square

Remark 2.17. *The bounds in Corollary 2.16 is sharp. For a path P_n of order ($n \geq 2$) has two extreme vertices, namely its end-vertices so $k = 2$ and $l = n - 2$. since $cdn_1(G) = n$. Therefore $cdn_1(G) = \max\{2, 2 + n - 2\} = n$. Also the bounds in corollary 2.16 can be strict. For the given edge detour graph Figure 2.4 $k = 2$, $l = 2$, $cdn_1 = 5$. Therefore $cdn_1(G) > \max(2, k+l)$.*

For the graph H and an integer $k \geq 1$, we write kH for the union of the k disjoint copies of H .

Theorem 2.18. *Let $G = (K_{n_1} \cup K_{n_2} \cup \dots \cup K_{n_r} \cup kK_1) + v$ be a block graph of order $n \geq 4$ such that $r \geq 1$, each $n_i \geq 2$ and $n_1 + n_2 + \dots + n_r + k = n - 1$. Then $cdn_1(G) = 2r + k + 1$.*

Proof. Let u_1, u_2, \dots, u_k be the end vertices of G . Let $S' = \{u_1, u_2, \dots, u_k, v\}$ be the set of all end-vertices and the cut-vertex v of G . Then by Corollary 2.13, S' contains all the end-vertices and cut-vertex but it is not a connected edge detour set of G . Let S'' contains a vertex from each component of $G - v$. Let $S'' = S' \cup \{v_1, v_2, \dots, v_r\}$ where $v_i \in K_{n_i}$ ($1 \leq i \leq r$). However by Theorem 2.11, S'' is not a connected edge detour set of G . Now taking

CONNECTED EDGE DETOUR NUMBER OF AN EDGE DETOUR GRAPHS

one more vertex from each component of K_{n_i} . Let $S = S'' \cup \{y_1, y_2, \dots, y_r\}$ where $y_i \in K_{n_i}$ ($1 \leq i \leq r$). It is easy to verify that $|S| = 2r + k + 1$. Clearly S is a connected edge detour set of G so that $cdn_1(G) = 2r + k + 1$. \square

Remark 2.19. *If the blocks of the edge detour graph G in Theorem 2.18 are not complete, then the theorem is not true. For the edge detour graph G given in Figure 2.6 there are two blocks and $\{v_4, v_5, v_9, v_6, v_8\}$ is a connected edge detour basis so that $cdn_1(G) = 5$.*

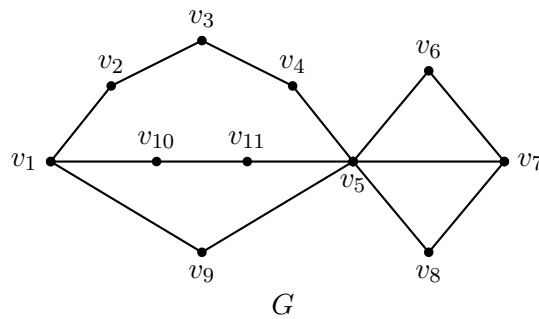


Figure 2.6

Theorem 2.20. *Let G be the complete graph K_n ($n \geq 3$) or cycle C_n ($n \geq 3$). Then a set $S \subseteq V$ is a connected edge detour basis of G if and only if S consists of any three adjacent vertices of G .*

Proof. Let G be the complete graph K_n ($n \geq 3$). For any two elements subset $\{u, v\}$ of $V(G)$, all the edges of G other than uv lie on a $u - v$ detour. Hence it follows that no two element subset of $V(G)$ is an edge detour set of G . Let $S = \{u, v, w/u, v, w \in V(G)\}$ be any three adjacent vertices of G . Then every edge in G lies on any one of the $u - v$, $v - w$ or $u - w$ detours. Hence it follows that S is a connected edge detour basis of G .

Conversely, assume that S is a connected edge detour basis of G . If $|S| = 2$, then as in the first part of the theorem, S is not a connected edge detour set of G . Let S' be any set consisting of any three adjacent vertices of G . Then as in the first part of this theorem S' is a connected edge detour basis of G . Hence $|S| = |S'| = 3$ and it follows that S consists of any three adjacent vertices of G .

Let G be a cycle C_n ($n \geq 3$). If $\{u, v\}$ is any two adjacent vertices of G , then no edge of the $u - v$ geodesic lie on the $u - v$ detour in G and so no two

CONNECTED EDGE DETOUR NUMBER OF AN EDGE DETOUR GRAPH9

element subset of $V(G)$ is an edge detour set of G . Let $S = \{u, v, w\} \subseteq V$ be any set of three adjacent vertices of G . Then every edge in G lies on any one of the $u - v$, $v - w$ detours so that S is an edge detour basis and also the subgraph $\langle S \rangle$ induced by connected.

Conversely, assume that S is a connected edge detour basis of G . Since any set of two adjacent vertices of G is not a connected edge detour set of G , let S' be any set of three adjacent vertices of G . Then as proved above, S' is a connected edge detour basis of G . Hence $|S| = |S'| = 3$ and it follows that S consists of any three adjacent vertices of G . \square

Theorem 2.21. *Let G be the complete bipartite graph $K_{m,n}$ ($2 \leq m \leq n$). Then a set $S \subseteq V$ is a connected edge detour basis of G if and only if S consists of any three vertices of G such that two vertices from one partition and one from other partition of G .*

Proof. Let X and Y be the bipartite sets of G with $|X| = m$ and $|Y| = n$. Let $S = \{u, v, w\}$, where $u, v \in X$ and $w \in Y$ be any three vertices of G . It is clear that $D(u, v) = 2m - 2$. Then every edge of G lies on the $u - v$ detour but it is not connected. Let $w \in Y$ is adjacent to u and v . Clearly the subgraph induced by S is a connected edge detour set of G . Since $|S| = 3$, S is a connected edge detour basis of G .

Conversely, assume that S is a connected edge detour basis of G . Let S' be any set of three vertices of G such that two vertices from one partition and one from other partition. Then as in the first part of this theorem S' is a connected edge detour basis of G . Hence $|S| = |S'| = 3$. Let $S = \{u, v, w\} \subseteq V$. If u and $v \in X$ or Y it is clear that u and v are not connected. suppose u and $v \in X$, $w \in Y$ and w is adjacent to u and v or u and $v \in Y$, $w \in X$. Hence S consists of any three vertices of G . \square

Corollary 2.22. (a) *If G is the complete graph K_n , then $cdn_1(G) = 3$.*

(b) *If G is the complete bipartite graph $K_{m,n}$ ($2 \leq m \leq n$), then $cdn_1(G) = 3$.*

(c) *If G is the cycle C_n , then $cdn_1(G) = 3$.*

Proof. (a) It follows from Theorem 2.20.

(b) It follows from Theorem 2.21.

CONNECTED EDGE DETOUR NUMBER OF AN EDGE DETOUR GRAPH10

(c) It follows from Theorem 2.20.

□

The following theorems give realization results.

Theorem 2.23. *For each pair of integer k and n with $3 \leq k \leq n$, there exists an edge detour graph G of order n with $cdn_1(G) = k$.*

Proof. Case 1. $3 \leq k = n$. Then any tree of order n has the desired property by Corollary 2.15.

Case 2. $3 = k \leq n$. Then any cycle of order n has the desired property by Theorem 2.20.

Case 3. $3 < k < n$, Let G be the graph obtained from the cycle $C_{n-k+3} : u_1, u_2, \dots, u_{n-k+3}, u_1$ of order $n - k + 3$ by adding $k - 3$ new vertices v_1, v_2, \dots, v_{k-3} and joining each vertex v_i ($1 \leq i \leq k - 3$) to u_1 . The resulting graph G is connected of order n and is shown in Figure 2.7. Now we show that $cdn_1(G) = k$. Let $S = \{u_1, v_1, v_2, \dots, v_{k-3}\}$ be the set of all end-vertices together with the cut-vertex u_1 of G . It is clear that S is not a connected edge detour set of G . Let $T = S \cup \{u_2, u_{k-3}\}$. Then every edge of G lies on a detour joining a pair of vertices of T and also $\langle T \rangle$ is a connected so that T is a connected edge detour basis of G , so that $cdn_1(G) = k$. □

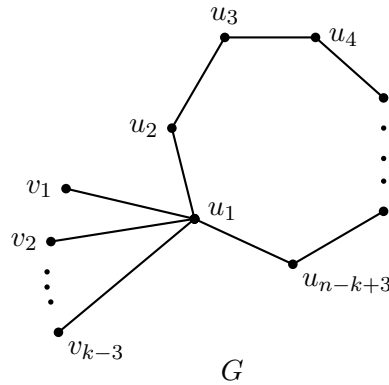


Figure 2.7

Theorem 2.24. *For each positive integer $k \geq 3$ there exists an edge detour graph G and a vertex v of degree $k - 1$ in G such that v belongs to a connected edge detour basis of G and $cdn_1(G) = k$.*

CONNECTED EDGE DETOUR NUMBER OF AN EDGE DETOUR GRAPH11

Proof. Case 1. $k = 3$, the star graph $K_{1,2}$ has a desired properties by Corollary 2.15.

Case 2. $k > 3$. Let $G = (K_2 \cup (k - 3)K_1) + v_1$. The resulting graph as shown in the Figure 2.8. Then clearly $\deg_G v_1 = k - 1$ and by Theorem 2.12, v_1 belongs to every connected edge detour basis of G . Also, by Theorem 2.18, $cdn_1(G) = 2 + k - 3 + 1 = k$. \square

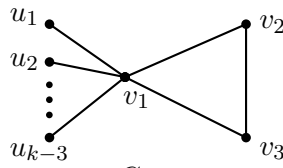


Figure 2.8

Theorem 2.25. For every pair of positive integer a, b with $3 \leq a \leq b$, there exists an edge detour graph G such that $dn_1(G) = a$ and $cdn_1(G) = b$.

Proof. Case 1: $a = b$, we have the following two sub cases.

Sub case (i): $a = 3$, the complete graph K_3 has the desired property.

Sub case (ii): $a > 3$. Let $G = ((K_2) \cup (a - 2)) + u_2$. Then by Theorem 1.4, G is an edge detour basis so that $dn_1(G) = 2(1) + a - 2 = a$. Similarly, let $G = ((K_2 - 1) \cup (b - 2)) + u_2$. Then by Theorem 2.18, $cdn_1(G) = (2(1) - 1) + (b - 2) + 1 = b$.

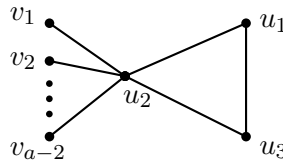


Figure 2.9

Case 2: $a < b$. Let G be any tree with a end -vertices and $b - a$ cut-vertices. Then by Theorem 1.3, $dn_1(G) = a$ and by Corollary 2.15, $cdn_1(G) = b$. \square

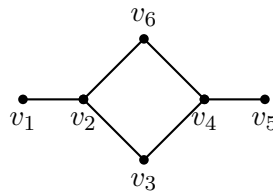
3 Connected Edge Detour Number and Detour Diameter of an edge detour graph

In [3], an upper bound for the detour number of a graph is given in terms of its order and detour diameter D as follows:

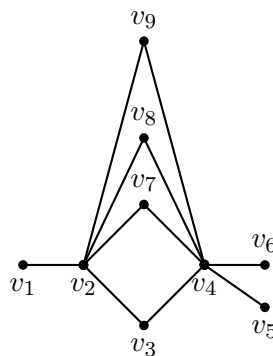
CONNECTED EDGE DETOUR NUMBER OF AN EDGE DETOUR GRAPH12

Proposition A[3] If G is a non-trivial connected graph of order $n \geq 3$ and detour diameter D , then $dn(G) \leq n - D + 1$.

Remark 3.1. In the case of an edge detour number $dn_1(G)$ of an edge detour graph G it is shown in [5] that, there are edge detour graphs G for which $dn_1(G) = n - D + 1$, $dn_1(G) > n - D + 1$ and $dn_1(G) < n - D + 1$. Similarly, in the case of connected edge detour number $cdn_1(G)$ of the edge detour graph G , we show that there are edge detour graphs for which $cdn_1(G) = n - D + 1$, $cdn_1(G) < n - D + 1$ and $cdn_1(G) > n - D + 1$. For the edge detour graph G given in Figure 3.1(a), $n = 6$, $D = 4$, $cdn_1(G) = 5$ so that $cdn_1(G) > n - D + 1$. For the edge detour graph G given in Figure 3.1(b), $n = 9$, $D = 4$ and $cdn_1(G) = 6$ so that $cdn_1(G) = n - D + 1$. For the edge detour graph G given in Figure 3.1(c), $n = 15$, $D = 7$ and the set $S = \{v_2, v_3, v_4, v_5, v_6, v_7, v_9\}$ is a connected edge detour basis of G , $cdn_1(G) = 7$ so that $cdn_1(G) < n - D + 1$.



(a)



(b)

CONNECTED EDGE DETOUR NUMBER OF AN EDGE DETOUR GRAPH13

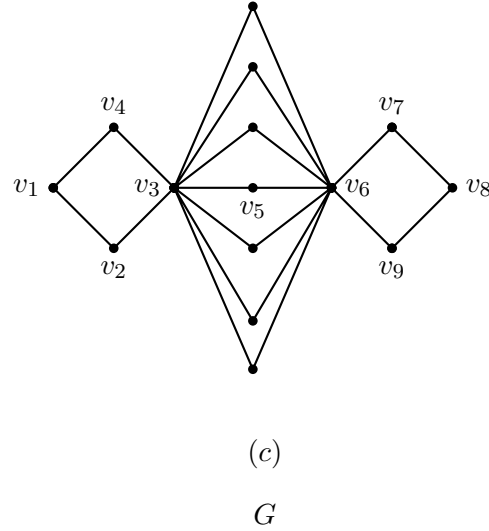


Figure 3.1

Theorem 3.2. *Let G be a connected edge detour graph of order $n \geq 2$. If $D = n - 1$, then $cdn_1(G) \geq n - D + 1$.*

Proof. For any connected edge detour graph G , $cdn_1(G) \geq 2$. Since $D = n - 1$, we have $n - D + 1 = 2$ and so $cdn_1(G) \geq n - D + 1$. \square

Remark 3.3. *The converse of the Theorem 3.2 is not true. For a connected edge detour graph G given in Figure 3.1(b), as in the Remark 3.1, $cdn_1(G) = n - D + 1$, but $D \neq n - 1$. Also for the connected edge detour graph G given in Figure 3.2, as in the Remark 3.1, $cdn_1(G) > n - D + 1$, but $D \neq n - 1$.*

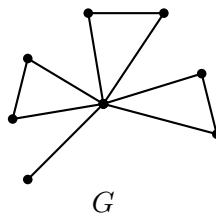


Figure 3.2

Theorem 3.4. *Let R, D, k be three positive integers such that $k > D$ and $R < D \leq 2R$. Then there exists an edge detour graph G such that $rad_D G = R$, $diam_D G = D$ and $cdn_1(G) = k$.*

CONNECTED EDGE DETOUR NUMBER OF AN EDGE DETOUR GRAPH14

Proof. Case 1: When $R = 1$ and $D = 2$, let $G = K_{1,k-1}$. Clearly $rad_D G = 1$, $diam_D G = 2$ and by corollary 2.15, $cdn_1(G) = k$.

Case 2: When $R \geq 2$ and $R < D \leq 2R$, we construct a graph G with the desired properties as follows: Let $C_{R+1} : v_0, v_1, \dots, v_R, v_0$ be a cycle of order $R + 1$ and let $P_{D-R+1} : u_0, u_1, \dots, u_{D-R}$ be a path of order $D - R + 1$. Let H be the graph obtained from C_{R+1} and P_{D-R+1} by identifying v_0 of C_{R+1} with u_0 of P_{D-R+1} . The required graph G is obtained from H by adding $k - D + R - 2$ new vertices $w_1, w_2, \dots, w_{k-D+R-2}$ to H and joining each w_i ($1 \leq i \leq k - D + R - 2$) to the vertex u_{D-R-1} and is shown in Figure 3.3. Clearly, G is connected such that $rad_D G = R$ and $diam_D G = D$. Now, we show that $cdn_1(G) = k$. Let $S = \{u_0, u_1, \dots, u_{D-R-1}, u_{D-R}, w_1, w_2, \dots, w_{k-D+R-2}\}$ be the set of all cut-vertices and end-vertices. However, by Corollary 2.13, S is not a connected edge detour set of G . Let $T = S \cup \{v_1, v_R\}$, where v_1, v_R are vertices in C_{R+1} . Then T is a connected edge detour basis of G so that $cdn_1(G) = k$.

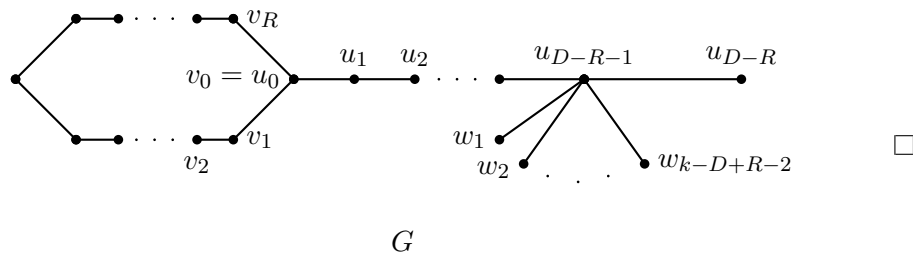


Figure 3.3

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CONNECTED EDGE DETOUR NUMBER OF AN EDGE DETOUR GRAPH15

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MIRRORING INDIAN HISTORY: A NEW HISTORICIST READING OF ROHINTON MISTRY'S FAMILY MATTERS

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Abstract

Rohinton Mistry, a Parsi novelist represents his Parsicommunity who constitute only a small number of India's population, through his writings. Apart from treating Parsi theme, he also highlights the historical incidents in his novels. His Family Matters is a novel with a difference. Traditional historians consider literature and history as two entirely different genres. New Historicists analyze the literary text with an eye to history and explore the interplay between text and historical context. The present paper attempts to read the novel Family Matters in a new historicist perspective.

Keywords: New Historians, Traditional Historians, Assimilation strategy, Parsi consciousness.

Traditional historians consider literature and history as two entirely different genres. To them, literature is subjective unlike history which consists of mere facts. The new historicism questions the approach of the traditional literary historians and asserts that all historical analyses, be it documentation or creative writing, are unavoidably subjective. New Historicists analyse the literary text with an eye to history and explore the interplay between text and historical context. For them, no historical event has a single cause and each event is caught in the economic, social, and political factors. New historicism is also concerned with relating the idea of a text to other key concepts as culture, discourse, ideology, the self and history. New historicism claims that it is impossible to separate the literary text from the historical context. It asserts each text is only one example of many types of discourses that reveal history. Supporting the new historicism, Tyson (2006) says:

.....literary texts are cultural artifacts that can tell us something about the inter play discourses, the web of social meanings, operating in the time and place in which the text was written. And they can do so because the literary text is itself part of the inter play of discourses, a thread in the dynamic web of social meaning (Tyson 2006: 291).

Literature that is the production of a particular society echoes social reality. Indian writers, especially the Parsi

writers, focus on contemporary political occurrences and they confirm to the fact that literature reflects history.

The Parsis in India constitute only a small number of India's population. Historically, the Parsis were the remnants of the ancient Persian Zoroastrians. They migrated from Iran in fear of religious persecution by the Arab Invaders and most of them settled down in India. They always keep their minority status in their minds and behave accordingly. Despite their refugee minority status, they contribute much to the economic development of India. Yet, they hesitate to involve themselves in any kind of political activities. Their leaders had warned them against their participation in politics during the struggle for independence.

Various Indian communities protested against the injustices of the colonial subjection. But, the Parsis sided with the colonial rulers. When the British declared independence for India, the Parsis felt very miserable as if they were reduced to the level of a backward community in India. During the Partition, India witnessed massive waves of Hindu – Muslim riots. When most of the other communities faced crisis during that period, the Parsis remained aloof from the political turmoil. For, they were certain that someone other than a Parsi was going to rule the country. It is evident in Col. Bharucha's words in Bapsi Sidhwa's (1989) *Ice*: 'It is no longer just a struggle for Home Rule. It is a struggle for power. Who's going to rule once we get *Swaraj*?.....Hindus, Muslims and even the

Sikhs are going to jockey for power: and if you jokers jump into the middle you'll be mangled into chutney' (Bapsi 1989: 36).

After the British left India, the state of the Parsis has been in a mess. The community has developed a sort of hatred towards the Congress government. Though, they have not faced much problems as the other Indian minorities, they have sometimes fallen victims of some political vendetta. Since their settlement in India, they have been loyal to every ruling authority. They have been exploited at all levels, socially, politically and economically. The Parsi novelists deal with Parsis' views of Indian history, of politicians and political occurrences. Rohinton Mistry is not an exception. He presents a realistic portrayal of contemporary India, with special focus on corrupt politicians, religious fundamentalism and the insecurity felt by the members of his community. He makes clever use of national events, political parties and well known politicians as unavoidable ingredients in his novels. He, thus informs the readers the Parsis' response to political events and politicians. He makes use of history in his fiction and his aim is not to falsify history but to present the past as it is.

Mistry exposes the crookedness of the leaders and shows how the Parsis have fallen victims to some of the major, but dirty political games. He intermingles history with the personal lives of his characters. Mistry presents both the urban and the rural India and retells history. Generally history is based on the victory of the triumphant and not on the defeat of the vanquished. Mistry presents the history of the vanquished, and the condemned. He recreates the Parsi diaspora, their settlement and their exodus. The Parsis are not the triumphants. For, they were forced to give up their land and take shelter in the unknown soil-India. Thus, quite naturally, dealing with the history of the Parsis is dealing with the history of the vanquished.

The Parsis in India have been maintaining hostile attitude towards Congress Party from the beginning. But a few Parsis supported the Congress movement. Dadabhai Naoroji, a member of the Parsi community, on being elected as the president of the party in 1873, declared, 'Whether I am a Hindu, a Mohemadan, a Parsi, a Christian or any other creed, I am above all an Indian. Our country is India, Our Nationality is Indian' (qtd. in Kulke 1974: 61).

The Parsis were not much impressed by Mahatma Gandhi and his movements. The Parsi writers express their hatred towards Gandhi, Nehru, and Indira Gandhi in

their writings. At their hands only a few leaders have escaped criticism. Bapsi Sidhwa (1989) in *Ice Candy Man* portrays Gandhi as a comic figure. Gandhi's speech: 'An enema a day keeps the doctor away' sounds obsessive (Bapsi 1989: 87). Commenting upon Gandhi's salt march, Bapsi Sidhwa (1989) writes: "Who does this Gandhi think he is? ... Is it his grandfather's ocean?" (Bapsi 1989: 35). Mistry (2002) too in his *Family Matters* exhibits the Parsis' hatred for Gandhi and bemoans, 'He gave away Pakistan and left the country with problems' (Mistry 2002: 278).

Mistry left India during the Emergency. Since 1975, he has been living in Canada, but he preserves the memories of his homeland green in his mind and leaves the imprints of those fond recollection in his novels. Like most of the postcolonial writers, he delves into the history of the past and lets his readers know the past; and live in the past. His illuminating novel *Family Matters*, lends itself to various levels of political interpretation. It unravels the misery caused by the political upheavals during demolition of Babri Masjid.

Mistry recreates Babri Masjid riots in his *Family Matters*. On 6th December 1992, the Babri Mosque at Ayodhya was demolished by a large group of Hindu agitators. They claimed that the place was the birth place of the Hindu god, Ram and hence the place belonged to them. They wanted to build a Ram temple in the place. The news soon spread over everywhere in Bombay. Muslims rose in anger and protested against the demolition which wounded their religious sentiments. Violence broke out. For few months, Bombay was under the grip of violence. More than eight hundred people were dead and many people lost their houses. According to the police report, many Muslims set fire to the houses of innocent Hindus and vice versa. Mistry in *Family Matters* highlights the atrocities of a particular party towards the minorities. Mistry describes the unpleasant development during Babri Masjid riots through an eye witness, Husain. He is working in Bombay Sporting Emporium and is one of the victims of the riot. His wife and his three children are burnt alive before his eyes by the rioters.

Husain explains the police brutality during the Babri Masjid riots. He says that instead of saving the people, the police joined hands with the goondas. He wails in agony:

Sahab, in those riots the police were behaving like gangsters. In Muslim mohallas they were shooting their guns at innocent people. Houses were burning, neighbours came out to throw water. And the police? Firing bullets like target practice. These guardians of the law were murdering

everybody! And my poor wife and children ... I couldn't even recognize the (Mistry 2002: 148-149)

On Sri Krishna Commission which was appointed to investigate the BabriMasjithriots, Mistry observes, 'More than three years have passed, and still no justice. Shiv Sena polluted the police. And now ShivSena has become the government' (Mistry 2002: 149). Mistrysmells the fist of Shiv Sena behind the riot. He refers to the general view that a list of non-Hindus was prepared at the behest of Shiv Sena to fix them for attack.

Vilas in Family Matters, who runs Jai Hind Book Mart, is represented as a kind hearted fellow. He helps the illiterate labourers who work in the city to write letters to their relatives in distant villages. He collects a meagre amount from them and when Yezad requests him to charge more, he refuses. Because his clients are poor and they 'might turn for help to a Shiv Senashakha where they would be exposed to vicious communal propaganda, might even get recruited in their sticks-and-stones method of political persuasion, their fine art of scoring debating points by breaking opposition bones' (Mistry 2002: 135).

Gautam and Bhaskar are introduced to Yezad through his friend Vilas. They are from an amateur troupe, staging dramas with socially oriented themes. They are journalists too. While the four people meet in the restaurant, they discuss Matka, 'it's a criminal scourge that has Bombay helpless in its grip' (Mistry 2002: 199). Bhaskar details the atrocities of Shiv Sena committed on Gautam. The latter published the story about Matka, an illegal game. Describing the link between Siva Sena and Matka, he explains the role of politicians, criminals and police in the game. When the article was published, "some of their goondas caught him outside the office' (Mistry 2002: 199). They wanted to blacken the person who blackened their party by printing lies, 'The men twisted his arms behind him and grabbed his hair to keep him still. They had a tin of Cherry Blossom black shoe polish, and applied it on his face and ears and neck, even ruining his shirt in the process' (Mistry 2002: 200). On hearing about the attack, Yezad comments 'Those people are absolutely lawless' (Mistry 2002: 200). Mistry describes how the money from Matka finances Shiv Sena. Money from Matka is also used for making plastic explosives with which the terrorists blow up the stock exchange in Bombay. He muses: 'The enemies of the nation, and political parties that claim to be defenders of the nation, all rely on the same source' (Mistry 2002: 200).

Vilas sums up 'Matka is Bombay and Bombay is Matka' (Mistry 2002: 200). When Bhaskar mentions the

name Shiv Sena, Gautam expresses his fear of it and asks him not to mention the name directly because, 'they'll burn down the hall where we meet'(Mistry2002: 202). The Police decide to ban Makta as its hand in the Bombay bomb blast is brought to light and action is launched against it:

...the police were arresting people from top to bottom – big bookies and small, kingpins and little safety pins. Rumour was that since those terrorist bombs had blown up the stock exchange and shattered Bombay, they had to do something about Matka. Even the crookedest politician didn't want Bombay to be the next Beirut. (Mistry 2002: 262-263). Mistry brands the Shiv Sena 'urban menace' (Mistry 2002: 202). In his assessment, 'Janata Party okay, Shiv Sena not okay, secular good, communal bad, BJP unacceptable, Congress lesser of evils?'(Mistry 2002: 351). According to Mistry, Shiv Sena opposes each and every thing and even converts trifle matters into political issues. He remarks, 'Since coming to power they'd been in a constant fit of censorship and persecution. Top of the list were Muslims, their favourite scapegoat as usual' (Mistry 2002: 265). 'They have destroyed the works of famous Indian artists; set fire on the office of the Men's Magazines for publishing vulgar photos and matters. Women aren't allowed to work in the discos and bars as it was against Indian culture'(Mistry 2002: 265). Yezad remarks 'What a joke of a government. Clowns and crooks. Or clownish crooks' (Mistry 2002: 265). For Mistry, BJP and Shiv Sena 'encouraged the Hindutva extremists to destroy the BabriMosque' (Mistry 2002: 30). Bombay was an embodiment of peace till 1960s but the rise of fascists parties like Shiv Sena, and BJP, turned the city's atmosphere by spoiling its uniqueness. They never liked the arrival of outsiders to Bombay. The recent violent protest against the North India settlement in Bombay vouchsafes to this.

Kapur decides to contest the election. He promises Yezad to give promotion in his absence. Yezad, who is already upset over economic hardships, feels happy about his forthcoming promotion. He always encourages Kapur to contest the election. But suddenly Kapur drops his plan. Yezad wants Kapur to be in the race. By this he can settle his family problems. After consulting his friends Gautam and Bhaskar, Yezad plans to use the name of Shiv Sena to force Kapur. Gautam and Bhaskar are ready to act as Shiv Sainiks. For Vilas, these journalists are better than the real Shiv Sena people. Because 'With real Shiv Sena, you'll have people rampaging like wild animals, glass shattering, smell of smoke and fire, goondas with sticks and bricks'(Mistry 2002: 315).

The name of the city Bombay is changed by the Shiv Sena and renamed Mumbai after the name of Mumba Devi. Since the name of the shop owned by Kapur is 'Bombay Sporting Emporium', Yezad contrives a plan of threatening the former for keeping the old name. As arranged earlier, the next day, Yezad tells Kapur that two Shiv Sena men from their tax department come to the shop, 'They were informing all shops, hotels, any business with Bombay in its name, that they had to change it to Mumbai within thirty days. Or pay a fine' (Mistry 2002: 317). When Kapur asks whether it is a Government law, Yezad replies, 'it was new Shiv Senapolicy' (Mistry 2002: 317). When Yezad explains the difficulties in changing the name board, the Shiv Sena men demand payment of thirty five thousand at once every month as long as they want to keep the name Bombay in their name boards or they must change the name of the shop as 'Mumbai Sporting Emporium'. To refute Shiv Sena's orders, Yezad says that the only option for Kapur is to run in the election. He can then root out corruption. But Kapur gives a startling reply, 'A municipal councillor tackling corruption is like a penknife trying to dig up a banyan tree' (Mistry 2002: 320). To the surprise of Yezad, Kapur hands over the suitcase stuffed with thirty five thousand rupees to him to give to the Sena. 'Their arrogance: nothing will stand in their way, they seemed to say, now it is their kingdom. They are taking what they want-like a conquering army' (Mistry 2002: 326).

But accidentally two Shiv Sena members meet Kapur and ask him to change the name of the shop. Kapur becomes violent because he links the present situation with the story narrated by Yezad. He scolds and curses them: 'You think you can scare me, you fucking grass-eating ghaties? You know who I am? I have drunk the milk of Punjab! Saalaybhonsdikaybharve, I'll break your faces if you act smart with me!' (Mistry 2002: 373). He attacks them and the two persons step out to the pavement. As they are insulted openly, they threaten Kapur that he will feel sorry for the insult. Later on, Husain's words bear testimony to the fanatic ways of the Shiv Sena and caution his owner correctly: 'You know when Babri Mosque was destroyed and all the riots were flaming, these bad people killed so many innocents, with my own eyes I saw it, sahab, they locked them in their houses and set fire to them, they attacked people with swords and axes' (Mistry 2002: 374).

But Kapur replies coolly, 'It's okay, Husain miyan, you don't have to fear. They only attack poor people, weak people. Like all bullies, they are cowards at heart...' (Mistry 2002: 374). But soon, Kapur has to pay his valuable life for his reckless attitude towards the Sena. The two Sena people kill him cruelly. The police confirm the murderers as robbers, who have come for stealing goods from the shop.

While Husain, the eye witness suspects the hands of Shiv Sena men, the police laugh at him. Husain reports: 'They said it was not right to connect Shiv Sena, there was no evidence. One policeman laughed in a very bad way. He said, 'You Muslims, always trying to blame Shiv Sena'' (Mistry 2002: 393). Mistry brings into limelight the indifference and heartlessness of the Sena. Jagroop S. Biring (2006) in 'Rohinton Mistry's Family Matters: A Critique of Ethnic Discourse' comments:

All throughout the novel Mistry does not let slip the opportunity to cast aspersions on the old betel-noir, the Shiv Sena. Kapur's murder by the 'sainiks' is the last straw in the series of events involving Shiv Sena. It is a climactic moment of the sub-plot that has obtrusive impact on the story line of the main plot. The novelist has succeeded in lending a political background to the otherwise personal life story of a Parsi family. (Jagroop 2006: 7)

Besides being unhappy about the communal politics in India, Mistry regrets over the corruption prevalent in the country. He pictures India as a weak country, which suffers from the disease of corruption. For him, none of the political parties strives for the welfare of the people. Instead, they have their own aims and aspirations. Jehangir in Family Matters is moved by the pitiable condition of the poor people. The stories as a whole depict Mistry's concern for the underdog: To sum up, the representation of history in Mistry's novels holds the mirror up to nature and is critical in that Mistry perceives the historical events from the point of view of the innocent victims of atrocities and corruption and peruses them in a new historical perspective.

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