

ICTIMES - 2017

*Proceedings of
International Conference on
Advances in Humanities Sciences
and Management (ICAHSM)*

ISBN No: 978-93-85100-18-5

*Under the Auspices of International Conference on
trends in Information, Management, Engineering
and Sciences (ICTIMES)*



MALLA REDDY COLLEGE OF ENGINEERING (MRCE)

Permanently Affiliated to JNTUH, Approved by AICTE(New Delhi), Accredited by NBA
An ISO 9001:2015 Certified Institution.
Maisammaguda, Hyderabad - 500 100.
www.mrce.in

Convenor
Dr. Ch. Shankar
HOD-Dept. of Business Management

Editor
Dr. T.V. Reddy
HOD - H&S Dept.

Editor in Chief
Dr. P. John Paul
Principal



Proceedings of International Conference on Advances in Humanities Sciences and Management (ICAHSM)

Chief Patron:

Sri Ch. Malla Reddy, Founder Chairman, MRGI
(Member of Parliament, Govt., INDIA)

Patrons:

Mr. Ch. Mahender Reddy, Secretary MRGI
Dr. Ch. Bhadra Reddy, Treasurer MRGI

International Advisory Committee:

Col. G. Ram Reddy, Director (Admin), MRGI
Mr. N Sudhir Reddy, Director, Administration, MRCE
Dr. S. R. C. Murthy, University of Sydney, Australia
Dr. A.V. Vidya Sagar, BELL, USA
Dr. K.V.S. S. Narayana Rao, NITIE, Bombay
Dr. K. Vijay Kumar, CEO, First ESCO India, Vizag
Dr. Ch. A.V. Prasad, Senior Consultant, TCS
Dr. A. Govardhan, Principal, JNTUH
Dr. B. Sudeer Prem Kumar, Chairman, BOS, JNTUH
Dr. K. Venkateswar Rao, JNTUH
Dr. P. Dasharathan, JNTUH
Dr. B.N. Bhandari, Director DAP, JNTUH
Dr. M. Manzoor Hussain, Director Administrations, JNTUH
Dr. M. Madhavi Latha, Former Director, I-Tech, JNTUH

Dr. V.C.V. Prathap Reddy, RIT Rochester, USA
Dr. S. Venkateswara Rao, Head- Physics, JNTUH
Mr. N. Shyam Kumar, Group Manager, Tech Mahindra
Mr. S. Goutam, Manager, TCS
Dr. Hussain Reddy, SKU, A.P.
Dr. Seow Ta Wee, University Tun Hussein Onn Malaysia.
Ir. Dr. Goh Hui Hwang, Malaysia

Chief Guest:

Dr. T.G Thomas, Dean-Admissions (Campus Wide) - BITS Pilani, Dubai Campus, Academic City, Dubai, UAE.

Guest of Honor:

Dr. Balajied Lang Nongrum, Biola University USA.

Keynote Speakers:

Dr. T.G Thomas, BITS Pilani, Dubai UAE
Dr. Balajied Lang Nongrum, Biola University USA
Dr. C. Krishna Mohan, IIT Hyderabad
Dr. R.Thundil Karuppa Raj, VIT University
Dr. K. Ramulu, Central University, Hyderabad

Conference General Chair:

Dr. P John Paul, Principal, MRCE



MALLA REDDY COLLEGE OF ENGINEERING (MRCE)

Permanently Affiliated to JNTUH, Approved by AICTE (New Delhi), Accredited by NBA, An ISO 9001:2015 Certified Institution.
Maisammaguda, Hyderabad, India - 500 100.

www.mrce.in

Proceedings of International Conference on Advances in Humanities Sciences and Management (ICAHSM)

Organizing Committee:

Dr. M. Thamarai, Dean Academics (Chair)
Dr. V. Bhoopathy, Dean R&D - CSE
Dr. P.Velmurgan, Dean R&D - MECH
Dr. Nikhil Raj, Dean R&D - ECE
Dr. Ch. Shankar , Dean Academics - MBA
Dr. J. Gladson, Dean Student Affairs - CSE

Co- ordination Committee:

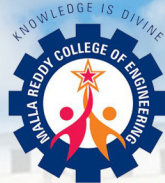
Prof. Rajesh Durgam
Prof. M. Shiva kumar
Prof. Ch. Vijaya Kumari
Prof. C. Shashi Kanth
Prof. J. Shashi Kumar

Program Committee

Dr. T. V. Reddy, Vice Principal (Chair)
Dr. T. Sunil , Dean Academics - CSE
Dr. S.S Gowda, Dean Academics - MECH
Dr. G. Sridhar , Dean Student Affairs - ECE
Dr. A. Karthikeyan, Dean Student Affairs - MECH

Information Contact:

Dr. P John Paul
Principal, MRCE
+91-9348161222, 9346162620
E-mail: principal@mrce.in



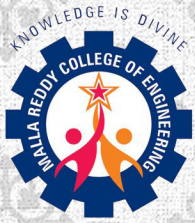
MALLA REDDY COLLEGE OF ENGINEERING (MRCE)

Permanently Affiliated to JNTUH, Approved by AICTE (New Delhi), Accredited by NBA, An ISO 9001:2015 Certified Institution.

Maisammaguda, Hyderabad, India - 500 100.

www.mrce.in





Malla Reddy College of Engineering

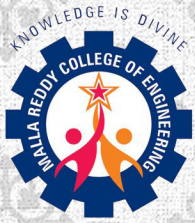
Permanently Affiliated to JNTUH, Approved by AICTE(New Delhi), Accredited by NBA
An ISO 9001:2015 Certified Institution.
Maisammaguda, Hyderabad - 500 100.
www.mrce.in



Sri. Ch. Malla Reddy
Founder Chairman, MRGI
Member of Parliament

Best Wishes:

I Congrtulate Humanities and Management
Department on Conducting International
Conference on " Advances in Humanities
Sciences and Management " (ICAHSM)



Malla Reddy College of Engineering

Permanently Affiliated to JNTUH, Approved by AICTE(New Delhi), Accredited by NBA
An ISO 9001:2015 Certified Institution.
Maisammaguda, Hyderabad - 500 100.
www.mrce.in



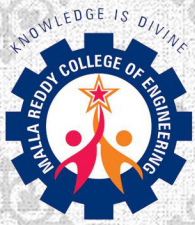
Sri. Ch. Mahender Reddy
Secretary, MRGI



Sri. Ch. Bhadra reddy
Treasurer, MRGI

Best Wishes:

We Congrtulate Humanities and Management
Sciences Department on Conducting
International Conference on " Advances in
Humanities Sciences and Management "
(ICAHSM)



Malla Reddy College of Engineering

Permanently Affiliated to JNTUH, Approved by AICTE(New Delhi), Accredited by NBA
An ISO 9001:2015 Certified Institution.
Maisammaguda, Hyderabad - 500 100.
www.mrce.in



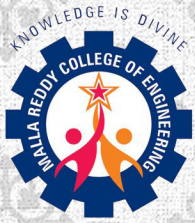
Col. G. Ram Reddy
Director/Administrations, MRGI



Sri. N. Sudhir Reddy
Director, MRCE

Best Wishes:

We Congrtulate Humanities and Management
Sciences Department on Conducting
International Conference on " Advances in
Humanities Sciences and Management "
(ICAHSM)



Malla Reddy College of Engineering

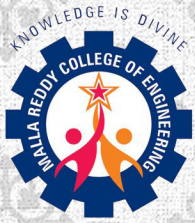
Permanently Affiliated to JNTUH, Approved by AICTE(New Delhi), Accredited by NBA
An ISO 9001:2015 Certified Institution.
Maisammaguda, Hyderabad - 500 100.
www.mrce.in



Dr. P. John Paul
Principal, MRCE
Editor in Chief

Best Wishes:

My wishes to Humanities and Management
Sciences Department on Conducting
International Conference on " Advances in
Humanities Sciences and Management "
(ICAHSM)



Malla Reddy College of Engineering

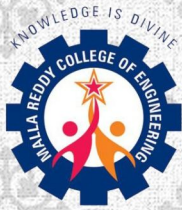
Permanently Affiliated to JNTUH, Approved by AICTE(New Delhi), Accredited by NBA
An ISO 9001:2015 Certified Institution.
Maisammaguda, Hyderabad - 500 100.
www.mrce.in



Dr. T.G Thomas
Dean Admissions (Campus Wide) BITS Pilani,
Dubai Campus, Academic city, Dubai, UAE.

Best Wishes:

My warmest congratulations to you,
MRCE and all staff on conducting
International Conference on "Advances in
Humanities sciences and Management"
(ICAHSM)



Malla Reddy College of Engineering

Permanently Affiliated to JNTUH, Approved by AICTE(New Delhi),Accredited by NBA
An ISO 9001:2015 Certified Institution.
Maisammaguda, Hyderabad - 500 100.
www.mrce.in

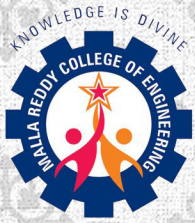


Dr. Balajied Lang Nongrum

Biola University, USA.

Best Wishes:

*My warmest congratulations to you,
MRCE and all staff on conducting
International Conference on "Advances in
Humanities sciences and Management"
(ICAHSM)*



Malla Reddy College of Engineering

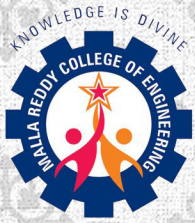
Permanently Affiliated to JNTUH, Approved by AICTE(New Delhi), Accredited by NBA
An ISO 9001:2015 Certified Institution.
Maisammaguda, Hyderabad - 500 100.
www.mrce.in



Dr. K. Ramulu
Central University, Hyderabad

Best Wishes:

My warmest congratulations to you,
MRCE and all staff on conducting
International Conference on " Advances in
Humanities Sciences and Management "
(ICAHSM)



Malla Reddy College of Engineering

Permanently Affiliated to JNTUH, Approved by AICTE(New Delhi), Accredited by NBA
An ISO 9001:2015 Certified Institution.
Maisammaguda, Hyderabad - 500 100.
www.mrce.in



Dr. T.V. Reddy
Vice principal , MRCE



Dr. Ch. Shankar
HOD - MBA Dept, MRCE

Best Wishes:

We Congrtulate Humanities and Management
Sciences Department on Conducting
International Conference on " Advances in
Humanities Sciences and Management "
(ICAHSM)

INDEX

| S. No | Title | Page No |
|----------|---|---------|
| IC17HM01 | <i>An Analytical Study on Issues of Handloom Industry in Undivided State of Andhra Pradesh</i> Dr. A. Kalyani, V. Rohitha, M. Pragnya Bharathi | 01 |
| IC17HM02 | <i>A Study on Performance of Indian Mutual Fund Schemes based on Risk Adjusted Performance Indices: Treynor, Sharpe and Jensen Approaches</i> Dr. K Ramesh, Y. Hemasri, Sk. Khadar | 11 |
| IC17HM03 | <i>Factors of Life Insurance at Household Level: A Case Study</i> Dr.V.V.Narsi Reddy, Dr.S.M.Reddy | 20 |
| IC17HM04 | <i>Role of Technology as a Service Enabler-The Case of Railway Ticket Booking Through IRCTC (Indian Railway Catering and Tourism Corporation) Website</i> Thirupathi Chellapalli, S. Abhilash, J. Murali | 33 |
| IC17HM05 | <i>Effect of Fiber Length and NaOH Treatment on the Flexural Behavior of Coir Fiber Reinforced Epoxy Composite</i> Ayyavoo KarthikeyanAnbarasu Kalpana | 38 |
| IC17HM06 | <i>Evolution, Trading Mechanism & Growth of the Derivatives Market in India</i> Dr. K.Veeraiah | 43 |
| IC17HM07 | <i>Skill Development Necessities to Achieve Employability in the States of AP & Telangana – A Review</i> Dr. Rudra, M. Sinduja, N. Sravya | 51 |
| IC17HM08 | <i>The Point of view in Khushwant Singh's "Posthumous"</i> Dr. N. Madhu, A.Madhavi Latha | 64 |
| IC17HM09 | <i>Trends in Agricultural Product's Exports and Imports of Major SARRC Countries</i> Dr. V. V. Narsi Reddy, S.M. Reddy, J. N. Naik | 71 |
| IC17HM10 | <i>The Role of Demographics Variables in Online Shopping- an Exploratory Study</i> Rathod Jaipal, D. Vinay Singh, P. Uttam Kumar | 84 |
| IC17HM11 | <i>Corporate Social Responsibility for Livelihood Development in Rural India</i> Dr. D. Satishbabu, K. Srishailam, K. Karthik | 95 |
| IC17HM12 | <i>Intellectual Property Issues in Modern Library Environment</i> K. Sridevi, R. Lalitha, Dr. G. A. Prasad Rao | 99 |
| IC17HM13 | <i>Problems in Teaching and Learning English for Students</i> A Madhavi Latha | 103 |
| IC17HM14 | <i>Generalized Fixed Point Theorem of Pal and Maiti</i> Sujatha Kurakala, Y. Rani, T. Sarala, | 106 |
| IC17HM15 | <i>Commercial Production of Bio Control Agents</i> M. Sunanda | 111 |
| IC17HM16 | <i>A Survey of The Development of Fixed Point Theory</i> Sujatha Kurakula, V. Sankar Rao, Ramakrishna Mankena | 123 |
| IC17HM17 | <i>Kinetics and Mechanism of Cinnamyl Alcohol by Benzyltrimethyl Ammoniumdichloroiodate</i> Dr.T.V.ReddyK.SarithaS.Sirisha | 127 |
| IC17HM18 | <i>Determinants For Customer Intended Use of Self Service Technologies</i> Thirupathi Chellapalli, G. Pranay, V. Naresh | 132 |
| IC17HM19 | <i>Importance of a Teacher and Teaching Profession</i> M. Sunanda | 143 |
| IC17HM20 | <i>Customer Experience Management [Cem] – A Critical Overview</i> Thirupathi Chellapalli, K. Lavanya, R. Praharsha | 154 |
| | | |

INDEX

| | | |
|-----------------|---|------------|
| IC17HM21 | <i>Importance of English Language in India: It's Role in Present Scenario</i> A.Madhavi Latha | 163 |
| IC17HM22 | <i>Green Building Concept</i> M. Sunada, Ch.Rajani | 167 |
| IC17HM23 | <i>A Study of The Critical Issues Involved in Providing Necessary Tools in English Language for Standardised Test Takers</i> K. Satyanarayana | 177 |
| IC17HM24 | <i>A Study on Human Resource Hiring Process at Planman Pvt. Co. Ltd</i> B. Sindhulatha, D. Deepika | 181 |
| IC17HM25 | <i>Importance of Listening Skills Over Other Skills</i> A. Madhavi Latha | 191 |
| IC17HM26 | <i>A Study on Green Marketing Practices in Hospitals Towards a Sustainable Healthcare</i> K. Srikanth, M. Shiva, S. Amulya | 196 |
| IC17HM27 | <i>Improvement of resonance frequency in Sub-woofer Driver</i> Shashi kumar Jakkaraju, Dr.Y.Markandeya, Sultan Baba | 203 |
| IC17HM28 | <i>Role Plays in Teaching Language through Literature</i> G.Srinivas, P.Prasad | 207 |
| IC17HM29 | <i>Tribological Properties of Fly Ash Reinforced Aluminium 6061 Composite</i> Niranjan J Nanjayyana, Mahantesh S. Santosh Balanayak | 210 |
| IC17HM30 | <i>Determination of Pantoprazole in Bulk and Pharmaceutical Formulations by Validated Rp-Hplc Method</i> Satyadev TNVSS, M Madhu, K Gowri, Dr T V Reddy | 216 |
| IC17HM31 | <i>A Study on Futures and Options</i> B. Surya Kumar, B. Srinivas Jaswanth Raj, MD. Salman Khan, M. Priyanka | 231 |
| IC17HM32 | <i>Role of Joint Ventures in Profitability Strategies</i> S. Sampath Kumar, P S Shivani Yadav, R. Bharath Kumar, P. Sai Kumar | 239 |
| IC17HM33 | <i>A Study on Green Marketing Practices in Hospitals Towards a Sustainable Healthcare</i> K. Srikanth, M. Shiva, S. Amulya | 245 |
| IC17HM34 | <i>Comparative Analysis of Capital Structure of Sme's at NSIC</i> T. Nakhil, N. Sindhu, T. Pragya Abhishek, MD. Imran Sulthan | 251 |
| IC17HM35 | <i>Work and Leisure among the agrarian societies</i> Divya Teja Pasupuleti | 269 |
| IC17HM36 | <i>Dynamic Construal of Experience - Exploitation of Human Memory Functions for the purposes of Advertising - Experiential Learning may be an illusion</i> Sangeeth Konala | 273 |
| IC17HM37 | <i>A Study on Brand Equity and Media Efficiency</i> | 277 |
| IC17HM38 | <i>GST: Impact on Power Sector</i> Dr. Syed Azhar, B. Ramesh, Research Scholar | 287 |
| IC17HM39 | <i>A Comparative Study of Life Insurance Corporation of India and Selected Private Life Insurance Companies in India</i> Bandari Mounika, A. Chaithanya | 291 |

An Analytical Study on Issues of Handloom Industry in Undivided State Of Andhra Pradesh

Dr. A. Kalyani, Asst. Professor, Department of Business Management, St. Martin's Engineering College, Hyderabad. E-Mail: kalyaniv@rediffmail.com

V. Rohitha, Student of Business Management, Dept. of Business Management, Malla Reddy College of Engineering, Hyderabad. E Mail: Vemularohitha24@gmail.com

M. Pragnya Bharathi, Student of Business Management, Dept. of Business Management, Malla Reddy College of Engineering, Hyderabad. E-Mail: madhadi.pragnya@gmail.com

Abstract

The aim of the study is to identify the issues faced by the handloom industry. The study draws the attention of master weavers from the undivided state of Andhra Pradesh, especially four districts namely, Nalgonda, Guntur, Krishna and Prakasam districts. This study adopted the quantitative methodology, where 365 master weavers were selected through purposive sampling technique. The study findings reveal that the handloom industry in this district is unorganized. This reflects that there are some problems faced by the weavers. This study has limitations as it was conducted in four districts of the undivided state of Andhra Pradesh only. There may be other issues related to supply chain management practices of weavers in other districts. Therefore, the study inference can't be counted as general. Therefore, this study gives scope for conducting further research in future.

Keywords: Handloom industry, issues, Raw material, Finance, Technology, Supplies chain.

Introduction

This study attempts to analyse the issues in Indian handloom industry. In the last 100 years, the Handloom industry one of the ancient industries of India has faced a lot of changes in the form of mechanization, fibres used, refined methods of manufacturing and designing etc¹. The Textile Industry occupies a vital place in the Indian economy and contributes substantially to its export earnings. Textiles exports represent nearly “30% of the country's total exports. It has a high weightage of over 20% in the National production. It provides direct employment to over 15 million persons in the mill, power loom and handloom sectors”².

The structure of the Indian textile and garment industry is full of variability having the players at every level of their supply chain with a lot of structural, operational and performance differences³. The supply chain consists of all the activities associated with the flow and transformation of goods from the raw material stage, through to the end user, as well as the associated information flow.

However, the supply chain management process involved in handloom sector is haphazard, i.e. there is lack adequate mechanism to procure the raw product and produce them, then to sell the

end products to the consumer. Given this backdrop, the study has made an attempt to assess the issues faced by the handloom industry from the perspective of India as well as one district of Telangana.

Review of literature

Overview of Indian Handlooms

Of all the arts and crafts in India, hand-woven textiles are probably the oldest and most widely recognized. Handloom industry is the second largest economic activity in India providing direct and indirect employment to more than 30 lakh weavers. Handlooms contribute to nearly 23% of cloth production and it plays a major role in the Indian economy in view of its significant contribution to GDP. However, with the increasing onslaught of changes in fashion, the handloom sector has been suffering significantly in terms of technology, productivity and accessibility to market. Since 1960 and up to 95, the share of handloom production in the total textile production remained more or less constant at about 23%. “However, after 1995, it started declining and is pegged at 13% during 2004-05. The tradition of handlooms is so strong that the entire country is dotted with places famous for some or the other handloom product”⁴.

Handloom Industry in Undivided State of Andhra Pradesh

Handloom sector plays an important role in state economy. Weaving is the basic process among the various manufacturing stages of handloom clothes.

Handloom Industry in Nalgonda District

Nalgonda is salient for nurturing legacies such as the handloom industry at Pochampally. A large population of ikat weavers lives in Koyalagudem, Pochampally, Puttapaka and Chautuppall in Nalgonda district. The mentioned villages specialize in weaving the cotton textiles for apparel fabrics, furnishings, and sarees while silk ikats are woven in Pochampally. Cotton is cultivated in Mahaboobnagar district⁵.

Ikat sarees are made in the undivided state of Andhra Pradesh’s Nalgonda District. Besides Nalgonda town, these sarees are also woven in Guntur and Hyderabad districts. A peculiar weaving style referred to as Pagdu-bandhu and Chitku are also used and Katakbuti is created by using tie and dye⁶.

Handloom Industry in Prakasam District

Chirala region is one of the important places of weaving in Prakasam district. Moreover, within an 8-10 kilometer radius, the following towns and villages are noted for handloom weaving like: Ipurupalem, Perala, Chirala, Ramakrishnapuram, Hastinapuram, Jandrapeta, Amodagiripatnam, Dantampeta, Vetapalem, Desaipeta, Ravorapeta and Pandilapalli. These locations have 16,000 working looms, reputed to be one of the largest concentrations in the state. However, weavers often articulate their concerns in terms of wages and the availability of work. Again, it is necessary to place these perceptions within a larger economic context.

There have been crises in the availability of raw materials, especially yarn, are one such factor. Further, the phenomenal increase in yarn prices has been a major blow to handloom weavers. Therefore, the

position of master weavers was strengthened during a severe drought during 1957-62. It has been observed that majority of the weavers work for master weavers, most in their own houses, but there are various weaving sheds with appalling conditions⁷.

Handloom Industry in Guntur District

Guntur district has been part of the traditional weaving belt of Andhra Pradesh. Addepalli, Bhattiprolu, Ilavaram, Kanagala, K.R.Palem, Konetipuram, Mangalagiri, Nidubrolu, Peteru, Rajavolu, Repalle, Sattenapalli and Tenali are some of the main weaving centers. Weaving under the co-operative structure is not up to the mark as there is a report of a decline in production under co-operatives since 1980-81⁸. However, in Guntur district, master weavers are doing well especially in Mangalagiri, where there is heavy demand for the products.

The statistics report of this district reflects that there are 75 medium enterprises having more than 12000 spindles are functional. In addition, there are 20 small enterprises comprising 750 manual ginning and 20 automated ginning. The turnover of functional units in the cluster is 50000 million. As far as power loom sector providing employment is concerned, 19950 are employed in spinning mills and 46200 are employed in ginning mills. However, there are issues faced by the handloom industry in this area are in terms of high cost of energy, low level of automation, the absence of technical business development service providers, inadequate manpower, lack of standard quality measures, and high input costs. In addition, there are problems in availing bank credit and low level of enterprise social responsibility. This indicates various issues at each level of

supply chain management⁹.

Handloom Industry in Krishna District

Pedana, Kappaladoddi, Polavaram, Machilipatnam, Challapalli are major cluster areas involving handloom industry in Krishna district. The problems faced by the Handloom Weavers Co-operative Societies in this district are inadequate activation of looms, political interference, high production cost, lack of adequate marketing facilities, improper implementation of development schemes, misuse of funds and heavy dues from the Apex Society (APCO). Another study in this regard revealed the lapses of the Government in respect of non-compliance with the rule of hank yarn to be produced by the spinning mills and the supply of yarn by the NHDC. This was the major reason for most of the weavers and master weavers to buy the required yarn from the mills. Moreover, there is no adequate mechanism for the regulation of prices of yarn, dyes and other chemicals¹⁰. All these concerns indicate about supply chain management issues being faced by the master weavers of Krishna district.

There are a few studies conducted in the past that have been reviewed as in the following:

The issue of easy sourcing of raw materials (both yarn and dyes & chemicals) at reasonable prices has been a key problem across centers of handloom production. Cotton yarn is the major input for handloom weaving. In recent years, there has been a phenomenal rise in the prices of yarn. The main reason for this is the sharp increase in the prices of cotton. Supplementary reasons include lack of proper delivery systems, closure of spinning mills in some handloom producing States, and non- fulfillment of the Hank Yarn obligation by the organized mill

sector. The dearth of innovation and limited dynamism is associated with the handloom sector, particularly in the field of marketing. One major factor impeding the expansion and growth of this sector is the lack of adequate investment, participation, and stake-holding by the private sector, mainly in marketing and supply chain¹¹.

“Irregular supply of yarn is a major hurdle of the handloom industry and the like in the cost of the raw material results in many problems regarding employment”¹².

Lack of awareness in artisans, quality accreditation, finance, intellectual property rights and branding, global/national ethnic appeal, lack of new talent and unhealthy working practices are the main issues faced by the handloom industry. Marketing is the weakest link in the development of handlooms which is manipulated according to the convenience of the middlemen¹³.

The handloom sector is beset with manifold problems such as obsolete technologies, unorganized production system, low productivity, inadequate working capital, conventional product range, weak marketing link, overall stagnation of production and sales and, above all, competition from power loom and mill sector¹⁴.

The problems of shortage of raw materials, lack of proper financing and marketing insufficiency of the finished products as well as competition with other sectors. The major problem faced by handloom weavers is the fluctuation in the price of hank yarn¹⁵.

The handloom sector is the strongest backward linkage for the RMG sector regarding eco-friendly textile products¹⁶.

In the present context of globalization and rapid technological developments, handloom sector is beset with

many issues and challenges, which mainly focus on procurement of yarn, production, and distribution¹⁷.

“Handloom products are best known for their eco-friendly nature. The world is solely concentrating on ‘green technology’, therefore ‘green products’ and ‘social business concept’ to save the struggling world, where ‘Handloom technology’ could be best ‘green technology’ to fulfill basic needs of human i.e., clothing. The Handloom sector has a great deal of potential for further value addition in the RMG sector for further meeting local needs of fabrics and expanding sales of its products directly in foreign countries. This sector is an important channel for balanced sustainable economic growth”¹⁸.

To protect the weavers’ lively hood we should ensure that weaving as a profession remains viable for those who choose to continue with it. This can be done by providing market linkages, removing middle-men from the supply chain, improving the quality of the end product, innovating on designs¹⁹.

The major opportunities like rising power costs, rising production cost for non-handloom textile products, slow down in imports, esp. fabric and clothes, slow down in raw material exports, esp. cotton and cotton yarn, environmentally-acceptable production methods, skilled labor at low wages and growing market demand, no major investments in infrastructure is required. Improved levels of raw material and working capital are in fact critical inputs that determine the growth potential in the longer term²⁰.

An analysis of the products show that weavers are busy weaving age-old patterns, they lack skill in designing. As the products are open for the national and international market, they need to have variations in

designs and vibrancy in colors. There is an urgent need to work on the improvement of the tools and infrastructure provided to the weavers²¹.

The inheritance of skills and capacities to the young, next generation weavers, which is beyond the realm and reach of any modern training and educational institution is the greatest advantage of the handloom sector. And one biggest advantage of this sector at this epoch is; Handlooms are Eco-friendly; without any energy consumption. A handloom is a self-governing technology. The study finds out the availability of raw material such as yarn, dyes and dye stuffs is a major problem. Apart from this, there is a problem in introducing innovative designs as per the customer expectations and market trends to attract new customers towards handloom products. By incorporating changes in the supply chain problems like raw material procurement, technological problems in processing, logistics, stock handling and marketing problems by applying statistical and stochastic models to solve such problems and a major problem faced by handloom weavers is the fluctuation in the price of hank yarn. Marketing is a vital factor for the survival and growth of the handloom industry¹.

The problems faced by the weavers are in regard to the raw materials, labor problems, marketing of the handloom cloth, lack of financial assistance and how the power looms and mill sector are dominating the handlooms²².

The handloom sector is facing a crisis, rising input costs, production costs, and falling prices, combined with competition from cheaper factory made goods are causing many weavers to leave the sector in search of other jobs²³.

Access to raw material, design improvements, the market for products and patenting designs/varieties have to be paid immediate attention²⁴.

Objective

To identify the issues faced by the Handloom industry in the undivided state of Andhra Pradesh.

Methodology

The study is conducted in four districts of undivided state of Andhra Pradesh, namely Nalgonda, Guntur, Krishna and Prakasam where the concentration of master weavers is more. The data used is primary as well as secondary. Primary data was collected using questionnaire and the secondary data using the books, research papers, web sites and government records.

The study is descriptive and explorative. First, the questionnaire is designed using the secondary source (literature) and the same was confirmed by discussing with the experts and the officials from the same field before going for the final study. The items are constructed using Likert Five-point scale (1 Strongly Disagree -5 Strongly Agree). The study used SPSS 21.0 version for windows, MS-Excel for analyzing the data. Correlation and Factor Analysis is employed to analyze the data.

Results

A preliminary analysis of the data is analyzed using item statistics: mean and standard deviation and Cronbach's alpha. It is found that all the attributes have a standard deviation less than 2.0 which indicates that all the respondents have a relatively same level of agreement on the supply chain

management practices and production performance. Cronbach's alpha coefficient and critical analysis of correlation of the data matrix are computed to ensure the usage of factor analysis. 2 items have been discarded due to cross loadings²⁵.

The reliability test was run to determine the internal consistency of the scale used. The Cronbach's alpha (reliability) is 0.863, which indicates internal consistency among all the items, as the minimum alpha value of 0.70 is acceptable for using the scale for further analysis.

Sample Adequacy (KMO and Bartlett's test of Sphericity)

A sample size of 365 is used to perform the factor analysis. This sample size meets the minimum requirement of five observations per variable²⁵. The total variables in the study are 25 hence the minimum sample size requirement is 125. However, the present sample (365) is more than the minimum requirement hence,

sufficient to carry out factor analysis. The other test to check the sample adequacy is Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy statistic. It indicates the proportion of variance in variables that might be caused by underlying factors. The KMO index ranges from 0 to 1, reaching 1 when each variable is perfectly predicted without error by the other variables.

The KMO value must exceed 0.50 for both the overall fit and each individual variable, and the value more than 0.8 is considered to be good²⁵. The KMO value for the study is 0.800; hence, the sample size is adequate to perform the exploratory factor analysis. Bartlett's measure tests the null hypothesis that the original correlation matrix is an identity matrix, thus there are as many factors as the items, and thus for doing the factor analysis, the test should be significant²⁶. For this data, Bartlett's test is highly significant ($p = 0.000$), and therefore, factor analysis is appropriate. The results of KMO and Bartlett's test are shown in Table 1.

TABLE 1
KMO and Bartlett's Test

| | | |
|--|--------------------|----------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .800 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 6322.272 |
| | Df | 253 |
| | Sig. | .000 |

Factor extraction

Principal Axis Factoring with VARIMAX rotation has resulted in four factors, which were the four constructs taken initially at the time of scale development, thus it helped to establish the construct

validity. As there are four factors the scale should be considered as multidimensional scale. Total cumulative variance explained these four factors is 57.589 per cent. Thus after the exploratory factor analysis, the final scale comprised of 23 items which were grouped under the following

constructs, include, 'Finance' (eight items), (four items) and 'human resources' (six items), shown in Table 2.

TABLE 2
Rotated Factor Matrix^a

| | Factor | | | |
|-----|--------|------|------|------|
| | 1 | 2 | 3 | 4 |
| I20 | .920 | | | |
| I19 | .881 | | | |
| I21 | .870 | | | |
| I22 | .816 | | | |
| I18 | .806 | | | |
| I17 | .780 | | | |
| I16 | .622 | | | |
| I23 | .584 | | | |
| I4 | | .923 | | |
| I2 | | .815 | | |
| I3 | | .799 | | |
| I1 | | .588 | | |
| I5 | | .540 | | |
| I14 | | | .889 | |
| I12 | | | .756 | |
| I15 | | | .624 | |
| I13 | | | .613 | |
| I10 | | | | .751 |
| I24 | | | | .689 |
| I8 | | | | .560 |
| I11 | | | | .540 |
| I25 | | | | .513 |
| I9 | | | | .418 |

Extraction Method: Principal Axis Factoring.

Rotation Method: Varimax with Kaiser

Normalization.^a

a. Rotation converged in 5 iterations.

Eigen value which represented the amount of variance accounted for by a factor, and the value more than 1 is considered significant; per cent of variance explained represents how much variance is explained by the each factor, here 23.511, 13.332, 10.449 and 10.297per cent of total variance explained by the four factors namely finance, procurement, production and human resources respectively.

Reliability Analysis

Reliability refers to the extent to which a scale produces consistent results if repeated measurements are made²⁷. The internal consistency of scale has been examined through Cronbach's alpha, which has a high value of 0.863, thus showing the reliability of the scale. The value of Cronbach's alpha if an item is deleted has

also been examined to know the impact of the items on overall alpha value.

Discussion

By looking at the results it can be concluded that there is a major problem with the lead-times of supply of rawmaterials, high-interest rate to get the loans followed by too many formalities to be followed to get the loans, the subsidy is not available to the master weavers and so on.

References

1. Rajeswari, B. (2009). *A Study on Impact of Supply Chain Prospects on the Performance of Handloom Sector*. Retrieved from <http://www.fibre2fashion.com/industry-article/4314/a-study-on-impact-of-supply-chain>.
2. Nema, N., Soni, S. R., Talankar, A., & Nougriaya, S. (2013). Green Supply Chain Management Practices in Textile and Apparel Industries: Literature Review. *International Journal of Engineering Technology & Management Research*, 1(1), 330–336.
3. Giri, S., & Rai, S. S. (2013). Dynamics of Garment Supply Chain. *International Journal of Managing Value and Supply Chains*, 4(4), 29–42.
4. Nayak, P., Rout, T. ., Samantray, P. ., & Dash, P. (2008). *Khandua Sarees & Fabrics: Tradition and Pride of Orissa*. Mumbai.
5. Jiyo. (2016). *Nalgonda District*. Retrieved September 2, 2016, from <http://www.jiyo.net.in/cluster-location.php?IID=7>
6. Discovered India. (2016). *Handlooms In Andhra Pradesh*. Retrieved September 2, 2016, from <http://www.discoveredindia.com/andhra-pradesh/culture-in-andhra-pradesh/handlooms-in-andhra-pradesh/>
7. Niranjana, S., & Vinayan, S. (2001). *Report on Growth and Prospects of the Handloom Industry: Study Commissioned by the Planning Commission*. Retrieved from http://planningcommission.gov.in/reports/sereport/ser/stdy_hndloom.pdf
8. Mukund, K., & Syamasundari, B., *Traditional Industry in the New Market Economy – The Cotton Handlooms of Andhra Pradesh*, (Sage Publications, New Delhi), 2001.
9. Micro Small and Medium Enterprises. (n.d.). *Brief Industrial Profile of Guntur District*. Hyderabad: MSME-Development Institute.
10. Chalam, G. V. (2001). Problems and Prospects of Handloom Industry in Co- operative Sector ñ A Study of Handloom Weaverís Co-operative Societies in Krishna District. *Indian Co-Operative Review*, 38(3), 137–142.
11. Hameed, S. (2012). *Report of the Steering Committee On Handlooms and Handicrafts Constituted for the Twelfth Five Year Plan (2012 – 2017)*. Retrieved from http://planningcommission.gov.in/aboutus/committee/strgrp12/str_handloom0305.pdf
12. SrinivasaRaoKasisomayajula, *Socio-economic analysis of handloom industry in Andhra Pradesh A study on selected districts*, (MBA Thesis, Osmania University, Andhra Pradesh), 2012.

13. G.V.Madhuri&K.Tejaswini (2012). *Role of SME's in Internationalization of Andhra Pradesh Handloom Industry*. Retrieved from www.ijmra.us/project%20doc/IJPSS_JUNE2012/IJMRA-PSS1187.pdf
14. Dr.UshaN.Patil (2012). *Role of Handloom Industry in India*. Retrieved from http://www.i3s.net.in/uploads/pdf/Resources/Role_of_Handloom_Industry_in_India.pdf
15. Priyanka Singh Bhadouria (2012). *Handloom Industry on the way of Distress: An Empirical Study over the major problems*. Retrieved from <http://www.indianjournals.com/ijor.aspx?target=ijor:ajrssh&volume=2&issue=6&article=007>
16. Abrar Ahmed Apu, *Integrating Handloom – Weavers into Bangladeshi RMG Production Chain*, 2012. Retrieved from <http://www.textiletoday.com.bd/integrating-handloom-weavers-into-bangladeshi-rmg-production-chain/>
17. Goswami.R,& Jain, R. (2011). *An analytical study on Managerial Issues of Handloom Industry in Jaipur district*. Retrieved from ijrcm.org.in/article_info.php?article_id=750
18. Abrar Ahmed Apu (2011). *Reviving Bangladeshi Handloom Industry through Adoption and Diffusion Process*. Retrieved from www.textiletoday.com.bd/magazine/printable.php?id=145
19. Aishwarya Mishra (2011). *Sustaining lives or craft or both?* Retrieved from <http://wheredoiblog.blogspot.in/2011/10/sustaining-lives-or-craft-or-both.html>
20. Donthi,N.R.(2010). *Inclusive Growth in Handloom Sector: An Appropriate Strategy to Utilize Opportunities*. Retrieved from www.fibre2fashion.com/industry-article/32/3111/inclusive-growth-in-handloom-Sector-an-appropriate-Strategy-to-utilize-opportunities1.asp
21. Jain, R., &Goswami, R. (2010). *Livelihood through Handloom Weaving*. *International Research Journal*, 1(12), 1-3.
22. M.LakshmiNarasaiah, *Economics of Handloom Industry*, (Sonali Publications, New Delhi), 2004.
23. Akshara Network (n.d.). *Handloom Sub-sector Analysis*. Retrieved from www.aksharakriti.org/magazines/doc_download/185-subsector-handloom
24. Dr. S. Sudalaimuthu& S. Devi (n.d.). *Handloom industry in India*. Retrieved from <http://www.fibre2fashion.com/industry-article/2269/handloom-industry-in-india?>
25. Hair, J. F. Jr., Black, W. C., Babin, B. J., Anderson, R. E., &Tatham, R. L., *Multivariate Data Analysis* (6th ed.). (India: Pearson Prentice Hall), 2008.
26. Hair, J. F., Jr., Anderson, R. E., Tatham, R. L., & Black, W. C., *Multivariate data analysis* (5th ed.). (Boston, MA: Pearson Education Inc.), 1998.
27. Malhotra, N.K., *Marketing Research- An applied orientation*, (Pearson Education Inc., New Delhi, India), 2007.

Appendix I

TABLE 3
Questionnaire

| S. No. | Item | Item |
|--------|------|--|
| 1 | I1 | Continuous increase in the cost of raw material |
| 2 | I2 | The quantity supply of raw material is not adequate |
| 3 | I3 | The quality of raw materials is not up to the mark |
| 4 | I4 | High lead times in supply of raw material |
| 5 | I5 | Prevalence of middlemen in the supply of raw material causing short supplies and price fluctuations |
| 6 | I6 | Absence of credit facility in case of public sector units Ex. NHDC |
| 7 | I7 | Non-functioning of yarn depots opened under clusters through NHDC |
| 8 | I8 | Degrading health and energies of Handloom weavers due to occupational |
| 9 | I9 | Existence of un trained Handloom weavers is more |
| 10 | I10 | Standards of life of weavers is degenerating |
| 11 | I11 | Welfare measures from government side is not adequate |
| 12 | I12 | Traditional and dated back looms and accessories causing low productivity |
| 13 | I13 | There is a lack of innovative products in Handloom sector |
| 14 | I14 | Existence of seasonal unemployment causing loom idleness |
| 15 | I15 | There is a low level of value addition in the post production of Handloom |
| 16 | I16 | Poor financial support from the banking sector towards Handloom industry |
| 17 | I17 | Security to be furnished to get the loans |
| 18 | I18 | Need to have influence to get the loans |
| 19 | I19 | Too many formalities have to be followed to get the loans |
| 20 | I20 | High rate of interest causing capital more costly |
| 21 | I21 | Interest subsidy by the government is not available to the master weavers |
| 22 | I22 | There is a compulsion to depend on private loans and advances |
| 23 | I23 | Problem with the delayed payments by the marketing agencies like APCO, Handloom House, Lepakshi ... etc. |
| 24 | I24 | Consumers are shifting from handloom products to others |
| 25 | I25 | Younger generations are not willing to continue in this field |

A Study on Performance of Indian Mutual Fund Schemes based on Risk Adjusted Performance Indices: Treynor, Sharpe and Jensen Approaches

Dr. K Ramesh, Assistant Professor
Accounting and Finance, Khammam
Institute of Technology and Sciences,
Khammam, Telangana, India.
E-Mail: kalavaramesh@uohyd.ac.in

Y. Hemasri, Student Business Management,
Dept. of Business Mnagement, Malla Reddy
College of Engineering, Hyderabad.

Sk. Khadar, Student Business Management,
Dept. of Business Mnagement, Malla Reddy
College of Engineering, Hyderabad.

ABSTRACT: The assessment and performance of mutual funds have become a fascinating exploration research topic both for academic researchers, managers of financial, banking and investment institutions. Thus, this study focused on the best and least Scheme based on the ranks provided by risk adjusted performance indices from the period from April 2010 to March 2015 available to investors in India.

The collected data are analyzed by using MS Excel package. The study Treynor, Sharpe and Jensen Indices for Secondary Data analysis by followed Benchmark S&P BSE Sensex to grant best possible accurate output for the financial period from 2010 to 2015. 33 Equity Diversified Mutual fund Schemes from top 10 Mutual fund Companies (based on AUM) were chosen for the study. This study concludes that UTI - MNC Fund (UGS 10000)-Growth Option, UTI - MNC Fund (UGS 10000)-Growth Option and ICICI Prudential Exports and Other Services Fund - Regular Plan – Growth are the best ranking schemes based on Treynor, Sharpe and Jensen Ratios respectively. Moreover, SBI Magnum Multiplier Fund - REGULAR PLAN –Growth, Birla Sun Life Equity Fund - Growth - Regular Plan and SBI Magnum Multiplier Fund - REGULAR PLAN – Growth is the least ranked schemes respectively.

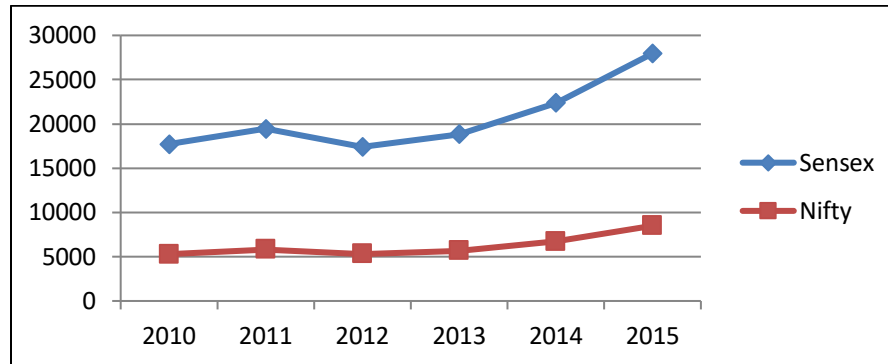
Keywords: Treynor Index, Sharpe Index, Jensen Index

1. INTRODUCTION

Mutual funds are institutions which pool the money from the public, invest in securities on behalf of investors and distribute the returns to the investors. They collect money from the public by issuing units. Investors are panic when they have many alternatives. Identifying the best scheme among the many alternatives (in terms of Risk and Return) is the biggest challenge to the mutual fund investors. Standard Deviation (σ) is the indicator of Measuring Risk (Volatility), which shows the tendency of an asset to fluctuate in price. Beyond the Standard Deviation (σ), the investors have to monitor various risk levels. Market Beta also considered for comparing the fund's returns.

S&P BSE Sensex and Respective Fund's Benchmark's Index have been incorporated.

Graph No 1: Recent Trends of Stock Market Indices (CNX Nifty & S&P BSE Sensex)

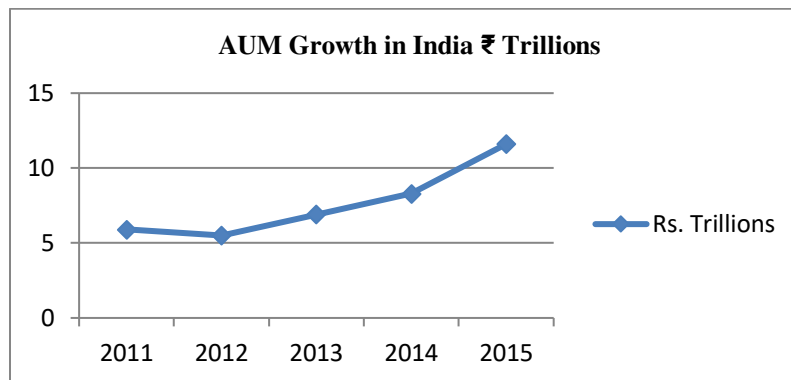


(Source: NSE & BSE)

By observing the above graph of Benchmarks (Graph No 1), Indices have relatively positive trends from past five

years. This would attract the Real Asset investors to invest in Financial Assets that imply more panic to choose the better one.

Graph No 2: Trends in Asset under Management (AUM)



(Source: Investment Company Institute)

In the above Graph No 2, one can understand that there is a relative positive in AUM Trends from past four Years. Mutual fund investment trend disclose the

attractiveness of Asset under Management day by day. Investors may be in a dilemma for choosing the best fund. But one can't identify the best fund based on not only the

performance or return indicators, but also they seek the information beyond the just performance.

2. LITERATURE REVIEW – SELECT STUDIES

Pedersen and Rudholm-Alfvin (2003) examine the performance of financial institution stocks using a choice of traditional and alternative performance measures partly identical to the selection used in this work. They find that the rankings of the alternative performance measures are extremely positively correlated with each other and to the Sharpe Ratio. As the alternative performance measures do not lead to significantly different results compared to the Sharpe Ratio in their analysis, the authors recommend staying with this traditional measure as it is analytically convenient and traditionally supported by researchers and practitioners (Pedersen & Rudholm-Alfvin, p. 166).

Eling and Schumacher (2006) analyze the performance of different categories of hedge funds using the Sharpe Ratio and a selection of the most documented alternative performance measures similar to those described in this work. Their results show high correlations in the rankings across all performance measures as well. They further prove that the rankings are very robust to changes in underlying parameters. Thus, they conclude that the choice of the performance measure does not matter and that the Sharpe Ratio is sufficient for appraising risk-adjusted performance.

Glawischnig (2007) attempts to refute Eling and Schumacher (2006) by showing that the choice of performance measure has a considerable influence on the ranking. His analysis, however, also yields highly correlated rankings for all performance measures. Nevertheless, this author warns against dismissing the alternative

performance measures. He points out that it is necessary to include the information contained in the higher moments of distributions even if they lead to the same result for the majority of observations. Yet, for some investment alternatives the additional information might lead to alterations in the ranking, which, even if small, might be significant for the decision of a particular investor (Glawischnig, 2007, p. 27).

Pedersen and Rudholm-Alfvin (2003) the discussed studies were based on hedge fund returns. This asset class is often criticized for suffering from severe selection biases (for a detailed discussion see for example Kaiser, Heidorn & Roder, 2009, p. 9) which might put the hitherto obtained statements about the usefulness of alternative performance measures into question. Hence, returns of the asset class of bank products shall be used in this work to determine whether alternative performance measures yield different results compared to the Sharpe Ratio.

3. RESEARCH METHODOLOGY

3.1 Objectives

To find the best and least ranked schemes in terms of Risk Adjusted Performance

3.2 Selection of Mutual Fund Companies

AMCs were chosen by based on top 10 Mutual fund companies (based on Asset under Management (AUM) as on March 31st, 2013). AUM of top 10 companies penetrates 80.20% out of the 44 Mutual fund companies in India. They are HDFC Asset Management Company Limited (16.21%), Reliance Capital Asset Management Ltd. (15.07%), ICICI Prudential Asset Mgmt. Company Limited (13.99%), Birla Sun Life Asset Management Company Limited (12.27%), UTI Asset Management Company

Ltd (11.06%), SBI Funds Management Private Limited (8.75%), Franklin Templeton Asset Management (India) Private Limited (6.62%), Kotak Mahindra Asset Management Company Limited (KMAMCL) (5.63%), IDFC Asset Management Company Limited (5.24%) and DSP BlackRock Investment Managers Private Limited (5.15%).

3.3 Selection of Mutual Fund Schemes (Sample size)

249 Equity Diversified Schemes available out of 44 AMCs as on 31st March, 2013. This study contains all 33 Equity Diversified Schemes related to top 10 Mutual fund companies, either closed ended or open ended funds. Rest of the schemes were not taken into consideration due to various reasons like institutional plans, inception date is less than a year and they do not belong to top 10 AMCs. Those 33 schemes are displayed in Table No 1. S&P BSE Sensex has been taken as Benchmark for the study.

3.4 Data Collection

Secondary data was collected from different sources and compiled as per the requirement of the study. Data collected from AMFI, RBI, NSE, BSE, SEBI, Moneycontrol.com, Economic Times and various respective funds' websites.

3.5 Data Analysis Tools

Risk Adjusted Performance Indices

There are three indices available for measuring the risk adjusted performance

- The Treynor Index (Treynor, 1965)
- The Sharpe Index (Sharpe, 1966)
- The Jensen Index (Jensen, 1968)

1. The Treynor Index

In 1965, Treynor was the first researcher who computed a measure of the portfolio

performance. A measure of a portfolio excess return per unit of risk equals to the portfolio rate of return minus the risk free rate of return, divided by the portfolio Beta. This is useful for assessing the excess return, evaluating investors to evaluate how the structure of portfolio to different levels of systematic risk will affect the return. Symbolically, the Treynor Index (T_p) is presented as:

$$T_p = \frac{R_p - R_f}{\beta_p}$$

Where, R_p = Portfolio Rate of Return

R_f = Risk free Rate of Return

β_p = Portfolio Beta

When $R_p > R_f$ and $\beta_p > 0$, Larger Treynor value appear. It means a better portfolio for all the investors regarding of their individual risk performance. Negative Treynor values occur in two situations.

When $R_p < R_f$, the Treynor value is negative because $R_p < R_f$, then one can judge the portfolio performance is very poor.

When $\beta_p < 0$, the negativity becomes from beta, the fund's performance is superb.

There is another very important case, suppose that when $R_p < R_f$ and β_p both are negative, then Treynor value will become positive but in order to qualify the fund's performance as good or bad, observe whether the R_p lies above or below the Security Market Line (SML). The Treynor Index used the Security Market Line as a benchmark. This Index has a geometric interpretation which is similar to the Sharpe Index.

2. The Sharpe Index

In 1966, Sharpe developed a composite measurement of portfolio performance which is very similar to the Treynor measure. The only difference being the Standard Deviation (σ) instead of Beta. The Sharpe Index is a measure of performance of the portfolio in given period of time.

In Sharpe Index, three things should be considered, the portfolio return, risk free rate of return and the standard deviation (σ) of the portfolio. Another thing is that for the risk free rate of return, use average return (over the given period of time). The standard deviation (σ) of the portfolio measures the systematic risk of the portfolio.

The Sharpe Index is computed by dividing risk premium of the portfolio by its standard deviation or total risk. Symbolically, the Sharpe Index is presented as below.

$$S_p = \frac{R_p - R_f}{\sigma_p}$$

Here, R_p = Portfolio Rate of Return

R_f = Risk Free Rate of Return

σ_p = Standard Deviation

The Sharpe Index uses the Capital Market Line as a benchmark. The higher the Sharpe measure indicates a better performance

because each unit of total risk (Standard Deviation) is rewarded with the greater excess return.

3. The Jensen Index

In finance, Jensen's Index is used to determine the required (excess) return of stock, security or portfolio by the Capital Asset Pricing Model (CAPM). Jensen Index utilizes the Security Market Line (SML) as a benchmark. At 1970's, this measure was first used in the evaluation of Mutual fund managers. This model is used to adjust the level of beta risk, so that riskier securities are expected to have higher returns. It allows the investor to statistically test whether portfolio produced an abnormal return relative to the overall capital market.

According to the Capital Asset Pricing Model (CAPM), in an equilibrium risk return model (Levy and Sarnat, 1984) the expected rate of return on an asset or portfolio is expressed as below.

$$E R_p = R_p + (E R_m - R_f) \beta_p \quad (1)$$

Where, $E R_p$ = Expected Return of an asset or portfolio

R_f = Risk Free Rate of Return

$E R_m$ = Expected Return on the market portfolio

β_p = Beta or Systematic Risk

To obtain Jensen Index, a time series regression of the security's return ($R_p - R_f$) is regressed against the market portfolio excess return ($R_m - R_f$).

Now

$$(R_p - R_f) = \alpha_p + (R_m - R_f) \beta_p + \epsilon_p \quad (2)$$

Where, R_p = Return on the Portfolio

R_f = Risk Free Rate of Return

α_p = Jensen Index measure of the performance of the portfolio

β_p = Beta or Systematic risk of the portfolio

R_m = Return of the market portfolio

ϵ_p = Portfolio Random Error Term.

Now by taking mean on both sides of equation (2), we obtain

$$(R_p - R_f) = \alpha_p + (R_m - R_f) \beta_p \quad (3)$$

By Levy and Sarnat 1984, the average error term ϵ_p is always zero.

So equation (3) become

$$\alpha_p = R_p - (R_f + (R_m - R_f) \beta_p) \quad (4)$$

Within the framework of CAPM, α_p should be zero. It means that the stock has

performed exactly same as the market expected based on its systematic risk. The

Jensen Index (α) for a particular portfolio is identified by the vertical intercept of regression model described in equation (4), from the equation (4) it is clear that the

higher the vertical intercept (α), the greater the abnormal return achieved by the portfolio in excess of the market return.

4. DATA ANALYSIS AND INTERPRETATION

Table No. 1 Treynor Index, Sharpe Index and Jensen Index for the financial period 2010 – 2015 and followed benchmark is S&P BSE Sensex

| SL NO | SCHEME CODE | SCHEME NAV NAME | TREYNOR INDEX | RANK | SHARPE INDEX | RANK | JENSEN INDEX | RANK |
|-------|-------------|--|---------------|------|--------------|------|--------------|------|
| 1 | 100740 | UTI - MNC Fund (UGS 10000)- Growth Option | 14.03 | 1 | 7.46 | 1 | 0.34 | 3 |
| 2 | 103312 | ICICI Prudential Exports and Other Services Fund - Regular Plan - Growth | 2.24 | 30 | 4.88 | 3 | 1.27 | 1 |
| 3 | 102594 | ICICI Prudential Value Discovery Fund - Regular Plan - Growth | 4.68 | 22 | 4.90 | 2 | 0.60 | 2 |
| 4 | 105817 | Franklin India High Growth Companies Fund - Growth Plan | 9.23 | 4 | 4.06 | 5 | 0.28 | 5 |
| 5 | 103111 | Birla Sun Life India Gennext Fund- Growth Option | 11.59 | 2 | 4.81 | 4 | 0.28 | 4 |
| 6 | 101161 | Reliance Equity Opportunities Fund-Growth Plan-Growth Option | 9.66 | 3 | 4.00 | 6 | 0.26 | 6 |
| 7 | 100520 | Franklin India Prima Plus-Growth | 8.86 | 5 | 3.61 | 7 | 0.22 | 9 |
| 8 | 102883 | Franklin India Flexi Cap Fund- Growth Plan | 7.62 | 9 | 2.99 | 10 | 0.22 | 8 |
| 9 | 106235 | Reliance Top 200 Fund- Growth Plan -Growth Option | 6.75 | 12 | 2.80 | 12 | 0.23 | 7 |
| 10 | 103024 | SBI Magnum Multiplier Fund - REGULAR PLAN -Growth | -34.62 | 33 | 2.76 | 13 | 0.05 | 33 |
| 11 | 104339 | Birla Sun Life Long Term Fund- Growth Option | 6.86 | 11 | 2.75 | 14 | 0.21 | 10 |
| 12 | 101764 | HDFC Capital Builder Fund - Growth Option | 8.57 | 6 | 3.03 | 9 | 0.18 | 19 |
| 13 | 100033 | Birla Sun Life Advantage Fund - Regular Growth | 5.68 | 16 | 2.29 | 20 | 0.21 | 11 |
| 14 | 101228 | ICICI Prudential Top 200 Fund - Regular Plan - Growth | 5.62 | 17 | 2.35 | 18 | 0.20 | 13 |

| | | | | | | | | |
|----|--------|--|--------|----|------|----|------|----|
| 15 | 103166 | Birla Sun Life Equity Fund - Growth - Regular Plan | 0.50 | 31 | 0.20 | 33 | 0.09 | 31 |
| 16 | 102846 | Reliance NRI Equity Fund-Growth Plan-Growth Option | 6.07 | 15 | 2.54 | 16 | 0.20 | 12 |
| 17 | 101144 | ICICI Prudential Dynamic - Regular Plan - Growth | 7.99 | 7 | 3.10 | 8 | 0.18 | 21 |
| 18 | 101762 | HDFC Equity Fund - Growth Option | 7.17 | 10 | 2.36 | 17 | 0.19 | 17 |
| 19 | 103819 | DSP BlackRock Opportunities Fund-Regular Plan - Growth | 6.39 | 13 | 2.59 | 15 | 0.20 | 15 |
| 20 | 103678 | Templeton India Equity Income Fund-Growth Plan | 5.00 | 20 | 2.31 | 19 | 0.18 | 22 |
| 21 | 100377 | Reliance Growth Fund-Growth Plan-Growth Option | 4.66 | 23 | 1.97 | 23 | 0.19 | 16 |
| 22 | 105875 | DSP BlackRock Equity Fund - Regular Plan - Growth | 6.27 | 14 | 2.29 | 21 | 0.19 | 18 |
| 23 | 107504 | Birla Sun Life Special Situations Fund - Growth | 4.51 | 24 | 1.95 | 24 | 0.20 | 14 |
| 24 | 101738 | Birla Sun Life Dividend Yield Plus - Growth - Regular Plan | 7.62 | 8 | 2.84 | 11 | 0.17 | 23 |
| 25 | 103040 | Kotak Classic Equity Scheme--- Growth | 5.24 | 19 | 2.09 | 22 | 0.17 | 24 |
| 26 | 100496 | Templeton India Growth Fund-Growth Plan | 3.29 | 29 | 1.50 | 31 | 0.17 | 25 |
| 27 | 100380 | Reliance Vision Fund-GROWTH PLAN-Growth Option | 4.81 | 21 | 1.90 | 26 | 0.18 | 20 |
| 28 | 100119 | HDFC Growth Fund - Growth Option | 5.41 | 18 | 1.93 | 25 | 0.16 | 26 |
| 29 | 111863 | IDFC Classic Equity Fund-Plan B- Growth | 3.74 | 27 | 1.64 | 27 | 0.16 | 27 |
| 30 | 108596 | IDFC Classic Equity Fund-Regular Plan-Growth | 3.74 | 28 | 1.64 | 28 | 0.16 | 28 |
| 31 | 102760 | HDFC Core and Satellite Fund - GROWTH | 4.14 | 26 | 1.40 | 32 | 0.14 | 30 |
| 32 | 102948 | HDFC Premier Multi-Cap Fund-Growth | 4.49 | 25 | 1.61 | 29 | 0.15 | 29 |
| 33 | 102414 | SBI CONTRA - REGULAR PLAN -GROWTH | -21.64 | 32 | 1.59 | 30 | 0.07 | 32 |

(Source: Author Calculations)

Table No. 1 discloses the values of Treynor, Sharpe and Jensen's Alpha and their ranks according to the best performer. 33 Schemes were chosen for the study for the financial period 2010 – 2015 (followed benchmark is S&P BSE Sensex).

Treynor Index indicates risk adjusted return i.e., excess return over risk free rate per unit of systematic risk means beta. In the above Table No. 1, the first column shows Treynor Index of different mutual fund schemes. Positive (+ve) Treynor Index demonstrates a superior risk adjusted performance of a fund, while a low and negative (-ve) Treynor Index shows an unfavorable risk adjusted the performance of a fund. Higher Treynor Index shown by UTI - MNC Fund (UGS 10000)-Growth Option (14.03) followed by Birla Sun Life India Gennext Fund-Growth Option (11.59), Reliance Equity Opportunities Fund-Growth Plan-Growth Option (9.66), Franklin India High Growth Companies Fund - Growth Plan (9.23) and Franklin India Prima Plus-Growth (8.86). 2 Schemes have negative values indicating that unfavorable risk adjusted returns for the investors. Those Schemes are SBI Magnum Multiplier Fund - REGULAR PLAN - Growth (-34.62) followed by SBI CONTRA - REGULAR PLAN -GROWTH (-21.64).

Sharpe Index indicates reward to variability ratio. It is excess returns over risk free return per unit of risk i.e., per unit of Standard Deviation. Positive values of Sharpe Index designate better performance. It is obvious from Table No. 1, UTI - MNC Fund (UGS 10000)-Growth Option (7.46) followed by ICICI Prudential Value Discovery Fund - Regular Plan - Growth (4.90), ICICI Prudential Exports and Other Services Fund - Regular Plan - Growth (4.88), Birla Sun Life India Gennext Fund-Growth Option (4.81) and Franklin India High Growth Companies Fund - Growth Plan (4.06). No Scheme has negative Sharpe

values which mean bad performance and lesser returns from the investment. But top least unfavorable Schemes (low values) are Birla Sun Life Equity Fund - Growth - Regular Plan (0.20) followed by HDFC Core and Satellite Fund - GROWTH (1.40). Positive values indicating all Schemes are a favorable option for investment for current and potential investors.

Jensen's Alpha measures the differential return on securities. It is the regression of excess return of the Scheme (the dependant variable) with an excess return of market (the independent variable). Higher Jensen's Alpha indicates better performance. Higher alpha values from Table No. 1, ICICI Prudential Exports and Other Services Fund - Regular Plan - Growth (1.27), ICICI Prudential Value Discovery Fund - Regular Plan - Growth (0.60), UTI - MNC Fund (UGS 10000)-Growth Option (0.34), Birla Sun Life India Gennext Fund-Growth Option (0.28) and Franklin India High Growth Companies Fund - Growth Plan (0.28) indicating better performer among the selected mutual fund Schemes. Top least funds (low alpha values) are SBI Magnum Multiplier Fund - REGULAR PLAN -Growth (0.05) and SBI CONTRA - REGULAR PLAN -GROWTH (0.07).

5. CONCLUSION

By observing the above calculations, one can understand that some of the funds have the best ranking based on Risk adjusted performance. Those funds are motioned clearly based on Treynor, Sharpe and Jensen with the followed benchmark S&P BSE Sensex.

| | Treynor Index | Sharpe Index | Jensen Index |
|---|--|---|---|
| Favorable Risk Adjusted Performance (2010 – 2015) | UTI - MNC Fund (UGS 10000)-Growth Option (14.03) | UTI - MNC Fund (UGS 10000)-Growth Option (7.46) | ICICI Prudential Exports and Other Services Fund - Regular Plan - Growth (1.27) |
| Unfavorable Risk Adjusted Performance (2010 – 2015) | SBI Magnum Multiplier Fund - REGULAR PLAN -Growth (-34.62) | Birla Sun Life Equity Fund - Growth - Regular Plan (0.20) | SBI Magnum Multiplier Fund - REGULAR PLAN -Growth (0.05) |

REFERENCES

Markowitz, Harry. 1952. "Portfolio Selection." *Journal of Finance*, vol. 7 (March), pp. 77–91

Fama, E.F. and M.H. Miller, 1972, *The theory of finance*, Holt, Rinehart and Winston, New York, Chapter 5.

Groot, J. Sebastiaan de, 1998, *Behavioral aspects of decision models in asset management*, Labyrint Publications, Capelle a/d IJssel.

Sharpe, William F., 1966, "Mutual fund performance", *Journal of Business*, No. 1, Vol. 2, pp. 119-138.

Sharpe, William F., 1994, "The Sharpe ratio", *Journal of Portfolio Management*, Vol. 21, No. 1, pp. 49-58

Jensen, Michael C. 1968. "The Performance of Mutual Funds in the Period 1945–1964." *Journal of Finance*, vol. 23, (May) pp. 389–416

Sharpe, William F. 1964. "Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk." *Journal of Finance*, vol. 19 (September), pp. 425–42.

Treynor, Jack L., & Fischer Black. "How to Use Security Analysis to Improve Portfolio Selection." *Journal of Business*, January 1973, pp. 66-85

FACTORS OF LIFE INSURANCE AT HOUSEHOLD LEVEL: A CASE STUDY

Dr.V.V.Narsi Reddy, Associate Professor,
School of Management Studies,
Lakireddy Balireddy College of
Engineering. E mail:
drvvnreddy@gmail.com

Dr.S.M.Reddy, Department of Economics,
Andhra University, Visakhapatnam.

Abstract: *In this paper, the relationship between life insurance and various economic and demographic characteristics of households were examined. The study conducted in urban and rural areas of Krishna District in Andhra Pradesh show that individual and household level variables are important factors of life insurance ownership. The objective of this study was to examine the relationship between life insurance ownership and the demographic, economic and educational characteristics of respondents. The analysis was based on data from filed survey. The stratified sampling technique was used in selecting respondents and Chi-square test was employed to apply to match up observed data with data that would be estimated according to a given hypothesis. From the study find the major significant factors of insurance in urban area are caste, level of education, earning members in the family, income, savings and nature of accommodation. In the rural area caste, level of education, number of children in the family, number of dependents in the family, income and savings are the determinants of insurance. In both areas caste, level of education, income and savings are the significant factors.*

JEL classification: G22; O18; D1

Key Words: Life Insurance, Households, Socio economic factors.

Introduction:

The term insurance may defined as a co-operative mechanism to spread the loss caused by a particular risk over a number of persons, who are exposed to it and who agree to ensure themselves against that risk. The function of insurance includes providing certainty, protection, risk sharing, and prevention

of loss and capital formation. Insurance is also defined as a social apparatus to accumulate funds to meet the losses arising through a certain hazard to a person insured for such hazard (Bodla, Marg & Singh, 2004). From an economic perspective, insurance is a financial intermediation function by which individuals exposed to a specified contingency each contribute to a pool from which covered events suffered by participating individuals are paid. From a legal perspective, insurance is an agreement, the insurance policy or insurance contract, by which one party, the policy owner, pays a stipulated consideration called the premium to the other party called the insurer, in return for which the insurer agrees to pay a defined amount of money or provide a defined service if a covered event occurs during the policy term (Black and Skipper, 2000).

Life insurance is generally considered a means of protecting one's family against the unforeseeable circumstance of the death of an earning member. However, there are a number of other benefits that are not apparent. Some benefits accrue to the individuals and their families, while others assist economic development. Insurance, particularly life insurance, is one of the ways of providing for the future. A life insurance policy which gives an annuity is a combination of protection and investment. In addition, it serves as a solution to social problems. Investment of

accumulated resources by the insurer facilitates the overall development of the country (NCEAR, 2011).

Factors associated with life insurance:

One would assume, a priori, that individual life insurance is function of income, assets, in some ways, education age of the family head, occupation of an individual, family composition and lifecycle and finally, life insurance purchase decisions are affected by a large group of variables which are difficult to isolate and measure. Attitudes towards death, family, insurance agents, saving, time preferences, and risk in general all create differences among individual utility functions for life insurance (Hammond, Houston and Melander, 1967). According to Anderson and Nevin (1975) the independent variables like socio-economic variables, demographic variables, psychograph variables and other explanatory variables were significant in life insurance purchased. Education of husband, current household income, expected household income, net worth of household, husband's insurance before marriage and wife's insurance before marriage were accounted in insurance decision. The wife and the insurance agent are playing an influential role in the type of insurance purchased by young married households. Burnett and Palmer's (1984) suggest that belief in the traditional work ethic, fatalism, socialization preference; religion salience and assertiveness were the most important variables and Education, number of children and income were the best associated variables with insurance decision at household level.

Shotick and Showers (1994) estimate impacts on purchasers, as well as the changes in the

probability of purchasing insurance. Income and number of earners are both positively related to the demand for insurance; the marginal effect from an increase in income is greater for single earner households than for multi-earner households. Also, as either family size or age increases, the marginal increase in insurance expenditure diminishes. Composition of households evolves; change in household's characteristics will affect the demand for insurance. Tienyu Hwang and Brian Greenford (2005) also attempt to gain an understanding of the different characteristics of the market in life insurance in each territory. Income and life insurance consumption are found to be strongly correlated, which is consistent with previous studies. Education is a significant factor. Price is found to be insignificant, largely conflicting with previous studies. Levels of social security are not significantly related. The one-child policy in mainland China has a negative effect on life insurance consumption.

Donghui Li, Fariborz Moshirian, Pascal Nguyen and Timothy Wee (2007) examined the determinants of life insurance consumption in OECD countries. Consistent with previous results, we find a significant positive income elasticity of life insurance demand. Demand also increases with the number of dependents and level of education, and decreases with life expectancy and social security expenditure. The country's level of financial development and its insurance market's degree of competition appear to stimulate life insurance sales, whereas high inflation and real interest rates tend to decrease consumption and socioeconomic factors are jointly considered. Life insurance ownership in the country has corroborated that insured households tend to be

more prosperous, more educated and more optimistic about future security than non-insured households. Both the level of education and occupation of the chief earner of a household are major determinants of life insurance participation, apart from asset-ownership. Further, households that are more optimistic about the adequacy of future income and savings show higher levels of participation. No rural–urban divide has been noticed with respect to these influencing factors. Preeti Kakar and Rajesh Shukla (2010)

Utility of the Study:

Social security is virtually non-existent in India. While governments play a role providing some security to poor households (through the public distribution system targeted at households below the poverty line), in general financial security remains the responsibility of individuals. Life insurance is one of the most important social security measures undertaken in the country the importance of life insurance for economic and financial development directs us to investigate which economic, demographic, and institutional factors give rise to a vibrant life insurance market. Several studies have identified a core set of socio-economic determinants as good predictors of life insurance consumption (Thorsten Beck and Ian Webb, 2003). Life insurance purchase decisions are affected by a large group of variables which are difficult to isolate and measure.(Hammond, Houston and Melander, 1967). Kakar and Shukla (2010) attempted to identify determinants of life insurance ownership in the country based on primary data generated through the National Council of Applied Economic Research's (NCAER) National Survey of Household Income

and Expenditure (NSHIE). Both the level of education and occupation of the chief earner of a household are major determinants of life insurance participation, apart from asset-ownership. Furthermore, households that are more optimistic about the adequacy of future income and savings show higher levels of participation. No rural–urban divide has been noticed with respect to these influencing factors. In this scenario the present study has been made an attempt to examine the factors of life insurance at household level in terms of depth and content. A couple of issues on socio-economic factors of households towards life insurance are examined.

Objectives:

The specific objectives of the study are:

1. To understand the socio-economic factors of respondents in the study area.
2. To understand the factors associated of life insurance consumption of insured respondents in the study area.

Hypothesis:

H₀: There is no relationship between socio-economic factors and insurance.

H₁: There is a relationship between socio-economic factors and insurance.

Data and Methodology:

The study embodied a sizeable primary data, which was collected by way of canvassing a questionnaire among selected sample of

respondents The stratified sampling technique was used in selecting respondents .The researcher used the population strata on the basis of rural urban and insured and uninsured respondents and from each of these strata we drew at random a predetermined number of units (Yogesh Kumar Singh, 2006). The study is made in urban and rural areas of Krishna District in Andhra Pradesh. For the present study the total sample size of 400 was taken in which, 200 respondents were covered in urban area and 200 respondents taken from rural area. The total insured respondents from the two areas are 241, out of which, from urban area 143 and rural area 98. The total uninsured respondents from the two areas are 159, out of which, from urban area 57 and rural area 102. In this regard the data collected through questionnaires, personal observations, interviews etc. The collected raw data was processed by using Statistical Package for Social Sciences (SPSS) package for analyzing and interpretation. Chi-square test was employed to apply to match up observed data with data that would be estimated according to a given hypothesis.

$$\chi^2 = \sum \frac{(O - E)^2}{E}$$

Where O refers to the observed frequencies and E refers to the expected frequencies.

In order to judge the significance associated between attributes, the calculated value of chi square were compared with corresponding table. 0.05 level of significance. The results are considered significant if the calculated value of chi square is greater than tabulated value otherwise regarded as non-significant value (Gupta, S.P., 1997).

Results and Discussions:

1. Individual Factors

Consumers are categorized by age, gender, region, education, occupation, status of living, interests, preferences and opinions etc. But identifying the factors that are affecting consumers decisions are extremely complex. The affective response expresses an individual's preference for an entity. It is essential to study the effect of human factors that influences the attitudes of insured and uninsured towards life insurance. The nature of occupation always influences a person to do or not to do a particular course of action in addition to occupation, age, marital status, religion, caste, education etc. Appendix-1 shows individual factors of sample insured and uninsured respondents between two selected areas.

The occupation which forms the major source of income for the family has been taken as the occupation of the household. Government employees (22.50%) are the highest percentage of insurers in urban area followed by private employees (17.50%). In the rural area others (16.00%) and farmers (12.00%) are became the highest percentage of insured respectively. Government employees (14.50%) and others (12.50%) are having highest insurance percentage in the total sample. Others (9.50%) are the highest percentage of uninsured category in urban area followed by farmers (6.50%). In the rural area farmers (16.00%) and others (15.50%) are became the highest uninsured percentage. Other occupation respondents (15.50%) are highest of uninsured category and farmers (11.25%) are occupied second place in the total sample. The chi-square values for urban and rural area respondents

on life insurance among different occupational groups are 17.678 and 3.528 respectively. The chi-square value of urban area is significant at 1 per cent level. Hence, the null hypothesis is rejected in urban area and accepted in rural area. Therefore, we can conclude that there was a relationship between occupation and insurance in urban area and no relation between occupation and insurance in rural area.

In the age group between 30-39 (23.50%) respondents in urban area are the highest covered insured and 40-49 age group respondents are (20.00%) followed them. In rural area also 30-39 age group (18.00%) respondents and 40-49 age group (11.00%) respondents are occupied first and second places in insured category. In the rural area 19-29 age group (16.50%) and 30-39 age group (15.50%) respondents are the most uninsured category. The most uninsured respondent's category in the total sample area is in the age groups of 19-29 (12.50%) and 30-39 (12.25%). Chi-square values for both urban and rural areas age group are 5.341 and 7.039 respectively. None of the chi-square value is significant at 5 per cent and 1 per cent level. Hence, the null hypothesis is accepted for both urban and rural areas and concluded that there is no relationship between age group and insurance in both urban and rural areas.

Out of the total insured urban respondents, the highest percentage (37.00%) belongs to OC community and the lowest percentage belongs to ST (6.00%) community. In rural area OC community (26.50%) registered most insured respondents and the lowest percentage is recorded in ST community (2.00%). OC community (31.75%) is the highest registered community in

insured category in total respondents while ST community (4.00%) became the least community in which respondents are insured. In uninsured category for urban respondents, OC community (9.50%) stood at first place and ST community (3.50%) stood at last place. As the rural area uninsured respondents are considered majority of them belongs to BC community (14.00%) and the lowest belongs to ST community (10.50%). For caste wise total uninsured category OC community (11.25%) has the highest percentage and ST community (7.00%) registered lowest percent. The chi-square values for both urban and rural areas are 10.961 and 27.205 respectively. The chi-square value for the urban area is significant at 5 per cent level and for rural area significant at 1 per cent level. Hence, the null hypothesis is rejected and concluded that there is a relationship between caste and insurance.

Highest level of education of any member in the household has been taken as its level of education. This was done because, even where the head of the family is not literate, the younger members might be well educated and, being aware of insurance, become responsible for the household becoming insured. It is found that in the urban area the most insured respondents are educated and qualified of Graduation (21.50%) followed by Intermediate (11.00%) and SSC (11.00%). In rural area the highest percentage of insured respondents are notified with Graduation (10.50%) followed by Illiterate (8.50%), SSC and Primary Education (7.50%). Out of the total respondents, respondents who have Graduation (16.00%) qualification are most insured followed by SSC (9.25%) and Intermediate (9.00%). Regarding the uninsured respondents in urban area illiterates (9.50%) are the

highest percentage followed by Graduation (5.00%) qualification. In rural area the majority of the uninsured category are having Primary Education (12.50%) followed by Illiterate (11.00%). Illiterate (10.25%) respondents are became the highest percentage of uninsured in the total area followed by Primary Education (8.50%). The chi-square values for both urban and rural areas are 27.475 and 13.795 respectively. The chi-square value for urban area is significant at 1 per cent level and for rural area at 5 per cent level. So, the null hypothesis is rejected which concludes that there is a relationship between level of education and insurance.

2. Family Structure

It is very significant to know the effect of family structure on forming consumer behavior. The inbuilt risk protection system is there in Hindu Undivided Families but, nowadays nuclear families came into existence. Hence it is essential to know the effects of family structure on forming behavior towards life insurance. The family structure includes family type, number of children; number of dependents in the family etc. Information regarding Family Structure of respondents for both urban and rural areas is presented in Appendix -2.

Highest percentages of insured respondents are found in urban, rural and total sample respondents in nuclear family type (i.e. 42.00%, 26.50% and 34.25%) respectively. The same case may be noticed in uninsured also. Nuclear family type respondents in urban (16.00%), rural (32.00%) and in total (24.00%) respondents are found to be highest percentage in uninsured. The chi-square values for both urban and rural areas are 1.463 and 3.667 respectively.

The chi-square values for both urban and rural areas are insignificant. So, the null hypothesis is accepted and concludes that there is no relationship between type of family structure and insurance.

Highest percentage of insurance is obtained in respondents those who have two children in urban (33.50%), rural (20.00%) and total (26.75%) respondents respectively. In urban area highest percentage of uninsured is obtained in two children category (12.50%). Four and above children (16.50%) respondents in rural area are the majority of uninsured. In the total area two children (11.00%) respondents are became highest percentage of uninsured. The chi-square value is insignificant for urban area and significant at 1 per cent level for rural area. Hence, the null hypothesis is accepted in urban area and rejected in rural area. This concludes that there is no relationship between number of children and insurance in urban area and there is a relationship between number of children and insurance in rural area.

It can be found that only one dependent family has more insured in urban (21.50%), rural (13.50%) and total (17.50%) areas respondents. In the urban area two and three dependents (8.50%) in the family have majority of uninsured. In rural (25.00%) and total (16.75%) areas respondents, three dependents in the family are found to be the highest percentage of uninsured. The chi-square value for urban area is insignificant and for rural area it is significant at 1 per cent level. So, the null hypothesis is accepted for urban area and rejected for rural area. The conclusion is that there is no relationship between number of dependents in the family and insurance in the urban area and recognized the relationship between number of

dependents in the family and insurance in the rural area.

3. Economic Factors

Economic factors influence the decision of every individual towards insurance. Economic factors include income, wealth and savings. Income is used in calculating the life risk value of any individual. It is clearly said that the ten times of annual income plus liability of an individual will be the policy for everyone. Earning members in the family are also important in affecting the decisions. In some cases personal earnings may not be there but holds wealth from forefathers. The nature of savings that a person habituated, or the level of savings etc., always influence a person in selecting the savings mode i.e. banks, post office, insurance, chits, etc. Hence, it is essential to study the influence of these factors in forming or changing the decision towards life insurance. . Economic Factors of respondents is shown in the Appendix -3.

The highest percentage of insured in urban (43.00%), rural (23.00%) and total (33.00%) areas respondents are found in only one earning member in the family. In the case of uninsured also only one earning member in the family is found to be the highest percentage in urban (12.50%), rural (20.00%) and total (16.25%) areas respondents respectively. The chi-square value for urban area is significant at 5 per cent level and insignificant for rural area. So, the null hypothesis is rejected for urban area and accepted for rural area. Hence, the conclusion is that there is a relationship between earning members in the family and insurance in urban area and there is no

relationship between earning members in the family and insurance for rural area.

In the urban area highest percentage of insured respondents are in the range of above Rs. 50,001 (41.50%) followed by Rs. 40,001 – 50,000 (10.50%) and the lowest is noticed in the range of Rs. 30,001 – 40,000 (2.00%). In the rural area above Rs. 50,001 (18.50%) respondents occupied first place as insured respondents followed by below Rs. 10,000 (8.00%) and the range of Rs. 40,001 – 50,000 (4.00%) is noticed as the least insured. In the total sample respondents the majority of insured is recorded in the range of above Rs. 50,001 (30.00%) followed by Rs. 40,001-50,000 and below Rs. 10,000 (7.25%) and the lowest insured respondents are belongs to the range of Rs. 30,001- 40,000 (4.25%). In the urban area the highest uninsured respondents are belongs to the range of below Rs. 10,000 (13.50%) and the lowest respondents belongs to the range of Rs. 20,001- 30,000 and above Rs. 50,001 (2.00%). In the rural area below Rs. 10,000 respondents which constitute 31.00 per cent are notified as the highest uninsured and the least are noticed in the range of Rs. 40,001 – 50,000 (1.00%). Regarding the total area respondents below Rs. 10,000 (22.25%) are registered as highest uninsured and the lowest are in the range of above Rs. 50,001. The calculated chi-square values for the urban and rural areas are 61.089 and 63.264 respectively. Both the urban and rural areas chi-square values are significant statistically at 1 per cent level. So, the null hypothesis is rejected and concludes that there is relationship between annual income of the respondent and the insurance for both the urban and rural areas.

In the urban area the highest percentage of insured are in the range of above Rs. 50,000 (38.50) and the lowest is recorded in Rs. 30,001 – 40,000 (2.50%). Above Rs. 50,000 (19.50%) family income respondents are notified as the highest insured in rural area and Rs. 40,001 – 50,000 range family income respondents are registered as lowest insured. Regarding the total respondents, above Rs. 50,000 (29.00%) range family income respondents are the highest percentage of insured and the lowest are in the range of Rs. 30,001 – 40,000 (4.50%). In the uninsured category below Rs. 10,000 (13.00%) family income respondents are became the highest percentage and Rs. 40,001 – 50,000 (1.00%) are the lowest in urban area. In the rural area uninsured below Rs. 10,000 (25.00%) family income respondents are registered highest percentage and Rs. 30,001 – 40,000 (1.50%) respondents are the lowest. Below Rs. 10,000 (19.00%) family income respondents are having the highest percentage for the total respondents in the uninsured and the lowest are in the range of Rs. 40,001 – 50,000 (1.50%). The calculated chi-square values for both urban and rural areas are 73.397 and 58.74 respectively. Both chi-square values are significant at 1 per cent level. Hence, the null hypothesis is rejected and concludes that there is a relationship between annual income of the family and insurance for both urban and rural areas respectively.

Majority of insured respondents in the urban area is having own independent house (30.00%) and others (0.50%) category respondents are the lowest insured. Own independent house (29.00%) respondents are the highest percentage of insured in rural area and the lowest belongs to own flat (6.00%). For the total area respondents first

place occupied by own independent house (29.50%) and the last place received by others (0.25%). Regarding the uninsured in the urban area rented house (15.00%) respondents are the highest percentage and the lowest percentage belongs to own flat (1.00%). Own independent house (32.50%) respondents are the highest in rural uninsured and others (0.50%) respondents are the lowest. Regarding the total uninsured own independent house (21.50%) respondents occupied first category and others (0.25%) belongs to the last position. The chi-square value for the urban area is significant at 1 per cent level and for the rural area is insignificant. The null hypothesis is rejected for urban area and accepted for rural area and concludes that there is relationship between nature of accommodation and insurance in urban area and there is no relationship between nature of accommodation and insurance in rural area.

In the urban area below Rs. 10,000 (25.50%) respondents are the highest percentage in insured category and the lowest respondents are in the range of Rs. 30,001 – 40,000 (0.50%). In the rural area below Rs. 10,000 respondents are noticed as the highest percentage in insured and the lowest respondents are in the ranges of Rs. 30,001 – 40,000 and above Rs. 50,000 (1.50%). The highest percentage of total insured respondents are in the range of below Rs. 10,000 (24.75%) and the lowest are in the range of Rs. 30,001 – 40,000. Regarding the uninsured in the urban area below Rs. 10,000 (12.50%) respondents are the highest and the lowest are in the range of Rs. 40,001 – 50,000 (1.00%). In the rural area the highest percentage of uninsured are belongs to Rs. 10,001 – 20,000 (20.00%) and the lowest are in the range of Rs. 30,001 – 40,000 (2.00%). Below Rs. 10,000

(16.00%) respondents are belongs to the highest percentage of uninsured in the total respondents and Rs. 40,001 – 50,000 (0.50%) are the lowest percentage. The chi-square value for the urban area is significant at 1 per cent level and for the rural area it is significant at 5 per cent level. So, the null hypothesis is rejected for both urban and rural areas respectively. Thus, concludes that there is a relationship between annual saving of the family and the insurance for both urban and rural areas respectively.

Summary:

In this chapter the study examined household determinants of insurance in urban and rural areas by category wise such as individual factors, family factors and economic factors. The chi-square test is employed to analyses these factors to observe whether the relationship is significant or not. The findings are:

Individual Factors: Occupation, age group, caste and level of education are the four factors which are considered under individual factors category for both urban and rural areas to examine the relationship with insurance. Caste and level of education are the two variables which have relationship with insurance in urban area and the remaining two variables are not having relationship. In rural area occupation, caste and level of education have relationship with insurance and only one factor i.e., age group is not having relationship with insurance.

Family Factors: To know the relationship between family factors and insurance in both urban and rural areas three factors are studied under family factors category. They are – type of family,

number of children in the family and number of dependents in the family. As the study reveals that in the urban area none of the factor is found to have relationship with insurance. In the rural area number of children in the family and number of dependents in the family factors are having relationship with insurance while the type of family is not having relationship.

Economic Factors: Earning members in the family, annual income of respondent, annual income of the family, annual saving of the family and nature of accommodation factors are considered under economic factors in both urban and rural areas to examine the relationship with insurance. In the urban area all the factors are having relationship with insurance. In the rural area annual income of the respondent, annual income of the family and annual savings of the family are having relationship with insurance while earning members in the family and nature of accommodation are not having relationship with insurance.

From the study the major significant determinants of insurance in urban area are caste, level of education, earning members in the family, income, savings and nature of accommodation. In the rural area caste, level of education, number of children in the family, number of dependents in the family, income and savings are the determinants of insurance. In both areas caste, level of education, income and savings are the significant determinants of insurance consumption.

References:

Anderson R. Dan and R. Nevin John (1975):
“Determinants of Young Married’s Life

- Insurance Purchasing Behaviour: An Empirical Investigation”, *Journal of Risk and Insurance*, Vol. 42, No. 3, pp: 375-387.
- Bodla, B.S., M.C. Marg and K.P. Singh (2004): *Insurance – Fundamentals, Environment and Procedures*, Deep & Deep Publications Pvt. Ltd., New Delhi, Chapter 1, pp: 4-5.
- Burnett, J. John and Palmer. A. Bruce (1984): “Examining Life Insurance Ownership through Demographic and Psychographic Characteristics”, *The Journal of Risk and Insurance*, Vol. 51, No. 3, pp 453-67.
- Donghui Li, Fariborz Moshirian, Pascal Nguyen and TimothyWee (2007): “The Demand for Life Insurance in OECD Countries”, *The Journal of Risk and Insurance*, Vol. 74, No. 3, pp.: 637-652.
- Gupta, S.P. (1997): *Statistical Methods*, Sultan Chand & Sons Publications, New Delhi
- J. D. Hammond, David B. Houston and Eugene R. Melander (1967): “Determinants of Household Life Insurance Premium Expenditures: An Empirical Investigation”, *The Journal of Risk and Insurance*, Vol. 34, No. 3, September, pp: 397-408.
- J. D. Hammond, David B. Houston and Eugene R. Melander (1967): op.cit.
- Jatinder S. Bedi, Secretary& Head, Operations (2011): Pre-launch Report of Insurance Campaign Survey Awareness, National Council of Applied Economic Research, New Delhi -2011, pp 1-2.
- Kenneth Black Jr. and Harold D. Skipper Jr. (2000): *Life & Health Insurance*, Pearson Education Inc., Chapter 1, pp: 19-20.
- Preeti Kakar and Rajesh Shukla (2010): “The Determinants of Demand for Life Insurance in an Emerging Economy—India”, *The Journal of Applied Economic Research*, vol. 4 no. 1, pp: 49-77.
- Preeti Kakar and Rajesh Shukla (2010): op.cit.
- Thorsten Beck and Ian Webb (2003): “Economic, Demographic, and Institutional Determinants of Life Insurance Consumption across Countries”, *The World Bank Economic Review*, Vol. 17, No. I, pp: 51-88.
- Tienyu Hwang and Brian Greenford (2005): “A Cross Section Analysis of the Determinants of Life Insurance Consumption in Mainland China, Hong Kong, and Taiwan”, *Risk Management and Insurance Review*, Vol. 8, No. 1, pp: 103-125.
- Vince E. Showers and Joyce A. Shotick (1994): “The Effects of Household Characteristics on Demand for Insurance: A Tobit Analysis”, *The Journal of Risk and Insurance*, Vol. 61, No. 3, pp: 492-502.
- Yogesh Kumar Singh (2006): *Fundamental of Research Methodology and Statistics*, New Age International (P) Limited Publishers, New Delhi, Chapter 5, p. 89.

Appendix -1: Individual Factors

| Factors | Group | Urban | | Rural | |
|------------|-------------------------|------------|-----------|------------|------------|
| | | Insured | Uninsured | Insured | Uninsured |
| Occupation | Government Employee | 45 (22.50) | 7 (3.50) | 13 (6.50) | 8 (4.00) |
| | Private Employee | 35(17.50) | 9(4.50) | 10(5.00) | 15(7.50) |
| | Business | 22(11.00) | 9(4.50) | 19(9.50) | 16(8.00) |
| | Farmer | 23 (11.50) | 13(6.50) | 24 (12.00) | 32 (16.00) |
| | Others | 18 (9.00) | 19 (9.50) | 32 (16.00) | 31 (15.50) |
| Age group | 19 – 29 | 25(12.50) | 17(8.50) | 21(10.50) | 33(16.50) |
| | 30 – 39 | 47(23.50) | 18(9.00) | 36(18.00) | 31(15.50) |
| | 40 – 49 | 40(20.00) | 11(5.50) | 22(11.00) | 21(10.50) |
| | 50 – 59 | 17(8.50) | 4(2.00) | 15(7.50) | 8(4.00) |
| | Above 60 | 14(7.00) | 7(3.50) | 4(2.00) | 9(4.50) |
| Caste | SC | 16(8.00) | 16 (8.00) | 10 (5.00) | 26 (13.00) |
| | ST | 12 (6.00) | 7 (3.50) | 4 (2.00) | 21 (10.50) |
| | BC | 41 (20.50) | 15 (7.50) | 31 (15.50) | 28 (14.00) |
| | OC | 74 (37.00) | 19 (9.50) | 53 (26.50) | 27 (13.50) |
| Education | Illiterate | 11 (5.50) | 19 (9.50) | 17 (8.50) | 22 (11.00) |
| | Primary Education | 18 (9.00) | 9 (4.50) | 15 (7.50) | 25 (12.50) |
| | Upper Primary Education | 10 (5.00) | 7 (3.50) | 9 (4.50) | 13 (6.50) |
| | SSC | 22 (11.00) | 5 (2.50) | 15 (7.50) | 14 (7.00) |
| | Intermediate | 22 (11.00) | 4 (2.00) | 14 (7.00) | 5 (2.50) |
| | Graduation | 43(21.50) | 10(5.00) | 21(10.50) | 10(5.00) |
| | Post-Graduation | 14 (7.00) | 2 (1.00) | 7 (3.50) | 13 (6.50) |
| | Others | 3(1.50) | 1(0.50) | -- | -- |

Appendix -1 (a): Individual Factors Chi-Square Result

| Area | Factors | χ^2 -Value | p-Value |
|-------|------------|-----------------|---------|
| Urban | Occupation | 17.678 | 0.001 |
| | Age Group | 5.341 | 0.254 |
| | Caste | 10.961 | 0.011 |
| | Education | 27.475 | 0.000 |
| Rural | Occupation | 3.528 | 0.473 |
| | Age Group | 7.039 | 0.133 |
| | Caste | 27.205 | 0.000 |
| | Education | 13.795 | 0.032 |

Appendix -2: Family Factors

| Factors | Group | Urban | | Rural | |
|------------------------------------|--------------|-----------|-----------|-----------|-----------|
| | | Insured | Uninsured | Insured | Uninsured |
| Family Structure | Single | 12(6.00) | 8(4.00) | 9(4.50) | 13(6.50) |
| | Nuclear | 84(42.00) | 32(16.00) | 53(26.50) | 64(32.00) |
| | Joint Family | 47(23.50) | 17(8.50) | 36(18.00) | 25(12.50) |
| Number of Children | One | 33(16.50) | 8(4.00) | 11(5.50) | 12(6.00) |
| | Two | 67(33.50) | 25(12.50) | 40(20.00) | 19(9.50) |
| | Three | 21(10.50) | 13(6.50) | 22(11.00) | 24(12.00) |
| | Four & Above | 16(8.00) | 7(3.50) | 8(4.00) | 33(16.50) |
| | Nil | 6(3.00) | 4(2.00) | 17(8.50) | 14(7.00) |
| Number of Dependents In the Family | Nil | 6(3.00) | 4(2.00) | 8(4.00) | 2(1.00) |
| | One | 43(21.50) | 8(4.00) | 27(13.50) | 14(7.00) |
| | Two | 34(17.00) | 17(8.50) | 22(11.00) | 24(12.00) |
| | Three | 35(17.50) | 17(8.50) | 26(13.00) | 50(25.00) |
| | Four & Above | 25(12.50) | 11(5.50) | 15(7.50) | 12(6.00) |

Appendix -2 (a): Family Factors Chi-Square Result

| Area | Factors | χ^2 -Value | p-Value |
|-------|----------------------|-----------------|---------|
| Urban | Family Structure | 1.463 | 0.481 |
| | Number of Children | 3.977 | 0.409 |
| | Number of Dependents | 5.866 | 0.209 |
| Rural | Family Structure | 3.667 | 0.159 |
| | Number of Children | 23.068 | 0.000 |
| | Number of Dependents | 15.647 | 0.003 |

Appendix -3: Economic Factors

| Factors | Group | Urban | | Rural | |
|---------------------------------|-----------------|------------|-----------|-----------|-----------|
| | | Insured | Uninsured | Insured | Uninsured |
| Earning Members | Nil | 2(1.00) | 6(3.00) | -- | -- |
| | One | 86(43.00) | 25(12.50) | 46(23.00) | 40(20.00) |
| | Two | 36(18.00) | 15(7.50) | 32(16.00) | 37(18.50) |
| | Three | 12(6.00) | 7(3.50) | 10(5.00) | 20(10.00) |
| | Four & Above | 7(3.50) | 4(2.00) | 10(5.00) | 5(2.50) |
| Annual Income of the Respondent | Below – 10,000 | 13(6.50) | 27(13.50) | 16(8.00) | 62(31.00) |
| | 10,001 – 20,000 | 14(7.00) | 11(5.50) | 14(7.00) | 20(10.00) |
| | 20,001 – 30,000 | 8(4.00) | 4(2.00) | 10(5.00) | 9(4.50) |
| | 30,001 – 40,000 | 4(2.00) | 5(2.50) | 13(6.50) | 6(3.00) |
| | 40,001 – 50,000 | 21(10.50) | 6(3.00) | 8(4.00) | 2(1.00) |
| | Above 50,000 | 83(41.50) | 4(2.00) | 37(18.50) | 3(1.50) |
| Annual Income of the Family | Below – 10,000 | 10(5.00) | 26(13.00) | 11(5.50) | 50(25.00) |
| | 10,001 – 20,000 | 15(7.50) | 12(6.00) | 15(7.50) | 27(13.50) |
| | 20,001 – 30,000 | 13(6.50) | 6(3.00) | 11(5.50) | 11(5.50) |
| | 30,001 – 40,000 | 5(2.50) | 8(3.50) | 13(6.50) | 3(1.50) |
| | 40,001 – 50,000 | 23(11.50) | 2(1.00) | 9(4.50) | 4(2.00) |
| | Above 50,000 | 77(38.50) | 4(2.00) | 39(19.50) | 7(3.50) |
| Annual Saving of the Family | Below – 10,000 | 51 (25.50) | 25(12.50) | 48(24.00) | 39(19.50) |
| | 10,001 – 20,000 | 13(6.50) | 10(5.00) | 22(11.00) | 40(20.00) |
| | 20,001 – 30,000 | 34(17.00) | 16(8.00) | 17(8.50) | 19(9.50) |
| | 30,001 – 40,000 | 1(0.50) | 4(2.00) | 3(1.50) | 4(2.00) |
| | 40,001 – 50,000 | 32(16.00) | 2(1.00) | 5(2.50) | -- |
| | Above 50,000 | 12(6.00) | -- | 3(1.50) | -- |
| Nature of Accommodation | Own House | 60(30.00) | 21(10.50) | 58(29.00) | 65(32.50) |
| | Own Flat | 36(18.00) | 2(1.00) | 12(6.00) | 10(5.00) |
| | Rented House | 41(20.50) | 30(15.00) | 28(14.00) | 22(11.00) |
| | Office Quarters | 5(2.50) | 4(2.00) | -- | 4(2.00) |
| | Others | 1(0.50) | -- | -- | 1(0.50) |

Appendix -3(a): Economic Factors Chi-Square Result

| Area | Factors | χ^2 -Value | p-Value |
|-------|---------------------------------|-----------------|---------|
| Urban | Earning Members | 11.439 | 0.022 |
| | Annual Income of the Respondent | 61.089 | 0.000 |
| | Annual Income of the Family | 73.397 | 0.000 |
| | Annual Saving of the Family | 23.379 | 0.000 |
| | Nature of Accommodation | 18.445 | 0.001 |
| Rural | Earning Members | 5.703 | 0.126 |
| | Annual Income of the Respondent | 63.264 | 0.000 |
| | Annual Income of the Family | 58.740 | 0.000 |
| | Annual Saving of the Family | 14.337 | 0.013 |
| | Nature of Accommodation | 6.223 | 0.183 |

ROLE OF TECHNOLOGY AS A SERVICE ENABLER-THE CASE OF RAILWAY TICKET BOOKING THROUGH IRCTC (Indian Railway Catering and Tourism Corporation) WEBSITE

Thirupathi Chellapalli, Research Scholar,
School of Management Studies,
University of Hyderabad.
E Mail: thirupathi.chellapalli@gmail.com

S. Abhilash, Student of Business
Management, Department of Business
Management, Malla Reddy College of
Engineering, Hyderabad.
E-Mail: abhi.as1225@gmail.com

J. Murali, Student of Business Management,
Department of Business Management, Malla
Reddy College of Engineering, Hyderabad.
E-Mail: janam.murali1516@gmail.com

Abstract: The last decade has witnessed deployment of information technology in the delivery of numerous services. The role played by technology is increasingly becoming a key component in delivering superior services to customers in various industries like Banking, Airlines (ticket booking), Rail and Road travel (ticket booking), Insurance, Stock Trading etc. Technology is fast replacing the role played by humans in certain areas of service delivery. In certain cases, technology has the capability to deliver the core service and in other cases technology enables the delivery of core service. Self Service Technologies (SSTs) like ATMs, mobile banking, online banking, online ticket booking etc have resulted in reduced stress and strain for the customers and offered them benefits like convenience, time saving etc. The establishment of Indian Railway Catering and Tourism Corporation (IRCTC) website for online Train ticket booking is changing the face of railway ticket booking in India. Indian Railways has pioneered internet based rail ticket booking through its website, as well as from the mobile

phones via GPRS (General Packet Radio Service) or SMS (Short Message Service). This paper attempts to present the case of railway ticket booking through IRCTC website.

Keywords: Service delivery, Customer Convenience, Self Service Technologies (SSTs), Online Ticket Booking, IRCTC, Indian Railway, etc.

1. INDIAN RAILWAYS - AN INTRODUCTION

Indian Railways is one of the largest and busiest rail networks in the world and an important mode of public transportation in India. Since its inception (16th April 1853), 161 years ago, the Indian Railways has contributed significantly to India's transport needs and economic growth. Today, Indian Railways ranks among the top five National Railway Systems in terms of size and scale and is poised to emerge as a world class railway system. The developmental role of the railways is particularly important in India, in both passenger and freight sectors. It has been performing a valuable social role in passenger sector

by providing affordable means of relatively safe and efficient transportation for millions of passengers daily. As a carrier of bulk freight such as ores and minerals, grains, fertilizers, mineral oils, iron and steel, container cargo etc., the cost advantages of the railways are well known. In consonance with the increased expectations and present requirements various Information Technology (IT) related measures have been taken for making Indian Railways one of the most efficient railway network in the world.

Indian Railways is an Indian state-owned enterprise, owned and operated by the Government of India through the Ministry of Railways. It is one of the world's largest railway networks comprising 115,000 km (71,000 mi) of track over a route of 65,000 km (40,000 mi) and 7,500 stations. As of December 2012, it transported over 25 million passengers daily (over 9 billion on an annual basis). In 2011, Indian Railway carried over 8,900 million passengers' annually or more than 24 million passengers daily (roughly half of which were suburban passengers) and 2.8 million tons of freight daily. Indian Railways is the world's ninth largest commercial or utility employer, by number of employees, with over 1.4 million employees. As for rolling stock, Indian Railway holds over 229,381 Freight Wagons, 59,713 Passenger Coaches and 9,213 Locomotives. The trains have a 5-digit numbering system as the Indian Railways runs about 10,000 trains daily. As of 31 March 2012, 22,224 km (13,809 mi) (34%) of the total 65,000 km (40,000 mi) km route length was electrified. Since 1960, almost all electrified sections on Indian Railway use 25,000 Volt AC traction through overhead catenary delivery. (www.Indianrailway.gov.com)

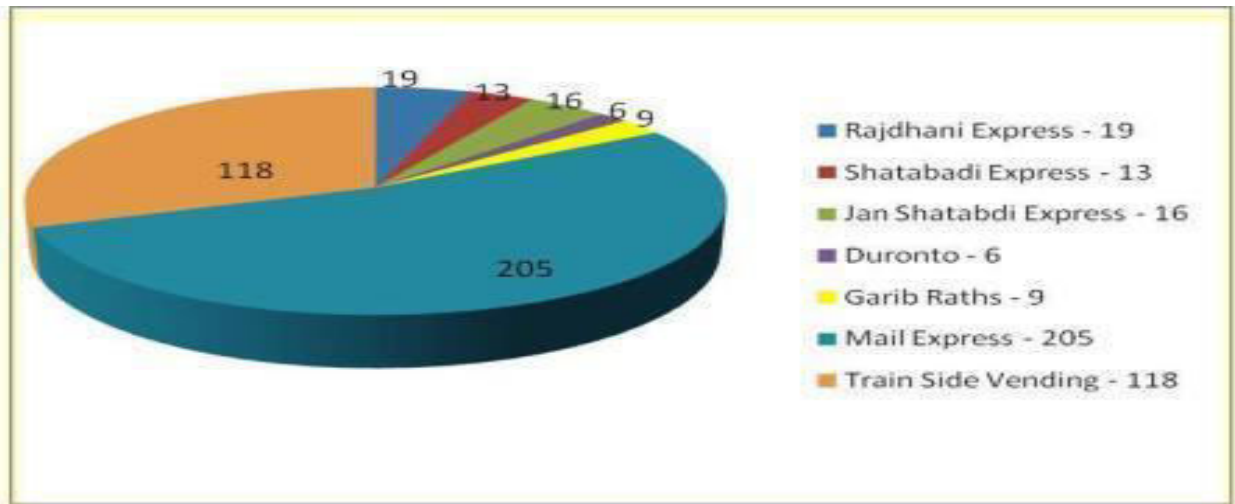
2. HISTORY OF IRCTC WEB SITE:

Indian Railway Catering and Tourism Corporation Ltd. (IRCTC) is a Public-Sector Enterprise under the Ministry of Railways. IRCTC was incorporated on 27th September 1999 as an extended arm of the Indian Railways to upgrade, professionalize and manage the catering and hospitality services at stations, on trains and other locations and to promote domestic and international tourism through development of budget hotels, special tour packages, information & commercial publicity and global reservation systems. IRCTC is better known for changing the face of railway ticketing in India. It pioneered Internet-based rail ticket booking through its website, as well as from the mobile phones via GPRS (General Packet Radio Service) or SMS (Short Message Service). Ticket cancellations or modifications can also be done online. In addition to E-tickets, IRCTC also offers I-tickets that are basically like regular tickets except that they are booked online and delivered by post. The Tickets PNR (Passenger Name Record) Status is also made available here recently. IRCTC is currently using 58 iridium servers and is planning to add 10 more servers to cater the heavy traffic in peak hours.

Indian Railways Catering and Tourism Corporation (IRCTC) launched E-Wallet Scheme in the second week of February 2014. The scheme was launched to make payment process fast and to reduce transaction failures due to bank payment related problems. Under the scheme, user can deposit money in advance with IRCTC and the money can be used as payment option along with other payment options available on IRCTC website for the payment at the time of booking tickets. Names of all the passengers booked on a fully waitlisted e-ticket are dropped at the time of preparation of reservation charts and fare is

refunded automatically. In this regard, there is no difference between e-tickets booked through E-wallet scheme or those booked through other payment options available on website www.irctc.co.in. The scheme is available only for PAN verified users. (www.irctc.co.in)

IRCTC is managing currently 19 Rajdhani, 13 Shatabdi, 16 Jan Shatabdi, 6 Duronto Express, 9 Garib Rath, 205 Mail & Express trains and 118 train side vending facility. The graphical representation of various types of trains is depicted below



(Source: www.irctc.co.in)

3. ROLE OF TECHNOLOGY ON WEB BASED RAIL RESERVATION SYSTEM:

Role of Technology has been part and parcel of different cross sections of society, Indian Railway has taken initiatives to selling e-Ticket and i-Tickets, for that IRCTC has designed an e-Commerce portal where the web based rail reservations are done. It was launched in the year 2002 and sale of tickets has reached to 45,000 tickets per day from few hundreds. Technology has giving customer's convenience, time saving, speed, and avoiding long queues etc. The website www.irctc.co.in/ has more than 40 lakhs registered users and in terms of transactions, making it the biggest e-Commerce site of India.

As per the latest statistics available, IRCTC website has registered the highest ever number of bookings 5.80 lakhs on Wednesday March 19, 2014. Before

that highest booking record was 5.72 lakhs on September 2, 2013. During the period of January'14 to March'14 the website has booked more than 4.63 lakhs tickets with an average of 9.47 lakhs passengers every day against 3.85 lakhs tickets with 6.86 lakhs passengers booked daily during 2013. There is a 20% increase in the number of tickets and a 38% increase in the number of passengers. One measure that IRCTC took in achieving this target was to launch a new website called 'IRCTC Lite' for premium tatkal ticket booking between 10 to 12 in the morning. The corporation removed all the links, images, ads, services, features from the website that didn't directly help a user in booking a ticket, and minimized the load that server had to bear in opening a page. This freed up some bandwidth allowing more users to get on the same page. Crores of rupees and a slew of measures have been invested to improve the

experience of those wishing to book a ticket online.
(May 21, 2014 Times of India)

4. TYPES OF TRAVEL TICKETS OFFERED BY INDIAN RAIL WAYS:

Ticket

Means any ticket issued by Indian Railway. It is an authorization to travel using the ticket booking facility for the specified journey over the network of Indian Railways. This can mean an I-ticket or an E-ticket.

4.1 I-ticket

Refers to a Railway reservation booked on this website, for the consummation of which a printed Railway ticket on standard Stationery is dispatched by IRCTC to the Customer by courier which constitutes the authority to travel on a train.

4.2 E-ticket

Refers to a Railway reservation booked on this website, for the consummation of which the customer prints out an Electronic Reservation Slip which, along with the concerned authorized personal identification, constitutes the authority to travel, in lieu of the regular ticket on standard Stationery.

4.3 Tatkal Ticket:

A ticket booked against Tatkal Quota against extra payment of premium charges as per extant Railway rules.

4.4 ATVMS (Automated Teller Vending Machines):

Initially, a work for 300 ATVMs was sanctioned for Mumbai area. Subsequently, 450 more ATVMs were sanctioned for other Railways. 117 ATVMs have been made functional on the Western Railways suburban system by 11th October 2007.

4.5 Ers (Electronic Reservation Slip):

The printout in standard specified Performa containing reservation , and instructions for use

which can be used by the Passenger along with the relevant authorized Identification, as travel authority for performing the journey. The user of the ERS is governed by these rules and the instructions available on the ERS itself.

4.6 Timings of Booking Tickets:

Generally, reservation office counter is open for booking from 8.00 am to 8.00 pm and some counters from 8.00 am to 10.00 pm. While online booking is available from 0.30 hours to 23.30 hours. Tatkal tickets can be booked from reservation office counter during timings mentioned above and online after 10.00am before 24 hours of travel.

4.7 Future Activities

IRCTC is associating with Banks for the issue of e-Ticket from their ATMs. For bookings through ATM kiosks of SBI, UBI, PNB, BOB, Dena Bank, Canara Bank and Indian Bank, POC (Point of Contact) has been finalized with SBI and UBI and remaining integration is in process. In addition to this, initiatives are being taken for booking tickets through call centers.

Advantages OF Internet Ticket Booking:

- Information Accessibility regarding various trains and their timings
- Convenience of ticket booking for passengers
- Time saving for both passengers and railway officials
- Avoiding long queues and making the service available any time anywhere.
- Transparent Transactions
- Availability of status of booked ticket
- Speed & Reliable transactions

- SMS service for customers about PNR status.
- No need to carry paper based ticket

Limitations:

- This facility would be used by passengers capable of accessing and using Internet.
- Failed transactions are bound to create discontent and anxiety among the users.
- User friendly design of website is a prerequisite.
- Servers getting busy during the peak time is the biggest demerit of IRCTC portal.

CONCLUSION:

In the current scenario, of increasing penetration of internet and preference for usage of smart phones by various cross sections of society, technology is playing a key role of enabling superior services to customers. A variety of factors like, knowledge and skills related to usage of IRCTC portal (web based rail reservation system) and the kind of services delivered through portal and the value of transaction involved, etc. influence the outcomes of passenger convenience and satisfaction. Technology as service enabler is playing core role to delivering superior passenger experience, availability, convenience, speed, perceived ease of use, perceived useful etc. which further leads to the superior passenger delight.

In the Indian context where there is a clear digital divide across various cross sections of the society, customer adoption of technology, and the rate of adoption are key for increased usage of railway ticket booking over internet. With the increased usage, railways face the challenging task of perpetual up gradation of technology and facilities to meet the requirements of users.

References:

Mehul Chhatbar, (2012). Rashmi Maurya, (2012). "A Cram of Consumer's Buying Performance for long Journey Train Tickets", International Journal of Research in Commerce and Management. Volume No.4 (2013), Issue No. 04 (April), ISSN 0976-2183.

Articles

1. IshanBhatkoti, "IRCTC becomes 'laughing stock' on Twitter" TOI, Tech Nov 8, 2012, New Delhi.
2. NehaShukla, "IRCTC helpless, e-ticketing woes to continue", TNN, Nov 11, 2012, Luck now.
3. NidhiSinghi, "IRCTC doesn't help book, cancels travel plans", TNN, TOI, June 11, 2012, Ludhiana.
4. "Now, separate form for tatkal bookings to check misuse", PTI, Oct 18, 2012, New Delhi.
5. "Passengers are struggling to get a ticket online through this system", CIOI Bureau, Bangalore.
6. "Too many agents of IRCTC adding to woes of passengers in festive seasons", TOI, 15 Oct 2012.

Websites

7. [http:// indianrailway.com](http://indianrailway.com)
8. <http://irctc.co.in>
9. <http://wikipedia.com>
10. www.timesofindia

Effect of Fiber Length and NaOH Treatment on the Flexural Behavior of Coir Fiber Reinforced Epoxy Composite

Ayyavoo Karthikeyan^{1*}

¹Professor

Anbarasu Kalpana²

²Assistant Professor

¹Department of Mechanical Engineering, Malla Reddy College of Engineering, Secunderabad, India – 500100.

karthirajme@gmail.com

²Department of Chemistry, Sri Saradha College for Women, Salem, India – 636 016

kalpanaanbarasu@gmail.com

* - Corresponding Author

Abstract - This paper presents the study on the effect of fiber length and fiber surface modification on flexural properties of coir fiber reinforced epoxy composites. The composite sample was fabricated with three different fiber lengths namely 10, 20, and 30 mm. The fiber treatment was carried out using sodium hydroxide (NaOH) solution at five different concentrations such as 2, 4, 6, 8 & 10%. The fabrication was made by hand lay-up techniques. Mechanical interlocking between fiber and matrix was observed from the SEM (scanning electron microscope) micrographs. The study reveals that increases NaOH concentration in the fiber treatment was found to increase the flexural strength up to 4% and further increase in NaOH concentration reduce the flexural strength and also the strength increase with increasing fiber length.

Key words - Coir fiber, epoxy matrix, fiber length, sodium hydroxide, flexural strength

I. INTRODUCTION

Natural fiber composites have become a popular new materials because of their high strength and stiffness, natural availability and environmental 'friendly' [1-2]. Additionally they are also recyclable, renewable and have a very low raw material cost [3]. The advantage of natural lignocellulosic fibers over traditional reinforcing materials such as glass fibers, talc and mica are acceptable specific strength properties, low cost, low density, non-abrasive, good thermal properties, enhanced energy recovery and bio-degradability. The main bottle necks in the broad use of these natural fibers in various polymer matrixes are poor compatibility between fiber and the matrix and the inherent high moisture absorption, which brings about dimensional changes in the lignocellulosic based fibers [4]. The efficiency of a fiber reinforced composite depends on the fiber/matrix interface and the ability to transfer stress from the matrix to fiber. This stress transfer efficiency plays a dominant role in determining the mechanical properties of the composite. Coir is an important lignocellulosic fiber obtained from coconut tree which grow extensively in tropical countries. Because of its hard wearing quality, durability and other advantages. It is used for making a wide variety of floor furnishing materials, yarns, rope etc [5]. However these traditional

coir products consume only a small percentage of the potential total world production of coconut husk. Hence research and development efforts have been underway to find new use areas for coir including utilization of coir as reinforcement in polymer composite [6-11]. The alkali treatment of coir fiber for coir polyester composites. The experimental results proved that flexural strength, modulus and impact strength of treated fiber composites were 40% higher than those containing the same volume fraction of untreated fibers [12]. Rout et al. [13] have studied the influence of fiber treatment on the performance of coir fiber polyester composites. The investigation proved that the 2% alkali treated coir fiber polyester composites showed better tensile strength (26.80Mpa) whereas 5% alkali treated composites showed better flexural (60.4Mpa) and impact strength (634.6 J/m). Karthikeyan et al. [14] have studied the coconut fiber reinforced epoxy composite with alkali treatment. The results proved that treated fiber composites have better impact strength (27kJ/m²) and also impact strength was greatly influenced by the fiber lengths. Therefore, in this research the coir fibre is chosen to be the sources of fiber for producing reinforced composites and investigate the effects of fiber length and surface modification by NaOH treatment on flexural properties of epoxy resin composites.

II. MATERIALS AND METHODS

In this work, the main studies were carried out to investigate how fiber length of coir fiber reinforced epoxy composite affects flexural strength with and without NaOH treatment. The coir fibers were collected from the rural area of Erode, Tamil Nadu. Coir fibers were carefully extracted from the coconut husk. A diameter of coir fiber was in the range of 0.2743mm. After that the coir fibers were immersed in the NaOH solution (2, 4, 6, 8, & 10% concentration) for 10days. Thereafter, fibers were rinsed with water to remove the excess of NaOH sticking in the fiber. The fibers were then dried at room temperature for 5 days. After that, composites containing 30% by weight of fiber were prepared using fiber of length in the range 10, 20, and 30 mm. A matrix was created by mixing epoxy resin with its hardener in the ratio 10:1 by weight percentage. The mixture was poured into the metal mould of size 300x300x3mm. The fabrication of the composite material was carried out through the hand lay-up technique. The top & bottom surface of the mold and the

walls were coated with remover & allowed to dry. The chopped fibers with epoxy resin were mixed manually. Epoxy resin properly mixed with coir fiber was transfer to the mold and the mold close, and then it is pressed in the compression testing machine and left for 24hr for curing. After the curing process, the samples were cut into the required size prescribed in the ASTM D790 standards. The microstructure of composites sample was investigated by scanning electron microscope (SEM).

III. EXPERIMENTAL SETUP

Flexural strength is defined as a material’s ability to resist deformation under load. The short beam shear tests are performed on the composite samples to evaluate the value of inter-laminar shear strength. It was a 3-point bend test, which generally promotes failure by inter-laminar shear. This test was conducted as per ASTM standard D790 using UTM. The loading arrangement is shown in Figure 1. The dimension of the specimen was (137x13x3) mm.

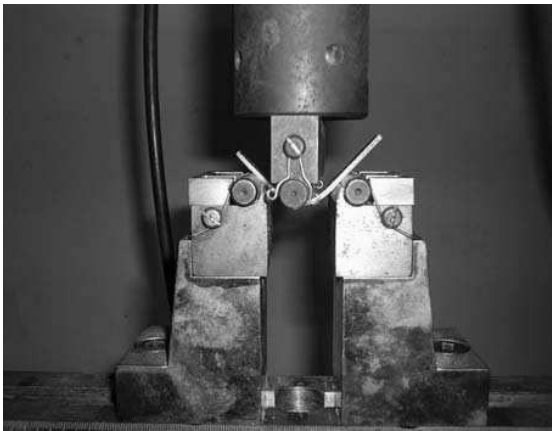
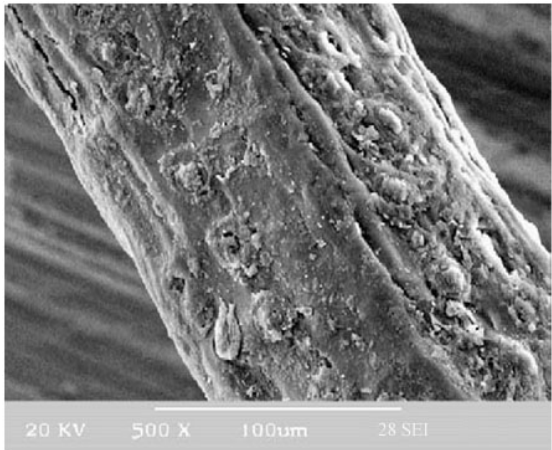


Figure 1 Loading arrangement for flexural test

IV. RESULTS AND DISCUSSION

The average diameter of untreated coir fiber rounded off to two decimals is observed to be 0.27mm. The average tensile strength of the coir fiber is found to be 617.6 mPa. SEM image of untreated coir fiber is shown in Figure 2.



Figures 2 SEM image of untreated coir fiber
The surface of the coir fiber is covered with a layer of substances, which may include pectin, lignin and other impurities. The surface is rough with nodes and irregular

stripes. Figure 3 shows similar improvements in the flexural strength of coir fiber reinforced epoxy composite.

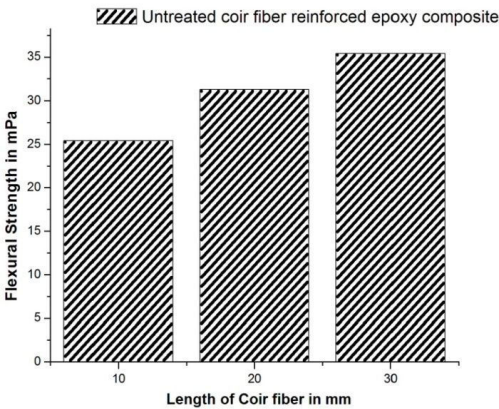


Figure 3 Flexural strength of untreated coir fiber composite

SEM picture (Figure 4) of failed coir epoxy composite under flexural loading also shows evidence for poor interfacial bonding. This gives a clue that the tensile and flexural strengths of coir fiber reinforced epoxy composite could be improved by increasing the length of the fiber and also by improving interfacial bonding.

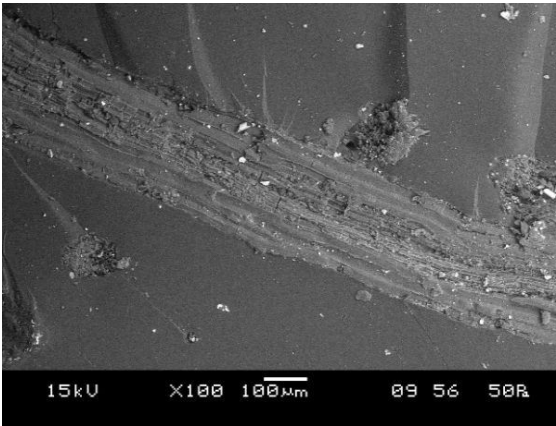


Figure 4 SEM image of failed 10mm long coir composite surface after flexural test

A. Alkaline treated coir fibre

In the composite load is shared between the matrix and fiber. The fiber offers resistance to load in two different ways. One is through its tensile strength and the other is through the interlocking of the fiber surface with the matrix. If the load carrying capacity of the fiber through their tensile strength is poorer than the resistance through the mechanical interlocking of the fiber, it will fail by tensile failure. If it is the other way, it will fail by slipping or pull out of fibers. The tensile resistance offered will be dependent on the net cross-section of the fiber. The mechanical interlocking of the fiber depends on three factors.

- 1. Co-efficient of sliding friction between the fiber and matrix.
- 2. Surface properties of the fiber (surface roughness) measured along the axis.
- 3. Total surface area of fiber.

The NaOH treatment results in changing all the above three parameters simultaneously. The nature of variation of the co-efficient of friction of the fiber is to be investigated. It may improve or deteriorate the frictional resistance offered. The tensile strength of NaOH treated coir fiber is presented in Figure 5.

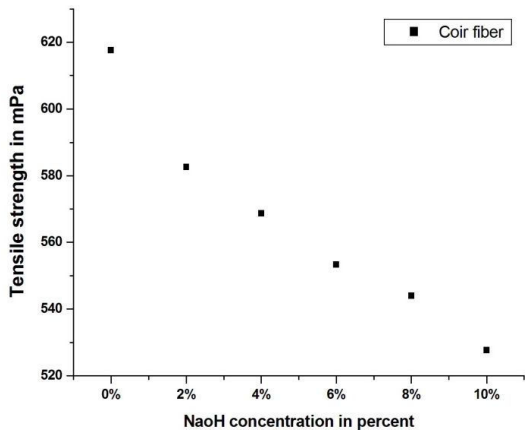


Figure 5 Tensile strength of NaOH treated coir fiber

A decreased trend in the tensile strength of the fiber is seen with increased NaOH concentration. Denser NaOH solution provides more Na⁺ and OH⁻ ions to react with the substance on the fiber, causing greater amount of lignin, pectin to leach out. It seems that lignin, pectin are stronger than the core of the fiber and hence their removal results in loss of strength. The diameter of NaOH treated coir fiber is presented in Figure 6.

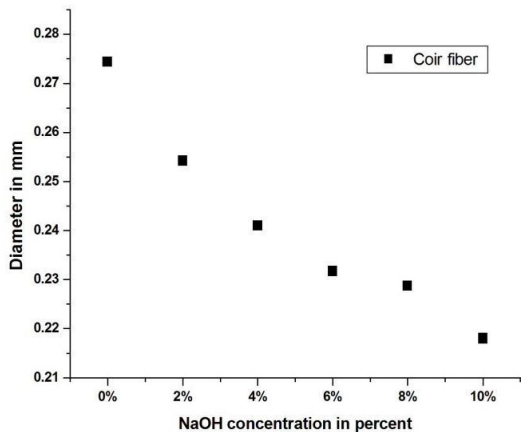


Figure 6 Influence of NaOH treatment on coir fiber diameter

Figure 6 shows how the variation in NaOH concentration affects the fiber diameter. Stronger NaOH solutions remove more and more lignin, pectin and other impurities from the surface of the coir fiber there by reducing the diameter.

B. SEM image of NAOH treated coir fiber

The effect of NaOH treatment on fiber surface morphology was analyzed by scanning electron microscope. The NaOH treatment seems to modify the surface of the coir fiber. Removal of pectin, lignin and

other impurities has resulted in increase in the surface roughness. Figure 7 show the surface modification of coir fiber treated with 2% NaOH concentration. 2% NaOH solution has reacted with the nodes and strips on the fiber surface turning the fiber surface a bit smother than the untreated fiber surface.

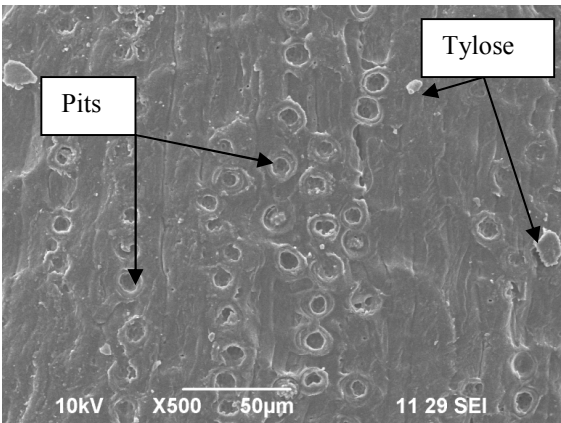


Figure 7 SEM image of 2% NaOH treated coir fiber

The SEM image also shows a number of pits which are evidence of such reactions. As a result of these reactions fatty deposits called tyloses are found to be dislodged and spread over the surface. As a result of increasing the NaOH concentration up to 4%, the surface roughness is increased as evidenced from more number of rows of pits on the surfaces. The globular protrusions called tyloses shown in Figure 7 are appearing on the fiber surface. Pits are seen to have spread along the entire cell wall outside of the parenchyma cells of NaOH treated fibers. The presences of pits after chemical treatment are important for increasing the effective surface area and the surface roughness, consequently improving the mechanical interlocking with the polymeric matrix. An increase in NaOH concentration up to 6% the surface roughness increases. Most of the fatty deposits have been removed from the fiber surface. Only shallow pits less in number are seen, on the fiber surface as compared to that of 4% concentration. Absence of ridges and valleys on the fiber surface may lead to less resistance to relative sliding between fiber and matrix. Increase in NaOH concentration up to 8%, has led to aggressive reaction leaving behind more number of ridges and valleys. There is also evidence for diameter having reduced. A further increase in NaOH concentration up to 10% leads to further increase in surface roughness. The fiber diameter is also seen to have further reduced. Increased surface roughness in the case NaOH treated coir fibers with 8% and 10% concentration may improve the interlocking between the fiber and matrix but at the same time the reduction in fiber diameter may weaken its load carrying capacity.

C. Flexural strength of NaOH treated coir epoxy composite

From Figure 8 it is seen that the flexural strength increases with increase in fiber length. The flexural strength of the composite increases with NaOH concentration up to 4% and reduces thereafter.

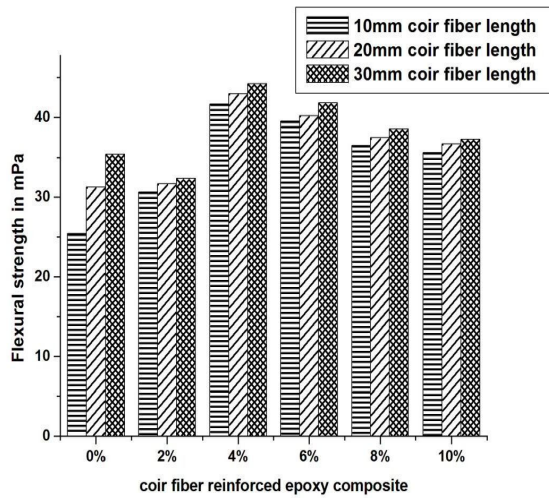


Figure 8 Flexural strength of untreated coir/epoxy composite and NaOH treated coir/epoxy composite

The flexural strength of the NaOH treated coir fiber reinforced epoxy composite has improved when compared to that of untreated coir fiber reinforced epoxy composite. SEM pictures of failed surfaces of NaOH treated 10mm fiber reinforced epoxy composite show evidence for fiber pullouts. Even though SEM pictures of NaOH treated 20mm fiber reinforced epoxy composites show similar pulled out fibers across the failed surface, they are less concentrated when compared to that of 10mm NaOH treated fiber reinforced epoxy composites (Figure 9). As far as the flexural strength is concerned reinforcing with 10mm NaOH treated fibers introduced a maximum of 63.99% increase when treated with 4% NaOH solution, whereas 20mm and 30mm NaOH treated fibers introduced only about 33.34% and 24.92% increase in the flexural strength.

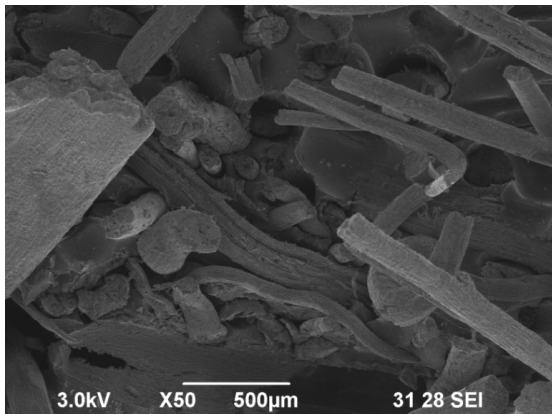


Figure 9 SEM image of 4% NaOH treated 10mm long coir/epoxy composite after flexural failure

Even though the fiber treated with higher concentrations of NaOH leads to improved surface properties as evidenced from reduced pull outs (Figures 10), the fiber diameter is also reduced as a result of which the flexural strength of the composite reduces. Hence 10mm fiber treated with 4% NaOH solution is found to be preferable to increase the flexural strength of the composites.

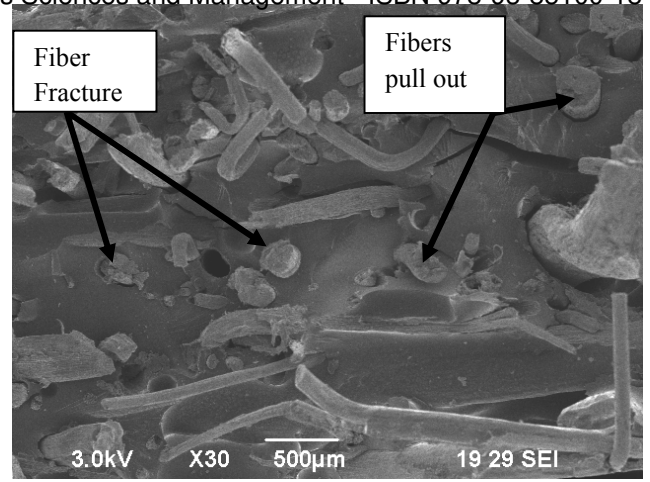


Figure 10 SEM image of 4% NaOH treated 20mm long coir/epoxy composite after flexural failure

V. CONCLUSION

1. This work shows that successful fabrication of a coir fiber reinforced epoxy composites with different fiber lengths is possible by simple hand layup techniques.
2. The surface of untreated coir fiber is covered with a layer of substance, which may include pectin, lignin and other impurities. The coir fiber surface is rough with nodes and irregular stripes.
3. For the untreated coir fiber of length 10mm, the mechanical interlocking between fiber and matrix is weak and the frictional resistance is small the fiber slips, thereby letting the fiber to take only limited tensile load.
4. Increasing the length of untreated fiber (20, 30mm) increases the surface area in the interface between fiber and matrix, increasing the frictional load carrying capacity.
5. When the fiber is treated with NaOH solution, a decreased trend in the tensile strength is seen with increased NaOH concentration. The NaOH solution reacts with the substance on the fiber, causing greater amount of lignin, pectin to leach out. Their removal results in loss of strength, due to reduced diameter and an increase in the surface roughness, thereby increasing the mechanical interlocking between fiber and matrix.
6. 10mm NaOH treated coir fiber reinforced epoxy composite introduced a maximum of 63.99% increase in flexural strength when treated with 4% NaOH solution, whereas 20mm and 30mm NaOH treated fibers introduced only about 37.34% and 24.92% increase as compared to that of untreated coir fiber reinforced epoxy composite.

VI. REFERENCE

- [1] S.M. Sapuan, A. Leenie, M. Harimi, Y.K. Beng, *Mater. & Design.*, 27, 689-93 (2006).
- [2] S. Mukhopadhyay, S. Srikanta, *Poly. Degrad Stability.*, 93, 2048-51 (2008).
- [3] N.G. Justiz Smith, G. Junior Uirgo, V.E. Buchanan, *Mater. Charact.*, 59, 1273-8 (2008).

- [4] N. Chand, P.K. Rohatgi, K.G. Satyanarayana, *In Lac Stuard M. editor. Inter. Encyclopedia of compo. VCH publishers, Germany.*, 4, 9 (1991).
- [5] K.G. Satyanarayana, A.G. Kulkarni, P.K. Rohatgi, *J Scient. Ind. Res.*, 40, 222 (1981).
- [6] O. Owolabi, T. Czuikovsky, I. Kovacs, *J Appl. Polym. Sci.*, 30, 1827 (1985).
- [7] D.S. Varma, M. Varma, I.K. Varma, *J Reinf. Plast. Compos.*, 4, 419 (1985).
- [8] Varma DS, Varma M, Varma IK. *Ind. Eng. Chem. Prod. Res. Dev.* 1986, 25, 282.
- [9] V.G. Geethamma, K. Thomas Mathew, R. Lakshminarayan, S. Thomas, *Polym.*, 39, 1483 (1988).
- [10] A. Paul, S. Thomas, *J Appl. Polym. Sci.*, 63(2), 247 (1997).
- [11] H.P.S. Abdul Khalil, H.D. Rozman, M.N. Ahmad, H. Ismail, *Polym. Plast. Technol Eng.*, 39(4), 757 (2000).
- [12] S.V. Prasad, C. Pavithran, P.K. Rohatgi, *J Mater. Sci.*, 18, 1443 (1987).
- [13] J. Rout, M. Misra, S.S. Tripathy, S.K. Nayak, A.K. Mohanty, *Compos. Sci.*, 61, 1310 (2001).
- [14] A. Karthikeyan, K. Balamurugan, *J Sci. Ind. Res.*, 71, 627-631 (2012).

Saradha College for Women, Salem, India – 636 016. She has published 08 research papers in reputed journals like Elsevier international journals with good impact factor and 01 paper in international conference and 02 paper in national conference.



First. Author was born in Salem city, Tamil Nadu, India, in 1981. He received the B.E. Mechanical Engineering from Periyar University, Salem in 2003 and M.E. Engineering Design degrees from Anna University, Chennai, in 2005 and the Ph.D. degree in mechanical engineering from Anna

University, Chennai, in 2014. From 2006 to 2017, he was an Assistant professor and Associate Professor in the department of Mechanical Engineering, K.S.R. College of Engineering, Tiruchengode, Namakkal, Tamil Nadu. Now he is working as a Professor in the department of Mechanical Engineering, Malla Reddy College of Engineering, Secunderabad, India. He has published 07 research papers in international journals with good impact factor and 01 paper in international conference and 02 paper in national conference. He filed 05 patent among that 02 was completed registered. He was act as a reviewer of few journals and conferences. His research interest includes composites and anthropomorphic hand/Brain computer interface. He is guiding three Ph.D., research scholars.



Second. Author was born in Salem city, Tamil Nadu, India, in 1977. She received the B.Sc. Chemistry from Periyar University, Salem in 1997 and M.Sc. Chemistry degrees from Periyar University, Chennai, in 2005 and now submitted her Ph.D. thesis in 2017. From 2008 to 2017, she was an

Assistant professor in the department of Chemistry, Sri

Evolution, Trading Mechanism & Growth of the Derivatives Market in India.

***Dr. K.Veeraiah**

M.B.A., M.Com, M.Phil. UGC- NET, Ph.D.

* Professor, Marri Laxman Reddy Institute of Technology & Management, Hyderabad.

ABSTRACT

The Indian derivative market has become multi-trillion dollar markets over the years. Marked with the ability to partially and fully transfer the risk by locking in assets prices, derivatives are gaining popularity among the investors. Since the economic reforms of 1991, maximum efforts have been made to boost the investors' confidence by making the trading process more users' friendly. Still, there are some issues in this market. So, the present paper is an attempt to study the evolution of Indian derivative market, trading mechanism in its various products and the future prospects of the Indian Derivative market. The present paper is descriptive in nature and based on the secondary data. In spite of the growth in the derivative market, there are many issue (e.g., the lack of economies of scale, tax and legal bottlenecks, increased off-balance sheet exposure of Indian banks need for an independent regulator etc), which need to be immediately resolved to enhance the investors' confidence in the Indian derivative market.

In India, the emergence and growth of derivatives market is relatively a recent phenomenon. Since its inception in June 2000, derivatives market has exhibited exponential growth both in terms of volume and number of traded contracts. The market turn-over has grown from Rs.2365 crore in 2000-2001 to Rs. 11010482.20 crore in 2008-2009. Within a short span of eight years, derivatives trading in India has surpassed cash segment in terms of turnover

and number of traded contracts.

Keywords: Derivatives, Exchange, Futures, Options, Regulation Forward, Financial Derivatives, Risk Management.

INTRODUCTION

Fixed exchange rate was in existence under the Bretton Woods system. According to Avadhani (2000), Financial derivatives came into the spotlight, when during the post- 1970 period, the US announced its decision to give up gold- dollar parity, the basic king pin of the Bretton Wood System of fixed exchange rates. With the dismantling of this system in 1971, exchange rates couldn't be kept fixed. Interest rates became more volatile due to high employment and inflation rates. Less developed countries like India opened up their economies and allowed prices to vary with market conditions. Price fluctuations made it almost impossible for the corporate sector to estimate future production costs and revenues. The derivatives provided an effective tool to the problem of risk and uncertainty due to fluctuations in interest rates, exchange rates, stock market prices and the other underlying assets. The derivative markets have become an integral part of modern financial system in less than three decades of their emergence. This paper describes the evolution of Indian derivatives market, trading mechanism in its various securities, the various unsolved issues and the future prospects of the derivatives market.

Increased financial risk causes losses to an otherwise profitable organization. This underlines the importance of risk

management to hedge against uncertainty. Derivatives provide an effective solution to the problem of risk caused by uncertainty and volatility in underlying asset. Derivatives are risk management tools that help an organization to effectively transfer risk. Derivatives are instruments which have no independent value. Their value depends upon the underlying asset. The underlying asset may be financial or non-financial.

The present study attempts to discuss the genesis of derivatives trading by tracing its historical development, types of traded derivatives products, regulation and policy developments, trend and growth, future prospects and challenges of derivative market in India. The study is organised into four sections. Section I deals with the concept, definition, features and types of financial derivatives. Section II has been devoted to a discussion of the growth of derivatives market, and regulation and policy development. Section III discusses status of global derivatives market vis-a-vis Indian derivatives market. The last section specifies summary and concluding remarks.

Objectives of the Study

The objectives of the study are as follows:

1. To know overview and growth of Indian derivative market.
2. To know the evolution of various derivative products.
3. To know the trading mechanism of different derivative products.

Methodology

Methodology of the study through the secondary sources only.

Derivatives concept:

Section 2(ac) of Securities Contract Regulation Act (SCRA) 1956 defines Derivative as: a) “a security derived from a debt instrument, share, loan whether secured or unsecured, risk instrument or contract for differences or any other form of security; b)

“a contract which derives its value from the prices, or index of prices, of underlying securities”.

The International Monetary Fund (2001) defines derivatives as “financial instruments that are linked to a specific financial instrument or indicator or commodity and through which specific risks can be traded in financial markets in their own right. The value of a financial derivative derives from the price of an underlying item, such as an asset or index. Unlike debt securities, no principal is advanced to be repaid and no investment income accrues.”

Definition of Financial Derivatives

Section 2(ac) of Securities Contract Regulation Act (SCRA) 1956 defines Derivative as:

- a) “a security derived from a debt instrument, share, loan whether secured or unsecured, risk instrument or contract for differences or any other form of security; “a contract which derives its value from the prices, or index of prices, of underlying securities

Underlying Asset in a Derivatives Contract

As defined above, the value of a derivative instrument depends upon the underlying asset. The underlying asset may assume many forms:

- i. Commodities including grain, coffee beans, orange juice;
- ii. Precious metals like gold and silver;
- iii. Foreign exchange rates or currencies;
- iv. Bonds of different types, including medium to long term negotiable debt securities issued by governments, companies, etc.
- v. Shares and share warrants of companies traded on recognized stock exchanges and Stock Index
- vi. Short term securities such as T-bills; and

- vii. Over- the Counter (OTC)² money market products such as loans or deposits.

Participants in Derivatives Market

1. *Hedgers*: They use derivatives markets to reduce or eliminate the risk associated with price of an asset. Majority of the participants in derivatives market belongs to this category.
2. *Speculators*: They transact *futures* and *options* contracts to get extra leverage in betting on future movements in the price of an asset. They can increase both the potential gains and potential losses by usage of derivatives in a speculative venture.
3. *Arbitrageurs*: Their behaviour is guided by the desire to take advantage of a discrepancy between prices of more or less the same assets or competing assets in different markets. If, for example, they see the *futures* price of an asset getting out of line with the cash price, they will take offsetting positions in the two markets to lock in a profit.

Applications of Financial Derivatives

Some of the applications of financial derivatives can be enumerated as follows:

1. *Management of risk*: This is most important function of derivatives. Risk management is not about the elimination of risk rather it is about the management of risk. Financial derivatives provide a powerful tool for limiting risks that individuals and organizations face in the ordinary conduct of their businesses. It requires a thorough understanding of the basic principles that regulate the pricing of financial derivatives. Effective use of derivatives can save cost, and it can increase returns for the organisations.

2. *Efficiency in trading*: Financial derivatives allow for free trading of risk components and that leads to improving market efficiency. Traders can use a position in one or more financial derivatives as a substitute for a position in the underlying instruments. In many instances, traders find financial derivatives to be a more attractive instrument than the underlying security. This is mainly because of the greater amount of liquidity in the market offered by derivatives as well as the lower transaction costs associated with trading a financial derivative as compared to the costs of trading the underlying instrument in cash market.
3. *Speculation*: This is not the only use, and probably not the most important use, of financial derivatives. Financial derivatives are considered to be risky. If not used properly, these can lead to financial destruction in an organisation like what happened in Barings Plc. However, these instruments act as a powerful instrument for knowledgeable traders to expose themselves to calculated and well understood risks in search of a reward, that is, profit.
4. *Price discovery*: Another important application of derivatives is the price discovery which means revealing information about future cash market prices through the futures market. Derivatives markets provide a mechanism by which diverse and scattered opinions of future are collected into one readily discernible number which provides a consensus of knowledgeable thinking.

Futures Contract

Futures is a standardized forward contract to buy (long) or sell (short) the underlying asset at a specified price at a specified future date through a specified exchange. Futures contracts are traded on exchanges that work as a buyer or seller for the counterparty. Exchange sets the standardized terms in term of Quality, quantity, Price quotation, Date and Delivery place (in case of commodity).

Options Contract

In case of futures contract, both parties are under obligation to perform their respective obligations out of a contract. But an options contract, as the name suggests, is in some sense, an optional contract. An option is the right, but not the obligation, to buy or sell something at a stated date at a stated price. A “call option” gives one the right to buy; a “put option” gives one the right to sell. Options are the standardized financial contract that allows the buyer (holder) of the option, i.e. the right at the cost of option premium, not the obligation, to buy (call options) or sell (put options) a specified asset at a set price on or before a specified date through exchanges.

Swaps Contract

A *swap* can be defined as a barter or exchange. It is a contract whereby parties agree to exchange obligations that each of them have under their respective underlying contracts or we can say, a swap is an agreement between two or more parties to exchange stream of cash flows over a period of time in the future. The parties that agree to the swap are known as counter parties. The two commonly used swaps are: i) *Interest rate swaps* which entail swapping only the interest related cash flows between the parties in the same currency, and ii) *Currency swaps*: These entail swapping both principal and interest between the parties,

with the cash flows in one direction being in a different currency than the cash flows in the opposite direction.

History of Derivatives Markets in India

Derivatives markets in India have been in existence in one form or the other for a long time. In the area of commodities, the Bombay Cotton Trade Association started futures trading way back in 1875. In 1952, the Government of India banned cash settlement and options trading. Derivatives trading shifted to informal forwards markets. In recent years, government policy has shifted in favour of an increased role of market-based pricing and less suspicious derivatives trading. The first step towards introduction of financial derivatives trading in India was the promulgation of the Securities Laws (Amendment) Ordinance, 1995. It provided for withdrawal of prohibition on options in securities. The last decade, beginning the year 2000, saw lifting of ban on futures trading in many commodities. Around the same period, national electronic commodity exchanges were also set up. Derivatives trading commenced in India in June 2000 after SEBI granted the final approval to this effect in May 2001 on the recommendation of L. C Gupta committee. Securities and Exchange Board of India (SEBI) permitted the derivative segments of two stock exchanges, NSE³ and BSE⁴, and their clearing house/corporation to commence trading and settlement in approved derivatives contracts. Initially, SEBI approved trading in index futures contracts based on various stock market indices such as, S&P CNX, Nifty and Sensex. Subsequently, index-based trading was permitted in options as well as individual securities. The trading in BSE Sensex options commenced on June 4, 2001 and the trading in options on individual securities commenced in July 2001. Futures contracts on individual stocks were launched

in November 2001. The derivatives trading on NSE commenced with S&P CNX Nifty Index futures on June 12, 2000. The trading in index options commenced on June 4, 2001 and trading in options on individual securities commenced on July 2, 2001. Single stock futures were launched on November 9, 2001. The index futures and options contract on NSE are based on S&P CNX. In June 2003, NSE introduced Interest Rate Futures which were subsequently banned due to pricing issue.

Literature Review

According to Greenspan (1997) “By far the most significant event in finance during the past decades has been the extraordinary development and expansion of financial derivatives...”

Avadhani (2000) stated that a derivative, an innovative financial instrument, emerged to protect against the risks generated in the past, as the history of financial markets is replete with crises). Events like the collapse of the fixed exchange rate system in 1971, the Black Monday of October 1987, the steep fall in the Nikkei in 1989, the US bond debacle of 1994, occurred because of very high degree of volatility of financial markets and their unpredictability. Such disasters have become more frequent with increased global integration of markets. Sahoo (1997) opines “Derivatives products initially emerged, as hedging devices against fluctuation in commodity prices and the commodity-linked derivatives remained the sole form of such products for many years. Marlowe (2000) argues that the emergence of the derivative market products most notably forwards, futures and options can be traced back to the willingness of risk-averse economic agents to guard themselves against uncertainties arising out of fluctuations in asset prices.

It is generally stated that regulation has an important and critical role to ensure the efficient and smooth functioning of the

markets. According to Sahoo (1997) the legal framework for derivatives trading is a critical part of overall regulatory framework of derivative markets. The purpose of regulation is to encourage the efficiency and competition rather than impeding it. Hathaway (1998) stated that, while there is a perceived similarity of regulatory objective, there is no single preferred model for regulation of derivative markets.

Derivatives include a wide range of financial contracts, including forwards, futures, swaps and options. Forward contract is an agreement between two parties calling for delivery of, and payment for, a specified quantity and quality of a commodity at a specified future date. The price may be agreed upon in advance, or determined by formula at the time of delivery or other point in time” (Web 2). Just like other instruments, it is used to control and hedge currency exposure risk (e.g. forward contracts on USD or EUR) or commodity prices (e.g. forward contracts on oil). Patwari and Bhargava (2006) explain it in simple words and further add that one of the parties to a forward contract assumes a long position and agrees to buy the underlying asset at a certain future date for a certain price and the other agrees to short it. The specified price is referred to as the delivery price. The parties to the contract mutually agree upon the contract terms like delivery price and quantity.

Date Analysis:

Trading Mechanism

Web10 states that the trading system of derivatives at NSE, known as NEAT-F&O trading system, provides a fully automated screen-based trading for all kinds of derivatives products available on NSE on a national wide basis. It supports an anonymous order driven market, which operates on a time priority/strict price basis. It offers great flexibility to users in terms of kinds of orders that can be placed on the terminal. Various time and price-

related conditions like Immediate/Cancel, Limit/Market Price, Stop Loss, etc. can be built into an order. The trading in derivatives is essentially similar to that of trading of securities in the Capital Market segment.

Trade Details of Derivatives Market

After recording a 60.43 percent growth (2009–2010) in trading volume on year-on-year basis, the NSE's derivatives market continued its momentum in 2010–2011 by having a growth rate of 65.58 percent (Table 3). The NSE further strengthened its dominance in the derivatives segment in 2010–2011 by having a share of 99.99 percent of the total turnover in this segment. The share of the BSE in the total derivatives market turnover fell from 0.0013 percent in 2009–2010 to 0.0005 percent in 2010–2011. The total turnover of the derivatives segment increased by 26.56 percent during the first half of 2011–2012 compared to the turnover in the corresponding period in the previous fiscal year. In terms of product wise turnover of futures and options segment in the NSE, index options segment was the clear leader in 2010–2011.

Table 1: Trade Details of Derivatives Market

| Month/ Year | NSE | | | BSE | | | TOTAL | | |
|-------------------|-------------------------------|-------------------|-------------------------------|-------------------------------|-------------------|-------------------------------|-------------------------------|-------------------|-------------------------------|
| | No. of Contracts Traded | Turnover ₹ mn. | Turnover (US\$ million) | No. of Contracts Traded | Turnover ₹ mn. | Turnover (US\$ million) | No. of Contracts Traded | Turnover ₹ mn. | Turnover (US\$ million) |
| 2008-09 | 657,390,497 | 110,104,822 | 2,161,037 | 496,502 | 117,750 | 2,311 | 657,886,999 | 110,222,572 | 2,163,348 |
| 2009-10 | 679,293,922 | 176,636,663 | 3,913,085 | 9,026 | 2,341 | 52 | 679,302,948 | 176,639,004 | 3,913,137 |
| Apr-10 | 58,230,570 | 16,716,200 | 372,133 | 54 | 10 | 0 | 58,230,624 | 16,716,210 | 372,133 |
| May-10 | 80,960,515 | 21,244,957 | 472,951 | 158 | 40 | 1 | 80,960,673 | 21,244,997 | 472,952 |
| Jun-10 | 77,078,089 | 20,355,990 | 453,161 | 93 | 20 | 0 | 77,078,182 | 20,356,010 | 453,161 |
| Jul-10 | 67,756,807 | 18,299,101 | 407,371 | 40 | 10 | 0 | 67,756,847 | 18,299,111 | 407,371 |
| Aug-10 | 73,712,025 | 20,537,276 | 457,197 | 114 | 30 | 1 | 73,712,139 | 20,537,306 | 457,197 |
| Sep-10 | 93,089,649 | 27,363,918 | 609,170 | 122 | 40 | 1 | 93,089,771 | 27,363,958 | 609,171 |
| Oct-10 | 90,801,023 | 28,244,931 | 632,585 | 180 | 60 | 1 | 90,801,203 | 28,244,991 | 632,587 |
| Nov-10 | 98,799,250 | 29,658,462 | 664,243 | 37 | 10 | 0 | 98,799,287 | 29,658,472 | 664,243 |
| Dec-10 | 80,242,319 | 23,571,090 | 527,908 | 435 | 130 | 3 | 80,242,754 | 23,571,220 | 527,911 |
| Jan-11 | 98,728,755 | 28,418,339 | 636,469 | 39 | 10 | 0 | 98,728,794 | 28,418,349 | 636,469 |
| Feb-11 | 109,365,434 | 29,292,946 | 656,057 | 3,434 | 930 | 21 | 109,368,868 | 29,293,876 | 656,078 |
| Mar-11 | 105,447,626 | 28,779,002 | 644,547 | 917 | 250 | 6 | 105,448,543 | 28,779,252 | 644,552 |
| 2010-11 | 1,034,212,062 | 292,482,211 | 6,550,553 | 5,623 | 1,540 | 34 | 1,034,217,685 | 292,483,751 | 6,550,588 |
| Apr-11 | 81,540,014 | 23,513,002 | 480,590 | 4,925 | 1,480 | 30 | 81,544,939 | 23,514,482 | 480,620 |
| May-11 | 96,041,825 | 26,051,378 | 532,473 | 9,054 | 2,830 | 58 | 96,050,879 | 26,054,208 | 532,530 |
| Jun-11 | 90,744,339 | 24,381,766 | 498,347 | 2,418 | 720 | 15 | 90,746,757 | 24,382,486 | 498,362 |
| Jul-11 | 91,377,746 | 25,649,648 | 524,261 | 1,268 | 360 | 7 | 91,379,014 | 25,650,008 | 524,269 |
| Aug-11 | 116,885,761 | 29,637,492 | 605,770 | 2,164 | 580 | 12 | 116,887,925 | 29,638,072 | 605,782 |
| Sep-11 | 114,305,645 | 28,352,638 | 579,509 | 31,782 | 8,400 | 172 | 114,337,427 | 28,361,038 | 579,680 |
| Apr - Sep 2011 | 590,895,330 | 157,585,925 | 3,220,950 | 51,611 | 14,370 | 294 | 590,946,941 | 157,600,295 | 3,221,243 |

Source: NSE Website

Figure 1: Trade Details of Derivatives in NSE

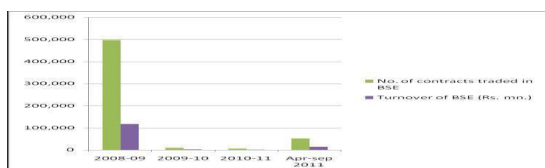
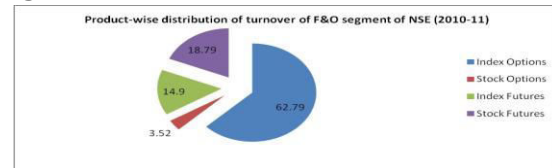


Figure 2: Trade details of Derivatives in BSE



Source: NSE Website

Figure 4: Product-wise distribution of turnover of F&O segment of NSE (2010-11)

Figure 5: Product wise Turnover of F&O at NSE from 2000-2011.

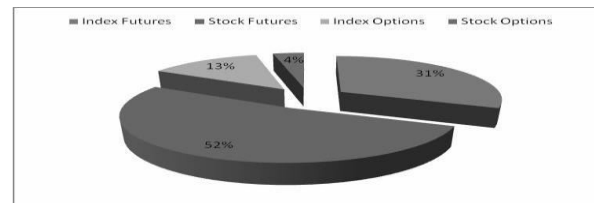


Figure 6: Derivatives Volume by Region From 2000- 2011.

Conclusion:

The Indian derivative market has achieved tremendous growth over the years, and also has a long history of trading in various derivatives products. The derivatives market has seen ups and downs. The new and innovative derivative products have emerged over the time to meet the various needs of the different types of investors. Though, the derivative market is burgeoning with its divergent products, yet there are many issues. Among the issues that need to be immediately addressed are those related to, lack of economies of scale, tax and legal bottlenecks, increased off-balance sheet exposure of Indian banks, need for an independent regulator etc. Solution of these issues will definitely lead to boost the investors' confidence in the Indian derivative market and bring an

overall development in all the segments of this market

Innovation of derivatives have redefined and revolutionized the landscape of financial industry across the world and derivatives have earned a well deserved and extremely significant place among all the financial products. Derivatives are risk management tool that help in effective management of risk by various stakeholders. Derivatives provide an opportunity to transfer risk, from the one who wish to avoid it; to one, who wish to accept it. India's experience with the launch of equity derivatives market has been extremely encouraging and successful. The derivatives turnover on the NSE has surpassed the equity market turnover. Significantly, its growth in the recent years has surpassed the growth of its counterpart globally. The turnover of derivatives on the NSE increased from Rs. 23,654 million (US \$ 207 million) in 2000-01 to Rs. 130,904,779 million (US \$ 3,275,076 million) in 2007-08. India is one of the most successful developing countries in terms of a vibrant market for exchange-traded derivatives. This reiterates the strengths of the modern development of India's securities markets, which are based on nationwide market access, anonymous safe and secure electronic trading, and a predominantly retail market.

References

1. Avadhani, S. (2000). Investment Management and Mutual Funds (2nd Edition). E. Sirisha (2001). Stock Market Derivatives: Role of Indices (2nd Edition). Hull J. (1995). Introduction to Futures and Options Market (1st Edition).
2. J. Marlowe (2000). Hedging Currency Risk and Options and Futures. Murti and Murti (2000). Derivative Trading in India.
3. Sahoo (1997). Financial Derivatives and its products (2nd Edition).
4. Ahuja, L. Narender (2005). Commodity Derivatives Market in India: Development, Regulation and Future Prospects. IBRC Athens 2005.
5. Habibullah (2003), retrieved from: http://files.embedit.in/embedit.in/files/8OxCrHwRoN/1/page_63.swf, 08th December, 2012; 9:56 am.
6. Hathaway, Kate (October 1988), "Regulatory parameters associated with successful derivatives", *Chartered Secretary*, Volume XXVII, Number: 10, Pp. 981-988
7. Jason Greenspan (1997). Financial Futures and Options in Indian Perspective. Jaico Publishing House.
8. Trading statistics of Derivatives segment at BSE', available at: www.bseindia.com (accessed on May 30, 2009)
9. Harish, A. S. (2001) 'Potential of Derivatives Market in India', *The ICFAI Journal of Applied Finance*, Vol. 7, No.5, pp 1-24.
10. International Options Market Association (IOMA) Derivatives Market Survey' 2007, available at: <http://www.world-exchanges.org/ioma> (accessed on May 30, 2009).
11. 'Introduction to derivatives in India', available at: <http://business.mapsofindia.com/investment-industry/introduction-to-derivatives.html> (accessed on May 27, 2009).

12. Kannan, R. (2008), 'Onset of Derivatives Trading in Derivatives market', available at: www.geocities.com/kstability/content/derivatives/first.html (accessed on May 20, 2009).
13. Kaur, P.(2004), 'Financial derivatives: Potential of derivative market in India and emerging derivatives market structure in India' available at: www.icwai.org/icwai/knowledgebank (accessed on May 28, 2009)
14. Misra Dheeraj and Misra Sangeeta D (2005), 'Growth of Derivatives in the Indian Stock Market: Hedging v/s Speculation', *The Indian Journal of Economics*, Vol. LXXXV, No. 340.
15. Srivastava, P. (2004), 'Financial and legal aspect of derivative trading in. India', available at: www.taxmann.net/Datafolder/Flash/article0412_4.pdf (accessed on May 10,2009).

Websites:

1. <http://www.nseindia.com/content/u/s/ismr2011ch6.pdf>, retrieved on: 09th December, 2012; 2:00 pm.
2. Definition of Forward/Future/options Contract (Online), Available from www.ers.usda.gov/Briefing/RiskManagement/glossary.htm, November, 2012, 3:30pm.

retrieved on: 25th

Skill Development Necessities to Achieve Employability in the States of AP & Telangana – A Review

Dr. Rudra, Principal, IMS – PG Center,
www.impg.in, E-mail:
rudragen@gmail.com

M. Sinduja, Student of Business
Management, Malla Reddy College of
Engineering, Hyderabad

N. Sravya, Student of Business
Management, Malla Reddy College of
Engineering, Hyderabad

Abstract: *Globalization has increased international competition between companies and countries in providing products and services; and in terms of their design, distribution and cost. As a consequence to that, it has placed a premium on developing and improving a high-quality of workforce in India. It is very important to attain necessary skills before placement since the changing skills need in industry have to match with the candidate skills set. Along with attaining necessary skills it is required to maintain specific skills during hiring process like communication, teamwork, initiative skill, problem solving skill and self management skills. The State Government of Andhra Pradesh & Telangana was looking for the long term implementation policy to empower their human capital with good quality of education and necessary skills to strengthen the employability.*

Key Words: Skill Development, Employability, Competence

Introduction:

Globalization has increased international competition between companies and countries in providing products and services; and in terms of their design, distribution and cost. As a consequence to that, it has placed a premium on developing and improving a high-quality of workforce in India. There is a large demand for professionals, technicians, managerial staff and skilled and educated production workers and office staff able to perform tasks to standards, continuously innovate and improve processes and products through the application of new technologies. Informal workers and contractual staff are being focused on acquiring certification for the trained skills; so as to improve their work standards. At the same time, new thinking about how people learn them is being used to adapt education and training systems and **improve the competencies and employability of the workforce**. Competence is a broader concept than skilling,

because it depends on embracing the abilities of each individual to apply and adapt their knowledge, understanding the skills in a particular occupation and in the given working environment. Thus it aims to “bridge the gaps between knowledge acquired in formal education and that learnt in work, a long-standing but now ever more acute problem in many countries.” In this 21st century, children are growing up in an environment where social media, online communities and mobile technologies are fundamental and basic requirements for them to communicate as well as to learn and develop. **To develop employability skills, consider the following steps for new approach:** involve young students in designing and decision-making from the beginning; have a clear purpose and thorough implementation plan; identify and secure the necessary resources; empower young people by offering them meaningful roles that align with their skills, experience, and

interests; provide young people with the support and training that they need to succeed in career and life. By this new approach, the young students will get accustomed in planning & designing along with accepting challenging roles. All countries face a major challenge in reorganizing their education and training systems to meet changes in the demand for skills and to improve the learning environment at work and in education establishments.

Employability of Graduates in Different Roles

There are various sectors available for engineering graduates to grab an opportunity and majority of them fall under IT roles, Engineering

roles and Non – Tech roles. The percentage of employability of engineering graduates in different roles is shown in figure 1. And the following observations are made:

For the role of Software Engineer – IT Product, a very low percentage of employability (3.67 %) has been observed; as most of the IT product based companies prefer robust computer knowledge. Also the candidates are lacking in required skills and it was estimated that 90.72 % of engineers do not possess the programming skills, where 72.77 % are lacking in soft skills and 60 % are lacking in cognitive skills. With the help of assessment tools, students will be guided towards effective programming skills.

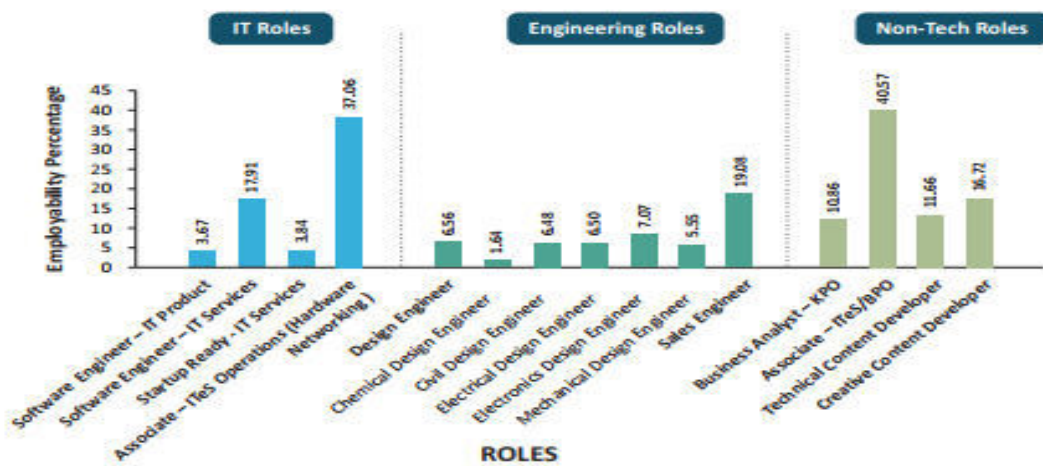


Figure 1: Employability Percentage of Engineering Graduates in Different Roles
 Source: National Employability Report, Engineers Annual Report 2016

For the role of Software Engineer – IT Services, the employability percentage of graduates is observed to be 17.91 %. The employer focuses on the technical and soft skills where candidates have to be trained within a period of 3 to 6 months. And 52.31 % of graduates are being rejected since they are lacking in soft skills.

For the role of Small – Medium Sized Enterprises (IT), the employability percentage of graduates is 3.84 % since the graduates have to learn on the job work and then start contributing towards the role. Start Ups and SMEs would like to hire only ready-to-deploy manpower. There is no necessity for in depth knowledge of candidates but basic coding to

solve the problem and then to debug and submit the working program in SME.

For the role of Associate- ITes Operations (Hardware & Networking), the employability percentage of graduates is 37.05 % where it involves network management along with technical support. Only certain candidates will be hired who manage ITes operations in the firms by providing support to consumers. Candidate will be trained further to improve their basic usage of computers in terms of both hardware and software.

For the role of Design Engineer – Non IT, the employability percentage is 6.55 % where they need to apply their core engineering knowledge to

solve the real problems. Design Engineers are required in the complete lifecycle of products / services to make corrections and to maintain services. High analytical and logical skills along with good demand over domain are required.

For the role of Sales Engineer – Non IT, the employability percentage is 19.09 % where the candidate should develop skills in selling a technical product. The role of sales engineer is a combination of dual role; as an engineer they understand and apply engineering concepts and as a salesperson they sell the engineered products. This role requires the candidates to possess analytical skills, demand over communication skills and domain skills.

For the role of Business Analyst – Knowledge Process Outsourcing (KPO), the employability percentage of graduates is 10.86 % where good analytical and written communication skills are required. Only 11 out of 100 graduates are choosing this role since most of them do not exhibit competent communication skills. To remain competitive in this role, there is a need for assessment methodology as it develops critical thinking and reasoning skills.

For the role of Associate – ITeS / BPO, the employability percentage of graduates is 40.58 % which occupies big portion in the employability sector. This role includes tele-calling and backend work processes; there is a belief that these roles will not match with the expectations of candidates either in remuneration or job satisfaction.

For the role of Technical Content Developer, the employability percentage of graduates is 11.66 %; where this role involves managing the technical aspects of the desired content along with

writing manuals for the technical products. These developers need to possess good quality of technical knowledge in their interested domain subjects.

For the role of Creative Content Developer, the employability percentage of graduates is 16.71 %; where this role involves non – technical and creative aspects of the desired content. These developers need to create new content from scratch or re-writing the existing content as required.

Basing on the complete observation of employability percentage in engineering graduates, it is significantly marked that there exists a wide gap between the skills expected by employers to perform job and the actual skills that engineers possess. So there is a high need for assessments which are used to test the ability of engineers and then provide them with required feedback and then improve the skills of employees.

Employability across Different States

The concept of employability ratio is not constant when compared with different states in India. High employability is recorded in the places where good quality of colleges and training institutes are located. A survey has been organized by looking at the employability of candidates in software engineer – IT services role across different states where more number of engineering colleges is located. As per the survey, the states are arranged in one of the four bins (each bin with 25 percentile) basing on the decreasing order of employability. For example, the states with lowest employability percentages occupied the last bin while the states with highest employability percentages occupied the first bin in figure 2.

| SOFTWARE ENGINEER – IT SERVICES | 2016* |
|---------------------------------|---|
| Top 25 Percentile | Bihar+Jharkhand Delhi Kerala Orissa |
| 75 to 50 Percentile | Haryana Karnataka Punjab West Bengal |
| 50 to 25 Percentile | Andhra Pradesh Chhattisgarh Uttarakhand Uttar Pradesh |
| Bottom 25 Percentile | Gujarat Himachal Pradesh Maharashtra Rajasthan Tamil Nadu |

*States in each quartile mentioned in alphabetical order.

Figure 2: States categorized in 25 percentile bins basis employability in Software Engineer - IT Services r
Source: National Employability Report, Engineers Annual Report - 2016

While comparing 2016 employability report with 2014 employability report, Delhi along with Bihar + Jharkhand tried hard to retain their positions where Punjab has come down to 2nd bin (75 to 50 percentile bin). Uttarakhand managed to stay in 3rd bin (50 to 25 percentile bin) where Tamil Nadu still remained in the last bin (bottom 25 percentile). Orissa and Kerala moved forward into the 1st bin (top 25 percentile) by occupying good quality of engineering colleges. Haryana and Karnataka also moved forward to 2nd bin where Maharashtra came down from 1st bin to 4th bin. Andhra Pradesh remained in the same position in 3rd bin with average quality of educational institutes. It is observed that, the states which have more number of colleges reflected low percentage of employability. And thus it was recommended that there is a dire need for

empowering the quality of education in engineering colleges rather than concentrating on establishment of new buildings. In the current generation, many states have requested AICTE Norms to reject any further proposals for new buildings. Media has occupied a great role in actively spreading the need of better education rather than concentrating on more number of engineering institutes.

Employability in Key Cities

The employability factor is considered among students who are graduating out from different metro cities in our country. Few observations have been focused basing on the survey report and is shown in figure 3.

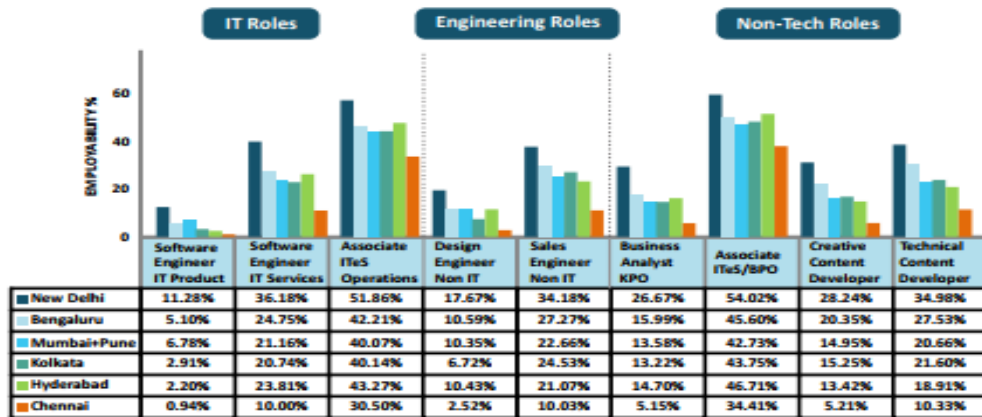


Figure 3: Employability Percentage in different Metro cities
 Source: National Employability Report, Engineers Annual Report - 2016

New Delhi in the north has recorded the highest employability in occupying more vacancies among IT, Engineering and Non – Technical roles. The same factor is observed in Bangalore and the cities in the west. But this employability factor is observed to be the lowest among southern cities. In New Delhi, 1 out of 8 candidates are found to be employed in IT roles where 1 out of 100 candidates are found to be employed in Chennai. It is observed that Mumbai + Pune had similar IT services employability when compared with the cities in southern and western parts. Also it has showed high employability among IT product companies. By this it can be stated that the candidates in Mumbai + Pune perform well in computer programming and algorithms. This might be due to their exposure towards programming and problem solving practice at home or colleges. The rapid increase in the number of engineering colleges mostly in Western and Southern cities has drowned the employability rate in India. While comparing the employment factor in figure 4, New Delhi has occupied few engineering colleges which are to be utilized by large population of students. Also New Delhi population is more when compared with the southern cities. In southern cities like Hyderabad there is more number of engineering colleges and the population is marked to be low when compared with other cities like Delhi.

| City | APPROXIMATE NUMBER OF COLLEGES | POPULATION |
|---------------------------------|--------------------------------|------------|
| Bengaluru | 80 | 5,438,065 |
| Chennai (including Thiruvallur) | 87 | 4,616,639 |
| Delhi | 35 | 12,565,901 |
| Hyderabad | 90 | 4,068,611 |
| Kolkata | 58 | 5,138,208 |
| Mumbai and Pune | 151 | 17,277,214 |

Figure 4: Number of colleges and population in major cities
 Source: National Employability Report, Engineers Annual Report - 2016

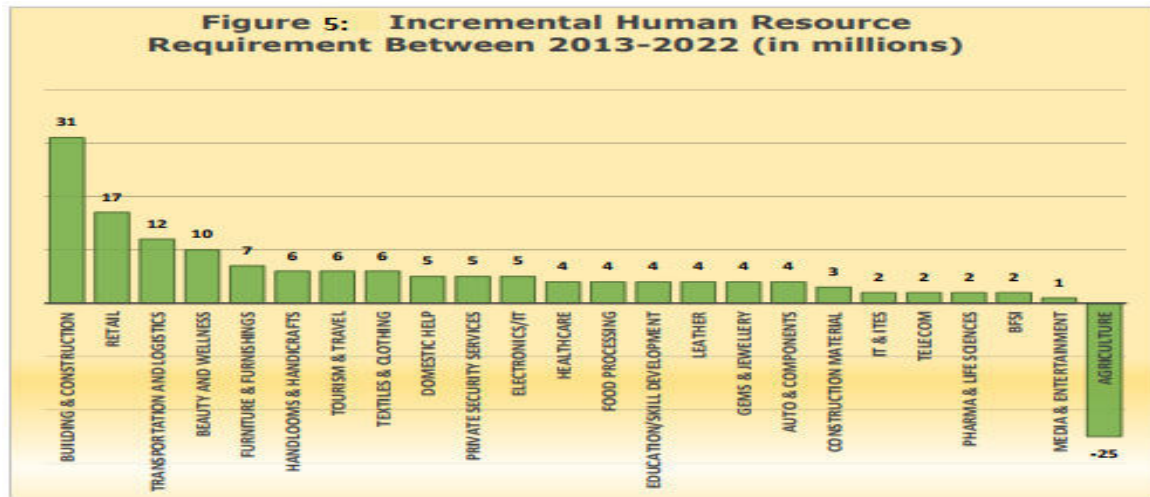
With reference to the survey, the employability percentage in different states is found to decrease logarithmically by occupying large number of colleges in the states. And the students, who have spent most of their lives in metro cities, will gain much demand over English language, computer education to become employable.

Increasing need for Human Resources in Various Fields

There is a prior need for coordination between training providers and available central ministries in order to prohibit duplication of efforts, with an aim to achieve optimum utilization of available resources. During 11th five year plan, the higher authority ministries have aimed to balance the gap between supply and demand of skilled workforce. So the vision of National Skill Development Mission (NSDM) is to train and place 500 millions of skilled resources by the end of 2022 using the available skill training systems. By

observing the survey report (view figure 5) for Human Resource Requirement Between 2013 – 2022 (in millions), various fields have been focused which

require more number of human resources to bridge the skill gap between supply and demand aspects.



Source: NSDC Skill Gap Studies

In Building & Construction field, there is a huge need for about 31 millions of resource professionals to satisfy the upcoming demand. Next marked field is Retail industry, where 17 millions of trained professional are needed by the end of 2022 year. Transportation & Logistics field require 12 millions of skilled workforce to enhance the productivity. 10 millions of skilled resources have to be gathered to support Beauty & Wellness field. 6 millions of resources are needed in each of the fields like Handlooms, Tourism and Textile Industries. 5 millions of skilled workforce is estimated to be available in the fields of Domestic Help, Private Security Services, and Electronics sector. 4 millions of qualitative professionals are required in the fields like Healthcare, Food Processing, Skill Development, Leather, Jewellery and Auto & Components to support the changing requirements. 2 millions of human resources are required in the fields like It & ITeS, Telecom, Life sciences and BFSI sectors. Finally 1 million of skilled work force is needed by Media & Entertainment industry to minimize the skill gap. And there is no work force required by

Agricultural sector since work force is shifting towards other fields like manufacturing or construction related works. Overall there is a need for minimum 150 skilled professionals to satisfy the demand which is based on the market situation.

Employability Factor in the states of Andhra Pradesh & Telangana

Work experience is considered as a major factor to enable students in bringing connections between their higher education and world of work; and then to get accustomed with the skills needed in the work environment. Now-a-days the trend is moving to a place where the employers are readily recruiting the students from the final year of their study who have participated in work placements. After getting employment, 48 percentage of employees felt that the important factor in enabling students to obtain their job is their relevant work experience obtained in the same firm. Employability should not be considered as a factor of beneficiary but has to be considered as a learning factor that evolves out of experience.

Figure 6: Average Number of Daily Workers in Coal Mines, 2008 - 2015

| Sl. No. | Colliery | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|--------------|------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 1 | Corporate Office | 2,391 | 2,361 | 2,357 | 2,551 | 2,518 | 2,474 | 2,461 | 2,169 |
| 2 | Kothagudem | 4,656 | 4,406 | 4,218 | 4,168 | 4,063 | 4,014 | 4,020 | 3,923 |
| 3 | Yellandu | 2,785 | 2,519 | 2,304 | 2,177 | 2,038 | 1,892 | 1,817 | 1,724 |
| 4 | Manuguru | 3,913 | 3,786 | 3,714 | 3,667 | 3,509 | 3,287 | 3,012 | 2,848 |
| 5 | Bellampally | 3,240 | 2,852 | 2,762 | 2,682 | 2,707 | 2,760 | 2,690 | 2,604 |
| 6 | Mandamarri | 9,560 | 8,586 | 7,705 | 7,740 | 7,395 | 6,701 | 6,551 | 6,678 |
| 7 | Srirampur | 14,388 | 15,263 | 14,922 | 14,316 | 14,306 | 14,384 | 14,046 | 13,573 |
| 8 | Ramagundam-1 | 10,449 | 9,875 | 8,714 | 8,471 | 8,066 | 7,761 | 7,466 | 7,381 |
| 9 | Ramagundam-2 | 6,236 | 6,023 | 6,825 | 6,625 | 6,022 | 4,917 | 4,663 | 4,433 |
| 10 | Ramagundam-3 | 5,524 | 6,030 | 6,829 | 7,042 | 7,210 | 7,067 | 6,894 | 6,621 |
| 11 | Bhoopalpalli | 8,034 | 7,788 | 7,630 | 7,315 | 7,389 | 7,163 | 7,058 | 6,883 |
| Total | | 71,176 | 69,489 | 67,980 | 66,754 | 65,223 | 62,420 | 60,678 | 58,837 |

Source: Directorate of Economics and Statistics | Government of Telangana

As per the report of MHRD 2012 – 13, few details are listed under the state of Andhra Pradesh (AP) & Telangana. The Literacy Rate in AP is 67 % where the female literacy rate is 58.7 % and the male literacy rate is 74.9 %. The Gross Enrolment Ratio of students in the colleges or institutions is 29.9 lakh. The Literacy Rate in Telangana is 81.09 % where the female literacy rate is 57.99 % and the male literacy rate is 75.04 %.

The average number of daily wage workers in coal mines is detailed in figure 6. There is a decrease in daily wage workers from 2008 to 2015. Overall statistical data shows that the average number of workers taking part in daily work is slowly decreasing every year since 2008 to till now. Hence the demand for daily waged workers is diminishing over a period of time. The wages have to be decided as per the physical work done by the workers and basing on the mobility factor of workers.

Figure 7: Employers using Exchanges, Notified Vacancies & Placements

| Year | No. of Employers using Exchanges | | | | | No. of Vacancies notified | | | | | No. of Placements | | | |
|------|----------------------------------|-------------|-------------|---------|-------|---------------------------|-------------|-------------|---------|--------|-------------------|-------------|----------------------|-------|
| | Central Govt. | State Govt. | Quasi Govt. | Private | Total | Central Govt. | State Govt. | Quasi Govt. | Private | Total | Central Govt. | State Govt. | Other Establishments | Total |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 2008 | 150 | 360 | 222 | 36 | 779 | 1,565 | 3,508 | 3,518 | 973 | 9,564 | 212 | 641 | 291 | 1,144 |
| 2009 | 141 | 295 | 207 | 31 | 674 | 1,353 | 2,436 | 3,569 | 155 | 7,513 | 179 | 570 | 76 | 825 |
| 2010 | 132 | 249 | 209 | 27 | 617 | 1,236 | 3,072 | 3,803 | 207 | 8,318 | 93 | 589 | 661 | 1,343 |
| 2011 | 139 | 258 | 201 | 34 | 632 | 658 | 1,326 | 4,629 | 284 | 6,897 | 40 | 514 | 785 | 1,339 |
| 2012 | 124 | 225 | 193 | 152 | 694 | 844 | 1,923 | 5,261 | 2,396 | 10,424 | 91 | 311 | 686 | 1,088 |
| 2013 | 58 | 375 | 147 | 827 | 1,407 | 2,007 | 851 | 2,552 | 658 | 6,068 | 23 | 217 | 340 | 580 |
| 2014 | 43 | 39 | 198 | 33 | 313 | 527 | 367 | 512 | 43 | 1,449 | 92 | 350 | 170 | 612 |

Source: Directorate of Employment and Training, Hyderabad.

After observing figure 7, it was clearly depicted that less than 50 % of all the notified vacancies are filled by candidates during placement activities. During 2008 there is more number of central and state government vacancies. Only few positions are being exchanged by employers where the role of private sector is minimal. Since there is no improvement found in training centers, the vacancies are not yet fulfilled properly. Maximum vacancies

can be occupied by candidates and more number of employers can be exchanged only when candidates acquire competent skills demanded by the industry. In Andhra Pradesh, most of the daily waged labour is found in the districts of Tirupati, Nellore, and Kurnool.

The 4th Annual Employment and Unemployment Survey have been taken place in

Telangana State by collecting both central and state samples during the period 2014. A sample of 4096 households from rural areas and 3822 households from urban areas (total 7918 households) have been survey in Telangana under central and state samples. For the production of goods and services, supply of labour plays a vital role. And this supply of labour is determined by Labour Force. The portion of working age population that actively steps towards production in labour market either by working or seeking towards works is determined as Labour Force Participation Rate (LFPR). Worker Population Ratio

(WPR) is determined as the total number of people employed or working for every 1000 persons. Unemployment Rate (UR) is determined as the number of persons unemployed in the labour force for every 1000 persons. On comparison, the Unemployability Rate is more in urban areas when compared with that of rural areas. There are certain parameters which are used to determine the labour force known as Usual principal & Subsidiary Status Approach (UPSS). This is a hybrid approach which considers both short time period and major time criterion.

Figure 8: District wise LFPR (per 1000) for persons aged 15 years and above as per UPSS

| Sl.No | DISTRICT | RURAL | | | URBAN | | | RURAL+URBAN | | |
|-------|--------------|-------|--------|--------|-------|--------|--------|-------------|--------|--------|
| | | male | female | person | male | female | person | male | female | person |
| 1 | ADILABAD | 822 | 711 | 768 | 712 | 208 | 467 | 793 | 575 | 688 |
| 2 | Niamabad | 824 | 685 | 751 | 766 | 338 | 561 | 812 | 623 | 714 |
| 3 | Karimnagar | 795 | 746 | 770 | 764 | 506 | 641 | 788 | 700 | 744 |
| 4 | Medak | 843 | 717 | 781 | 728 | 333 | 542 | 821 | 647 | 736 |
| 5 | Hyderabad | - | - | - | 720 | 238 | 488 | 720 | 238 | 488 |
| 6 | Rangareddy | 841 | 682 | 766 | 732 | 398 | 569 | 814 | 608 | 716 |
| 7 | Mahabubnagar | 822 | 688 | 758 | 810 | 435 | 629 | 820 | 652 | 739 |
| 8 | Nalgonda | 798 | 702 | 750 | 765 | 383 | 572 | 792 | 645 | 719 |
| 9 | Warngal | 786 | 628 | 709 | 695 | 304 | 501 | 763 | 545 | 656 |
| 10 | Khammam | 860 | 677 | 768 | 744 | 330 | 534 | 831 | 589 | 709 |
| -- | ALL | 818 | 694 | 757 | 731 | 292 | 518 | 785 | 547 | 668 |

Source: Directorate of Economics & Statistics, Government of Telangana

From figure 8, it is clearly observed that most of the male and female persons in rural areas are employed rather than the persons in urban areas. Specifically in Hyderabad district, there is no participation of persons working as labour force in rural areas. Most of the male and female persons

participate in equal ratio as labour in rural areas. But in urban areas, only male persons participate in work and limited female persons participate in work. Overall in Karimnagar district, there is good number of labour force contributing towards work from both rural and urban areas.

Figure 9: District wise WPR (per 1000) for persons aged 15 years and above as per UPSS

| Sl.No | DISTRICT | RURAL | | | URBAN | | | RURAL+URBAN | | |
|-------|--------------|-------|--------|--------|-------|--------|--------|-------------|--------|--------|
| | | male | female | person | male | female | person | male | female | person |
| 1 | ADILABAD | 807 | 687 | 749 | 687 | 201 | 450 | 775 | 555 | 669 |
| 2 | Niamabad | 816 | 680 | 744 | 707 | 313 | 519 | 793 | 614 | 700 |
| 3 | Karimnagar | 781 | 737 | 759 | 735 | 494 | 620 | 771 | 691 | 731 |
| 4 | Medak | 824 | 716 | 771 | 718 | 315 | 529 | 803 | 644 | 725 |
| 5 | Hyderabad | - | - | - | 691 | 173 | 442 | 691 | 173 | 442 |
| 6 | Rangareddy | 827 | 669 | 752 | 721 | 376 | 553 | 800 | 593 | 701 |
| 7 | Mahabubnagar | 815 | 685 | 752 | 790 | 429 | 616 | 811 | 648 | 733 |
| 8 | Nalgonda | 795 | 684 | 740 | 749 | 375 | 561 | 787 | 629 | 709 |
| 9 | WARNGAL | 785 | 623 | 705 | 670 | 287 | 480 | 756 | 537 | 648 |
| 10 | Khammam | 856 | 675 | 765 | 725 | 313 | 514 | 823 | 582 | 701 |
| -- | ALL | 809 | 686 | 748 | 704 | 250 | 484 | 770 | 526 | 650 |

Source: Directorate of Economics & Statistics, Government of Telangana

From figure 9, it is clearly observed that the ratio of male and female people who are employed in rural areas is more than people who are employed in urban areas. Specifically in Hyderabad district, there are no workers who are employed or working in rural

areas. The complete contribution of working employees comes from urban areas. Overall in Mahabubnagar district, there is more workers participation both from rural and urban areas.

Figure 10: District wise UR (per 1000) for persons aged 15 years and above as per UPSS

| Sl.No | DISTRICT | RURAL | | | URBAN | | | RURAL+URBAN | | |
|-------|--------------|-------|--------|--------|-------|--------|--------|-------------|--------|--------|
| | | male | female | person | male | female | person | male | female | person |
| 1 | ADILABAD | 17 | 34 | 25 | 36 | 36 | 36 | 22 | 34 | 27 |
| 2 | Niamabad | 10 | 8 | 9 | 77 | 72 | 76 | 23 | 14 | 19 |
| 3 | Karimnagar | 17 | 11 | 14 | 38 | 24 | 33 | 21 | 13 | 17 |
| 4 | Medak | 22 | 1 | 12 | 14 | 54 | 25 | 21 | 6 | 14 |
| 5 | Hyderabad | | | | 40 | 272 | 95 | 40 | 272 | 95 |
| 6 | Rangareddy | 17 | 20 | 18 | 15 | 56 | 29 | 17 | 26 | 20 |
| 7 | Mahabubnagar | 9 | 5 | 7 | 25 | 12 | 21 | 11 | 5 | 9 |
| 8 | Nalgonda | 3 | 26 | 13 | 21 | 20 | 21 | 6 | 25 | 14 |
| 9 | WARNGAL | 2 | 8 | 4 | 36 | 55 | 42 | 9 | 15 | 12 |
| 10 | Khammam | 4 | 4 | 4 | 28 | 54 | 36 | 10 | 11 | 10 |
| -- | ALL | 11 | 12 | 11 | 37 | 143 | 66 | 20 | 38 | 77 |

Source: Directorate of Economics & Statistics, Government of Telangana

From figure 10, it can be observed that most of the unemployability is observed in the urban areas of Hyderabad district. And this UR ratio is determined as the highest among all the districts. Overall the unemployment is more in urban areas compared with that in rural areas. Also the female persons are the major one's contributing towards highest unemployment in urban areas.

On the overall comparison status, Medak district is the one maintaining maximum LFPR and WPR in rural areas. Karimnagar district is having maximum LFPR and WPR in urban areas. Medak, Karimnagar and Mahabubnagar districts are the

major one's constantly maintaining the employees work participation in rural and urban areas. In Unemployment Rate, Adilabad district is having highest rate of unemployment in rural areas followed by Hyderabad district in urban areas. Mahabubnagar and Khammam districts are the major one's having lowest rate of unemployment; specifying the good quality of employment in those areas of Telangana State. In the period of 2017 – 18, a scheme has been established by the Finance Minister in Andhra Pradesh to provide allowances for unemployed youth in Andhra. This will provide a fixed monthly allowance of Rs 2000 for unemployed youth.

A scheme of Statistics for Local Area Planning (SLAP) in rural and urban regions has been initiated during 2015 – 16 period to collect information regarding village / ward / town level for the reference period 2014 – 15. This collected information is used to develop a detailed database at village level to meet all the requirements of Government Departments during planning, implementation and monitoring phase of various

schemes at village level. SLAP is implemented in the state of Telangana under the Directorates of Economics and Statics (DES) in Nizamabad district. The data collected from all villages / mandals will facilitate in the formulation of local level development plans along with the monitoring of various ongoing state and central government schemes in Telangana and Andhra Pradesh.

How Skill Development helps to increase both Employment & Productivity?

There is a large impact of SD initiatives on the employability factor and thus concerned about the productivity. Skills related training is offered in training institutions and followed by certification of skills learned. This will act as a skills recognition

element of trainee during placement activities. Government came up with specific employment generating schemes like MNEGRA, PMEGA, SGSY, SJSRY and many others. These schemes will enable more employment in rural and urban areas of every district. Various schemes have been designed to strengthen employment in order to face the competition and to lead the competition as well.

Figure 11: Distribution of Households (per 1000) benefited by employment generation schemes in each district

| Sl. No. | Name of district | distribution of households benefited from | | | | |
|----------------|------------------|---|----------|----------|----------|----------|
| | | MGNREGA | PMEGA | SGSY | SJSRY | Others |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 1 | Adilabad | 448 | 3 | 4 | - | 6 |
| 2 | Nizamabad | 546 | 0 | - | - | 1 |
| 3 | Karimnagar | 504 | - | 26 | - | 22 |
| 4 | Medak | 483 | 3 | - | - | 1 |
| 5 | Hyderabad | - | - | - | - | 1 |
| 6 | Rangareddi | 343 | 6 | 9 | - | 5 |
| 7 | Mahbubnagar | 508 | - | 0 | - | 4 |
| 8 | Nalgonda | 561 | 1 | 0 | - | 1 |
| 9 | Warangal | 448 | - | - | - | 1 |
| 10 | Khammam | 409 | - | - | - | - |
| Overall | | 481 | 1 | 5 | - | 4 |

Source: Report on District Level Estimates for the State of Telangana (2013-14)

From figure 11, it is observed that MGNREGA is the popular scheme which has showed that more than 50 percent of the households are benefitted out of this. About 48 percent of households are completely benefitted by implementing MGNREGA scheme in rural areas of Telangana state. Hyderabad does not show any participation of households in these schemes especially from rural areas. Other employment generation schemes are showing least participation rate of households. Trainees will be benefitted from these schemes since their talent will be utilized and skilling up takes place during practical exposure in industries. The

employers in the current generation look for minimum labour to fulfill higher productivity. These schemes would develop the rate of productivity, basing on the labour work being occupied by employees. Only when vocational training, assessment process is keen clear then good quality of employment will take place by supporting employees request and enjoying higher benefits out of productivity level.

Priorities Listed for Skill Development System Reform

The current system is lacking behind effective implementation because of inadequate provision of basic facilities. Also certain modifications have to be done in order to gain maximum result out of the skill development initiatives. While reforming is taking place, there is a need to prioritize the provisions and implementing schemes. This prioritization will enhance the immediate provision of required facilities and necessary skilling up activities. Skill Development reforming system is necessary to empower a robust public – private partnership (PPP) on education and training sector across the world. During employability of people, the interviewers observed four major priorities which are lacking in most of the people. These are determined to be the basic priorities for system reforming. They are Quality Assurance (QA), Credit Recognition, National Qualifications Framework and University / College teacher training and development.

Quality Assurance – 12th Five Year Plan came out with certain policies to boost the quality of programs. The National Assessment and Accreditation Council (NAAC) have set restricted regulations and accreditation policies in the higher education sector. Request approval for new college buildings have been stopped by NAAC since there is enough number of available institutions. But most of them are lacking in providing qualitative education and respective facilities. Quality has to be ensured to every state through state regulatory bodies only. Currently there is no system which provides exact information about the operations and recognitions of universities / colleges; and there is no existing system which will support and control the performance of policies. Quality Assurance System is given highest priority by interviewees in reforming process and is aware about the upcoming changes but interviewees are much concerned about the size of the task. Steps are being taken ahead to improve the quality of teaching and learning in the affiliated colleges. This step has developed a communication dialogue with other countries along with the management of affiliated colleges.

Credit Recognition – Since the Indian institutions are being collaborated with foreign institutions for further research, international

recognition is being received by Indian institutions. Even though the journey towards international recognition is complex, the reforming system is encouraged to support the international mobility of students. Priority is given to the recognition of credit by paving way to international learning and achievements.

National Qualifications Framework – Significant prominence is given to national qualifications framework as this enables mobility between technical and general education. The recognition and certification of competencies will enable individuals to accumulate skills and knowledge. The Higher Educational Institutions were involved in linking various initiatives of vocational and education system. This framework will help to ensure quality assurance for most of the initiatives.

Teacher Training and Development - One of the key priorities which is being focused in the reforming system is teacher training and development. They act as a leading factor for the future of higher education in India. Institutions are lacking behind the optimum capacity and skills to respond. Institutions are being encouraged to integrate with other countries for excellent training of teachers in training centers. In the survey forecasted for period 2008 – 2022, there is a need for 8.6 lakh of teachers and trainers. These teachers should be upgraded with the new technologies and have to train the people with their excellent training approach.

Various stakeholders have stated other key priorities while reforming the system. State universities were keen to *develop partnership opportunities through internationalization*; to enhance employability and capacity of research; to improve teaching and learning based outcomes along with modernization of curricula. This is to provide global rankings for Indian institutions and a best platform for the next generation of Indian researchers. The state government came up with a plan to welcome international students into Indian universities to enable Indian students to accumulate inter-cultural skills and exposing them towards new approach of research. In the previous generation, Indian universities had a good command over social sciences, arts and humanities. But consistently over

the years this command has been lost and so priority has to be given towards ***the development of Society & Culture***. One of the reasons stated is, large number of available engineering graduates are unable to find relevant jobs and are moving towards other higher studies to grab similar employment. So the effectiveness and in depth research in social sciences, arts and humanities have been lost. Priority is given by reforming system to develop research in these areas since India is found to have many conflict affected areas. Study and research on these subjects will enable people to understand and prevent conflict situations in the society. Higher Educational Institutions, alone cannot fulfill the employment so during reforming the system priority is given for linking industry with the institutions. State government came out with strategies ***to strengthen the link between industry and institutions***. Certain proposals have been put forward to encourage industry engagement with the institutions through the establishment of collaborative centers in universities. Since there is no shortage of funds in top tier institutions, international collaboration is encouraged through professional networking.

Conclusion

It is very important to attain necessary skills before placement since the changing skills need in

industry have to match with the candidate skills set. Along with attaining necessary skills it is required to maintain specific skills during hiring process like communication, teamwork, initiative skill, problem solving skill and self management skills. The State Government of Andhra Pradesh & Telangana was looking for the long term implementation policy to empower their human capital with good quality of education and necessary skills to strengthen the employability. In a workshop conducted between The Higher Education Board and Administrative Staff College of India, a proposal has been formulated where 50,000 students out of 50 institutions from AP & Telangana will be taken towards placement only through improved learning. The second proposal is to encourage students towards 64 credit system where the students will opt for 64 credit system along with conventional degree based on their chosen courses of interest. This will improve the employability of students and will empower students to obtain relevant job as per their interest. The third proposal is to develop a reference booklet for students which will enable them to know how to improve their acquired skills for employment. The fourth proposal is to document the result of “need assessment survey” conducted for about 5,000 students and then help the students to work on their own deficiencies.

References :

- Aspiring Minds Research Cell (2011) *“Employability of engineers state wise. Excerpts from Aspiring Minds”* National Employability Study 2011.
- Barber,M., Donnelly,K. & Rizvi,S. (2012) *“Oceans of innovation: the Atlantic, the Pacific, global leadership and the future of education”* Institute of Public Policy Research.
- Bound,K. & Thornton,I. (2012) *“Our frugal future: lessons from India’s innovation system”*. NESTA
- British Council (2012) *“Corporate Plan 2012-15”*.
- British Council (2012) *“Trust Pays”*.
- British High Commission, India (2012) *“Partners in education”*. Brochure.
- Daniel, J. (2012) *“Making sense of MOOCs: musings in a maze of myth, paradox and possibility”*. Essay.
- Das,S. (2007) *“Higher education in India and the challenge of globalization”*. Social Scientist 35(3/4), pp. 47-67

Department for International Development, UK, South Asia Research Hub (2011) *“Social science research in India: a mapping report”*.

Economist Intelligence Unit in partnership with the British Council (2014) *“High education enrolment, low graduate employment”*

Ernst & Young (2010) *“New realities, new possibilities: the changing face of Indian higher education”*.

Ernst & Young (2011) *“40 million by 2020: preparing for a new paradigm in Indian higher education”*. EDGE report.

Ernst & Young (2012) *“Higher education in India: twelfth five year plan (2012-2017) and beyond”*. FICCI Higher Education Summit 2012.

Ernst & Young (2012) *“University of the future: a thousand year old industry on the cusp of profound change”*.

European Commission (2012) *“Long term unemployment”*. EEO review.

Government of India, University Grants Commission (2012) *“Higher education in India at a glance”*.

Government of India Planning Commission (2012) *“Twelfth five year plan (2012-17): social sectors”*. Volume III.

Hackmann,H. & St.Clair,A.L. (2012) *“Transformative cornerstones of social science research for global change”*. International Social Science Council.

Huisman,J., de Boer,H. & Botas, P.C.P. (2011) *“The future of English higher education: the changing landscape”*.

Kapur,D. & Crowley,M. (2008) *“Beyond the ABCs: higher education in developing countries”*. Working Paper 139, Centre for Global Development.

NESTA (2012) *“River of innovation: The future of higher education and its impact on research and innovation”*.

Observatory on Borderless Higher Education (2012) *“MOOCs: Disruptive innovation in online learning”*. Media FHE Ltd.

OECD (May, 2012) *“How is the global talent pool changing? Education in focus”*.

Office for National Statistics, UK (2012) *“Graduates in the labour market, 2012”*.

Quality Assurance Agency, UK (2012) *“Enterprise and entrepreneurship education: guidance for UK higher education providers”*. Draft for consultation.

The Parthenon Group (2012) *“Private universities in India: an investment in national development”*.

The Russell Group (2012) *“Jewels in the crown: the importance and characteristics of the UK’s world class universities”*. Russell Group Papers, Issue 4.

United Nations System Task Team on the Post-2015 *“UN Development Agenda (2012)”*. Education

The Point of view in Khushwant Singh's "Posthumous"

Dr. N. Madhu, Assistant Professor English
Gitam University, Visakhapatnam

A.Madhavi Latha, Assistant Professor
English, Mallareddy College of Engineering,
Secunderabad.

Abstract: *This paper is concerned with the analysis of 'Point of view' in Khushwant Singh's Short story "Posthumous". It makes an attempt to investigate how Khushwant Singh achieves his spatio-temporal, ideological and psychological perspectives through his language. He continuously interferes with the comprehension of the readers by guiding them in terms of locating the places and time through his spatio-temporal perspective. He also influences the feelings of the readers by communicating his ideas through his psychological perspective. He also presents the mindset of his characters by describing the commonly accepted social practices in the society through his ideological perspective. Point of view on spatio-temporal, ideological and psychological planes helps the narrator achieve his purpose effectively. Point of view is a much discussed and rigorously explored area in fiction studies, whether in the stylistics framework or any other framework of literary criticism and theory. Point of view basically refers to the way a story is told, the mode of its narration. Point of view concerns, produces, results in, perspectives on, evaluations of, events and characters. It is about influencing readers to form certain opinions, or not to form certain opinions.*

Keywords: Ideological, Psychological, spatio-temporal

Introduction: This paper presents the stylistic analysis of the short story "Posthumous" written by Khushwant Singh. Khushwant Singh is a well-known Indian English Writer and a famous essayist. He got well equipped by background, education, exposure and experience to view the Indian scene from a wider angle without any sentimental attachment. He is known more for his books of jokes and his column *With Malice Towards All*. He has penned books on religion, Sikhism, and history of Sikhs and Delhi. He is a man who loves life fully and deeply as is evident in his books. The ironic mode that he adopted also enabled him to look at the human scene with detachment.

The Summary of "The Mark of Vishnu":

In "Posthumous" the author is ill in bed, and he fancies that he is dead. He is curious to know the responses and reactions of his friends and acquaintances to his supposed death. Perhaps the

headline in the *Tribune* would read; "Sardar Khushwant Singh Dead". The obituary notices would perhaps be adulatory and public men of eminence would call at his house to pay their last respects. Wreaths would be laid by ministers and judges on his body. Generous tributes would be paid to the high qualities of head and heart of the departed personality, and his funeral would be attended by large number of people. Thus, his imagination created all kinds of situations, and he visualized a series of scenes of persons consoling his widow and children for their irreparable loss. As this process became operative, he wrote; "I feel very sorry for myself and for all my friends. With difficulty I check the tears which want to express sorrow at my own death." But it actually transpired that the 'Tribune' published only a very brief obituary notice at the bottom of page three, column one about the Sardar. Shafi, the reporter, perhaps tried to settle old scores

with Sardar by relegating him to an insignificant place. Lawyer friends of the Sardar, Mr. and Mrs. Qadir, who were expected to call at the house, did not arrive, Mr. Khosla, a pompous bureaucrat and a high court judge, was too engrossed in writing his diary to take much notice of the Sardar's death. So the Khoslas did not appear either. When the imaginary funeral started, the author's inward eye could spot only a few black-robed lawyers, one artist, one communist, and a few others. The hearse was drawn by a bony, brown horse. The lawyers left the procession on the way. The artist and the Communist had had a heated discussion, and they also disappeared. But soon a professor arrived riding a bicycle and tried to console the author's wife by reciting quotations from the Bhagavad Gita "Like a man casts off old garments to put on new ones... So does the soul, etc." Between the professor's two legs, a little dog appeared licking his trousers. The author found that everyone left the hearse and that only the Tonga driver remained to carry out his last journey. The cart driver stopped under a peepul tree and the author, now awake in the hearse, contemplated three alternative courses left open to him. He could either give himself up to the scorching flames with the hope of being reborn in a better world, or escape from the hearse into brothels, or quietly return to his home and his humdrum existence. Since he could not decide on a course of action, he wished to flip a coin to decide. At that crucial point, this fantastic and funny reverie abruptly came to an end.

For the study of Point of View in fiction, in an influential publication on prose composition, the narratologist Boris Uspensky proposed a four-way model (Uspensky, 1973). This model was later revised and refined by Roger Fowler. So it is probably referred as the 'Fowler – Uspensky model'. The four components identified by the Fowler – Uspensky model of point of view are as follows:

1. Point of view on the ideological plane

2. Point of view on the temporal plane
3. Point of view on the spatial plane
4. Point of view on the psychological plane

The broad compass of the model has proved significant in shaping much stylistic work on point of view because it helps sort out different components in narrative organization.

Point of view on the ideological plane: The term ideology has a wide scope of reference. It refers to the matrix of beliefs we use to comprehend the world and to the value systems through and by which we interact in society. It follows then that the concept of point of view on the ideological plane refers to the way in which a text mediates a set of particular ideological beliefs through either character, narrator or author. Indeed, the domain of ideology is so broad that just about any aspect of narrative can be brought within its compass, whether it be a facet of narrative voice like author, narrator, character or person, or an element of narrative 'preoccupation' like emblem, theme, motif, and most important of all, characterization.

Point of view on the temporal plane: Point of view on the temporal plane, in terms of the Fowler – Uspensky model, is about the way relationships are signalled in narrative. Temporal point of view envelops a whole series of stylistic techniques such as repetition, analepsis (flashback) and prolepsis (prevision or flash forward). It basically covers any kind of manipulation of time sequence in narrative, explaining how certain events might be relayed as remote or distant, others as immediate or imminent.

Temporal point of view is certainly an important narrative category. It seems to be less about focalisation and viewpoint and rather more about narrative structure; it does after all encompass the structural segments and sequential progression of the time-line of a narrative.

Point of view on the spatial plane: Spatial point of view is about the narrative ‘camera angle’ and is a device which has palpable grammatical exponents in deixis and in locative expressions. This is often communicated through adverbs like this, that, here, there and so on.

Point of view on the Psychological plane

Psychological or perceptual view point refers to the way in which narrative events are mediated through the consciousness of the ‘teller’ of the story. It will encompass the means by which a fictional world is slanted in a particular way or the means by which narrators construct, in linguistic terms, their own view of the story they tell (Simpson: 1993).

In this paper, groups of indicators are linked together interpretatively, namely in terms of ‘Spatio-temporal’ ‘Psychological’ and ‘ideological’ viewpoint. To illustrate this distinction, three passages from the short story “Posthumous” are stylistically analyzed below.

Passage – 1

We regret to announce the sudden death of Sardar Khushwant Singh at 6 p.m. last evening. He leaves behind a young widow, two infant children and a large number of friends and admirers to mourn his loss. It will be recalled that the Sardar came to settle in Lahore some five years ago from his home town, Delhi. Within these years he rose to a position of eminence in the Bar and in politics. His loss will be mourned generally throughout the Province.

Amongst those who called at the late Sardar’s residence were the P.A. to the Prime Minister, the P.A. to the Chief Justice, several Ministers and Judges of the High Court.

In a statement to the press, the Hon’ble the Chief Justice said: ‘I feel that the Punjab is poorer by the passing away of this man. The cruel hand of

death has cut short the promise of a brilliant career’ (Singh, 1989: 1).

The narrator’s spatio-temporal perspective is communicated through the adverbials of place and time and demonstrative determiners. We find them in the following lines.

- We regret to announce the sudden death of Sardar Khushwant Singh at 6 p.m.
- He leaves behind a young widow, two infant children and a large number of friends and admirers to mourn his loss.
- His loss will be mourned generally throughout the Province.
- Amongst those who called at the late Sardar’s residence were the P.A. to the Prime Minister, the P.A. to the Chief Justice, several Ministers and Judges of the High Court.
- In a statement to the press, the Hon’ble the Chief Justice said: ‘I feel that the Punjab is poorer by the passing away of this man.

The above lines belong to the context in which the narrator explains the response of the fourth- estate to his imaginary death. The time- when adverbial at 6 p.m. place adverbials behind, throughout the province, at the late Sardar’s residence make us understand the time and place of the incidents of the story. The demonstrative determiner those, which is also a conjunct, gives an anaphoric reference to the people who would attend the funeral of the narrator. Another demonstrative determiner this, which gives a cataphoric reference to the narrator himself, helps the narrator achieve Spatio-temporal perspective.

The narrator’s ideological perspective is communicated through the following lines through which he achieves the irony and lets us get into the general viewpoint of the people. We can also get the

ideology of the characters through these lines. The people generally speak so greatly when someone dies. These are all routine sentences which reveal the mindset of the people in the society.

- Within these years he rose to a position of eminence in the Bar and in politics. His loss will be mourned generally throughout the Province.
- His loss will be mourned generally throughout the Province.
- In a statement to the press, the Hon'ble the Chief Justice said: 'I feel that the Punjab is poorer by the passing away of this man.
- The cruel hand of death has cut short the promise of a brilliant career'.

The psychological perspective of the narrator is communicated through the verbs of cognition in the following lines.

- We regret to announce the sudden death of Sardar Khushwant Singh at 6 p.m. last evening.
- His loss will be mourned generally throughout the Province.
- In a statement to the press, the Hon'ble the Chief Justice said: 'I feel that the Punjab is poorer by the passing away of this man.

And, the same is achieved through an 'adjective' in the following line.

- The cruel hand of death has cut short the promise of a brilliant career'.

The announcement of Khushwant Singh's imaginary death in the newspaper reveals the feelings and psychological perception of the people through the verbs of cognition like regret, feel in the lines above. The adjective cruel also reveals the perception of the people about death. Death always seems to be

cruel to human beings. So by using the word cruel the narrator reveals his perception.

Passage – 2

I feel very sorry for myself and for all my friends. With difficulty I check the tears which want to express sorrow at my own death. But I also feel elated and want people to mourn me. So I decide to die—just for the fun of it as it were. In the evening, giving enough time for the press to hear of my death, I give up the ghost. Having emerged from my corpse, I come down and sit on the cool marble steps at the entrance to wallow in posthumous glory.

In the morning I get the paper before my wife. There is no chance of a squabble over the newspaper as I am downstairs already, and in any case my wife is busy pottering around my corpse. *The Tribune* lets me down. At the bottom of page 3, column 1, I find myself inserted in little brackets of obituary notices of retired civil servants—and that is all. I feel annoyed. It must be that blighter Shafi, Special Representative. He never liked me. But I couldn't imagine he would be so mean as to deny me a little importance when I was dead. However, he couldn't keep the wave of sorrow which would run over the Province from trickling into his paper. My friends would see to that. (Singh, 1989: 1).

The narrator's Spatio-temporal perspective is communicated through the time adverbials, place adverbials, a deictic verb and a demonstrative determiner. We can find them in the following lines. We see the viewing position of the author through these lines.

- Having emerged from my corpse, I come down and sit on the cool marble steps at the entrance to wallow in posthumous glory.
- In the morning I get the paper before my wife.
- There is no chance of a squabble over the newspaper as I am downstairs already, and

in any case my wife is busy pottering around my corpse.

- At the bottom of page 3, column 1, I find myself inserted in little brackets of obituary notices of retired civil servants—and that is all.

The above sentences are narrated through the I-Narrator. The narrator takes the readers with him to look at the surroundings of his house, his wife and the newspaper. We see the place and people through narrator's eye with the help of the Spatio-temporal perspective of the narrator. The time adverbials in the morning and before help us know the time of the incidents. The place adverbials from my corpse, on the cool marble steps, at the entrance, downstairs and at the bottom of page 3 show us the surroundings of the narrator's house and the column about his death in the newspaper. The deictic verb come down shows us the direction of the movement of the story as we move along with the narrator. The demonstrative determiner that gives us the cataphoric reference of what was described till then.

The narrator's ideological perspective is communicated through the following lines in which he achieves irony. We can see the irony in the way the author thinks about the special representative of the newspaper, Shafi. The expression never liked reveals the hostility between the narrator and the news representative Shafi. The lines below reveal the ideology of both the narrator and the character Shafi.

- So I decide to die—just for the fun of it as it were
- It must be that blighter Shafi, Special Representative.
- He never liked me. But I couldn't imagine he would be so mean as to deny me a little importance when I was dead.

The narrator feels angry with Shafi as he did not give a prominent place to the announcement of his death in the newspaper. The lines mentioned above reveal the jealous nature of Shafi according to the narrator which ultimately leads to irony.

The psychological perspective of the narrator is communicated through the verbs of inert cognition, an abstract noun and adjectives in the following lines. The author's feelings are clearly shown through these lines.

- I feel very sorry for myself and for all my friends.
- With difficulty I check the tears which want to express sorrow at my own death.
- But I also feel elated and want people to mourn me.
- So I decide to die—just for the fun of it as it were.
- He never liked me.
- But I couldn't imagine he would be so mean as to deny me a little importance when I was dead.

The narrator could let us get into his consciousness with the help of the verbs of inert cognition like feel, decide and imagine in the above lines. We perceive the psychological condition of the narrator with the help of these words. The abstract noun sorrow and an adjective elated reveal the narrator's viewpoint about his death. By the verbs of inert cognition liked and mean, the narrator makes us understand the mindset of Shafi.

Passage – 3

Qadir knew his wife well. He told her with an air of casualness, and she burst out crying. Her ten-year-old daughter came running into the room. She eyed her mother for a little while and then joined her in the wailing. Qadir decided to be severe. What

are you making all this noise for?’ he said sternly. ‘Do you think it will bring him back to life?’ His wife knew that it was no use arguing with him. He always won the arguments. ‘I think we should go to their house at once. His wife must be feeling wretched,’ she said.

Qadir shrugged his shoulders. ‘I am afraid I can’t manage it. Much as I would like to condole with his wife – or rather widow – my duty to my clients comes first. I have to be at the tribunal in half an hour.’ Qadir was at the tribunal all day and his family stopped at home (Singh, 1989: 2).

The narrator’s Spatio-temporal perspective is achieved through the place adverbials and time-duration adverbials in the following lines. We can view the surroundings through the narrator’s eyes.

- Her ten-year-old daughter came running into the room.
- I have to be at the tribunal in half-an-hour.
- Qadir was at the tribunal all day and his family stopped at home.

We can understand how and where the characters are. We can also get the time references through the time-duration adverbials in half-an-hour and all day. The place adverbials at the tribunal and at home reveal where the family of Qadir and himself remain the whole day without visiting the bereaved family of the narrator.

The narrator’s psychological perspective is communicated through the verbs of inert cognition, an abstract noun and an adverb in the lines below. The narrator could effectively place the readers in the characters’ position to understand their process of thinking and feelings. The words underlined below make us understand the characters’ psychology very effectively.

- Qadir knew his wife well.
- He told her with an air of casualness.

- Qadir decided to be severe.
- His wife knew that it was no use arguing with him.
- His wife must be feeling wretched.
- What are you making all this noise for? He said sternly.
- I’m afraid I can’t manage it.

The inert cognition verb knew reveals the mindset of Qadir and his wife and make us understand their thinking. The abstract noun casualness and the adverb sternly and the verb of inert cognition decided reveal the casual attitude of Qadir about the death of the narrator.

The ideological perspective of the narrator is communicated through the following lines through which we can understand Qadir’s wife’s ideology as an Indian woman. It talks of how a woman feels when she loses her husband. Here, the narrator touched the peak of irony by making us understand that Qadir and his family did not even go to see the narrator’s wife though they talked about it elaborately. And, they remain as usual with their routine, which makes us feel the irony of the situation.

- His wife must be feeling wretched.
- Much as I would like to condole with his wife-or- rather widow-my duty to my clients comes first.
- I have to be at the tribunal

Table 12. The Grammatical Features in “Posthumous”

| Name of the Grammatical Feature | Number of times it occurred | Percentage |
|---------------------------------|-----------------------------|------------|
| Place Adverbials | 10 | 29.41% |
| Time-related Adverbials | 5 | 14.70% |

| | | |
|-------------|----|--------|
| Nouns | 2 | 5.88% |
| Adverbs | 1 | 2.94% |
| Adjectives | 2 | 5.88% |
| Determiners | 3 | 8.82% |
| Verbs | 11 | 32.35% |

The story “Posthumous” is narrated in the 1st person. The narrator narrates everything from his perspective. In this story, we find the occurrence of verbs in the highest place with the percentage of 32.35%. The occurrence of nouns and adjectives is the same. We can also comprehend that the narrator used ‘place adverbials’ most number of times through which we get his Spatio-temporal perspective. It is also understood that all three passages have the ideological features, through which we can understand the accepted and general beliefs of the people.

From the above analysis, we can see that Khushwant Singh achieves his intended perspective by the effective use of ‘Point of view’ in his story “Posthumous”. One can easily get into the mind of the author or the character by following the ‘Point of View’ meticulously. The successful use of point of view and their desired results on different planes of narration help the reader feel stylistically sensitive to the language.

References

Singh, Khushwant. 1989. *A collected Short Stories of Khushwant Singh*. South Asian books, Ravivi Dayal publishers.

Dietrich, R.F. 1967. *The Art of Fiction*. New York : Holt, Rinehart and Winstan.

Fowler, Roger. (ed.). 1986. *Essays on Style and Language* . London: Routledge and Keganpaul.

Simpson, Paul. (ed.). 1993. *Language, Discourse and Literature*. London: Unwin Hyman Ltd.

Short, Mick. 1996. *Exploring the Language of Poems, Plays and Prose*. Edinburgh gate:

Harlow, Addison Wesley. Longman.

Uspensky, B. 1973. Trans. V. Zavarin and S. Witting.

A Poetics of Composition. Berkeley:

University of California Press

Trends in Agricultural Product's Exports and Imports of Major SARRC Countries

Dr. V. V. Narsi Reddy, Associate Professor, School of Management Studies,
Lakireddy Bali Reddy College of Engineering, Mylavaram, Andhra Pradesh.

S.M. Reddy, Post-Doctoral Fellow, Department of Economics, Andhra University, Visakhapatnam

J. N. Naik, Scholar (F.D.P), Department of Economics, Andhra University, Visakhapatnam

Abstract: In this research paper an attempt is made to analyze the growth and instability of agriculture product's exports and imports of five major SAARC countries. The study is mainly based on secondary data obtained from world trade organization reports and world banks reports. The time period we consider for this study is span of 15 years from 2001 to 2015. Coefficient variation, instability index and exponential growth rate are employed along with descriptive statistics and; ANOVA and regression analysis is used for analyze the data. The result of the study reveals that the positive growth phase and significant variations have been observed across the selected countries regarding to exports and imports. India is performing as better regarding exports with highest growth rate followed by Pakistan. Nepal is most dependent country as per imports followed by India and Bangladesh. The imports of Bangladesh, India and Pakistan ranked at a higher compared to exports result in a decrease in the GDP and

the exports of Nepal and Sri Lanka ranked at a higher compared to imports result in an increase in the GDP.

Keywords: Trends in Exports, Agriculture Products, SAARC Countries

Introduction

Trade will bring welfare gains, in addition trade has also been argued to have dynamic effects and potentially generate growth-accelerating as well as growth-decelerating forces (Krishna& Mitra, 1998). International trade, as a major factor of openness, has made an increasingly significant contribution to economic growth (Sun & Heshmati, 2010). The role of trade has been widely recognized as an important instrument for country's economic development process. Exports growth builds import capacity and industries engaged in exports production have the high intensity to absorb surplus of labour force of developing country like India which thereby leads to the creation of employment and increase in income which leads to rise in savings which

is transferred into investment in physical and human capital, and thus in the rate of economic growth (Sharma, 2013).

The expansion of agricultural trade has helped provide greater quantity, wider variety and better quality food to increasing numbers of people at lower prices. Agricultural trade is also a generator of income and welfare for the millions of people who are directly or indirectly involved in it (FAO, 1995).

Driven towards integration by the pressure of socio-economic interests of the region, seven South Asian countries namely Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka formed the South Asian Association for Regional Co-operation (SAARC) in 1985. As a eighth member, Afghanistan joined the organization in 2005. SAARC countries are a large regional block with huge potential but achievement in regional cooperation so far is insignificant (Kiran et al, 2014).

It is argued that trade liberalization and regional economic co-operation can help a region to increase inter-regional trade by exploring the size of the markets. This may in turn yield efficiency and bring benefits not only by exploration of economies of scale but also by dynamic and

upward shifts in production function. To accelerate the process of socio-economic development in member countries is one of the major objectives of formation of SAARC forum. Thereafter, trade promotion was also pursued as an area of economic Co-operation. It is in this context, the present study has been undertaken to analyze the growth and instability of agriculture product's exports and imports of five major SAARC countries during 2000-01 to 2014-15.

In four-sector economy, exports are the injections in the national income, while import act as leakages or outflows of national income. While determining national income, the difference between net exports and imports ($X-M$) is considered. The injections are responsible for increasing the national income while leakages or outflows result in decrease in national income. When $X > M$, there is net injection; therefore, there would be an increase in national income. On the other hand, in case $X < M$ that is net leakages, the national income would decrease. For determining the national income with foreign sector in a four-sector economy, let us learn about export and import functions in next sections. In this connection the study examined trends in agriculture product's exports and imports of

five major SAARC countries with time series data span of 15 years.

Data and Methodology

The study is mainly based on secondary data obtained from world trade organization reports and world banks reports. The time period we consider for this study is span of 15 years from 2001 to 2015. In the present we calculated mean and Standard Deviation of exports and imports along with GDP. Arithmetic average is also called as mean. It is the most common and widely used measure of central tendency or an average (Kothari, 2004). Standard Deviation of a set of scores is defined as the square root of the average of the squares of the deviation of each from the mean. Symbolically we can say that (Singh, 2006). The objective of the F- test is to find out whether the independent estimates of population variance differ significantly across the counties (Gupta, 2007). The Kruskal-Wallis test is a nonparametric (distribution free) test, and is used when the assumptions of ANOVA are not met. They both assess for significant differences on a continuous dependent variable by a grouping independent variable (Kanji, 2006). These two are employed in the study to test the statistical significance of

variations across theselected counties regarding agriculture product's exports and imports. The coefficient of variation indicates the relative magnitude of the standard deviation as compared with the mean of the distribution as a percentage (Daniel et al, 2003). Instability is one of the important decision parameters in development dynamics, more so in the context of agricultural production (Krishan & Chanchal, 2014). Exponential growth is a way to measure change reliably at any time, or for any timedifference (Tague et all, 1981) and calculated trend with exponential function for 15 years' time period. As the regression models are log linear, their regression coefficients (ie slope parameters) are elasticity coefficients (Gujarathi, 1988). The slope of exports and slope of GDP are considered as exports elasticity of income and income elasticity of imports.

Results and Discussions

The data on the estimated exponential growth rates of agriculture product's exports of SAARC major counties are presented in Table-1. It can be observed that the highest coefficient of variation and growth of exports from India is positive and significant at one percent level during the study period followed by Pakistan and least

phase of growth has been observed in Nepal. As per data all counties have been observed significant positive growth in exports besides that Bangladesh is noticed high instability and Sri Lanka is found as stable in agriculture product's exports. As per exponential growth rates, India occupied top place and Nepal stood at last place in agriculture product's exports to rest of the world. Further, Coefficient of variation accompanied growth rate in all countries and observed that high coefficient of variation with higher level growth in exports.

The data on the estimated exponential growth rates of agriculture product's imports of SAARC major counties are presented in Table-2. It can be observed that the highest coefficient of variation and growth of imports to Nepal is positive and significant at one percent level during the

study period followed by India and least phase of growth has been observed in Sri Lanka. As per data all counties have been observed significant positive growth in imports besides that Pakistan is noticed high instability and India is found as stable in agriculture product's imports. As per exponential growth, Nepal is most dependent country on rest of the world in SAARC counties for agriculture products and Sri Lanka independent country for agriculture products with least growth rate. Further, Coefficient of variation accompanied growth rates in all countries and observed that high coefficient of variation with higher level growth in imports. During the study period Sri Lanka and Pakistan are noticed low growths, it infer that the country is self-sustain with their agriculture productivity.

| Table -1: Trends in Agriculture Exports of Major SAARC Counties during 2001 to 2015 (US Dollars in Million) | | | | | |
|--|-------------|-----------|-----------|--------------------|--------------------|
| Country | Mean | SD | CV | Growth | Instability |
| Bangladesh | 1057.08 | 497.23 | 47.04 | 0.109* (7.613) | 20.122 |
| India | 21928.20 | 14309.94 | 65.26 | 0.155* (14.698) | 15.580 |
| Nepal | 196.72 | 46.69 | 23.73 | 0.039* (3.858) | 16.044 |
| Pakistan | 3271.26 | 1644.23 | 50.26 | 0.122* (11.599) | 14.910 |
| Sri Lanka | 2094.00 | 770.28 | 36.79 | 0.087* (13.052) | 9.802 |
| Source: Appendix -1 | | | | | |
| Note: * Significant at 1% level. | | | | | |

Table – 2: Trends in Agriculture Imports of Major SAARC Counties during 2001 to 2015 (USD in Million)

| Country | Mean | SD | CV | Growth | Instability |
|------------|----------|---------|-------|---------------------|-------------|
| Bangladesh | 6057.27 | 3524.33 | 58.18 | 0.140* (13.049) | 15.503 |
| India | 14691.62 | 8739.16 | 59.48 | 0.144* (23.722) | 9.021 |
| Nepal | 706.60 | 422.65 | 59.81 | 12.967* (16.214) | 12.967 |
| Pakistan | 4962.32 | 2142.09 | 43.17 | 0.109* (8.362) | 17.104 |
| SriLanka | 1776.34 | 749.20 | 42.18 | 0.096* (13.941) | 10.586 |

Source: Appendix -2

Note: * Significant at 1% level.

Figures in parentheses denote 't' values

Trends in Gross Domestic Product (GDP) of five countries are presented in the Table-3. As shown in the Table the maximum growth rate (exponential) in GDP witnessed by Sri Lanka i.e., 13.3 per cent followed by India 11.1 per cent and Nepal 10.5 per cent while the minimum growth rate is witnessed by Bangladesh i.e., 9.4 per cent during the study period. The trend in GDP increased from 2001 to 2015 in all

counties positively and it is significant. As per instability index, the GDP growth in Bangladesh is observer stable compared to other SAARC nations. There is considerable growth is observed in all selected counties during the time period ranged from 13.3 per cent in Sri Lanka to 9.4 per cent in Bangladesh. Coefficient of variation accompanied with GDP growth rate in all countries and observed that high coefficient of variation have higher level growth.

| Table -3: Trends in GDP of Major SAARC Counties during 2001 to 2015 (US Dollars in Million) | | | | | |
|---|------------|-----------|-------|--------------------|-------------|
| Country | Mean | SD | CV | Growth | Instability |
| Bangladesh | 102946.21 | 44783.97 | 43.50 | 0.094* (31.052) | 4.960 |
| India | 1277510.62 | 572483.88 | 44.81 | 0.111* (18.396) | 8.620 |
| Nepal | 12868.15 | 5714.31 | 44.41 | 0.105* (20.015) | 7.819 |
| Pakistan | 161681.92 | 65579.35 | 40.56 | 0.099* (18.986) | 7.588 |
| SriLanka | 44450.37 | 24500.47 | 55.12 | 0.133* (26.867) | 7.395 |
| Source: Appendix -3 Note: * Significant at 1% level. Figures in parentheses denote 't' values | | | | | |

To test the statistical significance of variations across the selected counties regarding agriculture product's exports and imports, we applied F-test and Kruskal-Wallis Test. Panel A and Panel B of Table - 4 provides the results pertaining from these tests. Panel A presents the results of F-test with the null hypothesis that the estimated mean exports and imports across the counties are same. According to test results, the null hypothesis is rejected and concluded

that there is significant difference regarding exports and imports across the countries. Panel - B provides the results pertaining from Kruskal-Wallis Test. The null hypothesis that the distribution of exports and imports among the selected nations are not different is rejected as calculated test statistic is significant statically with p-value < 0.05. Hence, the study concludes that the distribution of exports and imports among the nations is different in the study period.

| Table – 4 Hypothesis Testing- Agriculture product's Exports and Imports Differences across the Selected Counties | | |
|---|-------------------------------|-------------------------------|
| | Exports | Imports |
| Panel A: ANOVA Test | | |
| <i>H₀: mean of exports and imports is not different across the SAARC major counties</i> | | |
| F-statistics | 30.071* | 24.270* |
| p-value | 0.000 | 0.000 |
| Inference | Rejected H₀ | Rejected H₀ |
| Panel B: Kruskal-Wallis Test | | |
| <i>H₀: The distribution of exports and imports is not different across the SAARC major counties</i> | | |
| Test statistics | 63.745 | 56.413 |
| p-value | 0.000 | 0.000 |
| Inference | Rejected H₀ | Rejected H₀ |
| Source: Appendix -1 & Appendix -2. Note: *Significant at 1 per cent level. | | |

The growth of any economy and distribution of income and wealth in a country are directly associated with exports. Exports play a crucial role in internal trade and economic stability of a country. Moreover, it helps in increasing foreign exchange reserves in a country. The exports of a country are dependent on various factors. Some of these factors are as follows: The prices of domestic goods as compared to prices of goods in importing countries and Income elasticity for import goods in importing countries.

Below Table-5 that the exports elasticity of national income of Bangladesh is 0.687 which means that a one per cent increases in country's exports causes 0.687

per cent increase in GDP. As the 't' values of exports elasticity of national income is significant at one per cent level, exports significantly influence the level of national income. It is found that of exports elasticity of national income is positive. A positive exports elasticity of national income contributes the economic growth of the country. Same kind of results has been observed in all selected counties and exports are positively influencing the national income at significant level in all counties. According to regression results, one per cent increases in agriculture exports causes 0.691 per cent increase in GDP for India, 1.536 per cent increase in GDP for Nepal, 0.765 per cent in

GDP for Pakistan and 1.457 per cent in GDP of Sri Lanka.

| Table - 5: Results of Log linear regression models revealing agriculture products exports elasticity of national income. | | | | |
|---|--------------------|--------------------|-------|----------|
| Country | α | β | R^2 | F-value |
| Bangladesh | 4.817* (4.998) | 0.687* (6.392) | 0.759 | 40.856* |
| India | 4.984* (10.697) | 0.691* (15.193) | 0.947 | 230.825* |
| Nepal | -2.660 (-0.887) | 1.536* (4.245) | 0.581 | 18.022* |
| Pakistan | 3.939* (7.492) | 0.765* (14.587) | 0.942 | 212.788* |
| Sri Lanka | -2.956 (-4.208) | 1.457* (19.274) | 0.966 | 371.505* |
| Source: Appendix -1 & Appendix -3 Note: * Significant at 1% level. Figures in parentheses denote 't' values of coefficients | | | | |

Imports also play an important function in the growth of an economy. It helps in strengthening the global presence of a country. The imports of a country are dependent on various factors. Some of them are as follows: Import prices in relation to domestic prices, Income elasticity of imports, Income levels.

According to Results of Log linear regression models revealing agriculture products income elasticity of imports, the income elasticity of imports of Bangladesh is 1.460 which means that a one per cent increases in country's national income causes 1.46 per cent increase in imports. As the 't' values of income elasticity of imports is significant at one per cent level, imports

of agriculture products significantly depend on the level of national income. It is found that of income elasticity of imports is positive. A positive income elasticity of imports contributes the increase in imports of the country. Same kind of results has been observed in all selected counties and income level of the country is positively influencing imports at significant level in all counties. According to regression results, one per cent increases in income causes 1.272 per cent increase in imports for India, 1.267 per increase in GDP for Nepal, 1.135 per cent in GDP for Pakistan and 0.725 per cent in GDP of Sri Lanka.

| Table - 6: Table - 5: Results of Log linear regression models revealing agriculture products income elasticity of imports | | | | |
|---|---------------------|--------------------|-------|----------|
| Country | α | β | R^2 | F-value |
| Bangladesh | -6.317* (-4.371) | 1.460* (11.086) | 0.904 | 122.896* |
| India | -5.249* (-7.6.3) | 1.272* (22.218) | 0.974 | 493.644* |
| Nepal | -3.979 (-4.106) | 1.267 (13.161) | 0.930 | 173.208* |
| Pakistan | -3.029* (-3.063) | 1.135* (12.822) | 0.927 | 164.391* |
| Sri Lanka | 1.543 (3.821) | 0.725 (18.992) | 0.965 | 360.692* |
| Source: Appendix -2 & Appendix -3 Note: * Significant at 1% level. Figures in parentheses denote 't' values of coefficients | | | | |

Further, a comparison has made between the exports and imports with help of their elasticities. This is evident from the analysis that the imports of Bangladesh ranked at a higher compared to exports result in a decrease in the

GDP. Same kind of state has been observed in India and Pakistan. While the exports of Nepal and Sri Lanka ranked at a higher compared to imports result in an increase in the GDP.

| Table – 7: Elasticity of Agriculture Product's Exports and Imports of SAARC Countries | | | | |
|---|----------------------------------|----------------------------------|----------------|---------------|
| Country | Exports Elasticity of Income (X) | Income elasticity of imports (M) | (X>M) or (X<M) | Effect on GDP |
| Bangladesh | 0.687 | 1.460 | X<M | Decreasing |
| India | 0.691 | 1.272 | X<M | Decreasing |
| Nepal | 1.536 | 1.267 | X>M | Increasing |
| Pakistan | 0.765 | 1.135 | X<M | Decreasing |
| Sri Lanka | 1.457 | 0.724 | X>M | Increasing |
| Source: Table-5 & Table-6 | | | | |

Conclusion

The result of the study reveals that the positive phase of growth and significant variations have been observed across the selected countries regarding to exports and imports. India is performing better regarding exports with highest growth rate per annum followed by Pakistan. Nepal is most dependent country as per imports with highest growth per annum followed by India and Bangladesh. Export elasticity of national income is significant at one per cent level; exports significantly influence the level of national income in all counties. It is found that the exports elasticity of income is positive. A positive exports elasticity of national income contributes the economic growth of the country. Same kind of results has been observed in all selected counties and exports are positively influencing the national income at significant level in all counties. Income elasticity of imports is significant at one per cent level, imports of agriculture products significantly depend on the level of national income. It is found that of income elasticity of imports is positive. A positive income elasticity of imports contributes the increase in imports of the country. Same kind of results has been observed in all selected counties and income level of the country is positively influencing

imports at significant level in all counties. The imports of Bangladesh, India and Pakistan ranked at a higher compared to exports result in a decrease in the GDP and the exports of Nepal and Sri Lanka ranked at a higher compared to imports result in an increase in the GDP.

References

- Kiran. R., Subashini, K. & Nagamani, M.K. (2014). India's Trade with SAARC Countries: An Analysis. *Golden Research Thoughts*, 3(11), 1-4.
- Krishna, P., & Mitra, D. (1998). Trade liberalization, market discipline and productivity growth: new evidence from India. *Journal of development Economics*, 56(2), 447-462.
- Sharma, K. (2013). India's Export Performance under the WTO Regime. Unpublished doctoral thesis, University of Lucknow, Lucknow.
- Sun, P., & Heshmati, A. (2010). International trade and its effects on economic growth in China, Discussion Paper No. 5151
- UN Food and Agriculture Organization. (1995). The State of Food and Agriculture 1995. Economic and Social Development Department, Rome.
- Krishan, B., & Chanchal, A. (2014), "Agricultural Growth and Instability in Western Himalayan Region: An Analysis of Himachal Pradesh, India", *Journal of Agriculture and Life Sciences*, 1(1), 21-27.
- Kothari, C. R. (2004), *Research methodology: Methods and techniques*. New Age International, New Delhi.
- Singh, Y. K. (2006), *Fundamental of research methodology and statistics*. New Age International. New Delhi.
- Gupta, S.P (2007): *Statistical Methods*, Sultan Chand & Sons, New Delhi.
- Daniel L. Fulks and Michael K. Staton (2003): *Business Statistics*, Schaum's outline series. McGraw-Hill Companies, Inc. New Delhi.
- Kanji, G. K. (2006). 100 statistical tests. Sage publications, New Delhi.
- Tague, J., Beheshti, J., & Rees-Potter, L. (1981). The law of exponential growth: evidence, implications and forecasts. *Library Trends*, 30(1), 125-149.
- Gujarathi, D. N. (1988). *Basic Econometrics*, McGraw-Hill, Singapore.

Appendix

| Appendix -1 : Agriculture Product's Exports of SAARC Countries during 2001-2015 (in US dollars) | | | | | |
|--|------------|-------------|-----------|------------|------------|
| Year | Bangladesh | India | Nepal | Pakistan | Sri Lanka |
| 2001 | 380226882 | 6328735628 | 140083307 | 1159709660 | 1059517302 |
| 2002 | 426009301 | 6911414631 | 140760082 | 1208816646 | 1060283322 |
| 2003 | 430563811 | 7205020331 | 141436857 | 1470168648 | 1123451047 |
| 2004 | 615268525 | 8799250972 | 142113632 | 1569599545 | 1252050455 |
| 2005 | 740676493 | 10273710651 | 176959909 | 2155000000 | 1495656977 |
| 2006 | 885563841 | 12452317389 | 173515507 | 2210007964 | 1695490672 |
| 2007 | 1267381357 | 16300759639 | 192628079 | 2327125283 | 2014502894 |
| 2008 | 1562935072 | 21251041997 | 294000000 | 3900537810 | 2326568014 |
| 2009 | 718942761 | 16383589827 | 248156160 | 3208975831 | 2108199873 |
| 2010 | 1012521670 | 23106277573 | 211008013 | 3939500368 | 2561325939 |
| 2011 | 1364852772 | 34491358396 | 198420892 | 5549601942 | 2979994973 |
| 2012 | 1309770213 | 41890150326 | 237587983 | 4978907867 | 2732369638 |
| 2013 | 1625898345 | 44685097711 | 203038993 | 5570965838 | 2913653953 |
| 2014 | 1698034627 | 43466524129 | 252956516 | 5155357107 | 3207578101 |
| 2015 | 1817579309 | 35377704595 | 198081421 | 4664619426 | 2879429327 |
| Source: World Trade Organization data bank | | | | | |

| Appendix -1 : Agriculture Product's Imports of SAARC Countries during 2001-2015 (in US dollars) | | | | | |
|--|-------------|-------------|------------|------------|------------|
| Year | Bangladesh | India | Nepal | Pakistan | Sri Lanka |
| 2001 | 1916687538 | 4512838958 | 210000000 | 1682106645 | 836594015 |
| 2002 | 1907733163 | 4954279337 | 302187814 | 1853873913 | 921304432 |
| 2003 | 2659697652 | 6166845538 | 394375628 | 2115699064 | 948394820 |
| 2004 | 2692637520 | 6822133729 | 314762875 | 2886028770 | 1041501592 |
| 2005 | 2683219993 | 7520129583 | 300811861 | 3655800682 | 1131155637 |
| 2006 | 3719772805 | 7975739637 | 428502314 | 4130920028 | 1337215724 |
| 2007 | 5322206468 | 10658998294 | 519879724 | 4518372879 | 1508350297 |
| 2008 | 6822418442 | 12005306333 | 565200000 | 7102859370 | 2021684211 |
| 2009 | 5096697286 | 14224008383 | 621518846 | 4925155949 | 1594759386 |
| 2010 | 5991601715 | 17863568499 | 791185268 | 6736671503 | 2062752246 |
| 2011 | 11047158375 | 22550681815 | 969540939 | 7352644171 | 2847977882 |
| 2012 | 9158188272 | 25668258000 | 1093628369 | 6523951457 | 2278385269 |
| 2013 | 9938587013 | 24417552000 | 1312110711 | 6332280445 | 2365439873 |
| 2014 | 11327460939 | 27315616000 | 1474542582 | 7434758201 | 2844900668 |
| 2015 | 10575046138 | 27718290000 | 1300809320 | 7183626478 | 2904656650 |
| Source: World Trade Organization data bank | | | | | |

| Appendix -I : Gross Domestic Product (GDP) of SAARC Countries during 2001-2015 (in US dollars) | | | | | |
|---|-----------------|------------------|----------------|-----------------|----------------|
| 2001 | 53991289844.33 | 493954161367.56 | 6007061224.49 | 72309738921.33 | 15746229581.56 |
| 2002 | 54724081490.51 | 523968381476.72 | 6050875806.66 | 72306820396.23 | 16536535647.08 |
| 2003 | 60158929188.26 | 618356467437.03 | 6330473096.54 | 83244801092.71 | 18881765437.22 |
| 2004 | 65108544250.04 | 721584805204.78 | 7273938314.72 | 97977766197.67 | 20662525941.30 |
| 2005 | 69442943089.43 | 834214699568.14 | 8130258041.47 | 109502102510.88 | 24406252456.51 |
| 2006 | 71819083683.74 | 949116769619.55 | 9043715355.89 | 137264061106.04 | 28279814924.59 |
| 2007 | 79611888213.15 | 1201071960529.75 | 10325618017.38 | 152385716311.92 | 32350248410.82 |
| 2008 | 91631278239.32 | 1186913419021.34 | 12545438605.40 | 170077814106.31 | 40713812309.73 |
| 2009 | 102477791472.39 | 1323896417147.06 | 12854985464.08 | 168152775283.03 | 42066217871.53 |
| 2010 | 115279077465.23 | 1656562168648.57 | 16002656434.47 | 177406854514.89 | 56725745039.34 |
| 2011 | 128637938711.39 | 1822989507290.05 | 18850169891.67 | 213587413184.00 | 65292741296.54 |
| 2012 | 133355749482.48 | 1828985283085.00 | 19206631648.97 | 224383620829.57 | 68434399083.41 |
| 2013 | 149990451022.29 | 1863208343557.81 | 19393541020.22 | 231218567178.98 | 74317806754.53 |
| 2014 | 172885454931.45 | 2042438591343.98 | 19811974851.55 | 244360888750.81 | 80025305461.58 |
| 2015 | 195078665827.57 | 2095398349095.54 | 21194888047.83 | 271049886672.73 | 82316172384.33 |

The Role of Demographics Variables in Online Shopping- An Exploratory Study

Rathod Jaipal, School of Business Studies,
Central University of Karnataka, Karnataka.
E mail: rathodphd@gmail.com.

D. Vinay Singh, Student of Business
Management, Department of Business
Management, Malla Reddy College of
Engineering, Hyderabad.
E-Mail: diguvavinaysingh@gmail.com

P. Uttam Kumar, Student of Business
Management, Department of Business
Management, Malla Reddy College of
Engineering, Hyderabad. E-Mail:
uttampothonaboina666@gmail.com

Abstract: Online shopping is a phenomenon in the wake of the emergence of Electronic Retailing and is considered to influence the future of shopping. The internet is fast becoming an integral feature of our day-to-day lives. Online shopping allows users to perform transactions 24 hours a day, all round the year, from almost any place. Vast amounts of product information on the web, increasing internet penetration, availability of multiple payment options, increasing usage of smartphones and changing lifestyles of customers are some of the factors that have contributed to the growth of electronic retailing in India. In addition to that online shopping is affected by factors like features of online shopping sites, policies of e-retailers, technological factors, and security factors.

The present research paper has carried out an exploratory study to depict and highlight the relationship between various demographic characteristics like age, gender, income, education,

marital status and occupation of consumers and online shopping in the Indian context. The study is purely empirical in nature

Keywords: Demographics, Online Shopping, Technology factors, internet penetration and payments options.

Introduction

Online shopping is a growing phenomenon developing due to the emergence of Electronic Retailing influencing the future of shopping. The Internet is fast becoming an integral feature of our day-to-day lives. There is a huge potential to purchase goods and services through the Internet (Cheung and Lee, 2006). On the one hand, Internet shopping allows users to perform transactions 24 hours a day, all year round, from almost any place, while on the contrary, the vast amount of product information on the web presents significant challenges to users (Huang et al., 2003). Most of the

companies are maintaining their online shopping portals to sell their product/services. Increasing Internet penetration, availability of multiple payment options increased usage of smartphones and changed lifestyles of customers are some of the factors that have contributed to the growth of electronic retailing in India.

Customer perceptions towards online purchasing are affected by a variety of factors like user-friendliness, expediency, situational factors, product exclusivity, previous online shopping perception and confidence in online purchasing mode (Rastogi, 2010). Though online shopping is very common outside India, its growth in the Indian market, which has a huge potential, is still not in line with the global market. The potential growth of online shopping has triggered the idea of conducting a study on online shopping in the Indian context. College students are easily identifiable by their typical age of under 25, their membership in the Millennial generation, and their college affiliation (Davis and Bauman, 2011; Pew Research Center, 2010).

The e-commerce business in India is expected to reach around \$50-70 billion by 2020 on the back of a fast-growing Internet-connected population and improvement in related infrastructures like payment and delivery systems. Electronic retailers believe perceptions of Indian consumers and their shopping patterns are changing very fast. Online shopping is expected to become mainstream in the coming five to six years, with smart mobiles phones being the biggest online shopping driver in the coming years. It

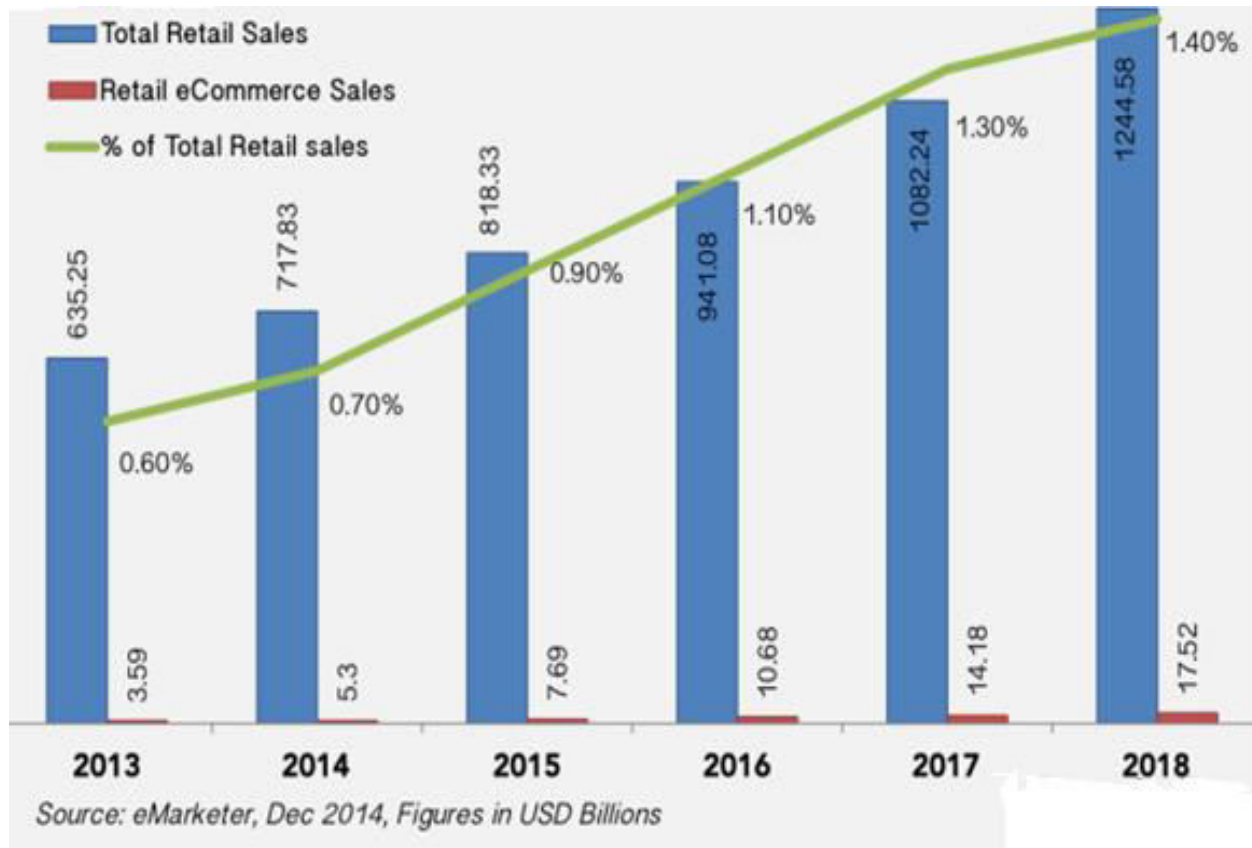
is also expected that over half a billion Indians will switch to smartphones in the next five- six years which would be a big boost to e-commerce in India.

According to the joint report by KPMG and IAMAI (2013), only around 10,000 out of the more than 150,000 pin codes in the country are covered by courier companies. The penetration of courier services is essential to boost online shopping as deliveries are mostly done through them. The size of India's e-commerce market in 2013 was pegged around \$13 billion, out of which online travel segments contributed over 70 percent of the total consumer e-commerce transactions last year.

According to IMRB Report (2013), e-commerce market has grown and reached to the level of INR 47,349 crores by 2012. This growth is primarily driven by the online travel industry, which contributes 76% to total net commerce industry in India. E-tailing comprising of buying consumer items such as cameras, computers, home and kitchen appliances, flowers and toys, online takes the second position with 7.82% share.

In 2013, trends of online shopping had witnessed a significant change with 85% rise in online trends over the regular shopping than last year (65%), reveals ASSOCHAM latest paper. The survey highlights that 35% of regular shoppers are in 18- 25 age group, 55% in 26-35, 8% in 36-45 and 2% in the age group of 45-60. 65% of Online Shoppers are male as against 35% female.

Figure 1.1 Total Retail and E-Commerce Sales in India (2013 – 18)



Source: Economic times of India (Bangalore e-paper) report.

The above figure:1 discussed the trends of the e-commerce from the period of 2013-to 2018. The percentage of total sale has been increasing from 0.60% to 1.40%, and total e-commerce sale has grown from 3.59 USD\$ to 17.52USD\$ from 2013 to 2018, and finally, the total sale of retail in India is from 635.25 USD\$ to 1244.58 USD\$.

Literature review

Hernandez et al. (2011) in a study “Age, gender, and income do them moderate online shopping behavior?” analyzed whether individuals’ demographic characteristics – age, gender and

income- influence their online shopping behavior. Many studies have been tried evaluating the online shopping tendencies based on gender. Although there was no significant difference between online shoppers and non-shoppers regarding gender as Men’s perceptions of online shopping were approximately the same. (Alreck, P. and Settle, R. B., 2002),

Most of the past research on demographic factors has focused on examination of the impact of education, age, gender and income variables on e-commerce adoption (Moschis et al., 1985; Jarvenpaa and Todd, 1996; Li et al, 1999; Lynch and Beck, 2001; Li and

Zhang, 2002; Ramayah and Jantan, 2003; Park and Jun 2003; Dillon and Reif, 2004; Yang, 2005; Slyke et al, 2005; Richards and Shen, 2006; Rotem-Mindali and Salomon, 2007). These researchers reveal that education, gender, and age are robust predictors of online buying status (frequent online buyer, occasional online buyer, or non-online buyer). In general, it has been found that online shoppers tend to be young, better educated, innovators and heavy users of technology. Research that attempts to understand post-adoption behaviors has found that demographics, attitudes, perceptions and search activities and purchase history, all impact repurchase and replacement purchases of previously adopted products (Bayus, 1991; Kim et al., 2001; Grewal et al., 2004).

Dahiya Richa., 2012). Suggested that in her studies there is no significance difference between age, gender, income and education of the consumer towards online shopping. Research that attempts to understand post-adoption behaviors has found that demographics, attitudes, perceptions and search activities and purchase history, all impact repurchase and replacement purchases of previously adopted products (Bayus, 1991; Kim et al., 2001; Grewal et al., 2004). Another study attempts to determine the importance of socioeconomic user characteristics such as age, gender, educational level, place of residence and income. These following characteristics have been commonly employed in the field of marketing for purposes of market segmentation and may explain changes in the behavior tested (Venkatesh et al., 2003; Bigne et al., 2005).

Case et al. (2001) suggested that Internet knowledge, income, and education level were particularly

powerful predictors of Internet purchases among university students. Mishra S. (2009) also suggested that age and income shows a significant association with purchasing attitude. Banerjee et al. (2010) revealed that online shopping is significantly related to family income and frequency of Internet usages and Internet users with high disposable monthly income are more likely to engage in online shopping. Thus, various demographic variables like age and income have a preliminary positive impact on online shopping behavior of individuals. Gender also plays an important role in online shopping. Females have more interest and confidence while using the Internet as compared to male Internet users.

Perception of online shoppers is independent of their age and gender but dependent on their qualification and gender also income and gender (Zia UIHaq, 2010) The studies on gender and family income reported that gender and family income had a significant relationship with overall attitude (Ahasanul Haque, 2006). The youngsters having 18-25 years age groups, both males and females, use the Internet heavily and more adapted to Internet shopping (Almousa, 2011). On the contrary, the studies on gender analysis reported that there is no any significant difference between male and female online buyers. (Srikanth Beldona, 2011).

Regarding frequency of online shopping, result reveals that gender and frequency of online shopping are independent of each other. (Nabil Tamimi, 2004) Consistent results with no any statistically significant differences in gender are observed in online behaviors and Attitudes. (Yet Mee Lim, 2010). For most women, shopping is a leisure activity whereas men perceive shopping as goal-directed. Men perceive shopping Web sites to be time-saving,

convenient, and offering flexibility to shop at any time of the day (Arpita Khare, 2011). When online buyers attitude is concerned, it shows that male students have more positive than female students. (Acilar, 2012).

Product Preferences in Online Shopping

Previous studies on “Low-touch” products/services like computer software, airline ticket, etc. revealed that customers tend to choose the online purchasing due to the advantage of quick delivery. Levin et.al, (2005), opined that because the feedback provided by others about the product, also works as a determinant for selecting online purchasing by the consumers. The online website channels are providing a broad range of goods catalogs of electronic products and non-electronic products for the consumer in e-market.

Problem Statement

Market segmentation is defined as “Dividing a market into smaller segments of buyers with distinct needs, characteristics, or behaviors that might require separate marketing strategies or mixes” (Kotler and Armstrong, 2011, p. 190).

The bases for market segmentation include demographics, geographic locations; psychographics, etc. There have been very few studies that have examined the differences between students and nonstudents behavior and perceptions towards online shopping. This study essentially reflects the need for segmenting online retail markets. Online retailing or e-retailing is an emerging phenomenon in the Indian context, which is challenging the existing traditional formats. With the ever-increasing deployment of information technology in traditional business channels, this information is essential to academic researchers and online retailers.

Managerial Implications

Online shopping has shifted customers’ attention from visiting physical stores for making purchases to searching for and ordering products/ services over the Internet. Online shopping also influenced their purchasing decision process. Online retailing is considered as an emerging area of electronic commerce that would change the retailing landscape. The study would generate information that would give insights to managers in the areas of choices made by customers during online shopping, the role of demographics in online shopping, etc., which would provide insights into market segmentation.

Research questions

In this study, the research questions addressed are related to the determination of factors influencing online shopping. In this research respondents were customers who used online shopping from two categories - students and non-students (employees, professionals, own business, etc.). As the research attempts to determine the role of demographics in online purchasing the preferences of respondents while making online purchasing in the choice of the products is collected. The specific research questions are as follows:

1. What factors influence the customer’s decisions to purchase online?
2. Do demographic factors influence online purchase decisions?
3. Does preference of product depend on consumer demographic parameters like age, gender, income, education, etc.?

Objectives of the Study

The purpose of this study is to explore online shopping behavior of various customer segments based on demographic segmentation. The research attempts to provide detailed information about the

online shopping behavior and product preferences of university students and employees of different organizations. To attain this purpose, the following objective was proposed:

1. To study the different demographic parameters like (Age, Gender, Income, Education, etc.) impacting online shopping by consumers in India.

Research Hypothesis

H1.1: Demographic variables (age, gender, income education, etc.) influence the consumer's preference towards online shopping.

H1. A: There is a significant relationship between age of the consumers and online shopping.

H1. B: There is a significant relationship between gender of consumers and online shopping.

H1.c: There is a significant relationship between income of consumers and online shopping

H1. d: There is a significant relationship between education of consumers and online shopping.

Research Methodology

The present study is on the role of demographic in online shopping in the Indian context. The study adopts both qualitative and quantitative approaches. The exploratory study was done through existing literature that helped in identification of key variables and factors. The present study collected data from relevant primary sources with the support of a structured questionnaire. Respondents included students (pursuing courses like M.Phil., Ph.D., PG and undergraduate courses) and non-students (professionals, employees, people in business, etc.) from various regions of Greater Hyderabad Municipal Corporation. The questionnaire was distributed to those who have done at least one transaction on any electronic retailer's website. The

questionnaire was pilot-tested on a sample of 50 respondents to ensure the validity of the survey instrument. The secondary sources were collected through websites, books, articles, literature and daily economic time's paper reports of online shopping, etc.

Sample size and sampling technique

The questionnaire was distributed to 400 respondents. However, after elimination of incomplete responses, unreturned questionnaires and invalid responses, the sample size for analysis arrived at 311. The respondents for questionnaire were selected in the Hyderabad city. The student has been chosen from the University of Hyderabad, a Central University. The non-students have been chosen from the Hyderabad city. The Hyderabad city is heterogeneous with different types of professional and organizations with high-bandwidth Internet infrastructure. Both the University and the city are cosmopolitan in nature and may be considered as a cluster with similar characteristics as India.

Present study adopted the non-probability sampling technique, i.e., purposive sampling. The purposive sampling method is one which is selected for more interactive with the consumer to get the data.

The purposive sampling was based on following parameters:

- The sample comprised of consumers those who have done online shopping at least once in their shopping duration in life.
- The sample comprised of consumers whose minimum educational qualification was Graduation.

Statistical Tool

A structured questionnaire was designed to capture demographic information of the respondents, their

online shopping patterns, preference of online shopping channel, product categories, perceptions of respondents towards online shopping, etc. Likert five-point rating scale ranging from “Strongly Disagree” to “Strongly Agree” was used to measure the consumer preference to purchase products and perceptions towards online shopping. Respondents were asked to choose their options on a five-point Likert scale (1= Strongly Disagree, 2= Disagree, 3= Neutral, 4=Agree and 5= Strongly Agree). These were used for the data analysis.

The data was analyzed by using SPSS 16.0 software. As per requirements of the study, reliability tests were conducted, and only those dimensions that met the requirements of reliability have been considered for further analysis. The descriptive statistics, Chi-square test, was done for collected data.

Results and Discussions

Online shopping was measured as responses of consumers toward the purchase of the different type of product on the consumer experience.

Table.1 Demographic variables Vs. Expected Benefits of Online Shopping

| S.No. | Demographic Variables | Chi-Square value | (Sig. Value) | Null Hypothesis Status (at $\alpha=0.05$) |
|-------|-----------------------|------------------|--------------|--|
| 1 | Age | 16.383 | .037 | Rejected |
| 2 | Gender | 0.413 | .981 | Not Rejected |
| 3 | Income | 27.380 | .287 | Not Rejected |
| 4 | Education | 2.334 | .969 | Not Rejected |
| 5 | Marital Status | 2.606 | .626 | Not Rejected |
| 6 | Occupation | 2.022 | .732 | Not Rejected |

Table:1 shows the chi-square results for the cross tabulation between demographic variables and expected benefits of online shopping. The anticipated benefits include parameters like saving of time in shopping, product variety in online shopping,

availability of discounts, etc. The results indicate that all the demographic variables (except for the age of the respondents) have no significant relationship with the benefits expected from online shopping.

Table: 2 Demographic Variables vs. Expected Post Order Attributes

| S. No | Demographic Variables | Chi-Square Value | (Sig. Value) | Null Hypothesis Status (at $\alpha=0.05$) |
|-------|-----------------------|------------------|--------------|--|
| 1 | Age | 22.279 | .900 | Not Rejected |
| 2 | Gender | 53.785 | .000 | Rejected |
| 3 | Income | 1.014 | .333 | Not Rejected |
| 4 | Education | 26.289 | .751 | Not Rejected |
| 5 | Marital Status | 16.787 | .400 | Not Rejected |

| | | | | |
|---|------------|--------|------|--------------|
| 6 | Occupation | 15.025 | .523 | Not Rejected |
|---|------------|--------|------|--------------|

Table: 2 shows the chi-square results for the cross tabulation between demographic variables and Post order attributes in online shopping include parameters like time duration involved from placing the order and the physical delivery of the product, post order tracking facility, ease of return of the

product in case of any damage, etc. The results indicate except for the demographic variable gender, the other demographic variables like age, income, education, marital status, and occupation have no significant relationship with the post order attributes considered by the respondents.

Table: 3 Demographic Variables vs. Concerns in Online Transaction

| S. No | Demographic Variables | Chi-Square Value | (Sig. Value) | Null Hypothesis Status (at $\alpha=0.05$) |
|-------|-----------------------|------------------|--------------|--|
| 1 | Age | 13.468 | .958 | Not Rejected |
| 2 | Gender | 18.279 | .107 | Not Rejected |
| 3 | Income | 62.660 | .776 | Not Rejected |
| 4 | Education | 24.797 | .417 | Not Rejected |
| 5 | Marital Status | 15.875 | .197 | Not Rejected |
| 6 | Occupation | 9.506 | .659 | Not Rejected |

Table, 3 shows the chi-square results for the cross tabulation between demographic variables and Online transaction concerns include security of personal details in online transactions, safety in the payment process, and ease of performing an online

transaction (placing an order). The results indicate that there is no significant relationship between demographic variables and concerns in online transactions.

Table: 4 Demographic Variables vs. Quality of Online Products

| S. No | Demographic Variables | Chi-Square Value | (Sig. Value) | Null Hypothesis Status (at $\alpha=0.05$) |
|-------|-----------------------|------------------|--------------|--|
| 1 | Age | 32.178 | .123 | Not Rejected |
| 2 | Gender | 33.849 | 0.01 | Rejected |
| 3 | Income | 61.380 | .810 | Not Rejected |
| 4 | Education | 28.711 | .231 | Not Rejected |

| | | | | |
|---|----------------|--------|------|--------------|
| 5 | Marital Status | 14.516 | .269 | Not Rejected |
| 6 | Occupation | 17.831 | .121 | Not Rejected |

Table: 4, the results indicate that there is a significant relationship between the gender and the perceived quality of online products. Other demographic

variables like age, income, education, occupation have no significant relationship with the perceived quality of goods purchased online.

Table: 5 Demographic Variables and Perceived Ease of Making Payments

| S. No | Demographic Variables | Chi-Square Value | (Sig. Value) | Null Hypothesis Status (at $\alpha=0.05$) |
|-------|-----------------------|------------------|--------------|--|
| 1 | Age | 8.439 | .392 | Not Rejected |
| 2 | Gender | 3.476 | .481 | Not Rejected |
| 3 | Income | 45.200 | .006 | Rejected |
| 4 | Education | 10.700 | .219 | Not Rejected |
| 5 | Marital Status | 2.487 | .647 | Not Rejected |
| 6 | Occupation | 8.705 | .069 | Not Rejected |

Table: 5, the results indicate that income of the respondents has a significant relationship with perceived ease of making payments. The other demographic variables have no significant relationship with perceived ease and security of payments.

Limitations of the study

The limitations of the study are as follows:

- The present study has been confined to Hyderabad metro city, Telangana, India.
- E-tailers perceptions are not captured.

- The study only explores the role of demographic variables issues in online retailing.

Conclusion

The advent of information technology coupled with the adaptation of Internet (which is yet to reach its full potential) by customers has paved the way for online retailing. Online retailing offers opportunities and challenges for the customers as well retailers. The traditional retailing formats are bound to undergo a radical change in the wake of online retailing. While online retailing promises to deliver greater value to the customers (it does not require a huge investment in physical retail space in prime locations), it also poses challenges to the retailers, regarding ensuring secure transaction procedures,

managing seamless supply chain and efficient logistics systems.

The customers of online retailing expect the convenience of shopping with the click of a button (without the need to move from the home, facing heavy traffic, dealing with parking space, etc.) making price comparisons online and search across a wide variety of product assortments in the virtual space. However, the customers also face the challenges of dealing with unknown retailers making online payments and ordering products which they can only feel and touch after the physical delivery of the product. Given the vast potential of electronic retailing especially in the context of Indian environment which constitutes a higher percentage of the younger population, the role of demographics in online purchasing should be carefully analyzed for the success of online retailing. This would enable the retailers to understand the needs and concerns of various target groups and accordingly offer the services.

References:

- Adeline Chua Phaik Harn, Ali.Khatibi and Hishamuddin bin Ismail, (2006) E-Commerce: A Study on Online Shopping in Malaysia, J. Soc. Sci., 13(3): 231-242.
- Amit Bhatnagar (2007), "Do determinants of online shopping differ for personal shoppers and professional shoppers." EuroMed Journal of Business Vol. 2 No. 1, pp. 87-102
- Arun Thamizhvanan and M.J. Xavier, (2013), Determinants of customers' online purchase intention an empirical study in India. "Journal of Indian Business Research Vol.5 No.1, pp.17-32
- Assocham & IMRB, Survey reports on demographic variables in online shopping in the Indian context, (2013).
- Baljeet Kaur, and Sushila Madan. (2013), "Identifying Customers' Preference of Trust Factors in Adoption of B2C E-Commerce in India". International Journal of Computer Science and Technology, IJCST Vol. 4, Issue 2, ISSN: 0976-8491
- Blanca Hernandez, Julio Jimenez and M. Jose Martin, (2011), Age, gender, and income: do they moderate online shopping behavior". Online Information Review Vol.35 No.1, pp.113-133
- Chee Wei Phang, Atreyi Kankanhalli, Karthik Ramakrishna and Krishnamurthy S. Raman. (2010) Customers' preference of online store visit strategies: an investigation of demographic variables. European Journal of Information Systems pp. 344-358
- Chuan lain Liu & Sandra Forsythe, (2010) Post-adoption online shopping continuance, International Journal of Retail & Distribution Management Vol. 38 No. 2, pp. 97-114.
- Dr. Gagandeep Nagra and Dr. Gopal, (2013). A study of Factors Affecting on Online Shopping Behavior of Consumers. International Journal of Scientific and Research Publications, Volume 3, Issue 6, ISSN 2250-3153
- Economic times of India (Bangalore e-paper) report 10th October 2014.
- Ellisavet, Lazaros Sarigiannidis, and Dimitrios Maditinos. (2011) Consumer characteristics and their effect on accepting online shopping, in the

- context of different product types. *Int. Journal of Business Science and Applied Management*, Volume 6, Issue 2,
- Google India., (2013) survey reports on online-shopping in the Indian context.
- Ian Phau and Sui Meng Poon, (2000) Factors influencing the types of products and services purchased over the Internet. *Internet Research: Electronic Networking Applications and Policy* Volume 10. Number 2. pp. 102-113, MCB University Press. ISSN 1066-2243
- Internet & Mobile Association of India (IAMAI), Report 2013.
- Kenneth C. Gehrt and Mahesh N. Rajan, G. Shainesh, David Czerwinski, and Matthew O'Brien, (2011) Emergence of online shopping in India: shopping orientation segments, *International Journal of Retail & Distribution Management* Vol. 40 No. 10, 2012 Pp. 742-758
- Kotler, P. & Gary Armstrong, (2005). 5th Edition *Principles of Marketing*, Prentice Hall of India
- Ling (Alice) Jiang, Zhilin Yang, and Minjoon Jun, (2013) Measuring consumer perceptions of online shopping convenience. *Journal of Service Management* Vol. 24 No. 2, pp. 191-214
- Manish Dwivedi, Kumawat Mahesh, and Verma Sanjeev, (2012) Online Retailing in India: Opportunities and Challenges. *International Journal of Engineering and Management Science IJEMS*, Vol.3 ISSN 2229-6425
- Namita Bhandari and Preeti Kaushal, (2013) Online Consumer Behavior: An Exploratory Study. *GJCMP*, Vol. 2(4):98-107, ISSN: 2319 – 728599
- Natalie Clewely, Sherry Y. Chen and Xiaohui. (2009) Credibility of Internet shopping, *Online Information Review* Vol.33 No.4, pp.805-826
- Strauss Frost (2012).5th Edition *Electronic retailing*, Prentice Hall of India
- Subrata Ray and Dipanjan Moitra. (2012) Preference of Online Purchasing Portals for Shopping by the Consumers of West Bengal: An Empirical Study, *SIT Journal of Management* Vol. No. 2. pp. 1- 16 ISSN: 2278-9111.
- Talal Al-Maghrabi & Charles Dennis. (2011) What drives consumers' continuance intention to e-shopping? Conceptual framework and managerial implications in the case of Saudi Arabia, *International Journal of Retail & Distribution Management* Vol. 39 No. 12, pp. 899-926.
- Tonita Pereay Monsuwe Benedict G.C. Dellaert and Kode Ruyter., (2004) what drives consumers to shop online? A literature review, *International Journal of Service Industry Management* Vol. 15 No. 1, pp. 102-121
- Youngjin Bahng, Doris H. Kincade, and Jung-ha (Jennifer) Yang. (2013) College students' apparel shopping orientation and brand/product preferences. *Journal of Fashion Marketing and Management* Vol. 17 No. 3, pp. 367-384

Corporate Social Responsibility for Livelihood Development in Rural India

Dr. D. Satishbabu, Professor, Department of Business Management, Sri Chaitanya Techno Campus, Hyderabad.

Email : satishbabuphd@gmail.com

K. Srishailam, Student of Business Management, Dept. of Business Management, Malla Reddy College of Engineering, Hyderabad.

K. Karthik, Student of Business Management, Dept. of Business Management, Malla Reddy College of Engineering, Hyderabad.

Abstract: Over 68% of the aggregate populace of India live in rustic ranges and relies upon agribusiness. Today provincial India is experiencing a few issues like horticulture, infrastructural improvement, financial conditions .it is imperative to deliver the issues identified with foundation, correspondence, and other open utility administrations over the rustic India. Country advancement in India pivots issues identified with agribusiness, financial measures, and framework. Thus, it is important to deliver the issues identified with Infrastructure, Public utility administrations, and Communication. The foremost to enhance Health, Education and clean living space are building up the infrastructural office, open utility administrations, and correspondence. The primary point of this sort of improvement is to produce potential work openings in

country zones. Since India is a horticultural nation thus, over 60% of provincial individuals rely upon it for work. Henceforth, a feasible agribusiness advancement is important to build up a stable financial action. The significant issues in country advancement are absence of infrastructural offices, open comfort administrations and correspondence. Because of this the advance in training and work is impeding reliably. Poor financial status and un-clean living spots and principles are prompting wellbeing related debate. Henceforth, social venture is fundamental in country zone as corporate social obligation.

Keywords: Social Responsibility, Livelihood Development, Corporate Social Responsibility

INTRODUCTION

CSR “a way companies manage the business processes to produce an overall positive impact on society.” The three words ‘Corporate,’ ‘social,’ and ‘responsibility.’ Rural development in India consists around sustainable agriculture and livelihood in subsidiary enterprises with a better socioeconomic because 65% of country’s population lives in rural villages. However, the government’s efforts to grow rural economy and the change are slow for reasons of poor acceptance by farmers, poor policy implementation and lack coherent thinking among stakeholders. Rural development envisages providing urban facilities like health, education and employment opportunities in villages. An enormous human resource is available in rural area which needs to be deployed in constructive job for making rural economy effectively. Indian agriculture contributes less than 15% to the GDP even though the share of agriculture in rural employment is 65%. The population below poverty line constitutes 23% percent. The issues plaguing rural development are poor on farm income, employment, infrastructure and health. This articles address regarding rural demography and issues related to the development in the

light of recent Corporate Social Responsibility bill.

Objectives

- Concentrating on significances of the livelihood
- Emphasis on economic real life for treating CSR as an individual from which earnings are expected
- Improving available resources by verifying that services are supported

RESEARCH METHODOLOGY

It is based on secondary data acquired from various data sources available. Author has used several published journal and records and web resources to frame the comparative conclusion. This article throws light on the importance of corporate social responsibility in context to rural India. This paper put emphasis on social investment for the development of rural India.

CSR LIVELIHOOD DEVELOPMENT IN INDIA

Corporate are operated in rural area for gaining profit but they are equally responsible towards the society and its betterment. The current opportunity of huge funding in the form of social investment by corporate houses under the new law a change can be made if proper investment policy envisaged under UNO charter of “Millennium development goals” is adhered to. Social investments in rural areas can be in the form of agricultural system advancement and related livelihood, Community development etc. Agriculture which is the back bone of rural development needs a lot of support to increase the farm income. Social investments in terms of creating knowledge parks for updating the knowledge on improved agricultural practices and cultivation of high value crops will enhance farm income and on-farm employment.

In other important area for social investments is to establish small scale industries and village based industries which can employ major rural population in both in season and nonperson for boosting the income. Social investments in the area of information and skill development will improve the yields and profits with more rural livelihoods. Information technology can be effectively utilized to provide the

services in rural areas. Health which is seen as index of development needs an effective delivery system. Social investments can also be done in health sector by establishing rural health care units, conducting health camps to prevent major diseases. Information kiosks can be established by training the rural youth for delivering various services at the rural level.

Training rural women in value addition to the farm produce and by creating market opportunities will help in addressing gender issues in rural areas. A better infrastructure in rural areas can build the rural economy making easy access to all the available services. Social investments in making of infrastructure help in providing urban facilities in rural area and also, prevent the urban migration in search of livelihood. Ultimately, in rural area there are many factors which delay the development of rural area and its improvement. Hence, proper planning and government’s policy need to be framed and lawful policies should be made in response to Social investment.

FINDINGS

The supported system with diverse agro climate situations, agriculture can offer

economic incentives if it is done with appropriate planning, policies and procedures. The change in this sector is necessary to overcome present agricultural system and make it more profitable commercial venture for more on farm employment and sustainable economic development. Widening new and advanced technology for bringing in high value crop system is the order of the day to improve the agriculture. A differentiated agriculture system in place of traditional one pays more in times of weather temperaments and crop failure, a kind of insurance to the farmer. In certain cases poor yields and losses due to pests and diseases is due to lack of knowledge, poor storage and lack of skills to add value calculation wherever possible.

Conclusion

Corporate Social Responsibility is not a short-lived trend, it is a business imperative that many Indian companies are either beginning to think about or are engaging with in one way or another. While some of these initiatives may be labeled as corporate citizenship by some organizations, their basic message and purpose is the same. A successfully implemented CSR strategy calls for aligning these initiatives with business objectives and corporate values

thereby integrating corporate responsibility across the business functions and enhancing business reputation. The challenge for us is to apply fundamental business principles to make CSR sharper, smarter, and focused on what really matters.

REFERENCES

- i. Wikipedia.org/Corporate social responsibility
- ii. Ministry of Corporate Govt. of India
- iii. Rural Health Statistics in India 2016
- iv. Ministry of Rural Development, Govt. of India
- v. Ministry of Health and Family Welfare. Government of India,

INTELLECTUAL PROPERTY ISSUES IN MODERN LIBRARY ENVIRONMENT

K. Sridevi¹

R. Lalitha²,

Dr. G. A. Prasad Rao³, *Member, IEEE*

Abstract— IPR is very delicate, subtle and sensitive issue. The aim of intellectual property system is to make it an engine of growth and development and cater to the needs of teeming millions around the world. It is meant to play a big role; the question arises whether IPR system would really be helpful in achieving these targets? Will the day ever dawn in the developing countries, when poverty will be eliminated, diseases will vanish, our cultural heritage will be intact, quality education will be accessible to all and food insecurity will be a thing of the past? Or they will remain pious hopes and dreams for the developing countries.

I. INTRODUCTION

Information makes intellectual property (IP). Any piece of information is produced or created, consumes lot of efforts and time. The Cost factor is also involved with the creation or production of information. The term IP means the reward of the creativity of the mental faculty of a man in various fields and ideas. The IP comprises of human intellect, ideas, inventions, works, music, theatre or art and literary works etc.. The IP is an invisible and intangible property emanating from the activities and practices of the human intellect.

In ancient days creative persons like artists, musicians and writers made, composed or wrote their works for fame and recognition rather than to earn their bread, thus the question of intellectual property never arose. The importance of IP rights was recognized only after the invention of the Printing press, which made possible the reproduction of books in large quantities. The items like books, periodicals, pamphlets, archives, Data base, the internet sources, computer software and hard ware also covered under IP. The latest scientific inventions and technological developments in Information Technology (IT) are also the elements of IP.

The ability of computer to share data with other computers with the help of networking has led to a major telecommunication revolution. Electronic data consists of text, images, voice and programs. The present day data transmission is far superior in terms of speed, quality, visuals, utility, impact and convenience. Internet is global in nature it is a fact that the growth and spread of Internet has become an important yardstick for measuring the growth and strength of any economy. Networking has led to the concept of Cyber space. At present Internet is the most suitable medium for global trade and exchange of services. The services available in the Internet include

Software, entertainment, information products and professional service. Commerce on Internet involves the sale licensing of Intellectual Property.

INTELLECTUAL PROPERTY RIGHTS:

Intelligence has historically been conceptualized as a more or less fixed trait. This view perceives intelligence as something people are born with, and the function of development is to allow this genetic endowment to express itself. The comprehensive legal protection for IP is a concept of 18th century. International protection of IP rights was first addressed in treaties beginning in the late 19th century. The Berne Convention of 1886 protected artistic and literary works among the members' countries. Through the Berne Convention, many International treaties addressed intellectual property rights (IPR), based in Geneva, Switzerland, administers some of these treaties. The World Trade Organization (WTO) has offered its own definition that "Intellectual property rights are right given to people over the creation of their minds". It goes on, to state that "Creators can be given the rights to prevent other form using their invention, designs or other creations".

The concept of IPR is both interesting and challenging. IPR allows people to own their creativity and innovation in the same way that they can own physical property. The owner of IP can control and be rewarded for its use, and this encourages further innovation and creativity to the benefit of everyone. The governments have initiated laws to protect the intellectual property through Patents, Trademarks, Copyright, and Domain names, etc. and amended them to suit the digital environment. "Cyber laws can include individual laws pertaining to the use of digital signatures, cryptography law, privacy law, digital IPRs and digital money laundering, etc., "(Laxman Moorthy) At the international level World Intellectual Property Organization plays a vital role in making the 110 member countries to establish IPR laws. The WIPONET addresses the problems on technologies and related standards. General Agreement on Trade and Tariff (GATT) signed by 130 countries has an agreement on Trade Related Intellectual Property Rights (TRIPS). Another initiative is Global Information Infrastructure (GII) (VISWANATHAN). The GII Committee urges international harmonization of IPR legislations. The GII Committee has recommended that the existing intellectual property laws be revamped in order to adopt the future development of technology.

IPR IN MODERN LIBRARIES:

Technological advance has produced an ongoing race between new methods of collecting intelligence and new techniques of protecting information. IPR issues in IT era have assumed significance, as there is radical shift in the ability to produce, publish, control and distribute information. Digital trademarks and copyright protection has become a hornet's nest since the commercialization of World Wide Web (WWW). Here the issue of privacy in the digital environment is an important and vital subject, where unauthorized public disclosure is the major areas of concern. The IPR issue in digital environment is more of concern because:

- It is easy to capture, store, process and redistribute digital information.
- It is impossible to observe or keep a track of trademarks and copy right infractions in the digital environment.
- It is simple to download any information value to the original creator if one has a multimedia computer and Internet account.
- Internet is a public information super highway.

Computer crime became so common through unauthorized access, hacking and virus attacks, computer espionage, falsification and erasure of data at threatens to effective storage and transmission of data. Hence a secured environment has to be ensured for a healthy growth and utilization of IT based services. The aim should be to strike a balance between loyalty to users and legally insulated data transmission. In this context the LIS professionals are interested to be aware of the IPR and develop related policies for offering services in cyberspace that deal with intangible property. The major issues associated with the implementation of the laws and protecting the digital information from piracy and misuse include:

- Technological Issues
- Ethical Issues
- Economic Issues
- Legal Issues

TECHNICAL ISSUES:

The advent of computer mediated communication has created a new world with new rules. New visions and paradigms in digital environment are being developed with the development of technologies that also has an impact on libraries in offering digital services protecting the copyrights and cyber laws. Technological changes always create challenges to the basic principles of IP laws.

Internet and the digital revolution pose complex problems for IP laws and their enforcement.

The three technological advances, namely, the digitization of information, networking and Internet have primarily turned the economics of reproduction; networking has changed the economics of distribution and internet has changed the economics of publication. The change is reaching uncontrolled level because costs have sunk to unimaginable levels as a result of which traditional assumptions about IP laws have to be rewritten to protect and to encourage scientific community and thinkers of social sciences.

The problems which arise in IP protection due to introduction of digital medium are:

1. Networks & distribution problems
2. Internet and search engines.
3. Hyper Text Transfer Protocol and Meta Tags
4. Internet domain name registration, etc.

The LIS professionals have to be aware of these technological advances and in particular accessing and preserving digital information in a world where data security and network security became more important. These matters need urgent attention, if the promise of equitable access for all is to be fulfilled.

ETHICAL ISSUES:

Copyright indeed relates to moral aspect - as piracy is an unlawful and unethical one. There is every need to protect the right of the creator. A lot of misuse is being done under the provision of "fair use". In fact misuse and piracy is leading to diminishing creativity among future generations. Many educators genuinely strive to follow the guidelines of copyright laws in respect to printed material, but in the area of new technologies, they fall short of the same conformity. In Brunner's survey of the problem, she concludes, "The educational community has typically not honored the copyright laws as they apply to the electronic media, though it has always respected other kinds of intellectual property. The illegal uses include copying a single licensed software to more than one computer, use of photographs, music or video beyond fair use limits, or putting pirated material on networks and school world wide web sites". (Goehner)

Computer ethics includes software ethics also, software makes a computer usable. Unlike other commodities, purchasing does not give you ownership rights for software; rather it gives usage rights only, to the purchaser. Unfortunately, for various reasons, some people justify making and using unauthorized copies of software. They may not understand the implications of their actions or the restrictions of the IPR. But, one must know that, unauthorized copying of software is illegal because it deprives the software developers of a fair return of their work and this unauthorized copying indirectly

harms the community. It results in price-rises, reduction in future support and inhibits the development of new software products.

LEGAL ISSUES:

The libraries entering the digital environment are concerned with legal issues like ownership, permissions and access to digital resources. IPR is a key issue in electronic information age. IPR "as a collective term includes several independent intellectual property rights, namely, patents, copyright, trademarks, registered (industrial) designs, protection of Integrated Circuits layout design, geographical indication and protection of undisclosed information". In many countries laws exist to protect IPR. In the context of digital environment it is necessary to revisit these to ensure that they are adequate to prevent the abuse of the facility.

"The Indian IPR laws have been amended in 1999 to broaden their purview including the information and communication technologies. Sections 65 through 74 of the Information Technology Act, 2000 contain provisions relating to various cyber crimes. The maximum imprisonment provided for by the IT Act extends to 10 years". (Livingstone) Thus there is regulatory mechanism in India to deal with digital environment. However it gave emphasis to e-commerce and industrial data than for information handling for education and scientific purpose. The legal remedy for trespass is slow as the redressal mechanism, in case of violation occurs, is not specific and simple. As the identification of jurisdiction is complex the legal remedy is also complex.

ECONOMIC ISSUES:

The electronic communication changes the way of production and distribution of information. It boosts the marketing of information services that are economically viable. With the advancement of technology, publishers, library institutions, and other information providers, suddenly become players in the global market for digital information. Thus, seizing a firm position in this market becomes a major goal, since it will determine the viability of the digital libraries maintained by these institutions. The publishers are providing direct access to their works via the Web for less cost and the role of libraries as intermediaries to distribute information becomes a matter of concern. With authors and publishers of articles, books, journals, and magazines being able to provide direct access to their digital works, library institutions face an identity crisis. Libraries have no option but to enter the market by developing value added services for the information available on the Web, engaging in publishing activities of their own such as scientific journals, conference proceedings, research reports etc., designed for their well-defined client communities. They have to find innovative ways to add value to bits to help users create knowledge out of information, just as they are doing in the non-digital world and market the same for their sustenance.

CONCLUSION

Understanding technology is key to resolving the conflicts between law and technology. Efforts to develop norms can bridge the gap between old laws and new technology. Speedy and easy redressal mechanisms may be established to deal with cases of electronic infringement. The information handling and provision of information services in changed digital environment necessitates dealing with issues related to IPR.

The professional associations should develop principles that guide librarians to work in digital environment to provide wider access to information and safeguard the copyright and other related aspects. LIS profession has the ethical responsibility to safeguard the IPR & copyright and also to safeguard the creativity and inquisitive nature of future generations.

REFERENCES

1. Lakshmana Moorthy and Karisiddappa: Copyright in networked environment. In Caliber 2000 on Information services in a networked environment in India. Ahmedabad, INFLIBNET Centre, 2000. p 4.18 - 4.29.
2. Viswanathan, Suresh : The Indian Cyberlaws with Information Technology Act 2000. NewDelhi, Bharat Law House, 2000.P 157.
3. Saha, R. : Intellectual Property Rights and Internet. DESIDOC Bulletin of Information Technology. V20, (1&2) January-March 2000. P14.
4. Viswanathan, Suresh : The Indian Cyberlaws with Information Technology Act 2000. NewDelhi, Bharat Law House, 2000.P 205-206.
5. Livingstone, N.D. and Varalakshmi, R.S.R. : IPR in Digital environment. The issues of concern for Librarians. SIS conference Volume, 2005, Visakhapatnam.
6. Choudhary P.K.and Jha, K.N. : Intellectual Property Rights: Issue and Concerns. In Library and Information Networking NACLIN 2000. NewDelhi, Delnet, 2000. P272- 273.
7. Hauptman, Robert and Motin, Susan : The Internet, Cyberethics, and Virtual Morality. Online (March), 1994, vol. 18, n2.
8. Chaubey R K : Intellectual Property Rights Under the TRIPS Agreement – Curse or Boon for India in the Era of Globalisation, Indian Bar Review, Vol.XXXI (3 & 4) 2004.

9. *National Research Council 1994 : Realizing the Information Future*, Washington, D.C., NRC., Pp. 301.

10. *Singh, Ajay Pratap and Murthy, T.A.V.:* *Library Without Walls*. New Delhi, Ess Ess Publications, 2004.P68.



First A. Author was born in Guntur City, in 1982. She received the M.A. Master degree in Economics from the Andhra University and M.Li.Sc. Master degree in Library Science from the Acharya Nagarjuna University. Working as Asst. Librarian, M.R.C.E. Library, Hyderabad
Email id: kotikalapudisridevi@gmail.com



Second B. Author was born in Visakhapatnam City, in 1983. B.S.C. degree in Mathematics from the Andhra University and M.Li.Sc. Master degree in Library Science from the Acharya Nagarjuna University. Working as Asst. Librarian, M.R.C.E. Library, Hyderabad
Email id: lalireddi@gmail.com



Third C. Author was born in Visakhapatnam City, in 1964. He received the M.Com. Master degree in Commerce from the Andhra University, and M.Li.Sc. Master degree in Library Science from the Andhra University and the Ph.D. degree in Library Science, in 2004. He was a Research Assistant with the Andhra University in 2004, he has been a Lecturer in Library Science in Visakhapatnam, in Andhra University. He was published in one book with ISBN, editor for 6 books with ISBN, publication in 18 articles in national and international journals. He is an Academic Senate member of Krishna University. Lecturer & HOD. Andhra Loyola College, Vijayawada, AP.
Email id: loyolaprasad@gmail.com

Problems in Teaching and Learning English for Students

A Madhavi Latha, Assistant Professor English, Malla Reddy College of ENgineering, email-
mlatha552@gmail.com

Abstract:- It is a known fact that all of us prefer to get educated from an English Medium Institution. This system of imparting education through English Medium has been a constant practice since britishers invaded India. Despite such conscious efforts we find students although receiving education from his/her Kindergarten to P.G or Ph.d may not have command over the language(English).Why do you think such kind of situation prevails in the society? You must be very well arriving at some conclusions; Basically, the problem lies in the whole Education Pattern. Researchers have conducted a large number of studies to solve problems and help teachers to overcome their difficulties. Learning English as a second language has received a lot of attention since it is a multi-lingua-franca, so teachers have to find some well-planned and organized ways to facilitate the process of learning and teaching. This paper is a brief review on the problems encountered by the teachers in teaching of English and the different measures to be adopted to facilitate efficient teaching process. It shows the relationship between language pedagogy and research as well as research and teaching. It also deals with a set of strategies and methods that teachers can apply as instruments to improve their students' learning English.

Keywords: Teaching English, Education Pattern, Methods and strategies, efficient teaching

INTRODUCTION:

English language is a global language. Learning English improves individual's skills& status and increases opportunities in education, technology, global trades, and business which are not only confined to a single state but all over the world. Communication skills are basically tested in any job interview despite the students' academic performance. The teachers should be aware of the fact that unlike other subjects which are knowledge oriented, English is a skill oriented subject where it demands learning along with practical application so that the student uses the same in real life situations. Despite good planning, curriculum, textbooks, qualified teachers and effective administration, the teaching-learning process sometimes seems to be futile when the actual skill development is not up to the mark The teachers face challenges due to the following: their qualification, training as an EFL teacher, experience as a bilingual teacher, psychology of the learners, language policy, status of English, methods and strategies, assessment etc. The learners face challenges mainly due to the following: the differences between the past and present style, technique of teaching, workload, more focus on EFL, and focused teaching, stricter evaluation system, hard work, lack of proper motivation and attitude etc.

Management of such pedagogic challenges is inevitable.

There are still problems lingering like cultural and linguistic diversity among students and educating this population remains a challenge for teachers. These problems should not be ignored ,However through conscious efforts the problems can be solved gradually and second language learning can be made easy Therefore, teachers should always look for useful strategies to reduce the difficulties of teaching English language and they have to deal with many challenges and often have questions about the best ways to teach. Some problems of Language teaching is brought into light in this paper where if tried to minimize the consequences,English Language teaching and learning can be made effective.

Lack of competent teachers:

This is the curse of the whole problem. Though We can find highly qualified teachers, they are offered training along with some other subjects (B.ED Colleges) and the same are employed to teach both English and the trained subject by many of the institutions. Hence it is unlikely that they would be able to teach English in a methodical or systematic way. There are however number of institutions like the EFLU which take up training of English teachers, but again, a serious attitude to improving standard of English has not set in, there by making it a programme for a privileged few.

Use of Other Languages

A noticeable issue for English language teachers is making students rely on their native language for communication which is easy rather than English which tends to be hard for them .If the student is not properly guided and imparted the skills by a teacher, it is usually frustrating for students to rethink and reward their thoughts into the new language clearly. Diversifying the student groups so that not all of the students in one group speak the same native language will discourage students from reverting to their native language to communicate and encourage them to use the one they have in common.

Less time allotted for English Language Teaching

Time allotted for English Language teaching is comparatively less than other subjects .While in the Secondary schools time allotted to teach the basics is two hours per week ,the junior colleges abandon teaching of English half the academic Year, Here English is merely taught for the students to score marks

and it's pitiable to note that students are made to practice rote learning and does not have proper access to the language. The situation is more terrible in Engineering & Medical colleges where time allotted to teach the language is 4 hours a week with 3 hours Lab for a week. However theory classes do take place, the problem lies with the Lab sessions. Most of the institutions do not have proper equipment and properly installed software and if at all it has it may not have dedicated and skilled professionals to impart skills. As a result the student comes out surely with the required credits but not with the efficient communication skills. Its ironical to notice that while English is a demanding language which should be given utmost importance the same is being ignored.

Lack of suitable aids and teaching Material:

Teaching a language requires innovative textbooks, workbooks hand books for teachers Audio-Visual aids. Unfortunately these are not provided , Moreover the content, examples and illustrations of language books are not diverse and the provided exercises do not strengthen language skills(reading, writing, speaking and listening). It should be noted that 90% of the exam questions have no resemblance to the book exercises, in other words solving the exercises in books do not mean the readiness for the exam. And teachers are forced to solve the exercises and give and solve different sample questions to prepare students for the exam. on the other hand, despite English teaching over 7 years (3years in secondary school, three years in high school, and one year in pre-university), they do not have the required skills, including listening, writing, speaking and reading.

Teacher-centered method:

The teacher plays the major role to teach the language, but languages should be taught employing Learner-centered approach where the learner is more involved in the learning process. If the learner is confined to his seat merely looking at the teacher and listening to the delivery of the lectures by the teacher, he or she may be bored and may lose the grip of the lesson resulting in poor communication skills . we also find students duly passing the course just by memorizing the contents of the books and eventually forget all the material after a few months.

Lack of Interest And Motivation For Learning English

This is the most important obstacle in learning English. Most students are not interested in learning the language and just think about passing the course, this may be due to tardiness of the students or feeling inferior looking at the efficient speaking skills of other students or lack of concentration since the students don't understand what is being taught as they don't know English. Since repetition of phrases goes on taking place without any practical application the environment becomes mundane and as a result the

student feels bored and not interested. Any Language teacher has to hold two responsibilities; one is to motivate & encourage the students to learn the language and the other is to teach and impart the skills of the language. But we rarely find teachers of such kind.

Lack of Supervision.

As there is no supervision of English teaching in the institutions, there are likely to be chances of employing defecting methods in teaching of English. As a result, teachers receive no guidance and are not encouraged to meet the subject experts and pursue courses to replace the old, traditional methods with the latest ones. A teacher should keep himself abreast of development in the language and should be capable to modify his methods according to the changing trends and needs of the learners. But there are no such programs readily available to the most of the teachers.

THE ROLE OF TEACHERS IN ENGLISH TEACHING

Unlike any teacher, the role of a language teacher is different; Here the emphasis is on language learning, not on subject learning. A Language teacher should act as an assessor, manager, evaluator, creator, collaborator, leader, instructor, guide, motivator, supervisor, competitor & initiator. The language teacher should give maximum exposure to four basic skills Listening, Speaking, Reading, Writing and should provide an ample of real life situations in the class room. The right attitude to learning the language along with culture and social norms should be imparted. Lessons should be presented in a variety of purposeful ways addressing the apathy and boredom of the students which is the primary criterion. Despite being patient, a language teacher should not point out at the mistakes done but should make the student realize the mistake and correct it by themselves. On the whole the role of a language teacher should be active making the learner active. The role of a teacher in a language class implies the relationship between the teacher & students and students among students. Some students mentioned that learning English is the function of the teachers' characteristics, so that if students love their teachers and use his motivation and creativity, they will be more interested in English.

CONCLUSION

Nowadays, with the advancement of science and technology, English has become indispensable and is recognized as an International language. In this new millennium, language is the guiding factor for trading, politics, economy, science and technology. Extending the process of English learning is a prerequisite due to the increasing development in the field of science and technology and the need to become aware of them through the mass media. This will be achieved through the development of English language teaching in a principled manner. And second language teachers need

special training to adopt new methods to teach the language.

This paper aims not only creating awareness among the teachers but the whole education pattern should consider the above said barriers and should compel the government to initiate methodological approaches and techniques for the proper efficiency of communication skills.

REFERENCES :

[1] Rivers, M. W. (1983). *Communicating naturally in a second language theory and practice in language teaching*. Cambridge: Press syndicate of the University of Cambridge.

[2] Arora, Navita. (2012). *English language teaching approaches and methodologies*. New Delhi: Tata McGraw Hill Education Private Limited.

[3]. Jarvis, S. (2002). Topic continuity in L2 English article use. *Studies in second language Acquisition*, 24.

[4]. Carter, R. & Nunan, D. (2002). *Teaching English to speakers of other languages*. Cambridge university press.

[5]. Ortiz, Alba. A. (2007). English language learning with special needs; Effective instructional strategies. *Journal of learning disabilities*. 30.420-321.

[6]. Rivers, Wilga. M. (1981). *Teaching foreign-language skills*. Chicago: university of Chicago press.

Generalized Fixed Point Theorem of pal and Maiti

Sujatha Kurakala, Assistant Professor of Mathematics, Department of Mathematics, Malla Reddy College of Engineering, Hyderabad. E-Mail: ksujathakurakula@gmail.com

Y. Rani, Assistant Professor of Mathematics, Department of Mathematics, Malla Reddy College of Engineering, Hyderabad.

T. Sarala, Assistant Professor of Mathematics, Department of Mathematics, Malla Reddy College of Engineering, Hyderabad.

Abstract: In this paper, we extend a unique fixed point of Pal and Maiti for any positive power of two self mappings in 2- metric space

AMS Subject Classification: 4785, 47H10

Key words: Fixed point, 2- metric space, Contractive mappings

Introduction: The notion of 2-metric was introduced by Gahler in 1963 as an abstract generalization of the concept of area function for Euclidean triangles. The concept of 2-metric attracted the attention of many researchers. Many authors like Iseki, Khan, Rhoades, Lal and Singh etc. probed deeply into this area and established several fixed point theorems in 2- metric space setting as generalizations or extensions to the metric fixed point theorems. Several fixed point theorems appeared in 2-metric spaces analogous to the fixed point theorems in metric space setting. In this present work we generalize the fixed point theorems that are proved by pal and maiti[4]. In 1977 Rhoades [6] proved some fixed point theorems by using contractive type mappings for 2-metric spaces.

1. Preliminaries

In this section, we present some basic definitions which are needed for the further study of this paper

1.1 Definition: Let (X,d) be a 2 –metric space. A mapping $T: X \rightarrow X$ is said to be Contractive if for all x,y,a in X

$$d(Tx, Ty, a) < d(x, y, a)$$

1.2 Definition: A 2-metric on a non-empty set X is a function $d : X^3 \rightarrow \mathbb{R}$, satisfying the following properties.

- (a) $d(x, y, z) = 0$, if at least two of x,y,z are equal
- (b) for each pair of distinct points x, y in X there exists a point $z \in X$ such that $d(x, y, z) \neq 0$
- (c) $d(x, y, z) = d(x, z, y) = d(y, z, x)$ for all x, y, z in X

(d) $d(x, y, z) \leq d(x, y, u) + d(x, u, y) + d(u, y, z)$ for all x, y, z and u in X

then d is called a 2-metric on X and the pair (X, d) is called a 2-metric space

1.3 Remark: A Contractive mapping of a complete 2 –metric space (X, d) into itself need not have a fixed point.

1.4 Example: Let $x = \{ x \in \mathbb{R} : x \geq 1 \}$ with 2 –metric defined as

$$d(x, y, z) = \min \{ |x - y|, |y - z|, |z - x| \}$$

Let $F(x) = x + \frac{1}{x}$, then $F(1) = 2, F(2) = 2.5, F(3) = 3.33$ and so on.

$$d(F(1), F(2), F(3)) = d(2, 2.5, 3) = \frac{1}{2}$$

$$d(1, 2, 3) = 1$$

But, $\frac{1}{2} < 1$, so F is a Contractive but it has no fixed point

2. Generalized fixed point theorem

2.1 Theorem: : Let (X, d) be a complete 2–metric space and $S, T : X \rightarrow X$

Such that for all x, y, a in X and positive integers $p, q, (p + q)$

$$d(S^p(x), T^q(y), a) < \max. \{ d(x, y, a), d(x, S^p(x), a), d(y, T^q(y), a) \}$$

$$\frac{1}{2} [d(x, T^q(y), a) + d(y, S^p(x), a)]$$

Then S and T have a unique common fixed point

Proof: Let for any arbitrary point $x_0 \in X$, $\{x_n\}$ be a Cauchy sequence defined as

$$X_{2n+1} = S^p x_{2n}, \quad X_{2n} = T^q x_{2n-1}, \quad n = 0, 1, 2, \dots$$

Then from given condition

$$d_{2n} = d\{x_{2n}, x_{2n+1}, a\} = d(S^p x_{2n}, T^q x_{2n-1}, a)$$

$$< \max \{ d(x_{2n-1}, x_{2n}, a), d(x_{2n}, S^p x_{2n}, a), d(x_{2n-1}, T^q x_{2n-1}, a) \}$$

$$\frac{1}{2} [d(x_{2n}, T^q x_{2n-1}, a) + d(x_{2n-1}, S^p x_{2n}, a)] \}$$

$$\text{i.e., } d(x_{2n}, x_{2n+1}, a) < d(x_{2n-1}, x_{2n}, a)$$

$$d_{2n+1} = d(x_{2n+1}, x_{2n+2}, a) = d(S^p x_{2n}, T^q x_{2n-1}, a)$$

$$< \max. d(x_{2n}, x_{2n+1}, a), d(x_{2n}, S^p x_{2n}, a), d(x_{2n+1}, T^q x_{2n-1}, a),$$

$$\frac{1}{2} [d(x_{2n}, T^q x_{2n-1}, a) + d(x_{2n+1}, S^p x_{2n}, a)] \}$$

$$\text{i.e. , } d(x_{2n+1}, x_{2n+2}, a) < d(x_{2n}, x_{2n+1}, a) < d(x_{2n-1}, x_{2n}, a), \dots \dots \dots d(x_0, x_1, a)$$

Thus $d_{2n+1} < d_{2n} < \dots \dots \dots < d_0$. so the sequence $\{ d_{2n} \}$ is monotone decreasing

and bounded also

Thus $d_{2n} \rightarrow 1$ as $n \rightarrow \infty$. As X is compact, there exists a cluster point u in $\{ x_n \}$

And so there exists a subsequence $\{ x_{2n} \} \rightarrow u$ as $n \rightarrow \infty$.

Also $x_{2n+1} = S^p x_{2n} \rightarrow S^p u$ and

$$x_{2n+2} = T^q x_{2n+1} = T^q S^p x_{2n} \rightarrow T^q S^p u \text{ when } n \rightarrow \infty.$$

Thus we get

$$1 = \lim_{n \rightarrow \infty} d(x_{2n}, x_{2n+1}, a) = \lim_{n \rightarrow \infty} d(x_{2n}, S^p x_{2n}, a) = d(u, S^p u, a)$$

$$\begin{aligned} 1 &= \lim_{n \rightarrow \infty} d(x_{2n+1}, x_{2n+2}, a) = \lim_{n \rightarrow \infty} d(S^p x_{2n}, T^q x_{2n+1}, a) \\ &= \lim_{n \rightarrow \infty} d(S^p x_{2n}, T^q S^p x_{2n}, a) \\ &= d(S^p u, T^q S^p u, a) \end{aligned}$$

Suppose that $u \neq S^p u$, then

$$\begin{aligned} d(u, S^p u, a) &< d(u, S^p u, x_{2n}) + d(u, x_{2n}, a) + d(x_{2n}, S^p u, a) \\ &= d(u, S^p u, x_{2n}) + d(u, x_{2n}, a) + d(T^q x_{2n-1}, S^p u, a) \\ &< d(u, S^p u, x_{2n}) + d(u, x_{2n}, a) + \max \{ d(u, x_{2n-1}, a), d(u, S^p u, a), \\ &\quad d(x_{2n-1}, T^q x_{2n-1}, a), \frac{1}{2} [d(u, T^q x_{2n-1}, a) + d(x_{2n-1}, S^p u, a)] \} \\ &= d(u, S^p u, x_{2n}) + d(u, x_{2n}, a) + \max \{ d(u, x_{2n-1}, a), d(u, S^p u, a), \end{aligned}$$

$$d(x_{2n-1}, x_{2n}, a), \frac{1}{2} [d(u, x_{2n}, a) + d(x_{2n-1}, S^p u, a)] \}$$

When $n \rightarrow \infty$

$d(u, S^p u, a) < d(u, S^p u, a)$, which is impossible. Thus $S^p u = u$.

Similarly we can show that $T^q u = u$.

Then u is the common fixed point of S^p and T^q .

Next we show that u is the only common fixed point of S^p and T^q .

If possible let $u^* \neq u$ is another common fixed point of S^p and T^q .

Then $S^p(u) = T^q(u) = u^*$.

Hence $d(u, u^*, a) = d(S^p u, T^q u^*, a) < \max\{d(u, u^*, a), d(u, S^p u, a), d(u^*, T^q u^*, a)\}$,

$$\frac{1}{2} [d(u, T^q u^*, a) + d(u^*, S^p u, a)] \}$$

$d(u, u^*, a) < d(u, u^*, a)$ which is a contradiction

Thus $u = u^*$.

Hence u is the unique common fixed point of S^p and T^q .

If we put $p = q = 1$ then u is a unique common fixed point of S and T .

Remark: If we put $S = T$ and $p = q = 1$ Then we get an analogee of pal and Maiti with condition (d) [4] in 2-metric space.

References

1. **Das, B.K and Sharma, A.K.:** A Fixed Point Theorem. Bull. Cal. Math. Soc., Vol-72, pp. 263-266, 1980
2. **Gahler, S., :** 2-Metrische Raume und ihre Topologische Struktur, Math. Nachr., Vol-26, pp. 115-148, 1963.
3. **Iseki, K. :** Fixed points theorems in 2-metric Spaces, Math.Seminar Notes, Vol-3, pp-133-136, 1975
4. **Khan, M.S.:** A theorem on fixed points, Math seminar Notes, Kobe University, Vol-2, pp. 227-228, 1976
5. **Pal, T.K and Maiti, M. :** Extensions of fixed point theorems of Rhodes and Ciric

Proc,Amer.Math.Soc. Vol-64(2), 1977

6. Petryshyn,W.V. : Strjucture of the fixed points sets of the sets of K set- contractions

Arch.Rational.mech.Anal. Vol-40, p.p 312-328, (1970/71)

7. Rhoades,B.E : Contraction type mappings on a 2- metric space. Math.Nachr.

Vol- 91 , p.p 151-155, 1979.

COMMERCIAL PRODUCTION OF BIO CONTROL AGENTS

M. Sunanda, Assistant professor in Humanities and Science Department,
Mallareddy College of Engineering, Secunderabad, E-mail: bandaraghupathi.med@gmail.com.

ABSTRACT:

Trichoderma viride is an effective biopesticide against several plant pathogenic fungi occurring usually in different crops. It is commercially produced by different organizations like government labs, NGO's and private industries and is made available to the farmer. The skills and expertise obtained in different aspects of the commercial production of these biopesticides is very important to pursue career in respective field. The general procedures involved in a commercial biopesticides production unit in sequence is maintaining the mother culture of the effective strains, sub culturing the mother culture, mass multiplication of the strain by either solid state fermentation or submerged fermentation, and downstream processing which involves formulation in to carrier material, drying, sieving and packing. Maintaining the quality of the final product is of utmost importance.

The protocols used in the production of the biopesticides and also the skills involved in handling the equipment have been acquired. Several intricate points involved in the commercial production have been thoroughly studied and gained confidence of running a commercial biopesticide unit independently and successfully.

Key words: *Trichoderma viridae*, biopesticides, commercial large scale production.

BACK GROUND ART OF WORK/HISTORY:

Occurrence of *Trichoderma viride*: *Trichoderma* species are found in almost all soils and all over the world. Phylogenetic analysis of the morphological species *T. viride* revealed that it comprises two or more new species, including the biocontrol species *T. asperellum*.

Taxonomic classification:

| | |
|---------|----------------------|
| Kingdom | :Fungi |
| Phylum | : Ascomycota |
| Class | : Euascomycetes |
| Order | : Hypocreales |
| Family | : Hypocreaceae |
| Genus | : <i>Trichoderma</i> |

Morphology: Conidia and phialides help in differentiation of species from each other. Greenish patches become visible as the conidia are formed and may form concentric rings at times, while on the reverse, the color is pale, tan, or yellowish. They are more readily visible on potato dextrose agar compared to Sabouraud dextrose agar.

Microscopic appearance: Septate hyaline hyphae, conidiophores hyaline, branched and flask shaped phialides. They may be solitary or arranged in clusters. Asexual sporulation occurs as single-celled, usually green, conidia. Conidia may occasionally display a pyramidal arrangement. Intercalary resting chlamydospores are also formed, and are single celled, although two or more chlamydospores may be fused together.

Mode of action of *Trichoderma viride*:

1. Mycoparasitism.
2. Antibiosis.
3. Competition for nutrients or space.
4. Producers of volatile and non-volatile antibiotics to suppress target pathogens.
5. Also induce tolerance to stress through enhanced root and plant development, solubilization and sequestration of inorganic nutrients.
6. Induce resistance and inactivation of the pathogen's enzymes.
7. Induce plants to "turn on" their native defense mechanisms, offers the likelihood that these strains also control pathogens other than fungi.

Large scale production: Mass production of *Trichoderma* species provides great potential for commercial use. Different conventional synthetic media like glucose, cellulose, soluble starch and molasses were used to produce *Trichoderma* species. Some researchers have successfully used substrates like corn fiber dry mass, sewage sludge compost and cranberry pomace. Micro propagules in the form of conidia are preferred over chlamydospores and mycelia biomass because of viability and stability. The optimum growth parameters for the production of *Trichoderma viride* through submerged state fermentation was investigated and evaluated and it was inferred that the optimum temperature for the growth of *Trichoderma viride* was $30 \pm 1^\circ\text{C}$ and pH 6.0. The maximum growth rate was observed between 3rd and 4th days of fermentation. It was also concluded that a change in nitrogen concentration caused the major variation in biomass concentration because nitrogen is the limiting nutrient. Maintaining a good level of shaker RPM is also important.

Formulation and Quality management:

Usually *Trichoderma viride* is made available as 1% wettable powder formulation. For making the quality product available to the farmers, the Central Insecticide Board has prescribed certain specifications which are listed here.

Specification as per Central Insecticide Board (CIB)

- Talc based formulation (300 mesh).
- Shelf life shall be 6 months.
- It shall have no contamination at 10^3 dilution with other microorganisms.
- The moisture content shall be less than 8%.
- The primary packing shall be in LDPE bags of thickness not less than 0.062 mm and the secondary packing in carton boxes.
- Marking on each secondary packing shall be legible and contain information of manufacturers name, manufacture and expiry date, batch number, manufacture and marketing license, weight and leaflet.
- It shall be stored in a cool and dry place away from direct heat preferably at 20°C and not exceeding 30°C .
- It shall have no contamination with pathogens like *Salmonella*, *Shigella* and *Vibrio*.

INTRODUCTION:

By definition, bio-inoculants are the living microorganisms, which when applied to the seed, soil or plant will colonize the environment around the plant and promote the growth of it by means of different biological functions like mobilization of nutrients,

production of plant growth promoting substances and control of plant diseases etc. Different types of bio-inoculants include: Nitrogen fixers like *Rhizobium*, *Azospirillum* etc, Phosphate solubilizers, Zinc mobilizing bacteria (some *Bacillus* and *Pseudomonas* spp), biopesticides like *Trichoderma viride*, *Pseudomonas fluorescens*, *Bacillus thuringiensis* and Entomopathogenic fungi like *Beauveria*, *Noumorea*, *Metarrhizium* and *Verticillium* etc.

Biological control can be defined as the use of natural enemies to reduce the damage caused by pest population. According to most biological control practitioners, biological control differs from "natural control." Natural control is what occurs most of the time, natural enemies keeping populations of potential pests in check without intervention. Biological control, on the other hand, requires intervention, rather than simply letting nature take its course. Biological control is an approach that fits into an overall pest management program, and represents an alternative to continued reliance on pesticides. Biological control has a long history of success, in India and throughout the world.

There are two types of biopesticides- biochemical and microbial. Biochemical pesticides may have a similar structure to, and function like, naturally occurring chemicals, and have nontoxic modes of action. Insect pheromones, for example, are naturally-occurring chemicals that insects use to locate mates. Man-made pheromones are used to disrupt insect mating by creating confusion during the search for mates, or can be used to

attract male insects to traps. Pheromones are often used to detect or monitor insect populations, or in some cases, to control them.

Bio Control Agents are naturally occurring organisms, such as fungi, bacteria, viruses and nematodes to control plant diseases and arthropod pests. They are an important group of pesticides that can reduce pesticide risks.

Microbial insecticides are another kind of biopesticide. They come from naturally occurring or genetically altered bacteria, fungi, algae, viruses or protozoans. They suppress pests by the following ways:

- Producing a toxin specific to the pest;
- Causing a disease through antibiosis;
- Preventing establishment of other microorganisms through competition.

AIM & OBJECTIVES:

- Production of low cost biopesticides as an alternative to the chemical pesticides to reduce the usage of chemical pesticides among the farmers and in turn reduce the cost of inputs and reduce pollution.
- To protect crops from insect pests and diseases using biopesticides.

MATERIALS & METHODS:

Materials:

Chemical compounds: peptone, dextrose, agar agar, sodium chloride, yeast extract, beef extract, di-potassium hydrogen phosphate, magnesium sulphate,

maltose, sucrose, rose bengal, potato, starch, chloramphenicol.

Methods:

- **Sub culturing of organisms:** A loopful of *Trichoderma viride* dry spore from mother culture slants was placed in the centre of the fresh petriplate containing selective media. The selective media used were *Trichoderma viride* Selective Agar Medium (TSM) and Potato Dextrose Agar (PDA).
- **Seed culture:** Potato dextrose broth and TSM broth prepared in one litre conical flasks were used as seed media and inoculated with a loopful of culture from the plates.
- **Commercial production:** *Trichoderma viride* is commercially produced using two methods i.e., on shakers using conical flasks or in fermentor. The commercial media prepared using the specific ingredients is inoculated with the seed culture. The inoculum size is 20% of the total volume of the commercial medium. The inoculated media flasks are incubated for 4-5 days with proper aeration, agitation under sterile conditions.
- **Quality management:** A small sample was drawn in all the above three stages of mass multiplication and was tested to check for any possible contamination and also to determine the spore count of the original culture.
- **Harvesting and formulation:** The media with optimum growth was harvested in tubs for formulation or centrifuged into a pellet for future use. The harvested culture is

mixed with carrier material. The carrier material used here was talc.

- **Curing and Packing :** The blended product was kept for drying for two to three days. The dried material is sieved using a 300 mesh size mesh. The sieved product was packed into 1kg Low Density Poly Ethylene bags.
- **Solid state fermentation :** *Trichoderma viride* is also grown by Solid state fermentation on Sorghum grains. In this method the pre cooked sorghum grains are packed in autoclavable covers, sterilized and inoculated with *Trichoderma* culture. The packs having the inoculated sorghum grains are incubated in such a way as to ensure maximum aeration of the grains.

TECHNIQUES :

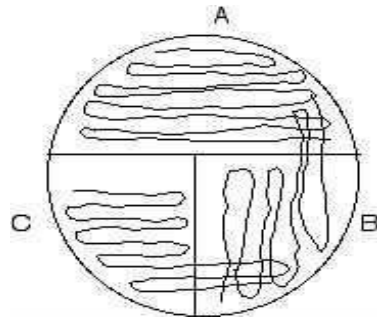
BACTERIAL CULTURES

Development of pure cultures:

1.Serial dilution: It is the technique of diluting the sample through a series of dilutions to a specific concentration for its easy quantification. In the field of Microbiology, this technique is used in different protocols like 1) isolation of a specific species of microorganism from environmental sample, 2) enumeration of the concentration of cells or spores per ml etc.

The technique involves adding 1 ml of sample to 9 ml of water i.e., 10-fold dilution. The dilution is called 10^{-1} and 1 ml of it is taken and added to fresh 9 ml of water which is 10^{-2} dilution. Dilutions are carried in the same manner till the required dilution is obtained thus diluting the sample by 10-fold each time.

2.Streak plate technique: For obtaining isolated bacterial colonies streak plate technique is the most effective. A petri plate is divided into 3 equal sized sections as shown in the figure below.



Streaking with a loop or swab is started at the top of area and many streak lines are made without overlapping. Bacteria are inoculated into region B by moving a sterile loop once or twice through region A and then making more streak lines that neither overlap nor enter region A again. Region C is also inoculated using the

same technique. This technique is (almost) guaranteed to produce isolated colonies in some area of the plate.

This helps to obtain a pure culture from a mixture of bacteria. A well isolated colony is touched with a sterile loop and these bacteria transferred to a second plate using the streaking technique. After incubation, isolated colonies appear as pure cultures.

3. Spread Plate Technique ; In this technique, the number of bacteria per unit volume of sample is reduced by serial dilution before the sample is spread on the surface of an agar plate.

1. Serial dilutions of the broth culture are prepared 0.1 ml of the final three dilutions (10⁻⁵, 10⁻⁶, 10⁻⁷) are added to each of three nutrient agar plates, and thoroughly mixed. The petri plates are labeled with the specific dilution.

2. Spread the 0.1 ml inoculum evenly over the entire surface of one of the nutrient Agar plates using a sterile glass spreader until the medium no longer appears moist.

3. The inoculated plates are incubated at room temperature

Microbial Identification :

1.Simple staining

1. A small amount of culture from bacterial colony is transferred into distilled water drop on a slide with inoculating loop.
2. The culture is mixed with water and spread in an oval shape to get a smear.
3. The slide with the smear is passed through the tip of the blue portion of the flame three to four times for heat fixing. The smear is now ready for staining.
4. The heat fixed smear is placed on a flat surface and few drops of stain is added on the smear and allowed for one minute.
5. The stain is washed from the smear gently with tap water.
6. The slide is blot dried using a blotting paper and observed directly under low power and high power objectives.
7. A drop of cedar wood oil is put on to the smear for viewing through 100 X objective (oil immersion objective).
8. Observations were recorded diagrams drawn.

2 .Gram's staining

1. A loopful of sterile distilled water was taken onto a microscope slide.
2. A loop full of bacterial culture was spread it in the drop of water on the slide to make an oval shaped smear.
3. The smear is air dried at room temperature and heat fixed by waving the slide over a flame, being careful not to overheat.
4. The slide was flooded crystal violet, and kept for one minute.
5. The slide was washed briefly with cold water.

6. Then the slide was flooded with gram's iodine; let stand for one minute. Excess stain was washed off with water.
7. Decolorised until the solvent flowed colorlessly from the slide.
8. Then the slide was flooded with safranin; let stand for 30 seconds and washed off with water.
9. The slide was dried with bibulous paper and examined under the microscope for gram reaction (100x oil- immersion objective)
10. Gram positive organisms appeared as purple.

3 .Spore staining : Species of bacteria, belonging principally to the genera bacillus and clostridium, produce extremely heat – resistant structures called endospores. In addition to being heat resistant, they are very resistant to many chemicals that destroy non spore forming bacteria. This resistance to heat and chemicals is due primarily to a thick, tough spore coat. Gram staining will not stain endospores. Only if considerable heat is applied to a suitable stain, it penetrates into the spore coat. Once the stain has entered the spore, it is not easily removed with decolorizing agents or water.

Microbial Enumeration techniques_:

1. Cell counts and CFU counting:

A standard plate count method is used to determine the number of viable bacterial cells per unit volume of a sample using agar plate media. For example, to count the viable bacterial cells per milliliter of culture a fixed volume of sample is transferred to a plate, spread the solution across the plate and count the colonies that form after incubation. The colonies are

referred to as colony forming units (CFU). Once the numbers of CFUs on the plate are determined, it is divided by the volume plated to determine the concentration of cells in the sample. If a sample contains over one thousand cells per unit volume then it produces too many CFUs to count accurately on the plate. Such samples are diluted in sterile media before transferring to plate media so that a countable number of colonies appeared. The actual concentration of the sample is not known, it is common practice to dilute the sample serially (for example 1/10, 1/100, 1/1000, etc.) then spread-plate the multiple serial dilutions. Lowest number of CFUs are produced with highest dilution and the lowest dilutions produce the highest number of CFUs. Dilutions with fewer than 30 colonies are easy to count, but often produce inaccurate results since one or two contaminating colonies can cause a significant overestimate of the cell count. After the colonies are counted the concentration of cells in the plated dilution can be determined by dividing by the amount plated. Once the concentration of cells at the specific dilution is determined the concentration in the original sample can be calculated by dividing by the total dilution.

FUNGAL CULTURE:

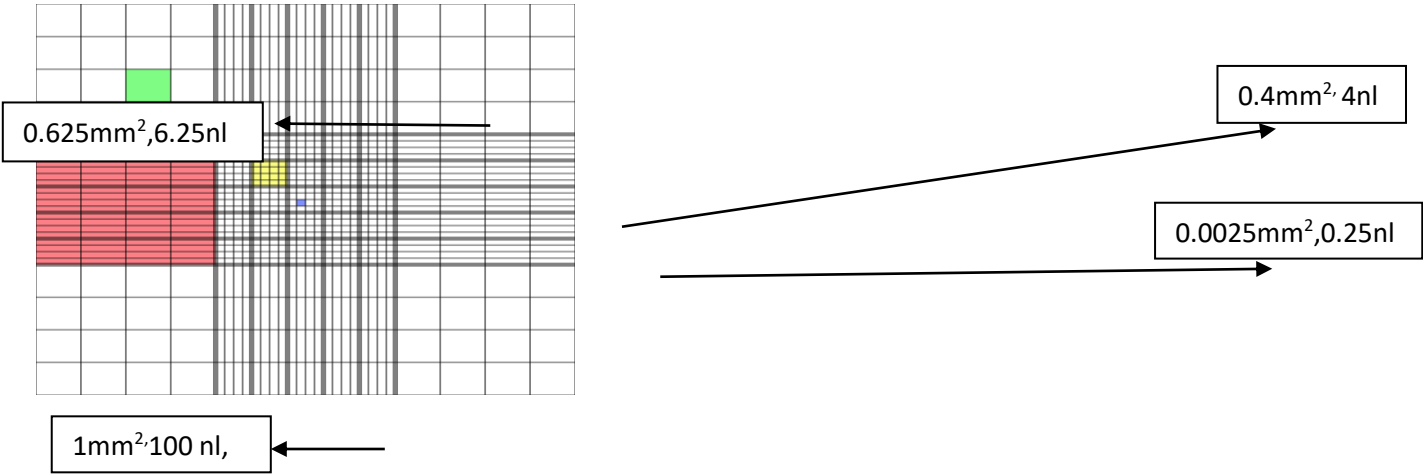
1. Mycelial staining: Fungi are generally stained and identified using the technique of lactophenol cotton

blue staining. Fungi unlike bacteria consist of mycelia and spores like conidia and chlamydospores. The morphology of the fungi is helpful in the identification and classification of the fungi till genera level. A small pinch of the mycelium is taken and placed in a drop of the stain. The mycelium is slightly teased and a cover slip is placed on the sample. Extra stain is blotted and the slide is viewed under microscope in 40X.

Lactophenol helps in killing the fungi and cotton blue is a useful stain for the fungi for better visualization.

2. Spore counting using Haemocytometer

Principle:- The enumeration of Fungal spores is generally performed using a Haemocytometer or a Neubauer chamber. The Haemocytometer is a device originally designed for the counting of blood cells. It is now also used to count other types of cells as well as other microscopic particles. It consists of a thick glass microscope slide with a rectangular indentation that creates a chamber. This chamber is engraved with a laser-etched grid of perpendicular lines. The device is carefully crafted so that the area bounded by the lines is known, and the depth of the chamber is also known. It is therefore possible to count the number of cells or particles in a specific volume of fluid, and thereby calculate the concentration of cells in the fluid overall.



The ruled area of the hemocytometer consists of several, large, 1 x 1 mm (1 mm²) squares. These are subdivided in 3 ways; 0.25 x 0.25 mm (0.0625 mm²), 0.25 x 0.20 mm (0.05 mm²) and 0.20 x 0.20 mm (0.04 mm²). The central, 0.20 x 0.20 mm marked, 1 x

1 mm square is further subdivided into 0.05 x 0.05 mm (0.0025 mm²) squares. The raised edges of the hemocytometer hold the cover slip 0.1 mm off the marked grid. This gives each square a defined volume.

| Dimensions | Area | Volume at 0.1 mm depth |
|----------------|------------|------------------------|
| 1 x 1 mm | 1 mm² | 100 nl |
| 0.25 x 0.25 mm | 0.0625 mm² | 6.25 nl |
| 0.25 x 0.20 mm | 0.05 mm² | 5 nl |
| 0.20 x 0.20 mm | 0.04 mm² | 4 nl |
| 0.05 x 0.05 mm | 0.0025 mm² | 0.25 nl |

The cell-sized structures counted lie between the middle of the three lines on the top and right of the square and the inner of the three lines on the bottom and left of the square. In an improved Neubauer haemocytometer (common medium), the total

number of cells per ml can be discovered by simply multiplying the total number of cells found in the haemocytometer grid (area equal to the red square in picture on right) by 10⁴ (10000).

PROCEDURE:

1ml of *Trichoderma viride* culture was taken from seed culture and mixed in 9ml of distilled water taken in a test tube. This is 10^{-1} dilution. This 10^{-1} dilution tube was vortexed and 1ml of this sample was mixed with 9ml distilled water in another test tube. This is 10^{-2} dilution. Thus the serial dilutions were made till 10^{-9} dilutions. From these dilutions 20 μ l of serial diluted spore suspension was taken. Kept on the Haemocytometer slide. Spore count was taken using bright field microscope.

Calculation: Spore count per ml =

Total count of spores (x) small squares (400) (x)
conversion factor (1000) (x) dilution factor

Number of small squares calculated (x)
depth factor (0.1)

Mass production / Fermentation: *Trichoderma viride* bio-inoculant is mass produced using a fermentor and also in conical flasks by submerged fermentation. The techniques involved in the handling of the 250 lit capacity fermentor for sterilizing media in it, process of inoculation, maintaining the temperature, aeration, and agitation in the fermentor was gained. The culture grown in the fermentor can be centrifuged and pelletized using the online centrifuge which is attached to the fermentor. Intricacies involved in centrifugation like loading the centrifuge, collecting the pellet and washing the centrifuge barrel was known

Equipments Handled:

1. Autoclaves – horizontal and vertical 2. Hot air oven. 3. Distillation unit (glass distillation) 4. Laminar air flow hood. 5. Rotary shaker – 81 flask capacity. 6. Fermentor – 250 lit capacity. 7. Online centrifuge. 8. BOD Incubator. 9. Binocular microscope. 10. Blender – 35 kg capacity

RESULTS AND DISCUSSION :

Sub culture : White mycelial growth was observed on the second day after inoculation of *T. viride*. Sporulation was noticed on fifth day and continued upto 10th day and no contamination was observed in any of the plates. Growth of the organism appeared as concentric rings with white and green color due to spore colour and smelled as coconut, a characteristic feature of *T. viride*. Conidia typically formed within one week in compact and loose tufts in shades of green. The growth of *T. viride* on PDA can be seen in Fig-2

Seed culture “Initial growth was observed after 24hrs and maximum growth after 82hrs. Serial dilutions were made and spore count was calculated as 4.1×10^8 with the help of Haemocytometer. No contamination was observed. A small sample of culture was withdrawn and stained with Lacto Phenol Cotton Blue stain. Branched mycelium with conidiphores, phialides and conidia were observed.

Commercial production : A small sample was taken out on second day after inoculation, Mycelial growth was somewhat less and one more sample was withdrawn from fermentor after 82hrs of inoculation and conducted qualitative tests like mycelial staining and spore count. Mycelial growth was good and spore count was 4.5×10^8 . In comparison with culturing in flasks, the culture

harvested from fermentor had less mycelial growth and more spores.

Solid state fermentation : Mycelial growth was observed 24hrs after inoculation. Sporulation was observed on fifth day and continued upto 10 days. All the grains were coated with green colour spores. Most of the spores were identified as chlamydo spores in microscopic observation. Chlamydo spores are resistant globose structures found intercalary in the mycelial hyphae. Spore count was calculated by using Haemocytometer and was 2.5×10^{10} spores per gram of harvested sorghum seed. Fig-6 shows the microscopic view of the spores in a Haemocytometer

Mycelial staining: Hyaline branched mycelium was observed with conidiophores, phialides and conidia. Some cells were bulged and appeared as globose structures. These were conformed as chlamydo spores. Fig-7 shows the microscopic view of the fungus. Conidiophores were highly branched and thus difficult to measure.

Serial dilution: Two separate *T.viride* colonies were observed in 10^{-7} dilution plates, means $100\mu\text{l}$ of suspension culture contained 2×10^7 spores and 1ml of culture had 2×10^8 spores or 1gm of formulated product had the count of 2×10^8 spores. Minute bacterial contamination was found in 10^{-3} dilution. There was no contamination in the plates of 10^{-4} , 10^{-5} , 10^{-6} and 10^{-7} dilutions.



Fig-2: *T. viride* growth on PDA plate **Fig-3:** TSM and PDA flasks with *T.viride* growth **Fig-4:** Fermentor in the production unit

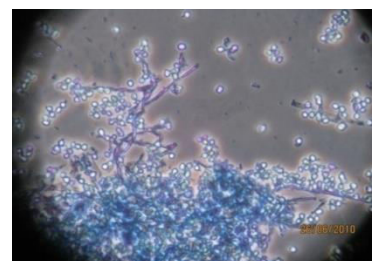
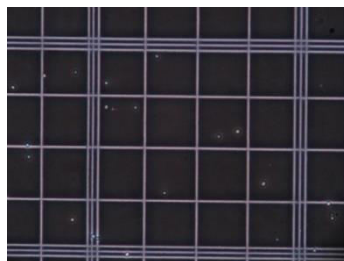


Fig-5: *T.viride* spores on Sorghum grains **Fig-6:** microscopic view from a Haemocytometer **Fig-7:** The microscopic view of the fungus after Mycelial staining using lactophenol cotton blue

CONCLUSION:

Trichoderma viride is a bio fungicidal fungus, which acts against many soil born fungal diseases in crops. In this present study experiments were conducted for the quality control and culture maintenance of *Trichoderma viride* and also different methods for mass production of *Trichoderma viride*. *Trichoderma viride* was produced commercially by shaker method, fermentor and by using sorghum grains as solid medium. Liquid medium was used in flask & fermentor methods. Maximum chlamidospore number was observed in liquid culture where as only conidia were observed in solid state production (4.5×10^9 spores per gram of sorghum grains).

After incubation period *Trichoderma viride* culture was harvested and mixed with carrier material (Aluminium silicate). Then the product was cured and packed into 1kg units. A sample from the final product was taken and tested for CFU count and 2×10^8 CFU per gram of final product was maintained.

REFERENCES:

1. ANGRAU-Agri Biotech Foundation-2011 refereed by Bio-Consortium India Limited.
2. Yusuf Chisti (1999). Robinson, Richard K., ed. Encyclopedia of Food Microbiology(PDF). London: Academic Press. pp. 663–674. ISBN 978-0-12-227070-3.
3. "Fermentation". Rpi.edu. Retrieved 2015-06-02.
4. "Introduction to Biochemical Engineering – Dubasi Govardhana Rao". Books.google.com. Retrieved 2015-06-02.
5. Stanbury, Peter F.; Whittaker, Allan; Hall, Stephen J. (1999). Principles of Fermentation Technology (Second ed.). Butterworth-Heinemann. ISBN 978-0750645010.
6. "Fermentation (Industrial)" (PDF). Massey.ac.nz. Retrieved 2015-06-02.
7. Wurm FM (2004). "Production of recombinant protein therapeutics in cultivated mammalian cells". Nature Biotechnology. **22**: 1393–1398. doi:10.1038/nbt1026. PMID 15529164.
8. Archived October 29, 2013, at the Wayback Machine.
9. Liggett, RW; Koffler, H (Dec 1948). "Corn Steep Liquor in Microbiology". Bacteriol Rev. **12** (4): 297–311. PMC 180696. PMID 16350125.
10. Archived December 2, 2012, at the Wayback Machine.
11. "Algae harvesting – Industrial fermentation – Separators". Alfalaval.com. Retrieved 2015-06-02.
12. Kinoshita, S; Udaka, S; Shimono, M (Dec 2004). "Studies on the amino acid fermentation. Part 1. Production of L-glutamic acid by various microorganisms". J Gen Appl Microbiol. **50**(6): 331–43. PMID 15965888.
13. Drugmand, JC; Schneider, YJ; Agathos, SN (2012). "Insect cells as factories for biomanufacturing". Biotechnology advances. **30** (5): 1140–57. doi:10.1016/j.biotechadv.2011.09.014. PMID 21983546.

14. De Lourdes, Maria; Polizeli, T. M.; Rai, Mahendra (2013). Fungal Enzymes. CRC Press. ISBN 978-1-466-59454-8.

15. Riegel's Handbook of Industrial Chemistry: 916–986. doi:10.1007/978-94-011-7691-0_24. Retrieved 2015-06-02.

16. "Biodegradation of agro industrial wastes by Pleurotus spp for its use as ruminant feed". Redalyc.org. doi:10.2225/vol9-issue3-fulltext-2. Retrieved 2015-06-02

A SURVEY OF THE DEVELOPMENT OF FIXED POINT THEORY

Sujatha Kurakula, Assistant
Professor, Dept. of
Mathematics,
Malla Reddy College of
Engineering,
Hyderabad.
E. Mail id:

ksujathakurakula@gmail.com.

V. Sankar Rao, Assistant
Professor, Dept. of
Mathematics, Malla Reddy
College of Engineering,
Hyderabad.

Ramakrishna Mankena,
Assistant Professor, Dept. of
Mathematics, Malla Reddy
College of Engineering,
Hyderabad.

Abstract: In this paper, we collected the developmental history of fixed point theory. Some important results from beginning up to at the present are included in this paper.

Keywords: Fixed Point, Metric Space, Contraction mapping

Subject Classification: 54H25, 47H10

1. INTRODUCTION

The theory of fixed point is one of the most powerful tool of modern mathematical analysis. Theorem concerning the existence and properties of fixed points are known as fixed point theorem. Fixed point theory is a beautiful mixture of analysis, topology & geometry which has many applications in various fields such as mathematics engineering, physics, economics, game theory, biology, chemistry, optimization theory and approximation theory etc. Fixed point theory has its own importance and developed tremendously for the last one and half century. The purpose of the present paper is to study the development of fixed point theory

Definition: Let X be a non-empty set. A function $T : X \rightarrow X$ is called a self map on X . A point $z \in X$ is called a fixed point of a self map $T : X \rightarrow X$, if $T(z) = z$

For example the function $T : [0,1] \rightarrow [0,1]$ defined by $T(x) = x^2$ has exactly two fixed points. This function is uniformly continuous on $[0, 1]$

The function $S : \mathbb{R} \rightarrow \mathbb{R}$ defined by $S(x) = x + 1$ has no fixed point in \mathbb{R} .

2. HISTORY OF FIXED POINT THEORY

In the 19th century The study of fixed point theory was initiated by Poincare and in 20th century developed by many mathematicians like Brouwer, Schauder, Kakutani, Banach, Kannan, Tarski, and others

Brouwer fixed point theorem

In 1912, Brouwer published his famous fixed point theorem. The theorem states that

Theorem 1. If B is a closed unit ball in \mathbb{R}^n and if $T : B \rightarrow B$ is continuous then T has a fixed point in B .

Remark: The Brouwer's fixed point theorem guarantees the existence of fixed point. But it does

not provide any information about the uniqueness and determination of the fixed point. For example, the function $T : [-1,1] \rightarrow [-1,1]$ defined by $T(x) = x^3$ is continuous and has three fixed points in $[-1,1]$. Many authors have given different proofs to this theorem. Most of them are topological in nature. This theorem is not true in infinite dimensional spaces.

Schauder's fixed point theorem

In 1930 Schauder was given The first fixed point theorem in an infinite dimensional Banach space. The theorem is stated below:

Theorem 2 If $T: B \rightarrow B$ is a continuous function on a compact, convex subset B of a Banach space X then T has a fixed point.

Remark: The schauder fixed point theorem is very important and has several applications in economics, game theory, approximation theory etc. In the above theorem Schauder imposed a strong condition of compactness on B . Schauder relaxed this condition and established the following classical result

Theorem 3 If B is a closed bounded convex subset of a Banach space X and $T: B \rightarrow B$ is continuous map such that $T(B)$ is compact, then T has a fixed point.

Tychonoff fixed point theorem

In 1935 The above Schauder's theorem was generalized to locally convex topological vector spaces by Tychonoff is as follows

Theorem 4 If B is a nonempty compact convex subset of a locally convex topological vector space X and $T: B \rightarrow B$ is a continuous map, then T has a fixed point

Further extension of Tychonoff's theorem was given by Ky Fan

A very interesting useful result in fixed point theory is due to Banach known as the Banach contraction principle

Banach contraction principal

In 1922 Banach proved a classical fixed point theorem which has many applications in the existence and uniqueness problems of differential equations and integral equations. This theorem is also known as the Banach contraction principle.

Theorem 5 If X is a complete metric space and $T: X \rightarrow X$ is a contraction map, then T has a unique fixed point or $T(x) = x$ has a unique solution.

While Banach principle came in to existence which was considered as one of the fundamental principle in the field of functional analysis.

In this theorem.Banach proved that a contraction mapping in the field of a complete metric space possesses a unique fixed point. Later on it was developed by Kannan

The fixed point theory (as well as Banach contraction principle) has been studied and generalized in different spaces and various fixed point theorem were developed.

Rothe fixed point theorem

In 1937 Rothe gave a fixed point theorem for non self maps

Theorem 6 If $T: B \rightarrow R^n$ is a continuous map, such that

$$(1) \quad T(\partial B) \subseteq B,$$

Then T has a fixed point

The famous fixed point theorem for non expansive maps was given by Browder, Kirk and Gohde independently in 1965

Further extensions of iteration process due to Mann, Ishikawa, and Rhoades are worth mentioning.

The contraction, contractive and nonexpansive maps have been further extended to densifying, and 1- set contraction maps in 1969

In 1966, Hartman and Stampacchia gave the following interesting result in variational inequalities.

Theorem 7 If B is a unit ball in R^n and $T: B \rightarrow R^n$ a continuous function, then there is a $y \in B$ such that

$$(2) \quad \langle Ty, x - y \rangle \geq 0 \quad \text{for all } x \in B.$$

In 1969 the following result was given by KyFan commonly known as the best approximation theorem

Theorem 8 If C is a nonempty compact convex subset of a normed linear space X

And $T: C \rightarrow X$ is a continuous function, then there is a $y \in C$ such that

$$(3) \quad |Ty - y| = \inf\{x - Ty\}$$

If P is a metric projection onto C , then $P \circ T$ has a fixed point if and only if (3) holds.

Recall that $d(x, C) = \inf\{x - y\}$ for all $y \in C, x \notin C$.

The Ky Fan's theorem has been widely used in approximation theory, fixed point theory, variational inequalities, and other branches of mathematics.

Theorem 9. If $T: B \rightarrow X$ is a continuous function and one of the following boundary conditions are satisfied, then T has a fixed point. Here B is a closed ball of radius r and center 0 (∂B stands for the boundary of the ball B).

(i) $T(\partial B) \subseteq B$, (Rothe condition)

(ii) $|Tx - x|^2 \geq |Tx|^2 - |x|^2$, (Altman's condition)

(iii) If $Tx = kx$ for $x \in \partial B$, then $k \leq 1$ (Leray Schauder condition)

(iv) If $T: B \rightarrow X$ and $Ty \neq y$, then the line segment $[y, Ty]$ has at least two elements of B . (Fan's condition).

In this survey we have restricted our presentation to single valued maps only. A vast literature is available for the fixed point theorems of multivalued maps. In 1941 Kakutani gave the following generalization of the Brouwer fixed point theorem to multivalued maps.

Theorem 10 If T is a multivalued map on a closed bounded convex C subset of R^n , such that T is upper semicontinuous with nonempty closed convex values, then T has a fixed point. Recall that x is a fixed point of T if $x \in Tx$.

The fixed point theory of multivalued maps is useful in economics, game theory and minimax theory. An important application of Kakutani fixed point theorem was made by Nash in the proof of existence of equilibrium for a finite game. Other applications of fixed point theorem of multivalued mapping are in mathematical programming, control theory and theory of differential equations.

Popa introduced implicit functions which are proving fruitful due to their unifying power besides admitting new contraction conditions.

The most recent result for implicit functions is due to Javid Ali and M. Imdad. They introduce an implicit function to prove their results because of their versatility of deducing several contraction conditions in one go. Some new forms of implicit relations are also introduced recently .

APPLICATIONS TO FIXED POINT THEOREM

There are so many applications of fixed point theorems. Some of the applications are as follows:

Integral equations: These equations occur in applied mathematics, engineering and mathematical physics. They also arise as representation formulas in the solution of differential equations.

The Method of Successive Approximations:

This method is very useful in determining solutions of integral, differential and algebraic equations.

Conclusion

The fixed point theory from Poincare and Brouwer's theorem to KyFan theorem and fixed point theorems of variational inequalities have been briefly presented. implicit functions are used in

engineering, economics, game theory, and the other applied sciences.

References:

- [1] Banach S. (1922), Sur les operations dans les ensembles abstracts ET leur applications aux equations integrals, Fund. Math.3, pp. 133-181.
- [2] Brouwer L. (1912), Uber Abbildungen von Mannigfaltigkeiten, Math. Ann., 70, pp. 97-115.
- [3] Browder F. (1976), Nonlinear Operators and Nonlinear Equations of Evolution, Proc. Amer. Math. Soc. Symp. Pure Math., vol. 18, pt2, Providence, RI.
- [4] Ciric L.J. (1977), Quasi- contraction in banach spaces, Publ. Inst. Math. 21 (35), pp. 41-48.
- [5] Fan, Ky, A generalization of Tychonoff's fixed point theorem, Math. Ann. 142 (1961), 305 - 310.
- [6] Fan, Ky, Extensions of two fixed point theorems of F. E. Browder, Math. Z. 112 (1969), 234 - 240.
- [7] Kakutani S. (1968), A generalization of Tychonoff's fixed point theorem, Duke Math. J. 8, pp. 457-459.
- [8] Kannan R. (1968), some results on fixed points, Bull. Calcutta Math. 60, pp.71-7
- [9] Krik W.A. (1983), fixed point theory for non-expansive mappings II, Contemporary Mathematics 18, pp.121-140.

KINETICS AND MECHANISM OF CINNAMYL ALCOHOL BY BENZYLTRIMETHYL AMMONIUMDICHLOROIODATE

Dr.T.V.Reddy

*Professor, Department of Humanities & Sciences, Malla Reddy College of Engineering,
Secunderabad, Telangana, India, drtvrchemistry@gmail.com*

K.Saritha,

*Assistant Professor, Department of Humanities & Sciences, Malla Reddy College of Engineering
Secunderabad, Telangana, India, keerthi.sari@gmail.com*

S.Sirisha,

*Assistant Professor, Department of Humanities & Sciences, Malla Reddy College of Engineering
Secunderabad, Telangana, India, sirishasurapaneni.kolli@gmail.com*

ABSTRACT

BENZYLTRIMETHYL AMMONIUM DICHLORO IODATE is used as a reagent for iodination and chloro iodination for many organic compounds because of its stable nature. However, the oxidation of alcohols, in particular unsaturated alcohols in the presence of BTMACI is not much known. In the present study, the oxidation of unsaturated alcohol, cinnamyl alcohol is carried out. The corresponding aldehyde is identified and kinetics of the oxidation reaction which is studied and found to be a first order reaction with respect to BTMACI. The effect of concentration of alcohol, oxidant and temperature on reaction rate is also studied. Depending on kinetics and activation parameters, a suitable mechanism is proposed for cinnamyl alcohol by the formation of intermediate active species between BTMACI and $ZnCl_2$.

chloroiodo adducts of alkenes. Auria et.al (5,6) reported the use of BTMACI as iodinating agent of Thiophene derivatives. The use of BTMACI in the oxidation of some Thioacids was reported by Suri et.al (7). The reaction was found to be first order with respect to Thio acids and BTMACI.

Oxidation of primary alcohols (8), hydroxy acids (9) and organic sulphides by BTMACI was studied by Jai Narain Vyas University, JODHPUR. However the use of BTMACI has not been extended to unsaturated alcohols. In the present study, the oxidation of cinnamyl alcohol in the presence of BTMACI is taken up. It is also aimed to study the effect of concentration of Substrate and oxidant and the effect of temperature on reaction rate. Based on kinetics and activation parameters a suitable mechanism is proposed for the oxidation of cinnamyl alcohol.

INTRODUCTION

Synthesized BTMACI is known as a good halogenating agent (1-3). Among various Benzyltrimethyl ammonium polyhalides, BTMACI is widely used because of its stable character. Addition of Zinc Chloride makes BTMACI more soluble in acetic acid, generating a complex which serves as an excellent halogenating agent. Moriwaki et.al (4) have reported successful halogenation of aromatic acetyl derivatives by BTMACI in acetic acid in the presence of $ZnCl_2$. Fujisaki et.al (5) used BTMACI in the formation of

EXPERIMENTAL

Cinnamyl alcohol (FLUKA) is purified by recrystallisation, is used. BTMACI is dissolved in acetic acid in the presence of $ZnCl_2$ BTMACI is prepared in the following way. A solution of Benzyl Trimethyl ammonium chloride (18.6 g, 0.1 mol) in water is added to a solution of Iodine monochloride (16.2 g, 0.1 mol) in Dichloromethane (200 ml) with continuous stirring. A layer of BTMACI is separated and dried. This is recrystallised for dichloromethane – Ether mixture (3:1) to get BTMACI, yellow needle shaped crystals.

The experiment is conducted with alcohol, BTMACI and ZnCl_2 made up to 50 ml in Glacial acetic acid and kept in the dark for 15 hours for complete reaction. The solution is treated with 2,4-DNP in dilHCl and recrystallised form ethanol and weighed. Absorbance of experimental solutions is measured at 470 nm using HP-diode array spectrophotometer.

KINETICS MEASUREMENTS

The reactions are carried out under Pseudo First order conditions by maintaining alcohol in large excess over BTMACI. Pseudo first order rate constants K_{obs} were computed from the linear ($r^2 > 0.990$) least square plots of $\log [\text{oxidant}]$ Vs time. The rates were checked by substituting values in the first order rate equation.

$$K_{\text{obs}} = \frac{2.303}{t} \log \frac{a}{a-x}$$

The third order rate constant K_3 of the oxidation of the alcohols by BTMACI is calculated using the equation

$$K_3 = \frac{K_{\text{obs}}}{[\text{alcohol}][\text{ZnCl}_2]}$$

E_a is calculated from the linear plots between $\log K_3$ and inverse of temperature.

$$E_a = -2.303 R \times \text{Slope}$$

Change in Enthalpy is calculated from which change in entropy and change in free energy are also calculated.

RESULTS AND DISCUSSION

Kinetics of oxidation of cinnamyl alcohol has been studied at various concentrations of substrate. The rate data is given in table 1. Rate increases with increase in concentration of cinnamyl alcohol as shown in Table 1.

Table 1

Substrate variation:

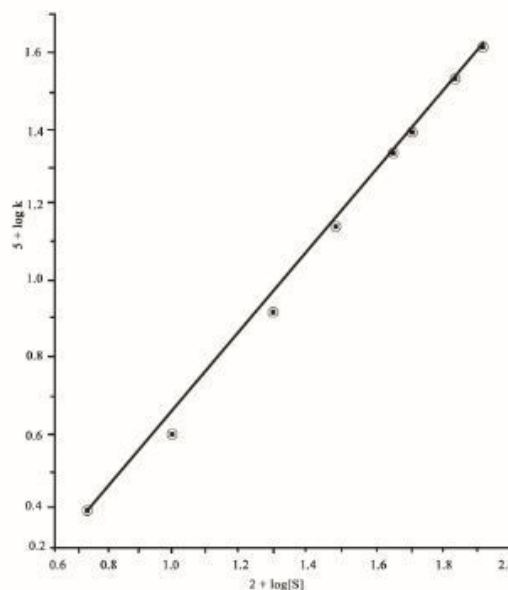
$$[\text{BTMACI}] = 0.001 \text{ mol dm}^{-3} \quad [\text{ZnCl}_2] = 0.002 \text{ dm}^{-3} \\ \text{Temp} = 308\text{K}$$

| Substrate | [S] or [Cinnamyl Alcohol] mol dm^{-3} | $K_{\text{obs}} \times 10^5 \text{ sec}^{-1}$ |
|------------------|--|---|
| Cinnamyl alcohol | 0.05 | 2.59 |
| | 0.10 | 4.21 |
| | 0.20 | 8.14 |
| | 0.30 | 13.30 |
| | 0.50 | 21.97 |
| | 0.60 | 26.03 |
| | 0.80 | 34.04 |
| | 1.00 | 41.14 |

With respect to substrate the order was found to be of first order. A plot of $\log K$ Vs $\log S$ gives a unit slope at temperature 308 K (Fig.1).

Fig.1

Cinnamyl alcohol
Log k Vs log[S]
Temperature - 308K



Rate increases with increase in concentration of cinnamyl alcohol is also found at 328 K as shown in Table .2.

Table 2

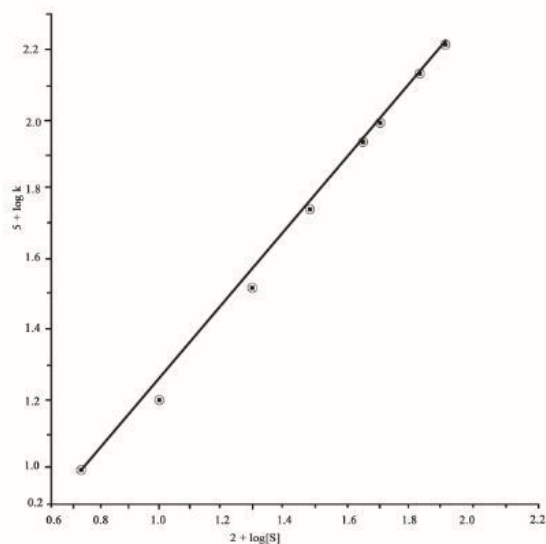
Substrate variation:

$[BTMACI] = 0.001 \text{ mol dm}^{-3}$ $[ZnCl_2] = 0.002 \text{ dm}^{-3}$
 Temp=328K

| Substrate | [S] or [Cinnamyl Alcohol] mol dm^{-3} | $K_{\text{obs}} \times 10^5 \text{ sec}^{-1}$ |
|------------------|--|---|
| Cinnamyl alcohol | 0.05 | 10.27 |
| | 0.10 | 16.50 |
| | 0.20 | 32.57 |
| | 0.30 | 53.27 |
| | 0.50 | 88.24 |
| | 0.60 | 103.67 |
| | 0.80 | 136.24 |
| | 1.00 | 164.74 |

Fig.2

Temperature 328K



Effect of change in concentration of BTMACI on reaction rate at 318 K is studied and the results are given in Table 3. It is observed that the rate of reaction has not been changed much. However, the change in the concentration of cinnamyl alcohol at 328 K shows an increase in the reaction rate.

Table 3

$[Substrate] = 0.05 \text{ mol dm}^{-3}$ $[ZnCl_2] = 0.002 \text{ dm}^{-3}$
 Temp=318K

| Substrate | [BTMACI] Mol.dm^{-3} | $K_{\text{obs}} \times 10^5 \text{ sec}^{-1}$ |
|------------------|-------------------------------|---|
| Cinnamyl alcohol | 1.0 | 8.30 |
| | 2.0 | 8.50 |
| | 3.0 | 7.10 |
| | 5.0 | 7.94 |
| | 8.0 | 7.91 |

Change of temperature on reaction rate is studied at three different temperatures and found that the rate increases with increase in temperature as given in Table 4.

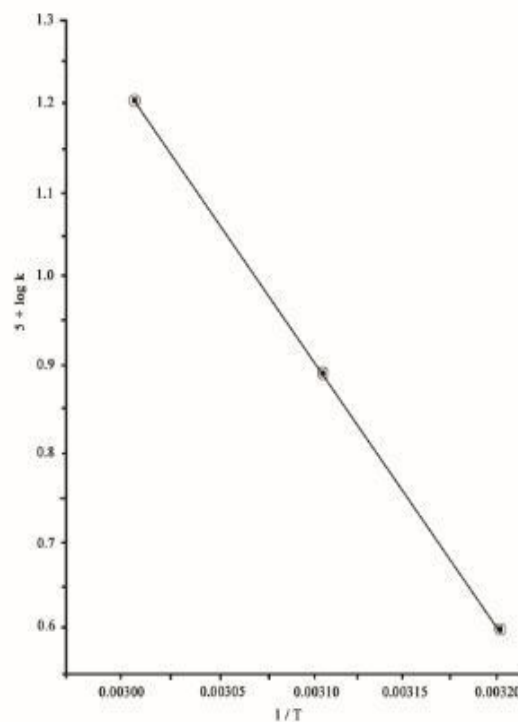
Table 4

$[BTMACI] = 0.01 \text{ mol dm}^{-3}$ $[ZnCl_2] = 0.002 \text{ dm}^{-3}$

$[Cinnamyl \text{ alcohol}] = 0.1 \text{ mol dm}^{-3}$

| Temperature | $K_{\text{obs}} \times 10^5 \text{ sec}^{-1}$ |
|-------------|---|
| 308K | 4.21 |
| 318K | 8.30 |
| 328K | 16.5 |

The relation between log K and $1/T$ is as shown in Fig 3.

Fig.3


DISCUSSION:

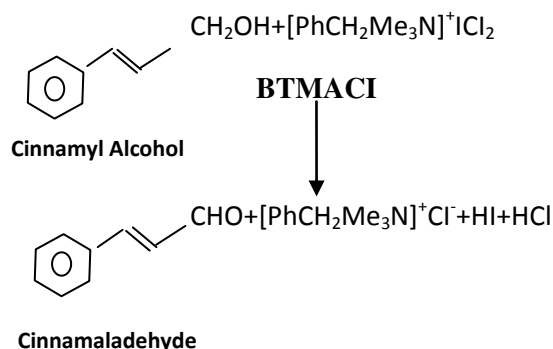
Activation parameters for the oxidation of cinnamyl alcohol, at temperature of 318 K are calculated and given below.

$$\Delta H^* = 53,141.47 \text{ J.mol}^{-1}$$

$$\Delta S^* = -155.16 \text{ J.mol}^{-1} \text{ K}^{-1}$$

$$\Delta G^* = 102.4 \text{ kJ.mol}^{-1}$$

In the present investigation, the oxidation of Cinnamyl alcohol yields corresponding aldehyde as the main product. The overall reaction may be represented as follows.

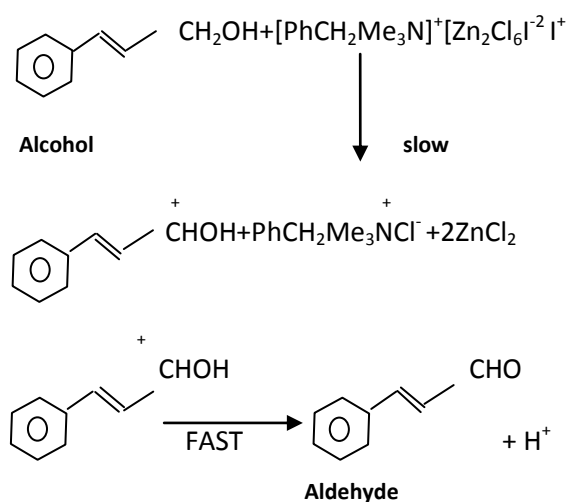


The rate of oxidation is found to be first order with respect to each BTMACI, alcohol and ZnCl_2 . Therefore the experimental rate law will be expressed as follows.

$$\text{Rate} = K_3 [\text{BTMACI}] [\text{alcohol}] [\text{ZnCl}_2]$$

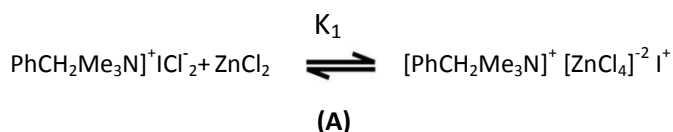
Mechanism:

In the present study, the oxidation of cinnamyl alcohol by BTMACI, the following mechanism is proposed and supported by the observed negative entropy of activation.

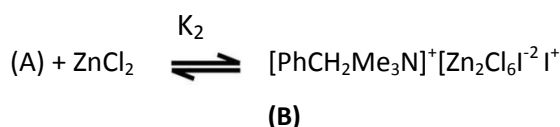


As the charge separation takes place in the transition state, the two ends becomes highly solvated. The loss in entropy can be attributed to this Solvation of the ends in the transition state.

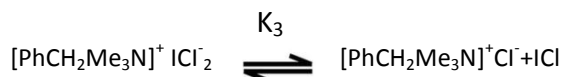
BTMACI is reported to produce an active species A(9) as shown in the following equation, in presence of ZnCl_2 .



Even at low concentration of ZnCl_2 almost the whole of BTMACI will be in the form of complex (A) as shown in the above equation. It is observed that the rate increases linearly with increase in the concentration of ZnCl_2 and this point supports by further complexation of 'A' with ZnCl_2 to give another complex (B).



The above observed dependence on the concentration of ZnCl_2 indicates that the equilibrium between A and B is rapid and the equilibrium constant K_2 is small and the reaction is not complete even at high concentration of ZnCl_2 . This suggests that only the complex B is the reactive oxidizing species. The small rate enhancing effect of BTMACI suggest that Iodine monochloride is not involved in the oxidation process.



The formation of the complex is supported by the spectral studies also.

CONCLUSION:

BTMACI is found to be an effective oxidant for organic compounds in particular alcohols to form corresponding aldehydes. It can be also tried for other substituted cinnamyl alcohols for further study which may give valuable information regarding mechanism and Kinetics.

REFERENCES

1. S.Kakinami, S.Kajigaeshi, H.Yamasaki and T.Okamoto
Bull, Chem., Soc.Jpn., 1988, 61,600.
2. S.Kajigaeshi, Y.Shinmasu, S.Fujisaki and T.Kakinami
Chem., Express, 1990, 5, 141.
3. S.Kajigaeshi, T.Kakinami, H.Tokiyama, T.Hirakawa and T.Okamoto
Chem.Lett., 1987, 627.
4. S.Fujisaki, S.Kajigaeshi, M.Moriwaki, T.Kakinami and T.Okamoto
Bull, Chem., Soc.Jpn., 1990, 63,3033.
5. T.Okamoto, T.Kakinami, H.Fujimoto, H.Yamasaki and S.Kajigaeshi
Bull, Chem., Soc.Jpn., 1991, 64, 2566.
6. M.D.Auria and G.Mauriello
Synthesis, 1995, 248
7. D.Suri, K.K.Banerji and S.Kothari
Int.J.Chem.Kinet., 1996, 28, 681
8. S.Goel, S.Kothari and K.K.Banerji
J.Chem.Res.(S), 1996, 230; (M) 1318
9. T.Kakinami, S.Kajigaeshi, M.Moriwaki, T.Tanaka, S.Fujisaki and T.Okamoto

DETERMINANTS FOR CUSTOMER INTENDED USE OF SELF SERVICE TECHNOLOGIES

Thirupathi Chellapalli, Research Scholar, School of
Management Studies University of Hyderabad E-
Mail: Thirupathi.chellapalli@gmail.com

G. Pranay, Assistant Professor, Department of
Business Management, Malla Reddy College of
Engineering, Hyderabad. E-Mail:
pranaykumar4545@gmail.com

V. Naresh, Student Business Management, Dept. of
Business Mnagement, Malla Reddy College of
Engineering, Hyderabad.

Abstract: The last decade has seen an increased focus by business world on using modern technologies to deliver their services. The introduction of self-service technologies (SSTs) opens for businesses for the potential of improving productivity and service quality while cutting costs. In fact, introduction of self-service technologies has not been proven to be quite successful. Research on the usage of technology based self services has mainly focuses on antecedents of attitude towards and corresponding behavior intentions to use Focusing on the moderating effects of age, education and gender as key demographic variable. Finally, the conceptual paper is taking support from the literature to exploring the determinants for intended usage and perceived behavior of consumers towards the self-service technologies.

Keywords: Self-Service Technologies, Customer Determinants, Technology Interfaces, Perceived Bahaviour etc.

1. INTRODUCTION:

The Rapid acceptance of modern information and communication technologies in day to day business activity is an important for long term trend in the business world given by Rust (2001). Consequently, business environment has increasingly considered innovative options for delivering services to their customers (Bobbitt and Dabholkar 2001, Dabholkar, Bobitt and Lee 2003, Quinn 1996). As a result, the mode of service provision and production is increasingly turned towards the use of self service technologies (SSTs), thereby Meuter et al (2005) explained enabling customers to produce a service encounter independent of direct service employee involvement. The infusion of technology is dramatically changing the

nature of service encounters which has been traditionally conceptualized as a high-touch, low-tech phenomenon, within technology based self-services, man-to-man interaction is substituted by man-machine interaction said by Bitner, Brown and Meuter (2000). From a customer's point of view these benefits are reflected mainly by increasing flexibility, greater control, and time savings compared to the traditional service options (Meuter et al., 2000). This is surprising to consider the fact that literature on adoption of technologies within organizations has established the key role played by demographics opined by Morris and Venkatesh (2000). So, in order to explain the moderating influence of demographic (education level, age and gender) on the attitude formation process. In the context of self-service technologies determinants for customer intended usage factors are conceptually describing in this paper.

2. SELF-SERVICE TECHNOLOGIES (SSTs):

Self-service technologies (SSTs) are technological interfaces that enable customers to produce a service independent of direct service employee involvement (Meuter et al., 2000). According to Fisher (1998) SSTs have been implemented in the

delivery of service as an aid to the front line of employee who interacts with customer. Going by these definitions, we can infer that these technologies depend on customer's understanding the procedure of use and how to use it in order to make them adopt it. Across various industries, Self-service technologies are replacing many face-to-face service interactions with the purpose of making service transactions more accurate, convenient and faster. The emergence and rapid deployment of information technology has led to the proliferation of Self-service technologies. The deployment of SSTs created value for both customers and company.

Some of the Commonly Used Self Service Technologies:

- 1) Online banking.
- 2) Travel reservation. (Airlines, Trains, Buses etc)
- 3) Online auction.
- 4) ATMs.
- 5) Online brokerage.
- 7) Interactive phone.
- 8) Online ticket purchasing. (Movies, events etc)

Researchers have identified the following three keys to usage of self-service transactions, from the customers' viewpoint:

- Availability- refers to the availability of SSTs across various geographic regions and across different time periods (24 hour ATMs etc.)
- Speed- this factor refers to the speed with which the transactions can be processed by SSTs
- Reliability- refers to the accurate functioning of SSTs over repeated number of times.

(Lawrence F. Cunningham, Clifford E. Young and James Gerlach, 2009).

3. SELF-SERVICE TECHNOLOGIES (SST's) IN THE INDIAN CONTEXT:

In a developing country like India the evolution of self-service technologies (SSTs) has significantly shaped the way customers interact with organizations to create service outcomes. It can be stated that the interpersonal transactions in the services sector have been gradually substituted by the do-it-yourself options. The widespread usage of online banking, shopping, and brokerage demonstrate that technology-based self-service is a critical component for customer-firm interactions. The self-service

option not only gives customers more control over the service process but also reduces the work load of service vendors. The benefits associated with self-service have been well-documented in prior research. For example, Bendapudi and Leone (2003) identified that the self-service customer takes more responsibilities than is warranted and tends to place less blame on the service vendor in case of a service failure. Kelley et al. (1990) also stated that involving customer participation will eventually enhance service quality and customer satisfaction. As suggested by Globarson and Maggard (1991), self-services are differentiated from professional services as those activities performed by customers without the presence of an employee of the organization.

In other words, self-service customers perform service-related activities that otherwise would have been performed by the employee (Adrian Palmer, 1990). Some of the widely used Self Service Technologies:

3.1. E-Banking

3.2. Mobile Banking

3.3. Automated Teller Machines 3.4. Credit and Debit Cards

3.5. Online Train Ticket Booking

3.1. E-Banking (or Internet banking or online banking)

It allows customers of a financial institution to conduct financial transactions on a secured website operated by the institution, which can be a retail bank, virtual bank, credit union or building society. The precursor for the modern home online banking services were the distance banking services over electronic media from the early 1980s. The term online became popular in the late '80s and referred to the use of a terminal, keyboard and TV (or monitor) to access the banking system using a phone line. Online services started in New York in 1981 when four of the city's major banks (Citibank, Chase Manhattan, Chemical and Manufacturers Hanover) offered home banking services using the videotext system. To access online banking, the customer would go to the financial institution's website, and enter the online banking facility using the customer number and password. Some financial institutions have set up additional security steps for access, Online banking facilities offered by various financial institutions have many features and capabilities in common, but also have some that are application specific.

The common features fall broadly into several categories:

A bank customer can perform non-transactional tasks through online banking, including: -

- viewing account balances
- viewing recent transactions
- downloading bank statements for example in PDF format
- viewing images of paid cheques
- ordering cheque books
- download periodic account statements
- Downloading applications for M-banking, E-banking etc.

3.2. Mobile Banking:

it is a system that allows customers of a financial institution to conduct several financial transactions through a mobile device such as a mobile phone or personal digital assistant the earliest mobile banking services were offered over SMS, a service known as SMS banking. With the introduction of smart phones with WAP support enabling the use of the mobile web in 1999, the first European banks started to offer mobile banking on this platform to their customers. Typical mobile banking services may include:

Account information:

- Mini-statements and checking of account history
- Alerts on account activity or passing of set thresholds
- Monitoring of term deposits
- Access to loan statements
- Access to card statements
- Mutual funds / equity statements
- Insurance policy management

Payments, deposits, withdrawals, and transfers:

- Cash-in, cash-out transactions on an ATM
- Domestic and international fund transfers
- Micro-payment handling
- Mobile & Direct to Home package recharging
- Purchasing tickets for travel and entertainment
- Commercial payment processing
- Bill payment processing

3.3. Automated Teller Machines:

The first Automated Teller Machine (ATM) was introduced in the year 1967 by Barclays Bank in Enfield Town in North London. ATM is designed to perform the

most essential functions of bank. ATM's were introduced to the Indian banking industry during 1987 by HSBC BANK in Mumbai. It is operated by plastic card with its specific features. The plastic card is replacing cheque, personal attendance of the customer, banking hours' restrictions and paper based verification. Automated Teller Machines (ATMs) have gained prominence as a delivery channel for banking transactions in India. Banks have been deploying ATMs to increase their reach. As per the ATM statistics computed by the Reserve Bank of India, total number of onsite and offsite ATM's of all Indian Banks are 100042 by July 2012. (Article: Jyotiranjana Hota, February 2013) More people are now moving towards using the automated teller machines (ATM) for their banking needs. According to a survey by Bank net India, 95% people now prefer this modern channel to traditional mode of banking. Almost 60% people use an ATM at least once a week.

3.4. Credit and Debit Cards:

Credit Cards issued by banks are post paid cards. Debit Card, on the other hand, is a prepaid card with some stored value (money). Every time a person uses this card, the merchant's Bank gets money transferred

to the merchant's account from the bank account of the buyer. The buyers account is debited with the exact amount of purchases. An individual must open an account with the issuing bank which gives debit card with a Personal Identification Number (PIN). When he makes a purchase, he enters his PIN on shops PIN pad. The Credit Card holders are empowered to spend wherever and whenever they want with their Credit Cards within the limits fixed by the respective banks

3.5. Online Train Ticket Booking:

Indian Railway Catering and Tourism Corporation, abbreviated to IRCTC, is a subsidiary of the Indian Railways that handles the catering, tourism and online ticketing operations of the Indian railways. IRCTC is known for changing the face of railway ticketing in India. It pioneered internet-based rail ticket booking through its website, as well as from the mobile phones via GPRS (General packet radio service) or SMS (Short message service). In addition to e-tickets, IRCTC also offers I-tickets that are basically like regular tickets except that they are booked online and delivered by post. The tickets' PNR (Passenger Name Record) status is also made available by IRCTC website.

As of May 2013, the ticketing site of the IRCTC can handle about 1.2 lakh concurrent connections on web servers and can book about 2000 tickets per minute. Indian Railways plans to spend about 100 crores (US\$15 million) to strengthen the website to enable it for booking 7200 tickets per minute. CRIS (centre for railway information system), the technical arm of railways, is involved in the upgrading of the IRCTC website. According to a senior Railway Ministry official, the average booking per day has increased from 3.67 lakh in 2012 to 4.15 lakh in May 2013. Approximately, 31 crore reserve tickets are booked in a year out of which 55% of tickets are sold through windows, 37% of tickets are booked online and 8% are booked by ticketing agents. IRCTC's highest ever single day booking is 5.02 lakh e-tickets on 1 March 2013.

4. DETERMINANTS FOR INTENDED USAGE OF SST's:

According to Meuter et al (2000) perspective the below explaining key factors that leads to satisfaction or dissatisfaction relate to customer use of SSTs are:

4.1) Perceived Usefulness: Refers to the Davis (1989) Usefulness is the subjective probability that using the technology would

improve the way a user could complete a given task and has also received a great deal of attention in adoption literature.

4.2) Perceived Ease of Use: Refers to the Davis (1989) Ease of use has been defined as the degree to which a user would find the use of a technology to be free from effort on their part and has been used in many studies.

4.3) Availability: refers to the availability of SST's across various geographic regions and across different time periods.

4.4) Convenience:

Refers to the undertaken consideration of location advantage technology enabled service. It would also create impact on formulation attitude toward usage of self service technologies.

4.5) Perceived Risk:

Refers to the Perceived risk is considering a multidimensional construct represents a perception about uncertainty about types of losses associated with financial, performance, social, psychological, security and time or convenience loss (Baur 1960, Dowling 1986, Peter and Tarpey, 1975).

4.6) Perceived Value:

Refers to the It is conceptualized as cognitive tradeoff between expected benefits and expected sacrifice associated with adoption of an SST (Dodd et al 1991, Zenithal,

1988). In Parasuraman (2000), perspectives contributors and inhibitors of technology readiness.

4.7) Technology Readiness (TR):

Parasuraman, (2000) refers to people's propensity to embrace and use modern technologies for accomplishing goals in home life and at work. The TR construct refers to an overall state of mind resulting from a gestalt of mental enablers and inhibitors that collectively determine a person's predisposition toward technologies. The construct is based on four dimensions:

(i) Optimism:

Optimism is defined as a positive view of technology and a belief that technology offers people increased control, flexibility, and efficiency. It captures the general feeling that technology is a good and positive thing.

(ii) Innovativeness:

Innovativeness is defined as a tendency to be a technological pioneer and an opinion leader. It represents the degree to which a person is a trail-blazer in trying new technology-based products or services and an opinion leader on technology related issues.

(iii) Discomfort:

Discomfort refers to a perceived lack of control over technology and a feeling of

being overwhelmed by it. This construct measures the degree to which people have a general prejudice against technology-based products and services.

(iv) Insecurity:

Insecurity is defined as distrust of technology and skepticism about its ability to work properly. It focuses on people's degree of trust in technology-based transactions. Optimism and innovativeness are positive drivers of TR, encouraging customers to use technological products and services and to hold a positive attitude toward technology. Discomfort and insecurity are negative drivers, making customers reluctant to use technology.

Literature suggest that Dabholkar (1994,1996) identified control, performance, need for human interaction, reliability, speed as critical variables in the usage of SSTs and Meuter and Bitner (1998) found support, accuracy, performance, recovery from error as important variable in the usage of technologies under certain circumstances.

4.8) Identified Control:

Refers to the level of control over transactions is considerable aspect for intended use of self service technologies. Level of education is increased the awareness of customers also getting high

which leads to the forming attitude toward usage of self service technologies.

4.9) Performance:

Refers to the entire performance of SSTs over a period.

4.10) Need for Human Interaction:

Dabholkar (1992) refer to the need for interaction is defined as a desire to retain personal contact with others during a service encounter. Historically, service encounters have involved interpersonal interactions between customers and service providers. These interactions allow for the development of interpersonal relationships between a customer and service provider.

4.11) Reliability:

Refers to the accurate functioning of SSTs over repeated number of times.

4.12) Speed:

Refers to the processing time for single transaction of SSTs over repeated number of times.

4.13) Support:

Refers to the support is provided by initiator is considerable impact ausage phenomenon.

4.14)Accuracy:

Refers to the consistency functioning of SSTs over repeated transactions.

4.15) Recovery from Error:

Refers to if any error is taken place with regard tottransactions, itrequires short time

for recovery from error is also determinant for usage of self service technologies.

CONCLUSION:

In this paper, we are conceptually discussing determinants for intended Usage of SSTs. In the current scenario of increasing penetration of internet, wide spread deployment of ATMs preference of Smart phones by users and developments in information technology, usage of credit cards, debit cards, mobile banking and online ticket purchasing etc. Self Service Technologies (SSTs) are bound to play a significant role in delivering superior customer services. A variety of factors like, knowledge and skills related to usage of SSTs the context in which SSTs are used by customers, the kind of services being delivered through SSTs, the value of transaction involved, etc. influence the outcomes and experiences for the customers, the marketers need to be more focused in assessing the benefits and challenges involved in the usage of SSTs.

In the Indian context where there is a clear digital divide across various cross sections of the society, study of the SST's and their role in delivering superior customer experience for that determinants for customer use of self service technologies is

very much needed. It is only when the above issues are addressed; marketers could be successful in delivering superior customer experience to a wide cross section of consumers.

REFERENCES:

- Bitner, M.J. (2001), "Self-Service Technologies: What Do Customers Expect?" *Marketing Management*, Vol. 10 No. 1, pp. 10-11.
- Bobbitt, Michelle L., and Prathiba A. Dabolkar (2001), "Integrating Attitudinal Theories to Understand and Predict use of Technology Based Self Service," *International Journal of Service Industry Management*, 12(5) 43-70.
- "Computer Giant Giving a Major Boost to Increased Use of Corporate Videotext, *Communication News*, 1984.
- Cronin, Mary J. (1997). "Banking and Finance on The Internet", John Wiley and Sons ISBN 0-471-29219-2 page 41 from *Banking and Finance on the Internet*.
- Dabholkar, P.A. (1992), "Role of Affect and Need for Interaction in on-Site Service Encounters", in Sherry, J.F. and Sternthal, B. (Eds), *Advances in Consumer Research*, Vol. 19, Association for Consumer Research, Provo, UT, pp. 563-9.

Dabholkar, P.A. (1994), "Incorporating Choice into an Attitudinal Framework: Analyzing Models of Mental Comparison Processes", *Journal of Consumer Research*, Vol. 10, June, pp. 100-118.

Dabholkar, P.A. (1996), "Consumer Evaluations of New Technology-Based Self-Service Options: An Investigation of Alternative Models of Service Quality", *International Journal of Research in Marketing*, Vol. 13, pp. 29-51

Dabholkar, P.A. and Bagozzi, R.P. (2002), "An Attitudinal Model of Technology-Based Self-Service: Moderating Effects of Consumer Traits and Situational Factors", *Journal of the Academy of Marketing Science*, Vol. 30 No. 3, pp. 184-201.

Davis, F.D. (1989), "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology", *MIS Quarterly*, Vol. 13 No. 3, pp. 319-39.

Davis, F.D., Bagozzi, R.P. and Warshaw, P.R. (1989), "User Acceptance of Computer Technology: a Comparison of Two Theoretical Models", *Management Science*, Vol. 35, August, pp. 982-1003.

IRCTC Website to go 4X faster, book 7200 tickets per minute.

IRCTC books record 5.02 lakh e-tickets on single day- Times of India Articles Times of India, India Times.Com (2013-03-02).

James M. Curran, Matthew L. Meuter, (2005),"Self-Service Technology Adoption: Comparing Three Technologies", *Journal of Services Marketing*, Vol. 19 Issue: 2 pp. 103 – 113.

Meuter, Matthew L., Mary Jo Bitner, Amy L. Ostrom and Stephen W. Brown (2005), "Choosing Among Alternative Service Delivery Methods: An Investigation of Customer Trial of Self-Service Technologies," *Journal of Marketing*, 69 (April), 61–83.

Meuter, M.L. and Bitner, M.L. (1998), "Self-Service Technologies: Extending Service Frameworks and Identifying Issues for Research", *AMA Winter Educator's Conference Proceedings: Marketing Theory and Applications*, Vol. 9, pp. 12-19.

Parasuraman, A., and Charles L. Colby (2000), "Techno-Ready Marketing How and Why Your Customers Adopt Technology," *New York: Free Press*.

Predict use of Technology Based Self Service," *International Journal of Service Industry Management*, 12(5) 43-70.

Retail Setting" Vlerick Leuven Giant Management School.

Rust Ronald (2001), "the Rise of E-Service *Journal of Service Research*," 3(4), 283-285.

Soon IRCTC Website to book 7200 tickets per minute. Times of India, India Times.com (2013-05-27).

“The World First WAP Bank is Norwegian” itavisen.no.1999-09-24.

Vaidya (2011). “Emerging Trends on Functional Utilization of Mobile Banking in Developed Markets in Next3-4 Years”.

Weijters B., Schillewaert N., Rangarajan D., (2005). “Customer Usage of Self Service Technology in a Retail Setting” Vlerick Leuven Gent Management School.

IMPORTANCE OF A TEACHER AND TEACHING PROFESSION

M. Sunanda, Assistant Professor in Humanities and Science Department, Mallareddy College of Engineering, Secunderabad. E-Mail-sunrags1918@gmail.com

ABSTRACT:

This article illuminates the importance of the person who occupies the role of teacher by focusing on well-regarded teachers and showing how important it is for teachers to develop a sense of community and of trust in the classroom. Finally, their work sheds light on why a teacher's intellectual and moral sensibility plays a significant role in his or her influence on students. Teachers are an extremely important facet of any society for a number of reasons and their role in society is both significant and valuable. Teachers play an extraordinary part in the lives of children for the formative years of their development and the importance of teachers is something that cannot be understated. A teacher is a person who helps others to acquire knowledge, competences or values. Informally the role of teacher may be taken on by anyone. In some countries, teaching young people of school age may be carried out in an informal setting, such as within the family, (homeschooling) rather than in a formal setting such as a school or college. Some other professions may involve a significant amount of teaching (e.g. youth worker, pastor). In most countries, formal teaching of students is usually carried out by paid professional teachers.

Key words: Teacher, Teacher Qualities, Teacher Communication, Barriers, Duties.

Duties and functions of a Teacher:

A teacher's role may vary among cultures. Teachers may provide instruction in literacy and numeracy, craftsmanship or vocational training, the arts, religion, civics, community roles, or life skills. Formal teaching tasks include preparing lessons according to agreed curricula, giving lessons, and assessing pupil progress. A teacher's professional duties may extend beyond formal teaching. Outside of the classroom teachers may accompany students on field trips, supervise study halls, help with the organization of school functions, and serve as supervisors for extracurricular activities. In some education systems, teachers may have responsibility for student discipline.

Competencies and qualities of teacher:

Teaching is a highly complex activity. This is in part because teaching is a social practice that takes place in a specific context (time, place, culture, socio-political-economic situation etc.) and therefore reflects the values of that specific context. Factors that influence what is expected (or required) of teachers include history and tradition, social views about the purpose of education, accepted theories about learning etc.

Competences:

So the competences required by a teacher are affected by the different ways in which the role is understood around the world. Broadly, there seem to be four models:

- The teacher as manager of instruction;
- The teacher as caring person;
- The teacher as expert learner; and
- The teacher as cultural and civic person.

Some evidence-based international discussions have tried to reach such a common understanding. For example, the European Union has identified three broad areas of competences that teachers require:

- Working with others
- Working with knowledge, technology and information, and
- Working in and with society.

Scholarly consensus is emerging that what is required of teachers can be grouped under three headings:

- **Knowledge** (such as: the subject matter itself and knowledge about how to teach it, curricular knowledge, knowledge about the educational sciences, psychology, assessment etc.)
- **Craft skills** (such as lesson planning, using teaching technologies, managing students and groups, monitoring and assessing learning etc.) and
- **Dispositions** (such as essential values and attitudes, beliefs and commitment).

Qualities Of a teacher:

It has been found that teachers who showed enthusiasm towards the course materials and students can create a positive learning experience. These teachers do not teach by rote but attempt to find new invigoration for the course materials on a daily basis. One of the challenges facing teachers is that they may have repeatedly covered a curriculum until they begin to feel bored with the subject, and their attitude may in turn bore the students. Students who had enthusiastic teachers tend to rate them higher than teachers who didn't show much enthusiasm for the course materials.

1. **An Engaging Personality and Teaching**

Style:

A great teacher is very engaging and holds the attention of students in all discussions.

2. **Clear Objectives for Lessons:**

A great teacher establishes clear objectives for each lesson and works to meet those specific objectives during each class.

3. **Effective Discipline Skills;**

A great teacher has effective discipline skills and can promote positive behaviors and change in the classroom.

4. **Good Classroom Management Skills:**

A great teacher has good classroom management skills and can ensure good student behavior, effective study and work habits, and an overall sense of respect in the classroom.

5. **Good Communication with Parents;**

A great teacher maintains open communication with parents and keeps them informed of what is going on in the classroom as far as curriculum, discipline, and other issues. They

make themselves available for phone calls, meetings, and email.

6. High Expectations:

A great teacher has high expectations of their students and encourages everyone to always work at their best level.

7. Knowledge of Curriculum and Standards:

A great teacher has thorough knowledge of the school's curriculum and other standards they must uphold in the classroom. They ensure their teaching meets those standards.

8. Knowledge of Subject Matter:

This may seem obvious, but is sometimes overlooked. A great teacher has incredible knowledge of and enthusiasm for the subject matter they are teaching. They are prepared to answer questions and keep the material interesting for the students.

9. Passion for Children and Teaching:

A great teacher is passionate about teaching and working with children. They are excited about influencing students' lives and understand the impact they have.

10. Strong Rapport with Students:

A great teacher develops a strong rapport with students and establishes trusting relationships.

Teacher Interaction with learners :

Research shows that student motivation and attitudes towards school are closely linked to student-teacher relationships. Enthusiastic teachers are particularly good at creating beneficial relations with their students. Their ability to create effective learning environments that foster student achievement depends on the kind of relationship they build with their students. Useful teacher-to-student interactions are crucial in linking academic success with personal achievement. Here, personal success is

a student's internal goal of improving himself, whereas academic success includes the goals he receives from his superior. A teacher must guide her student in aligning her personal goals with her academic goals. Students who receive this positive influence show stronger self-confidence and greater personal and academic success than those without these teacher interactions.

Students are likely to build stronger relations with teachers who are friendly and supportive and will show more interest in courses taught by these teachers.^{[22][23]} Teachers that spend more time interacting and working directly with students are perceived as supportive and effective teachers. Effective teachers have been shown to invite student participation and decision making, allow humor into their classroom, and demonstrate a willingness to play.

Teaching Qualifications:

- In many countries, a person who wishes to become a teacher must first obtain specified professional qualifications or credentials from a university or college. These professional qualifications may include the study of pedagogy, the science of teaching. Teachers, like other professionals, may have to, or choose to, continue their education after they qualify, a process known as continuing professional development.
- The issue of teacher qualifications is linked to the status of the profession. In some societies, teachers enjoy a status on a par with physicians, lawyers, engineers, and accountants, in others, the status of the profession is low. In the twentieth century,

- Many intelligent women were unable to get jobs in corporations or governments so many chose teaching as a default profession. As women become more welcomed into corporations and governments today, it may be more difficult to attract qualified teachers in the future.
- Teachers are often required to undergo a course of initial education at a College of Education to ensure that they possess the necessary knowledge, competences and adhere to relevant codes of ethics.
- There are a variety of bodies designed to instill, preserve and update the knowledge and professional standing of teachers. Around the world many teachers' colleges exist; they may be controlled by government or by the teaching profession itself.
- They are generally established to serve and protect the public interest through certifying, governing, quality controlling, and enforcing standards of practice for the teaching profession.

1. Professional standards

The functions of the teachers' colleges may include setting out clear standards of practice, providing for the ongoing education of teachers, investigating complaints involving members, conducting hearings into allegations of professional misconduct and taking appropriate disciplinary action and accrediting teacher education programs. In many situations teachers in publicly funded schools must be members in good standing with the college, and private schools may also require their teachers to be college members. In other areas these roles may

belong to the State Board of Education, the Superintendent of Public Instruction, the State Education Agency or other governmental bodies. In still other areas Teaching Unions may be responsible for some or all of these duties.

2. Professional misconduct:

Misconduct by teachers, especially sexual misconduct, has been getting increased scrutiny from the media and the courts. A study by the American Association of University Women reported that 9.6% of students in the United States claim to have received unwanted sexual attention from an adult associated with education; be they a volunteer, bus driver, teacher, administrator or other adult; sometime during their educational career.

3. Pedagogy and Teaching:

The teacher-student-monument in Rostock, Germany, honors teachers. Teachers facilitate student learning, often in a school or academy or perhaps in another environment such as outdoors.

4. Classroom management :

Teachers and school discipline

- Throughout the history of education the most common form of school discipline was corporal punishment. While a child was in school, a teacher was expected to act as a substitute parent, with all the normal forms of parental discipline open to them.
- It's not clear, however that this stereotypical view reflects the reality of East Asian classrooms or that the educational goals in these countries are commensurable with those in Western countries. In Japan, for example, although average attainment on

standardized tests may exceed those in Western countries, classroom discipline and behavior is highly problematic. Although, officially, schools have extremely rigid codes of behavior, in practice many teachers find the students unmanageable and do not enforce discipline at all.

- Where school class sizes are typically 40 to 50 students, maintaining order in the classroom can divert the teacher from instruction, leaving little opportunity for concentration and focus on what is being taught. In response, teachers may concentrate their attention on motivated students, ignoring attention-seeking and disruptive students. The result of this is that motivated students, facing demanding university entrance examinations, receive disproportionate resources. Given the emphasis on attainment of university places, administrators and governors may regard this policy as appropriate.

5. Obligation to honor student's rights:

Model democratic schools claim that popularly based authority can maintain order more effectively than dictatorial authority for governments and schools alike. They also claim that in these schools the preservation of public order is easier and more efficient than anywhere else. Primarily because rules and regulations are made by the community as a whole, thence the school atmosphere is one of persuasion and negotiation, rather than confrontation since there is no one to confront. Sudbury model democratic schools' proponents argue that a school that has good, clear laws, fairly and democratically passed by the entire school community, and a good

judicial system for enforcing these laws, is a school in which community discipline prevails, and in which an increasingly sophisticated concept of law and order develops, against other schools today, where rules are arbitrary, authority is absolute, punishment is capricious, and due process of law is unknown.

6. Occupational hazards:

- Teachers face several occupational hazards in their line of work, including occupational stress, which can negatively impact teachers' mental and physical health, productivity, and students' performance. Stress can be caused by organizational change, relationships with students, fellow teachers, and administrative personnel, working environment, expectations to substitute, long hours with a heavy workload, and inspections. Teachers are also at high risk for occupational burnout.
- There are several ways to mitigate the occupational hazards of teaching. Organizational interventions, like changing teachers' schedules, providing support networks and mentoring, changing the work environment, and offering promotions and bonuses, may be effective in helping to reduce occupational stress among teachers. Individual-level interventions, including stress-management training and counseling, are also used to relieve occupational stress among teachers.
- Apart from this, teachers are often not given sufficient opportunities for professional growth or promotions. This leads to some stagnancy, as there is not sufficient interests to enter the profession. An organization in

India called Centre for Teacher Accreditation (CENTA) is working to reduce this hazard, by trying to open opportunities for teachers in India.

- A great teacher is one a student remembers and cherishes forever. Teachers have long-lasting impacts on the lives of their students, and the greatest teachers inspire students toward greatness. To be successful, a great teacher must have:

Teacher Communication Barriers;

In the classroom make it difficult for students to get the most out of their education. Some teachers fail to create engaging lessons and struggle to connect to their students on a one-to-one basis. Students with unaddressed language or speech difficulties often have trouble communicating with their teachers and classmates. Personality differences and peer pressure add to the mix, making some classroom interactions feel awkward or forced

Barriers to Effective Communication:

Recognizing the most common communication barriers and understanding how they impact on effective communication is very important. Removing barriers is one of the easiest ways to improve communication. This article briefly studies the major obstacles to communication. Each barrier will then be examined in turn in further articles, with tips on overcoming each one. Some of the principal barriers to communication are: noise (interruptions, physical distractions) physical (geographical considerations, time and space) mental attitude (perceptions, stereotyping, prejudice, personal beliefs, status, relationship between communicators, culture, emotionality) poor feedback poor listening

skills selection of inappropriate medium or language used body language (non-verbal communication)

1. Noise: Noise is any interference that occurs between the communicators, i.e. the sender of the message, and the receiver. Noise appears in many forms – it can be distractions due to pictures on the wall, or objects in the room. In written forms of communication it can be the inclusion of irrelevant material, or an unsystematic approach to the topic. Other forms of noise can include: interruptions by other people, a ringing telephone, or external noise such as traffic outside a building, or people having a conversation close by.

2. Physical distractions: are the physical things that can get in the way of the communication process. A basic physical distraction can be the environment – the room may be too hot or too cold, or chairs can be uncomfortable. A person sitting behind a desk or standing behind a lectern automatically creates a physical barrier between sender and receiver. Time and space also serve as barriers to effective communication. When departments of an organization are geographically separate, quick, face-to-face communication becomes much more difficult. In global organizations, the time difference between colleagues in other continents can be a key communication barrier.

3. Mental attitude: The attitude of both the sender and the receiver can act as an obstacle in the communication process. Factors here include: respect, culture, and assumptions based on personal bias or stereotyping. Lack of empathy between the communicators can create a barrier as this entails putting aside preconceptions and prejudices. The relationship between the sender and the receiver is also important – if the relationship is good,

communication automatically has a better chance for success. Another key factor here is emotionality, e.g. if the speaker or the listener feels very strongly about a certain subject this will influence the communication process.

4. Poor feedback: Feedback is the receiver sending back the message to the sender as they have perceived it. It is reaction and without this, it is impossible for the sender to know if the receiver has accepted and understood the message. It can occur in a number of ways: people can be asked to repeat what they have said, or non-verbal communication such as a frown or a nod can provide valuable feedback to the sender. Feedback is especially important to help clarify muddled messages

5. Poor listening skills: Listening skills can have a major impact on the effectiveness of communication. A typical speaker will say about 125 words per minute, while a listener can receive 400-600 words per minute. Therefore, about 75% of listening time is free time, which can distract the listener. Barriers to communication here include not paying attention or daydreaming, so some or all of the message gets lost in the communication process.

6. Selection of inappropriate medium or language

Selecting the correct channel for communication is crucial, as using the wrong channel can hinder the communication process. In any situation, one medium may work better than another, although sometimes a combination of media will be the most useful. Simple messages can usually be transmitted orally, while more complex messages should be transmitted orally and in writing. The language chosen is also vital to effective communication. Using exclusionary language such as jargon, slang and abbreviations can be a major obstacle in the

communication process. Similarly, the level of language used must be chosen carefully. The level of education and knowledge of the intended audience must be considered, as must their social and cultural background.

7. Non-verbal communication

About 55% of the meaning of a message is communicated through non-verbal interaction. This includes posture, gestures, facial expression, tone and pitch of voice, style of dress, eye gaze and proximity (personal space). However, non-verbal cues can be ambiguous and their meaning can vary with respect to culture, context and intention. Random gestures can be interpreted to have some significance when none was intended. Style of dress can also have a huge influence on non-verbal communication as this can affect people's perceptions and stereotypes. The different types of barriers to effective communication can all reinforce each other, leading to vicious cycles. By anticipating potential barriers and attempting to avoid them wherever possible, the impact of communication can become greatly increased

Improving qualities of a Teacher:

1. Determine the success of training programs: The Indiana Department of Education will survey new teachers and the principals that oversee those teachers to evaluate the effectiveness of Indiana's educator preparation programs. Massachusetts will create public reports that link data from teacher training programs to student growth and other outcomes for their graduates. Pennsylvania will track teachers who have been dismissed to determine if they are coming from a specific preparation program.

2. A “Grow Your Own” System: Arkansas, Indiana, and Oklahoma have each proposed expanding programs that encourage high-performing high school students to consider teaching as a career, with some states attempting to also increase diversity in the teaching force. In Arkansas, the state will expand the Arkansas Teacher Cadet program from eight high schools to 20 high schools, half of which are high-poverty and high-minority schools. Indiana plans to create resources that will improve “cadet teaching” programs in its high schools, and Oklahoma plans to expand its Teach Oklahoma program to more high-poverty and high-minority high schools to introduce juniors and seniors to teaching.

3. Improve faculty knowledge at teacher prep programs: Kentucky will have regional coaches team up with teacher prep programs to teach faculty members about new standards and teacher and principal evaluation systems.

4. Change teacher prep courses and student teaching: Maine will meet with leaders of its teacher preparation programs to evaluate course requirements and ensure that new teachers have student teaching experiences in “high-poverty and isolated-small schools and high-risk school settings.” In its plan, state officials said that many teachers “are not adequately prepared” for the teaching demands of these types of schools. Missouri will also look for ways to incorporate a larger focus on urban education and working with diverse students into its teacher preparation programs and will attempt to expand the field experiences that candidates have before entering the classroom.

5. Make teacher candidates perform before they enter classroom: Missouri will create a performance assessment to make sure aspiring teachers have “pedagogy skills.” At least a dozen states require teachers to pass a state-approved performance exam before they receive a credential, and some teacher preparation programs in more than 20 other states have chosen to participate in an assessment

Benefits of Teaching:

- **Share Your Passion: Teaching** will give you a platform to share your passion and expertise with others. As you study to become a teacher, you'll also have the opportunity to further hone your skills and develop advanced training.
- **Inspire Others:** Becoming a teacher will also allow you to play an active role in inspiring others. As you share your knowledge and attention with your students, you'll influence who and what they become – not only in the professional realm, but also personally. Imagine what your future students might go on to achieve and share with the world. Will they seek to meet the needs of those around them, confronting poverty with compassion? Or might your students one day become the scientists who cure AIDS or cancer? As a teacher, your influence over your students, and ultimately the future, is infinite.

- **Make a Real Difference: Teachers** also have the opportunity to make a significant difference in the world by touching the lives of their students. For some of the children who enter your classroom, you may be the only one who believes in them and encourages them to do their best. In this way, you can change a child's life for the better, each and every day.
- **Do Things Differently** :Think back to when you were in school - what are some of the things that you would do differently, today, as an educator? Would you be careful about helping each student discover his or her talents? Would you take more time to listen? Would you give more second chances? As a professional educator, you can incorporate some of the positive changes that you wish you had experienced in the classroom as a child.
- **Change the Future of Education:** As a teacher, you'll also have the opportunity to influence the future of the field of education. At some point, most exceptional educators are either formally or informally asked to mentor newer staff members. In this way, you can share your expertise and wisdom, while also impacting all of the students that will eventually have that new colleague as a teacher.
- **A Community of Educators:** Within your school, you'll work alongside many qualified educators. By fostering an environment of creativity, professionalism, and sharing, you'll have the opportunity to be part of a vibrant learning community.
- **Ideal Work Hours** : Many educators find the convenience of being done with school by 3:00 or 4:00 pm to be quite appealing, not to mention the benefit of having summers off.
- **Fresh Start Every Year: Because** you'll most likely have an entirely new group of students each Fall, you'll find that each new school year holds different joys and challenges. You'll most likely find that within the field of education, you'll never be bored!
- **A Dynamic Field: Trends** in education are constantly changing, so if you're a person who enjoys adapting and growing over time, then you'll be well-suited for continuously learning about and incorporating new trends in the field of teaching.

Suggestions to the Teachers :

- Know your students' names and use their names as often as possible.
- Plan for every class; never try to wing it.
- Pay attention to the strengths and limitations of each of your students. Reward their strengths and strengthen their weaknesses.
- If possible, set your room in a U-shape to encourage interaction among students.
- Vary your instructional strategies; use lectures, demonstrations, discussions, case studies, groups, and more.
- Review the learning objectives with your students. Be sure students know what they are expected to learn, do, know, etc.
- Move around the room as you teach.

- Make your classes relevant. Be sure students see how the content relates to them and the world around them.
- Be expressive. Smile.
- Put some excitement into your speech; vary your pitch, volume and rate.
- Give lots of examples.
- Encourage students to share their ideas and comments, even if they are incorrect. You'll never know what students don't understand unless you ask them.
- Maintain eye contact and move toward your students as you interact with them. Nod your head to show that you are listening to them.
- Provide opportunities for students to speak to the class.
- Be available before class starts, during break, and after class to visit with students.
- Return assignments and tests to students as soon as reasonably possible. Provide constructive feedback.
- Be consistent in your treatment of students.
- Make sure that your exams are current, valid, and reliable. Tie your assessment to your course objectives.
- Plan around 15-20 minute cycles. Students have difficulty maintaining attention after a longer period of time.
- Involve your students in your teaching. Ask for feedback.

Conclusion:

A teacher's role involves more than simply standing in front of a classroom and lecturing. In fact, even though a teacher spends the majority of the day in the classroom, the actual teaching component is only part

of the job. An effective teacher understands that teaching involves wearing multiple hats to ensure that the school day runs smoothly and all students receive a quality education.

Teachers play multiple roles. They are learners, constantly taking classes and attending professional development sessions to learn the latest best practices and strategies for effective teaching. Many teachers regularly collaborate with one another to gain new ideas for teaching, planning grade-level instruction and combining subjects to enhance the learning experience. They analyze test results and other data to help determine the course of their instruction and make changes in their classrooms. Teachers also design lesson plans to teach the standards and provide engaging activities, while taking into account each student's interests and instructional needs. Teachers are facilitators of learning, providing students with the information and tools they need to master a subject. At times, teachers act like tutors, working with small groups of students or individual students within the classroom or after class.

A teacher, ignites the young mind nurtures the sprouts to take strong roots clears the weeds of ignorance helps the bud blossom into a flower!

References

- Stacy Zeiger began writing in 2000 for "Suburban News Publication" in Ohio and has expanded to teaching writing as an eighth grade English teacher. Zeiger completed creative writing course work at Miami University and holds a B.A. in English and a M.Ed. in secondary education from Ohio State.

- Williamson Mc Diarmid, G. & Clevenger-Bright M. (2008), 'Rethinking Teacher Capacity', in Cochran-Smith, M., Feiman-Nemser, S. & Mc Intyre, D. (Eds.): Handbook of Research on Teacher Education. Enduring questions in changing contexts. New York/Abingdon: Routledge/Taylor & Francis.
- For a review of literature on competences required by teachers, see F Caena (2011) 'Literature review: Teachers' core competences: requirements and development' accessed January 2017
- Teaching Patterns: a Pattern Language for Improving the Quality of Instruction in Higher Education Settings by Daren Olson. Page 96

CUSTOMER EXPERIENCE MANAGEMENT [CEM] – A CRITICAL OVERVIEW

Thirupathi Chellapalli, Research Scholar,
School of Management Studies, University
of Hyderabad. E- Mail:
thirupathi.chellapalli@gmail.com

K. Lavanya, Assistant Professor,
Department of Business Management, Malla
Reddy College of Engineering, Hyderabad.
E-Mail: lavanyakummari.k@gmail.com

R. Praharsha, Student Business
Management, Dept. of Business
Management, Malla Reddy College of
Engineering, Hyderabad.

ABSTRACT:

The aim of Customer relationship management is to enhance relationship with customers and builds customer loyalty. Research suggests, however, that service quality and customer satisfaction may be declining as customer often receives service and quality that falls well below their expectations, in this concern creating customer experience is bound to play vital role in business environment for getting competitive advantage over market competitors and enhances companies long run profitability and sustainable development. Many companies have seen customer experience management (CEM), as a successor to customer relationship management (CRM). This conceptual paper

is critically overview the concept of Customer experience management.

Keywords: Customer Experience, Customer Satisfaction, Consumer Behaviour etc.

1. INTRODUCTION:

Present business scenario the term Customer experience has been so widely used; according to academicians and practitioner's opinion, customer relationship management has not created the expecting levels of value for customers and profitability for organizations. So, Customer experience management may be an integrating framework that overcomes the theoretical and practical limitations of customer relationship management. The term customer experience has been receiving increased attention from practitioners and

academics in the recent past. Review of literature reveals the concept of Customer Experience was first conceived in the mid-1980s when, along with the mainstream literature in consumer behavior that deemed customers as rational decision makers, a new experiential approach offered an original view to consumer behavior is given by Holbrook and Hirschman, (1982). The concept of Customer Experience came more relevantly to the fore in the 1990s with Pine and Gilmore's book titled 'Experience Economy' (1999).

The authors of the book (Pine and Gilmore) present the 'experiences' as a new economic offering, which emerges as the next step after commodities, goods and services in what they term as the progression of economic value. Hence, in the following years a flourishing of different contributions focused their attention on some other works have referred to Customer Experience as a new lever to create value for both the company and the customer.(Adrian Palmer, 2010).

2. WHAT IS CUSTOMER EXPERIENCE MANAGEMENT?

Critics point out that diversity of dictionary is defining experience present a barrier to clear understanding and adoption by

marketers, because of marketers' confusion of experience as a verb with experience as a noun. According to Collin, 2007 (Collins English Dictionary) describes experience as the accumulation of knowledge or skill that results from direct participation in events or activities and the content of direct observation or participation in an event. The Oxford English Dictionary (Oxford University Press, 2006) explaining about Active participation in events or activities, leading to the accumulation of knowledge or skill. These are essentially cognitive definitions of experience as an outcome. American Heritage Dictionary of the English Language (2006), which defines experience as the feeling of emotions and sensations as opposed to thinking and involvement in what is happening rather than abstract reflection on an event. So,the confusion between verb and noun is overcome in those languages that distinguished these two meanings of experience with distinct words.

Marketing context discussion of experience has a long history, Abbott (1955), noted that what people really desire are not products, but satisfying experiences, Experiences are attained through activities. In order that activities may be carried out, physical

objects for the services of human beings are usually needed. Here lies the connecting link between men's inner world and the outer world of economic activity. People want products because they want the experience which they hope the products will render. Cited in Holbrook (2006, p. 40) After Abbott, Dewey (1963) added an additional dimension of uniqueness by stating that experience involves progression over time, anticipation, emotional involvement, and a uniqueness that makes an activity stand out from the ordinary. This was later followed by Pine and Gilmore (1998, p. 12), who described successful experiences as being those that a customer finds unique, memorable and sustainable over time.

The literature indicates a drift in time away from Abbot's essentially utilitarian view of experience, towards definitions based more on the hedonistic properties of a product. Thus, Schmitt (1999, p. 26) stated that experiences provide sensory, emotional, cognitive, behavioral and relational values that replace functional values, a most all-embracing definition of customer experience is provided by Gupta and Vajic (2000, p. 34) who state that an experience occurs when a customer has any sensation or knowledge acquisition resulting from some level of

interaction with different elements of a context created by the service provider.

However, such broad definitions take us back to Abbott's understanding of experience as being the transformation of products into value as perceived by the consumer.

3. UNDERSTANDING CUSTOMER EXPERIENCE:

Customer experience is understood as the internal and subjective response customers have to any direct or indirect contact with a company. Direct contact generally occurs during purchase and usage of a product, or during the delivery of a service and is usually initiated by the customer. Indirect contact most often involves unplanned encounters with representations of a company's products, services or brands and takes the form of word-of-mouth recommendations or criticisms, advertising, news reports, reviews, and so forth. Customer experience management encompasses every aspect of a company's offering, the quality of customer care of course, but also advertising, packaging, product and service features, ease of use, and reliability.

4. UNDERLYING REASONS FOR GROWTH OF INTEREST IN CEM:

The focus for Competitive differentiation between companies has evolved over time. According to Christopher et al. (1991) for a model by which the dominant basis for marketing-based competitive advantage has evolved, noting that during the 1950s and 1960s, firms in manufacturing-dominated economies used tangible product qualities to gain competitive advantage. As development of tangible bases for differentiation reached a plateau from the 1970s, the focus for differentiation moves to services. In turn, services, which began as a differentiator eventually became generic and from the 1980s, the quality of ongoing relationships became a new differentiator (Christopher et al., 1991). The authors

illustrate this evolution with reference to the car industry where services such as finance, warranties and insurance were used to differentiate otherwise increasingly generic tangible offerings from the 1970s.

In turn, services became generic, leading to the development of relationship marketing strategies. But what happens if relationships themselves become generic, and all companies operating in a product area and targeting similar groups of customers have similar patterns of relationship development activity? By extension of Christopher et al.'s model, experience may be a differentiator in markets where relationships have ceased to be a point of competitive differential advantage

Figure 1. AN EVALUATION OF THE DOMINANT BASIS FOR PREDICTS DIFFERENTIATION:

DIFFERENTIATION BASED ON



TANGIBLE DESIGN FEATURES



DIFFERENTIATION BASED ON
SERVICE BENEFITS



DIFFERENTIATION BASED ON
RELATIONSHIPS



DIFFERENTIATION BASED ON
EXPERIENTIAL VALUE

Source: Based on Christopher et al. (1991)

5. EMERGING THEORY OF CUSTOMER EXPERIENCE:

Creating superior customer experience has become one of the central objectives of marketing managers in today's business environment. Companies across the world have embraced the concept of customer experience management, with many incorporating the idea into their business strategy. Similarly, it has been argued that the success of Starbucks is based on creating a distinctive customer experience for their customers given by Michelle (2007). An IBM report identifies customer experience as a key factor for companies that are building loyalty to brands, channels and services stated by Baggett, Boyce, and Kleinberg (2007). At the utilitarian end of definitions of customer experience theory

has emerged from economics based models, for example through value (Abbott, 1955) and attribute theory (Hauser and Urban, 1979). Broader definitions of customer experience which stress hedonism call for a more diverse theory base.

Hedonistic definitions of customer experience explaining stimuli that create value for consumers. Like customer-focused product design with expected levels of quality, the physical setting of a service encounter, the service delivery processes, aspirational and utilitarian brands and supporting relationships. Hedonistic definitions of customer experience have focusing on attitudinal outcomes, for example, surprise, delight and excitement. The development of a customer

experience construct may be informed by the work of Sheth et al. (1999), who states that a combination of three factors help shape a consumer's attitude to an event:

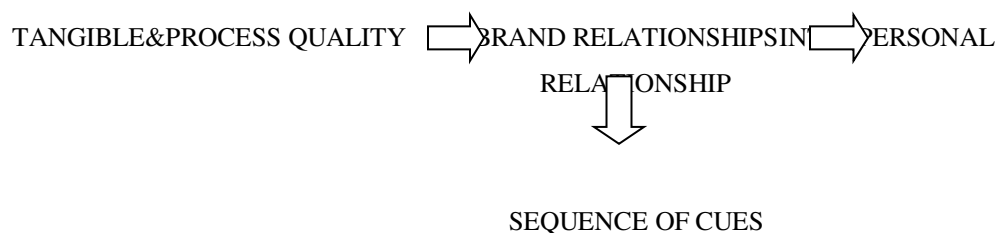
1. Stimulus characteristics – Solomon (1999) said, people perceive a stimulus differently according to its sensory characteristics and information content. Stimuli that differ from others around them are more likely to be noticed.
2. Context – in perceiving stimuli with a given set of characteristics, individuals will also be influenced by the context of the stimulus given by Biswas and Blair, (1991).
3. Situational variables - in which the information is received, including social, cultural and/or personal characteristics, perceptions are greatly influenced by individual characteristics, including prior

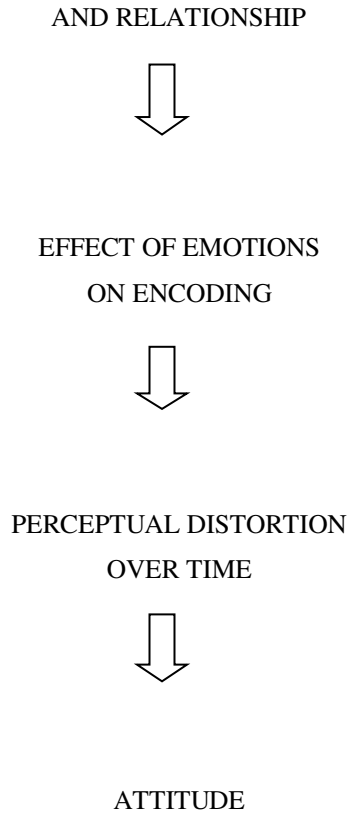
experience with a particular product or service offering.

6. A PROPOSED INTEGRATED FRAMEWORK:

Three higher order construct that have a long history of development and which analyze consumption and evaluation from three overlapping perspectives are: quality, relationships, and brands. The proposed integrated framework shown in below Figure 2 begins with basic stimuli, converging into three higher order constructs and leads to the development of an attitude, mediated by the sequencing of the stimuli and the emotional predisposition of the individual. Attitude is likely to be not stable over time, and subsequent recall of an experience is likely to result in attitude being weighted towards selected elements of the overall experience. It is the attitude that pertains over time that is most likely to subsequently influence behavior.

Figure 2. A conceptual framework for the construct of customer experience





Source: Adrian Palmer (1990), Customer Experience Management: A Critical Review of an emerging idea.

7. MEASURING CUSTOMER EXPERIENCE:

Probably the greatest problem in developing an operationally acceptable measure of customer experience is the complexity of context specific variables. The discussion above has indicated that experience is conditioned by differences between individuals, differences over time in a individual's emotional state, and a variety of situation specific factors. Prahalad and Ramaswamy (2003, p.14) noted that, Value

creation is defined by the experience of the specific customer, at a specific point in time and location, in the context of a specific event. To be of managerial usefulness for planning and control, a measure of experience must take account of these moderating influences. A second problem derives from the non-linearity of customer experience and third conceptual problem in measuring and managing experience is the identification of an optimal level of experience, the practical obstacles to

developing and implementing a robust measurement scale for customer experience must be recognized. A measurement instrument must incorporate not only contextual parameters, but also the sequencing of events, and their retention in the memory in the form of an attitude some time after an event occurred. It has been noted by Holbrook (2006) that measuring customer experience in a non-linear manner and in a way, that takes account of contextual differences, many researchers have stated that qualitative techniques are the only way to really understand experience from the perspective of the consumer.

CONCLUSION:

Practitioner papers have recognized the limitations of relationship marketing as widely operationalised, and have suggested that a focus on customer experience may create value for customers more effectively than narrowly defined relationships. Academic papers are beginning to recognize the importance of customer experience as an intellectual integrator of service quality, relationships and brands. The ideas underlying customer experience are not new, and historically many successful entrepreneurs have used essentially qualitative research techniques to develop

distinctive customer experiences, current highly competitive business scenario many companies have seen customer experience management (CEM), as a successor to customer relationship management (CRM).

REFERENCES:

- Abbott, L., (1955) *Quality and Competition: An Essay in Economic Theory*, Columbia University Press, New York, NY.
- Adrian Palmer, (1990). *Customer Experience Management: A Critical Review of an emerging idea. Journal of Marketing*, pp196 to 208.
- American Heritage Dictionary of the English Language* (2006), 4th ed., Houghton Mifflin, Boston, MA.
- Chiara Gentile, Nicola Spiller, Giuliani Noci, (2007). How to sustain the customer experience: An overview of experience components that co-create value with the customer. *European Management Journal* Vol 25, NO5, pp 395-410.
- Christopher, M., Payne, A., Ballantyne, D., (1991). *Relationship Marketing: Bringing Quality, Customer Service and Marketing Together*, Butterworth-Heinemann, Oxford.
- Collins, (2007). *Collins English Dictionary*, Harper Collins Publishing, Glasgow.

Dewey, J., (1963). Experience and Education, Macmillan Publishing, New York, NY.

Gupta, S., and Vajic, M., (2000). The contextual and dialectical nature of experiences, in Fitzsimmons, J.A. and Fitzsimmons, M.J. (Eds), New Service Development: Creating Memorable Experiences, Sage, Thousand Oaks, CA, pp. 33-51.

Holbrook, M.B., (2006). Reply to Bradshaw, McDonagh, and Marshall: turn off the bubble machine, Journal of Macro marketing, Vol. 26 No. 1, pp. 84-8.

Holbrook, M.B., and Hirschman, E.C., (1982).The experiential aspects of consumption: consumer fantasies, feelings and fun, Journal of Consumer Research, Vol. 9 No. 2, pp. 132-40.

Meyer, Christopher, and Andre Schwager, (2007).Understanding Customer Experience,*Harvard Business Review*, February 117–26.

OUP (2006). Concise Oxford English Dictionary, *Oxford University Press*, Oxford.

Pine, Joseph B., and James B., Gilmore (1999).The Experience Economy, Boston: *Harvard Business School Press*.

Prahalad, C.K., and Ramaswamy, V., (2003). The new frontier of experience innovation, MIT Sloan Management Review, Vol. 44 No. 4, pp. 12-19.

Pine, B.J. II and Gilmore, J.H., (1998), Welcome to the experience economy, Harvard Business Review, Vol. 76 No. 4, pp. 97-106.

Pine, B.J., and Gilmore, J.H., (1999). The Experience Economy, Harvard Business School Press, Boston, MA.

Schmitt, Bernd., (1999). Experiential Marketing,*Journal of Marketing Management*.

Schmitt, B., (1999). Experiential Marketing: How to Get Customers to Sense, Feel, Think, Act and Relate to You Company and Brands, Free Press, New York, NY.

Sheth, J.N., Mittal, B., and Newman, B.I., (1999). Customer Behavior: Consumer Behavior and Beyond, Dryden Press, New York, NY.

Shaw, Colin, and John Ivens, (2005).Building Great Customer Experiences, London: Prentice-Hall.

Importance of English Language in India: It's Role in Present Scenario

A.Madhavi Latha, Assistant professor, Malla Reddy College of Engineering, Secunderabad.

Abstract: In the present scenario, English is a widely spoken language. It is referred to 'global language', the Multi- lingua franca of the modern era. It is the language most often taught as a second language around the world. In India English is used in the process of communication with the outside world, It is also used for inter-state and intrastate communication. India does have great ethnic and linguistic diversity and we can therefore find English acting as an indispensable 'link' language. With the advanced development in Information Technology, Science, Medical, Irrigation, Education, Mass communication, software and operating systems, a new utility for written and oral communication in the English language has emerged. English is said to be the world's most important language which has communicative and educative value. English is used all over the world not out of any compulsion but because of the realization that it has certain advantages.

Key Words: global language, Multi- lingua franca, indispensable link language.

INTRODUCTION

One of the major problems that has grabbed our attention in the recent years is the role of English in the different fields of our life. Since Britishers invaded our country, English has been playing a

dominating role in our daily and professional life. Today it has become a symbol of people's aspirations for quality in education and a fuller Participation at national and international life and it's no wonder to say that it is the symbol of elite people. The visible impact of this presence of English is that it is today being demanded by everyone at the initial stage of schooling which has it's importance even at the higher level of education.

Consequently, the role and importance of English language in our national curriculum has increased to a greater extent.

The present writing is an attempt to highlight the importance of English language in today's Indian society and the role it plays in present national and international set up.

ROLE OF ENGLISH;

English plays quite a multi dimensional role in day to day life. It is used as a medium of communication in banks, railway stations, bus stations, airways, educational sector, medical, private sector, etc. English is a link language and is used in trade and business both at national and international level. Students who fly abroad for education and jobs would be at ease if they have efficient communication skills. We are aware of the fact that students are prime learners of English as it helps in designing their career and accomplish their goals. If the students are proficient in interactive skills, they would have confidence to face most of the

challenging people which turns out to be a good experience for them to apply the same to face interviews. English has become indispensable in this ultra-modern world, It is a major window of scientific and technical knowledge in the world. With the development in technology, there is also an increase in the need to learn English to meet the requirements of existing circumstances. Modern lifestyle of people has also changed and hence English communication adds more value to it. In the present scenario, a person who does not have proficiency in English is considered as semi-illiterate or an illiterate.

2.1 Importance and use of English language

English has very often been termed as a window of the world as it has its influence in different fields like business, education, IT, science, technology etc. It has often been described as pipe-line for the stream of knowledge in all branches of learning. The Radhakrishnan University Education Commission observed, "It (English) is a language which is rich in literature-humanistic, scientific and technical. If under sentimental urges we should give up English, we would cut ourselves off from the living stream of ever growing knowledge. Unable to have access to this knowledge our standards of scholarship would fast deteriorate and our participation in the world movements of thought would become negligible - for living nations must move with the times and must respond quickly to the challenges of their surroundings."(2.2) The Kothari Commission has rightly stressed that English would play a vital role in higher education as an important library language. The commission maintained that no student should be considered qualified for a degree, in particular as Master's degree, unless he has acquired a reasonable proficiency in English. According to the Commission, "The implications of this (English as a

library language) are twofold: all teachers in higher education should be essentially bilingual in the sense that they should be able to teach in the regional language and in English and all students (Particularly post graduates) should be able to follow lectures and use reading materials in the regional language as well as in English.(2.3) Following are some important areas where English Language has its importance:

1. As a Link Language in the global context:

English is a link language. It is important for international communication. As global communication expands throughout the world, so does the need for a global language. English is only the language that is recognized and understood by people in many parts of the world . It is estimated that "the number of native English speakers is 300 million to 450 million." (Stevenson) More than one billion people are believed to speak some form of English.(3/4)

2. As the Library Language:

The Kothari Commission is of view that English plays a vital role in

Higher education and is a library language. The commission maintained that no student should be considered qualified for a degree, in particular as Master's degree, unless he has acquired a reasonable proficiency in English.

According to the Commission, "The implications of this (English as a library language) are twofold: all teachers in higher education should be essentially bilingual in the sense that they should be able to teach in the regional

Language and in English and all students (Particularly post graduates) should be able to follow

lectures and use study materials in the regional language as well as in English.”

3. For Higher Education:

English is very much essential to many aspirants in India and other western countries who want to pursue higher education in other universities of the world for research purpose or any other scientific and technical operations. Here English helps them to reach their destination and opens the window of knowledge since most of the knowledge through books and materials is available only in English language.

4. For getting job opportunities:

English plays a pivotal role in the employment sector. Students and scholars from various disciplines of the knowledge seek employment in and across the country. Multinational organizations always recruit candidates with excellent communication skills and provide them good platform for the same. World's topmost companies and investors establish their empire in India and other corner of the globe to increase their capital and recruit English literate manpower.

5. English is useful for Business transactions:

Coming to trade and commerce both nationally and Internationally, English is a link language which makes the transactions take place with ease. No business can be run without skilled manpower. In most of the business organizations the first criterion for recruitment of employees is good command over language and proficiency in English.

6. Official Language:

English is employed by many of the offices today. We could not imagine any office without the use of

English language. The abolition of English will adversely affect the office work. Most of the office-goers know English besides their mother-tongue or regional language. Thus, they prefer to communicate in English to fulfill their everyday accomplishments. So, if the office-goers are asked to bid goodbye to the English language, they will face a great difficulty.

7. Language of Media and Entertainment:

It is a known fact that 70% media and entertainment channels use English for broadcasting purpose. Electronic media made the world transform into a global village, it brought the people of whole world very close through expanding use and this has become possible only through English language.

8. Language of Information Technology:

Software programmers develop software programs that form the basis of the Internet. They make up the majority of professional and related occupations, and account for about 34 percent of the industry as a whole. Computer programmers write, test, and customize the detailed instructions, called programs or software that computers follow to perform various functions such as connecting to the Internet or displaying a Web page in English. Language teaching in general and English language teaching in particular has tremendously changed over the centuries. Educational technologies, especially computers and computer-related peripherals, have grown tremendously and have permeated all areas of our lives. It is incomprehensible that anyone today would argue that banks, hospitals, or any industry apply technical knowledge. The Internet in particular gradually has become a vital tool in our information society. We can witness people going for online education, business transactions, personal correspondence, research and information-gathering.

III. CONCLUSION Thus, it is not a denying fact that, English is a Multi lingua franca of the world. The usage of English is constantly been increasing in many countries and it is the mother tongue in most of the countries. Communication in English became worthwhile in the present scenario. If one gets enough mastery over English he can share his/her thoughts, gather information, knowledge etc and keep in touch with the challenging world thus improving his career which results in the development of the country.

REFERENCES

[1.] Heera G.Rajwani , Present
scenario of English Language in
Higher Education,
INTERNATIONAL
MULTIDISCIPLINARY JOURNAL
ISSN 2277 -4262

[2.] Abida Begum, Importance of
English Language in India : Its Role
in Present National and International
Set Up ISSN: 2348 – 0343
International Journal of
Interdisciplinary and
Multidisciplinary Studies (IJIMS),
2014, Vol 1

[3.]
[http://iml.jou.ufl.edu/projects/students
/Wheaton/page1.htm](http://iml.jou.ufl.edu/projects/students/Wheaton/page1.htm)

[4.] M. Samanth Reddy, Lecturer in
English, IMPORTANCE OF
ENGLISH IN TODAY’S WORLD
International Journal of Academic
Research ISSN: 2348-7666; Vol.3,
Issue-4(2), April, 2016
les and Practices. Page -11

GREEN BUILDING CONCEPT

M. Sunada, Assistant Professor,
Humanities & Sciences Department,
Malla Reddy College of Engineering,
E-mail: bandaraghupathi.med@gmail.com

Ch.Rajani, Assistant Professor,
Humanities & Sciences Department,
Malla Reddy College of Engineering,
E-Mail: laxminaidu.k@gmail.com

Abstract: Green Building is becoming emerging adoption method to have sustainable building. The main objective of the green building is to reduce the effect of CO₂ caused to environment. Constructing industry is the one of the major industry which is emitting CO₂ in to atmosphere. To reduce the adverse effects which cause to environment, by the usage of non-renewable resource, .It is an opportunity to use the resources efficiently while creating healthier buildings that improve human health, build a better environment, and provide cost savings. All the development projects lead to over-consumption of natural resources. This leads to serious environmental problems.

Green building deals with the optimum use of natural resources for the development of infrastructure. The low cost eco-friendly house is the modern construction method which uses locally available material and unskilled labor and also reduces the construction time. Similarly, use of recycled plastic, recycled aggregates and municipal wastes for the construction of pavement has considerable effect on the environment of earth.

Another advanced method is the construction of low carbon building which uses sustainable materials like blended cement, compacted fly ash blocks, low energy intensity floor and roofing system, rammed earth walls and stabilized mud blocks etc. This ultimately results in reduction of green house gases which will help to reduce green house effect. This paper presents an overview of application of modern green infrastructure construction technology which makes a significant impact on conservation/proper utilization of resources like land, water, energy, air, material etc

Keywords: Green Building, Sustainable Building, Renewable resources, Non-Renewable Resources, Eco Friendly Material.

INTRODUCTION

Green building (also known as green construction or sustainable building) refers to both a structure and the application of processes that are environmentally responsible and resource-efficient throughout a building's life-cycle: from planning to design, construction, operation, maintenance, renovation, and demolition. This requires close cooperation of the contractor, the architects, the engineers, and the client at all project

stages. The Green Building practice expands and complements the classical building design concerns of economy, utility, durability, and comfort.

Green building (also known as **green construction** or **sustainable building**) refers to both a structure and the application of processes that are environmentally responsible and resource-efficient throughout a building's life-cycle: from planning to design, construction, operation, maintenance, renovation, and demolition. This

requires close cooperation of the contractor, the architects, the engineers, and the client at all project stages. The Green Building practice expands and complements the classical building design concerns of economy, utility, durability, and comfort.

A **natural building** involves a range of building systems and materials that place major emphasis on sustainability. Ways of achieving sustainability through natural building focus on durability and the use of minimally processed, plentiful or renewable resources, as well as those that, while recycled or salvaged, produce healthy living environments and maintain indoor air quality. Natural building tends to rely on human labor, more than technology. As Michael G. Smith observes, it depends on local ecology, geology and climate; on the character of the particular building site, and on the needs and personalities of the builders and users.

The basis of natural building is the need to lessen the environmental impact of buildings and other supporting systems, without sacrificing comfort or health. To be more sustainable, natural building uses primarily abundantly available, renewable, reused or recycled materials. The use of rapidly renewable materials is increasingly a focus. In addition to relying on natural building materials, the emphasis on the architectural design is heightened.

The orientation of a building, the utilization of local climate and site conditions, the emphasis on natural ventilation through design, fundamentally lessen operational costs and positively impact the environmental. Building compactly and minimizing the ecological footprint is common, as are on-site handling of energy acquisition, on-site water capture, alternate sewage treatment and water reuse.

Leadership in Energy and Environmental Design (LEED) is a set of rating systems for the

design, construction, operation, and maintenance of green buildings which was Developed by the U.S. Green Building Council. Other certificates system that confirms the sustainability of buildings is the British BREEAM (Building Research Establishment Environmental Assessment Method) for buildings and large scale developments. Currently, World Green Building Council is conducting research on the effects of green buildings on the health and productivity of their users and is working with World Bank to promote Green Buildings in Emerging Markets through EDGE Excellence in Design for Greater Efficiencies Market Transformation Program and certification.

Although new technologies are constantly being developed to complement current practices in creating greener structures, the common objective of green buildings is to reduce the overall impact of the built environment on human health and the natural environment by:

- Efficiently using energy, water, and other resources.
- Protecting occupant health and improving employee productivity.
- Reducing waste, pollution and environmental degradation.

Reducing environmental impact:

Globally, buildings are responsible for a huge share of energy, electricity, water and materials consumption. The building sector has the greatest potential to deliver significant cuts in emissions at little or no cost. Buildings account for 18% of global emissions today, or the equivalent of 9 billion tonnes of CO₂ annually. If new technologies in construction are not adopted during this time of rapid growth,

emissions could double by 2050, according to the United Nations Environment Program.

Green building practices aim to reduce the environmental impact of building. Since construction almost always degrades a building site, not building at all is preferable to green building, in terms of reducing environmental impact. The second rule is that every building should be as small as possible. The third rule is not to contribute to sprawl, even if the most energy-efficient, environmentally sound methods are used in design and construction.

Life cycle assessment : A life cycle assessment (LCA) can help avoid a narrow outlook on environmental, social and economic concerns by assessing a full range of impacts associated with all cradle-to-grave stages of a process: from extraction of raw materials through materials processing, manufacture, distribution, use, repair and maintenance, and disposal or recycling. Impacts taken into account include (among others) embodied energy, global warming potential, resource use, air pollution, water pollution, and waste.

In terms of green building, the last few years have seen a shift away from a *prescriptive* approach, which assumes that certain prescribed practices are better for the environment, toward the scientific evaluation of actual performance through LCA.

Although LCA is widely recognized as the best way to evaluate the environmental impacts of buildings (ISO 14040 provides a recognized LCA methodology), it is not yet a consistent requirement of green building rating systems and codes, despite the fact that embodied energy and other life cycle impacts are critical to the design of environmentally responsible buildings.

REVIEW:

A survey of literature was undertaken to be familiar with the subject matter concerned with the present research problem, which proved helpful in planning and execution of the study. A green building is a practice of creating structures using utmost natural resources making it environmentally friendly. The green building concept has been gaining prominence in India as well as in other countries too. Various experts and agencies have given definition and meaning of the term “Green Buildings”.

Capacity building for green building professionals, green building materials and technologies is needed to achieve the goals of sustainable construction in India. Emerging green building technologies and new green materials market is estimated to be around 40 billion USD and it is expected to grow.(Kats, 2003).

,Sustainable Development and Green Buildings Growing Human activity has increased the concern for sustainability even more in recent times. Sustainability in real estate context is not only limited to energy conservation, but also includes resource usage, impact on the neighbouring environment and working conditions for tenants. The design has to take into consideration the entire supply chain – from material sourcing, energy modelling, resource reuse, basic amenities and waste disposal to tenant education (Roy and Gupta, 2008).

Among the other production and manufacturing sectors, building and construction sectors occupies the first place as the largest contributor to pollution and natural resource consumption (Levine et. al., 2007; Plank, 2008).

Finally, there is the “prestige” factor of owning or occupying a Green building. Investors are also becoming more focused on investing in Green

buildings (Turner Green Building Market Barometer, 2008).

Green building and sustainability are often used interchangeably, but the terms are far from synonymous. Sustainability, a very broad and far reaching concept, is the underlying principle of green building (Timothy, 2010).

A unified green design movement did not begin to emerge until the 1970s, when design and building practices first became a focus of environmental advocates (IFMA Foundation, 2010).

(Kibert, 2012). The green building concept broadly integrates many interests and aspects of sustainability emphasising reduction of environmental impacts through a holistic approach to land and building usage and construction strategies

More people are moving to the city causing a significant increase in the construction of buildings and skyscrapers, and hence a booming in the city economy but with great repercussions in the environment (Conte and Yepes, 2012)

Energy consumption and associated greenhouse gas emissions will therefore continue to rise unless actions to direct the construction industry towards sustainable consumption and production are taken urgently (Mehta and Porwal, 2013)

Sustainability is one of the basic concept that interest people in the field of construction who are trying to apply its technology and strategy according to the architects and industrial progress (Matar, 2015).

The green building concept has been gaining prominence in India with an increasing number of initiatives, primarily by Indian Green Building Confederation of Indian Industry (CII), striving to impart knowledge, offering advisory services to the industry on environmental aspects and practices for green buildings (Times of India, 2015).

MATERIALS:

1. Earthen structures :Builders build rammed-earth, adobe, and other earthen structures using perhaps the greenest building materials. Constructed from dirt, gravel, clay, and lime, and often harvested locally, these homes offer a durable and well-insulated building.

2. Straw bale: Although straw bale construction is rare, it's gaining in popularity. Builders build these structures in a manner similar to a log home — simply stacking up a solid material. The buildings offer excellent insulation and sounddeadening properties. They are surprisingly resistant to fire due to the inability of air to flow through the straw bales.

3. Insulated concrete forms (ICF): Insulating concrete forms result in cast-in-place concrete walls that are sandwiched between two layers of insulation material.

4. Structural insulated panels (SIPS): SIPS are large panels (4' x 8' up to 24' x 8') typically constructed at a factory. They are composed of foam insulation sandwiched between two sheets of oriented strand board (OSB)

5. Wood: Two types of wood are gaining traction among green builders — engineered wood and wood certified by the authority of various countries like FSC in America.

6. Insulation is critical for any building. Whether the builder is trying to keep the heat out or in, the amount of insulation will indicate how resistant a building is to losing energy

7. Fiberglass :Builders or architect generally don't consider fiberglass insulation a green material because it typically contains a toxic binding agent and is very energyintensive to make.

8. Cellulose: Made from recycled paper, cellulose is the second most common insulation material and is

considered a very green choice when used properly. Also, it is relatively inexpensive, with costs similar to fiberglass.

9. Natural fiber (cotton, wool)— Cotton insulation is typically made from recycled cotton fibers formed into a batt, a preformed section of insulation sized to fit snugly in a framed cavity

8. Polyurethane— Expanding and shingles) is an increasingly spray-on polyurethane foams are quickly becoming very popular

9. Polystyrene and isocyanurate— These foams are typically installed as preformed sheets. Builders commonly use them to insulate below grade, such as beneath a slab, but also use them as exterior-mounted insulation in some applications.

10. Steel— Steel roofing (both panels is an increasingly popular green choice because of its high recycled content and longevity.

11. Slate/stone— These natural materials are excellent green choices but are very expensive due to both material and labor considerations but can be cheap at the places where they are easy available. They have a very long life.

12. Composites— Manufacturers often make composites from plastics and rubber, and they mimic the appearance of natural materials such as slate and wood

13. cement — This material is made from wood, sand, and Portland cement. Fiber cement offers excellent durability and fire resistance and is less expensive than many common wood choices.

14. Low/no-VOC (volatile organic compound) paints, stains, and coatings— Paints and stains are a common source of indoor airquality issues due to the amount of harmful VOCs needed to keep them in a usable liquid form.

15.Natural fiber flooring— Whatever type of flooring is desired, there are green alternatives. Rugs and carpets are available in natural materials such as wool and cotton, while wood and other solid alternatives such as bamboo and cork offer high durability and/or sustainable harvesting methods.

16.Paperless drywall — Paperless drywall helps saves on deforestation by eliminating the paper surface manufactured from trees.

17.Heating and Air Conditioning

The proper orientation of a building with respect to the sun and other design details can contribute significantly to minimizing the heating and cooling needs of a building.

18 Geothermal — Heat pumps can provide heating and cooling to a building using a fraction of the energy of a conventional system.

19.Solar hot water— Solar water heating has been commercially available for decades for domestic hot water needs, but these systems can be used as the primary source of space heating as well when coupled with radiant flooring.

PROCEDURES:

1.Site Planning :Simple techniques can be applied to site planning to reduce the environmental impact and development costs Locate building footprints and foundation elevations to avoid watercourses and limit site disturbance. Incorporate natural systems and retain existing vegetation within the site plan.Orient buildings to take advantage of Passive Solar Design opportunities. Consider solar heating. Incorporate low impact lighting solutions such as skylights and translucent panels.

2. Trenches and Swales

Infiltration facilities are designed to capture on site storm water run-off in an effort to delay heavy 'first flush' events that can contribute to downstream

erosion and sedimentation of watercourses. Infiltration techniques are intended to capture, filter, and promote infiltration of surface run-off into site soils and existing aquifers.

3.Rain gardens: function as a combination of conventional surface detention ponds and infiltration galleries. These facilities offer additional detention of water at the surface with a pond like appearance. Appropriate plantings are included to resemble a planting bed through the use of plants that are tolerant of fluctuating water tables.

4.Rainwater run-off

from impervious site elements such as roofs and paved areas is directed into deep absorptive soils and subsurface reservoirs.

5.Roof leader disconnect is a method used to intercept rainwater from impervious roofs and direct it into soak-away pits, rain barrels, swales or detention facilities.

6.Absorbent Landscaping

Simple techniques can be applied to site landscaping that will store water for uptake by plants and infiltration into underlying native soils:

7.Drought Tolerant Native Plants

Use plants that are well suited to the local climate and hydrology. Landscaping is designed to require little or no supplemental irrigation once established.

10.Use an automatic controller (timer). • Incorporate rain sensors, soil moisture sensors and evapotranspiration data.

TECHNIQUES: The following are some of the techniques used to achieve low-energy buildings, which excludes :

1.Active daylighting.2.Barra system.3.Cool roof and green roof.4.Daylighting.5.Double envelope house.6.Earth sheltering.7.Energy plus house .8.Fluorescent lighting, compact fluorescent lamp,

and LED lighting. 9.History of passive solar building design. 10.Low-energy house.11.Passive daylighting. 12.Passivesolar.13.Passivesolar building design.14.Solar energy. 15.Superinsulation. 16.Sustainable architecture.

BENEFITS OF GREEN BUIDING:

1.Lower building cost :building are more than a fashion statement. Many architects, builders and clients agree that smart, sustainable buildings are becoming a necessity.

2.Improved productivity :A number of studies -- and common sense -- indicate that building occupants who are healthy and comfortable are more productive

3.Higher market value:Both residential and commercial buildings retain a high resale value if they include sustainable design components.

4.Healthy occupants: Sick building syndrome is a problem that has plagued homes and offices for decades, and costs U.S. businesses millions of dollars each month. Green buildings, however, avoid many of these problems with healthy ventilation systems and use of non-toxic building materials.

5.Tax benefits:Recent and commercial federal tax incentives have been enacted to encourage the design and construction of energy-efficient green buildings, both residential

6.Improved retale costs: It found that sales were 40 percent higher when stores were lighted with skylights instead of electric lighting

7.Lower utility demands:One indirect benefit to green buildings is often overlooked: reduced demand on electric, gas and water utilities means that these infrastructures can do more with less.

8.Improved quality of life: The enhanced lifestyles shared by all of society makes sense, both economically and environmentally. Again, as we move

into an era of smarter technology and more expensive natural resources.

FUTURE TRENDS:

The world's most sustainable cities are redefining the building sector's environmental impact. These cities are comprised of innovative buildings that incorporate the newest green technologies and building trends, putting environmental responsibility first. These cities have captured the world's attention with their sophisticated designs, leading the way towards a greener future. Green building standards play an important role in sustainability, like the LEED certification program from the United States Green Building Council. For green building, companies and residential innovators alike, these are the top cities to watch.

The future of green building technology: If there's one thing the world's most sustainable cities have in common, it's their network of green technology companies. These innovative companies help these cities create a better future for people and the environment, and they demonstrate the importance of knowledge-sharing and data-driven innovation for businesses across the globe. Homeowners and business leaders alike can join the global green building network by contributing their knowledge and world growing economy.

SUGESSTIONS:

1.Sustainable Site Design : Create minimum urban sprawl and prevent needless destruction of valuable land, habitat and open space.Encourage higher density urban development as a means to preserve valuable green space.Preserve key environmental assets through careful examination of each site.

2.Water Quality & Conservation: Preserve the existing natural water cycle and design the site so that they closely emulate the site's natural hydrological

systems. Emphasis on retention of storm water and on-site infiltration as well as ground water recharging.Minimize the inefficient use of potable water on the site while maximizing the recycling and reuse of water, including rainwater harvesting, storm water, and gray water.

3.Energy & Environment: Minimize adverse impact on the environment through optimized building siting & design, material selection, and aggressive use of energy conservation measures. Maximize the use of renewable energy and other low impact energy sources. Building performance should exceed minimum International Energy Code (IEC) compliance level by 30-40%..

4.Energy & Environment: Minimize adverse impact on the environment through optimized building siting & design, material selection, and aggressive use of energy conservation measures. Maximize the use of renewable energy and other low impact energy sources. Building performance should exceed minimum International Energy Code (IEC) compliance level by 30-40%..

5.Indoor Environmental Quality: Provide a healthy, comfortable and productive indoor environment for building occupants.Utilize the best possible conditions in terms of indoor air quality, ventilation, and thermal comfort, access to natural ventilation and day lighting.

6.Materials and Resources:Minimize the use of non-renewable construction materials through efficient engineering and construction, and effective recycling of construction debris.Maximize the use of recycled materials, modern energy efficient engineered materials, and resource efficient composite type structural systems as well as sustainably managed, biomass materials.

7. Sufficient technical background and an understanding of green building practices are needed for implementing these fundamental principles, so that a building can be considered a truly “green building.

CONCLUSION:

Environment Quality in Green Building”, “Green Building rating Systems”, “Barriers and Challenges in adopting Green Building concept” in India as well as outside India. An overview of the researches highlighted that majority of the studies focused on buildings already constructed on the principles of Green Building Rating Systems and awareness of people residing or working in green buildings. The researcher did not find any study focusing on awareness of homeowners of existing (non-green buildings) regarding green buildings and also the assessment of it for the extent of its greenness.

The methods that can help us to create a green building, we like to put an end for our paper. From this paper we know that green building is the most important one to the human life and also to the environment safe. As a civil engineer we need to convert our construction method in a green way. Need to make every part of the construction in a green concept. Go green and go head much efforts has been made to research area of “Benefits of Green Buildings”, “Green Building materials”, “Green Building and Productivity”, “Vertical gardens”, “Net Zero Buildings”.

REFERENCE:

- 1 .U.S. Environmental Protection Agency. (October 28, 2009). *Green Building Basic Information*. Retrieved December 10, 2009,
2. Hopkins, R. 2002. *A Natural Way of Building_ Transition Culture*. Retrieved: 2007-03-30.

3. Hegazy, T. (2002). *Life-cycle stages of projects. Computer-Based Construction Project Management*, 8.
4. Simpson, J.R. *Energy and Buildings, Improved Estimates of tree-shade effects on residential energy use*, February 2002
5. WBDG Sustainable Committee. (August 18, 2009). *Sustainable*. Retrieved October 28, 2009.
6. Kats, Greg, Leon Alevantis, Adam Berman, Evan Mills, Jeff Perlman. *The Cost and Financial Benefits of Green Buildings*, November 3rd, 2008.
7. California Sustainability Alliance, *Green Buildings*. Retrieved June 16, 2010.
8. Fuerst, Franz; McAllister, Pat. *Green Noise or Green Value? Measuring the Effects of Environmental Certification on Office Property Values*. 2009. [4] Retrieved: November 5, 2010.
9. Lynne Elizabeth, L., and Adams, C., eds. 2000.
10. *Alternative Construction, Contemporary Natural Building Methods* pub. by John Wiley & Sons, inc. NY, NY
- 11 .Kennedy, J., Smith, M. and Wanek, C. eds. 2002. *The Art of Natural Building: Design, Construction, Resources*. Gabriola Island, BC. New Society Publishers.
12. Ianto Evans, Michael G. Smith, and Linda Smiley. 2003. *The Hand-Sculpted House: A Practical and Philosophical Guide to Building a Cob Cottage*. Chelsea Green Publishing.
13. Woolley T. 2006. *Natural Building: A Guide to Materials and Techniques*. Crowood Press.
14. Pivo, Gary; Fisher, Jeffrey D. *Investment Returns from Responsible Property Investments: 15 .Energy Efficient, Transit-oriented and Urban Regeneration Office Properties in the US from 1998-2008*. 2009.[5] Retrieved: November 5, 2010

16. Lee YS, Guerin DA, *Indoor environmental quality differences between office types in LEED-certified buildings in the US*, *Building and Environment* (2009)

17. United Nations General Assembly (1987) *Report of the World Commission on Environment and Development: Our Common Future*. Transmitted to the General Assembly as an Annex to document A/42/427 – Development and International Co-operation: Environment. Retrieved on: 2009-02-15.

18. *A Summary of the Monograph World Water Resources prepared in the Framework of the International Hydrological Programme*. Retrieved on: 2009-03-18.

19. U.S. Department of NOAA Research. *"The Carbon Cycle"*. Retrieved on: 2009-03-18.

20. Fujixerox *"Carbon Calculator Demonstration"*. One of many carbon calculators readily accessible on the web. Retrieved on: 2009-04-07.

A STUDY OF THE CRITICAL ISSUES INVOLVED IN PROVIDING NECESSARY TOOLS IN ENGLISH LANGUAGE FOR STANDARDISED TEST TAKERS

K. Satyanarayana, Assistant Professor English, Malla Reddy College of Engineering,
Hyderabad. E-mail: sathya.eflu@gmail.com

Abstract: I propose to make a study of the critical issues involved in providing necessary tools in English language for students who prepare for some of the standardised tests such as GRE, TOEFL, IELTS and etc. Standardised test is any form of test that requires all test takers to answer the same questions or a selection of questions from common bank of questions, in the same way, and that is scored in a standard or consistent manner, which make it possible to compare the relative performance of individual students or group of students. While different types of tests and assessments may be standardised in this way.

Standardised test is defined by Cohen and Wollack (2006: 358) in the following way. "Tests are standardised when the directions, conditions of administration, and scoring are clearly defined and fixed for all examinees, administrations, and forms.

Standardised tests can include true-false questions, short-answer questions, essay questions, or a mix of question types. These tests may come in a variety of forms, multiple-choice and true-false formats are widely used for large-scale testing situations because computers can score them quickly, consistently, and inexpensively. In contrast, open-ended essay questions need to be scored by humans using a common set of guidelines to promote consistent evaluations from essay to essay—a less efficient and more time-intensive and costly option that is also considered to be more subjective. These standardised tests are generally taken by engineering graduates who want to pursue their further education - M.S. in the U.S.A. In this regard, the students of Engineering and Technology require a specific set of language skills for success in their education and career.

Keywords: Standardised test, consistent manner, inexpensively

BACKGROUND OF THE STUDY

Language testing like all educational assessments is a complex social phenomenon. It has involved to fulfill a number of functions in the classroom, and society at large. Today the use of language of testing is endemic in contexts as diverse as

education, employment, international mobility and language planning.

The act of giving a test always has a purpose. In one of the founding documents of modern language testing is Carroll (1961: 341) states "The purpose of language is always to render information to aid in making intelligent decisions about possible courses of action. But these decisions are diverse and need to be make very specific for each intended use of a test.

It has been found that a number of technically-sound students have not been successful in job interviews just because of their lack of communication skills and there are cases of rank holders in engineering studies who could not go for higher studies to the United States and other English-speaking countries because of their lack of proficiency in English. Just because those students did not get score / band on their Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS), they could not make their dream of going to the countries for studies come true.

The components of the aforementioned tests are:

- Advanced Vocabulary
- Advanced Reading Comprehension Skills
- Critical Reasoning Skills
- Integrated tasks in Speaking and Writing
- Listening comprehension, etc.

Unfortunately, most of the engineering colleges prescribe the syllabus in English that does not fulfill the requirements of the aspirants who prepare for the standardised tests. On the other hand, the syllabus just focuses on the basic communication skills development. This point will be clear if the prescribed english text books/syllabus for Engineering Colleges by JNTU, O.U. and other universities are referred to. As a result, English in standardised tests poses a challenge to most of the students.

It is a question of planning, structuring and integrating various activities for the purpose of enhancing the students' learning. The English language skills areas comprise the abilities of understanding oral and written English and being able to use English orally and in writing adequately in different contexts and for various purposes.

"Speaking and Writing are said to be active, or productive skills whereas Listening and Reading are said to be passive or receptive skills". In my teaching I have focused on developing the students' written language skills within genres such as memos and formal letters, reports (of varying length), writing documentation (as in manuals, procedure and process descriptions), and writing brief articles for magazines and newspapers. Although there are many varieties of how these documents are set up, conventions and various standards indicate a common lay-out that is widely accepted internationally. Oral presentations, role plays and group discussions in meetings and negotiations are adequate activities for developing the students' oral skills.

So, in the process of educating engineers, special emphasis on English language is mandatory.

IMPORTANCE OF L, S, R AND W IN THE CONTEXT OF STANDARDIZED TESTS

Teaching listening skills is an essential element in improving the language proficiency and understanding. In the laboratory, students listen during various activities for two purposes: to repeat and to understand. While listening to repeat, students imitate and memorize linguistic items such as words, idioms and sentence patterns.

This is an important task in initial listening exercises. Techniques like developing cognitive strategies, developing listening by integrating with the other language skills, listening to authentic material, listening while using technology, listening for academic purposes, and listening for fun are all important to impart listening skills to the students. For this we need to use various material and activities effectively in the laboratory.

Teaching speaking skills plays a major role in the classroom and it has been felt that developing good oral skills is a complex activity and probably the most difficult part of foreign language learning. It involves not merely being able to pronounce words correctly, using appropriate vocabulary, and developing a good fluency and sentence construction.

The simplest activity for developing oral skills is to ask students to practice reading out loud in pairs focusing on fluency. This activity can be applied to

texts, but should also be applied to reading symbols, equations and formulae used in mathematics, physics and chemistry, for example. It is my impression that teachers of English do not always give students time to practice this skill, and lack of fluency in this respect may cause misunderstanding. Basic strategies such as asking and answering questions, imitation and repetition, substitution, question-answer dialogues, day-to-day expressions, eliciting, guess and speak, directed dialogues, descriptions and role-play can be used to improve speaking skills in the laboratory sessions. Teaching pronunciation involves internalisation of the articulation of consonants, vowels and diphthongs used in English language.

The techniques of imitation, explanation, practice, comparison and contrast are found effective for improving pronunciation in the language laboratory. Sounds of the language, accent and intonation are taught by drilling the words, phrases and sentences with their books or tape scripts open in the initial activities. This helps the students to develop sensitivity on their own correspondence between pronunciation and spelling.

Teaching reading skills can be done in four different ways, depending on the purpose of reading a text: skimming, scanning, intensive reading and extensive reading. Reading is a developmental phenomenon.

It has three phases in acquisition of the skill, they are

- (i) Beginners reading
- (ii) Intermediate reading and
- (iii) Advanced reading

Various aspects of teaching-learning reading skills are illustrated under these three phases. The interactive nature and storage capabilities of the computer are the features that may serve as a foundation for the creation of unique electronic reading environments as it influences cognitive processing during the reading process. Computer mediated texts enhance readers' options for acquiring word meanings during independent reading.

Developing oral comprehension skills i.e. developing comprehension is the most important part of foreign language learning. Oral communication is fast and will require not only a rich vocabulary and knowledge of sentence construction, but also some cultural knowledge about the people you are listening to.

As spoken statements are very dependent on culture, situation and context, they should be understood or interpreted within the context they

are spoken. Using videos (e.g. TV programmes on technical subjects, companies or product presentations) or sequences from films may give the students knowledge and examples of how language usage is culturally and contextually conditioned. The sequences may need to be played several times during which students should be asked to take notes in English and present briefs either in pairs or in front of class. Cultural aspects may be subject for discussions in class.

Teaching writing skills in the engineering profession – as with most other professional activities – is becoming increasingly ‘writing-Journal of education and practice. It is for this reason important to focus on developing the students’ writing skills. Engineers will have to proofread, correct or edit documents written by others, and they will have to be able to write these types of documents themselves.

Writing exercises –and preferably short one - should be given frequently and should be on relevant technological subjects (e.g. brief summaries of research article, newspaper articles, technical reports, minutes of meetings, product presentations). Process-oriented collaborative writing where students work in groups of three to four students will activate students as much as possible and allow them to learn from each other. In groups larger than this, some students may become passive.

During the writing process, the groups write, revise and edit the documents several times in line with responses from teacher, peers or peer-response groups. Avoid giving long lectures or talks in class. Instead, allow the students to explore material and inquire or seek information with respect to the problems they have. If the students are working with documents (e.g. a user manual) written in their native language, they may be asked to render – not to translate – the contents of documents in English.

This activity gives the students a bit more freedom to paraphrase than a ‘word-by-word’ translation. As a follow-up, they may be asked to use the rendered text to write a similar document as the original one in the national language using the appropriate writing conventions. The final stage may be to study, collect and apply relevant vocabulary from similar documents written by native english speakers in their own document.

This series of activities will make the students focus on the language used by native English speakers and the context and purpose of their own document disservice. Along with this, the teacher should encourage students to use ‘interactive grammar exercises’ available on the Internet

individually to improve their formal language skills. If teachers want to support their language instruction on grammar, a ‘comparative or contrastive grammar’ method may be used to highlight and create awareness of differences between national language and English.

METHODOLOGY

A mixed methodology (qualitative and quantitative) will be adopted to carry out this study.

PARTICIPANTS

Two groups of students i.e. technical graduation will be selected as participants.

PROCEDURE

This requires a detailed ‘Needs Analysis’ to obtain a viable framework for a specific course development. This can be done by using the survey research method with the help of some structured questionnaires.

Interacting with the language learners of different levels, the needs of their learning can be analyzed and understood. By communicating with many language teachers of same arena, it can be found out the complexities of language teaching and trace out the new techniques to overcome the problems.

Materials for instruction will be developed using the findings of needs analysis of the students.

Data will be collected through Pre and Post assessments and analysed to see the performance of participants.

Performances of the two groups will be compared to address the transferability issue.

The results of participants’ academic examinations will be collected and correlation with their performance will be calculated.

BIBIOGRAPHY

1. Jack C. Richards and Theodore S. Rodgers. Approaches and Method in Language Teaching. United Kingdom: Cambridge Publication.
2. N.Krishnaswami and Lalithaswamy. Methods of Teaching English. New Delhi: Macmillan Publication.
3. Jolene Gear and Robert Gear. Cambridge preparation for the TOFEL Test. United Kingdom: Cambridge Publication.
4. The Official Guide to the GRE revised General Test. (ETS)

5. A. Rama Krishna. Learning English. Hyderabad: Orient Black Swan
6. A. Rama Krishna. English for Empowerment. Hyderabad: Sangam Books.
7. Glenn Fulcher : Practical Language Testing : Oxford University

A Study on Human Resource Hiring Process at Planman Pvt. Co. Ltd

B. Sindhulatha, Student Business Management, Dept. of Business Management, Malla Reddy College of Engineering, Hyderabad. E. Mail: sindhulatha.b@gmail.com

D. Deepika, Student Business Management, Dept. of Business Management, Malla Reddy College of Engineering, Hyderabad.

Abstract: Employees are the assets of any organization. Nowadays, every organization necessitates personnel planning as one of the most vital activities. Human Resource Planning is, by far, an essential ingredient for the success of any organization in the long run. To understand the Internal/ External Recruitment process and to identify areas where there can be scope for improvement.

Keywords: Human Resource, Recruitment, Selection

1. INTRODUCTION

Employees are the assets of any organization. Nowadays, every organization necessitates personnel planning as one of the most vital activities. Human Resource Planning is, by far, an essential ingredient for the success of any organization in the long run. There are a number of techniques that need to be followed by every organization that guarantees that it possesses the right number and type of people, at the right time and right place, so as to enable the organization to achieve its planned objectives. Commonly, the objectives of Human Resource Planning department include resource, planning, recruitment and selection, career planning, training and development, promotions, risk management, performance appraisal, to name a few. Each of these objectives requires special attention and accurate planning and execution.

It is of utmost importance for every organization to employ a right person on a right position. And recruitment and selection plays a pivotal role during such situations. With shortage of skills and the rapid spread of new technology exerting considerable pressure on how employers perform recruitment and selection activities, it is recommended to conduct a step-by-step strategic analysis of recruitment and selection processes. With reference to the current context, this paper presents an incisive review of previous literature on the recruitment and selection process. This paper is primarily based on an analysis of six pieces of literature conducted by practitioners and researchers in the field of Human Resource management.

Various researchers have contributed to the field of HRM, and have offered intensive and profound knowledge on the branches of HRM such as scientific recruitment and Selection, Manpower management, Job analysis, Need and purpose of Recruitment, and so on.

Recruitment and selection forms a core part of the central activities underlying human resource management: namely, the acquisition, development and reward of workers. Planmanhr mostly out sources the Recruitment to several companies. It frequently forms an important part of the work of human resource managers – or designated specialists within work organizations. However, and importantly, recruitment and selection decisions are

often for good reason taken by non-specialists, by the line managers. There is, therefore, an important sense in which it is the responsibility of all managers, and where human resource departments exist, it may be that HR managers play more of a supporting advisory role to those people who will supervise or in other ways work with the new employee. "The art of choosing men is not nearly as difficult as the art of enabling those one has chosen to attain their full worth".

Recruitment is the process by which organizations locate and attract individuals to fill job vacancies. Most organizations have a continuing need to recruit new employees to replace those who leave or are promoted in order to acquire new skills and promote organizational growth.

Recruitment follows HR planning and goes hand in hand with selection process by which organizations evaluate the suitability of candidates. With successful recruiting to Create a sizeable pool of candidates, even the most accurate selection system is of little use.

Recruiting begins when a vacancy occurs and the recruiter receives authorization to fill it. The next step is careful examination of the job and enumeration of skills, abilities and experience needed to perform the job successfully.

1.1.Scope: To define the process and flow of activities while recruiting, selecting and appointing personnel on the permanent rolls of an organization.

1.2.Need of the Study

- To understand how to recruit and select the right candidate for job, as they are the assets of the Organization.
- To ensure the safest levels of staff recruitment, regardless of the size or nature of the organization, it is important to have a clear recruitment and selection process in place and is consistently applied.
- Efficient - cost effective in methods and sources Effective - producing enough suitable candidates without excess and ensuring the identification of the best fitted for the job.
- Being clear of the mix of experience, qualities and qualifications a successful candidate will need to demonstrate is all part of planning and will not only help you attract the 'right' candidate but also help to reduce the numbers of unwanted applications and deter unsuitable applicants.

1.3.Objectives of the Study

- To understand the Internal/ External Recruitment process.
- To identify areas where there can be scope for improvement.
- To give suitable recommendation to streamline the hiring process.
- To attract sufficient applications from potential candidates for appointment with the skills, qualities, abilities, experience and

competencies deemed as being necessary to the job.

- To develop and maintain procedures which will assist in ensuring the appointment of the most suitable candidate.
- To ensure that recruitment procedures are clear, valid and consistently applied by those involved in recruitment and that they provide for fair and equitable treatment for those who apply for employment.
- To base selection decisions and criteria directly on the demands and requirements of the job and the competencies identified as necessary for satisfactory performance.

2. Literature Review

Edwin Flippo defines Recruitment and selection process as “A process of searching for prospective employees and stimulating and encouraging them to apply for jobs in an organization.”

In simpler terms, recruitment and selection are concurrent processes and are void without each other. They significantly differ from each other and are essential constituents of the organization. It helps in discovering the potential and capabilities of applicants for expected or actual organizational vacancies. It is a link between the jobs and those seeking jobs.

Jackson et al. (2009) and Bratton and Gold (1999): As discussed by Jackson et al. (2009), Human resource management approaches in any business organization are

developed to meet corporate objectives and materialization of strategic plans via training and development of personnel to attain the ultimate goal of improving organizational performance as well as profits. The nature of recruitment and selection for a company that is pursuing HRM approach is influenced by the state of the labour market and their strength within it. Furthermore, it is necessary for such companies to monitor how the state of labour market connects with potential recruits via the projection of an image which will have an effect on and reinforce applicant expectations. Work of Bratton & Gold (1999) suggest that organizations are now developing models of the kind of employees they desire to recruit, and to recognize how far applicants correspond to their models by means of reliable and valid techniques of selection. However, recruitment and selection are also the initial stages of a dialogue among applications and the company that shapes the employment relationship (Bratton & Gold 1999). This relationship being the essence of a company's manpower development, failure to acknowledge the importance of determining expectation during recruitment and selection can lead to the loss of high quality job seekers and take the initial stage of the employment relationship so down as to make the accomplishment of desirable HRM outcomes extremely difficult. In the opinion of Bratton and Gold (1999), recruitment and selection practices are essential characteristics of a dialogue driven by the idea of “front-end” loading processes to develop the social relationship among applicants and an organization. In this relationship, both parties make decisions throughout the recruitment and

selection and it would be crucial for a company to realize that high-quality job seekers, pulled by their view of the organization, might be lost at any level unless applications are provided for realistic organization as well as work description.

Silzer et al (2010): However, the process of recruitment does not cease with application of candidature and selection of the appropriate candidates, but involves sustaining and retaining the employees that are selected, as stated by Silzer et al was largely concerned with Talent management, and through their work they were successful in resolving issues like whether or not talent is something one can be born with or is it something that can be acquired through development. According to Silzer et al (2010), that was a core challenge in designing talent systems, facing the organization and among the senior management. The only solution to resolve the concern of attaining efficient talent management was by adopting fully-executable recruitment techniques. Regardless of a well-drawn practical plan on recruitment and selection as well as involvement of highly qualified management team, companies following recruitment processes may face significant obstacles in implementation. As such, theories of HRM can give insights in the most effective approaches to recruitment even though companies will have to employ their in house management skills for applying generic theories across particular organizational contexts.

3. Research Methodologies

Research refers to search for knowledge. It is an art of the scientific

investigation. Research comprises definite problem. The research design ascetically states the procedures of data collection and analysis of information relevant to problem

Methodology is the branch of logic concerned with the application of the principle of reasoning to scientific and philosophical enquiry. The method to be followed to proceed with research is called methodology and the method adopted depends on the type of study and the nature of the study.

3.1.Data Collection

The information required for the preparation of report is collected through two sources

1. Primary Data
2. Secondary Data

1. **Primary Data**:-The data is collected through questionnaires, which form the major part.

2. **Secondary Data**:-The secondary data is readily available from the Dealer's, News & Magazines. Data like company profile and product profile are collected from the Internet.

3.1.1. Methods of Collecting Primary Data

The collection of firsthand information is referred to as primary method. There are various methods in which primary data can be adopted and thus can be broadly classified as survey method and experimental methods.

3.1.2. Survey method

A research is a technique in which information is gathered from people through the use of surveys or questionnaires.

3.2.Questionnaire

A set of questions printed in the form are provided to the respondents for their answers, closed ended and open ended questions are used. The questionnaires are developed and tested before using for data collection.

– **Closed-ended Questions:-** Closed ended questions include all possible answers/prewritten response categories, and respondents are asked to choose among them.

E.g. multiple choice questions, scale questions

– **Open-ended Questions:-** Open-ended questions allow respondents to answer in their own words. Questionnaire does not contain boxes to tick but instead leaves a blank section for the response to write in an answer

3.3.Limitations of the study:

- 1) Time was the biggest limitation. The project requires a thorough study which requires a considerable amount of time.
- 2) The research has been centered to only 20 employees.
- 3) Respondents may be biased while answering/filling the questionnaire.

4. Data analysis and interpretation of Questionnaire

SAMPLING UNITS: Planman Pvt Co Ltd.

SAMPLING SIZE: 25

4.1. Classification of the respondents based on tenure included in the survey.

– **Table 4.1.1 Response on tenure included**

| Category | Options | Responses | Percentages |
|----------|---------------|-----------|-------------|
| A | 0-6 months | 24 | 96% |
| B | 6mon-1 year | 1 | 4% |
| C | 1-2 years | 0 | 0 |
| D | Above 2 years | 0 | 0 |

Inference: from the above table we can see that majority of the employees who are included in this survey are the new joiners in the organization in the tenure of 6months.

4.2. Classification of the respondents based on through which source they been hired in Planman Pvt Co. Ltd

– **Table 4.2 Through which source respondents hired**

| Category | Options | Responses | Percentages |
|----------|-------------------|-----------|-------------|
| A | Employee referral | 5 | 20% |
| B | Portal calling | 0 | 70% |
| C | Direct Walk-in | 0 | 10% |

Inference: from the above table we can say that majority of the employees hired by Planman Pvt Co. Ltd is through Job portals

Classification of the respondents based on rounds of interview's undergone in Planman Pvt Co. Ltd

– **Table 4.3 Rounds of interview undergone**

| Category | Options | Responses | Percentages |
|----------|----------|-----------|-------------|
| A | 3 rounds | 4 | 16% |
| B | 4 rounds | 15 | 60% |
| C | 5 rounds | 6 | 24% |
| D | 6 rounds | 0 | 0% |

Inference; From the above table, majority of the new joiners felt they had undergone interview four rounds, some i.e. 24% felt they have been interviewed for 5 rounds and 16% felt they have been interviewed for 3 rounds.

Classification of the respondents based on which sector they are mainly interested to join

– **Table 4.4 Respondents mostly from which sector**

| Category | Options | Responses | Percentages |
|----------|-----------|-----------|-------------|
| A | FMCG | 0 | 0% |
| B | Pharma | 15 | 60% |
| C | Insurance | 5 | 20% |
| D | Others | 5 | 20% |

Inference: from the above table we can see that the most of the new joiners from the last six months are from pharmaceutical sector at 65%, 22% are from insurance sector and 13% are from Telecom etc. i.e. candidates from pharma sector are more interested to join the insurance industry.

Classification of the respondents based on the employee expectations when they first join the company

– **Table 4.5 Employee expectation level**

| Category | Options | Responses | Percentages |
|----------|--------------------------------------|-----------|-------------|
| A | Promotion | 8 | 32% |
| B | Better prospects | 4 | 16% |
| C | support from superiors | 10 | 40% |
| D | to learn more about insurance sector | 3 | 12% |

Inference: from the above table we can say that the majority of new joiners 40% have expectations that they get support from their superiors in the organization to reach their monthly targets, 32% expect to get promoted if they reach the targets according to the company norms, 16% expect for better prospects and the remaining 12% expect to learn more about the insurance industry as they are new to this industry.

Classification of the respondents based on expectation level of employee reach

– **Table 4.6 Reach of expectations**

| Category | Options | Responses | Percentages |
|----------|---------|-----------|-------------|
| A | Yes | 15 | 60% |
| B | No | 10 | 40% |

Inference: from the above table we can say that majority of the employees i.e. 60% reached their expectations. This shows employees are satisfied with the company.

Classification of the respondents based on their factor of motivation level.

– **Table 4.7 Motivational factor**

| Category | Options | Responses | Percentages |
|----------|-------------------------|-----------|-------------|
| A | Rewards and recognition | 4 | 16% |
| B | Monetary Benefits | 2 | 8% |
| C | Training | 15 | 60% |
| D | Leadership roles | 4 | 16% |
| Category | Options | Responses | Percentages |
| A | Rewards and recognition | 4 | 16% |
| B | Monetary Benefits | 2 | 8% |
| C | Training | 15 | 60% |
| D | Leadership roles | 4 | 16% |

Classification of the respondents based on recommendations they give to the company for future hiring.

– **Table 4.8 Recommendations level**

| Category | Options | Responses | Percentages |
|----------|---------|-----------|-------------|
| A | Yes | 24 | 96% |
| B | No | 1 | 4% |

Inference: from the above table we can see that 96% of the employees like to recommend the skilled and capable persons that they fit to the job because of the cooperation from the supervisor, working culture, Training methods which are very adaptable, Incentives and Bonus given to the employees.

Data Analysis and Interpretation of questionnaire which is given to the Exited employees from the company

Classification of the respondents based on reasons behind resignation.

– **Table 4.9 Resignation purpose**

| Category | Options | Responses | Percentages |
|----------|--------------------------------|-----------|-------------|
| A | Personal reasons | 13 | 65% |
| B | Better prospects/Hike benefits | 5 | 25% |
| C | Education | 2 | 10% |

Inference: from the above table we can see that there is no problem with the company work environment or the policies of the company.

Classification of the respondents based on work environment in their previous company

| Category | Options | Responses | Percentages |
|----------|---------|-----------|-------------|
| A | Better | 10 | 50% |
| B | Good | 8 | 40% |
| C | Average | 2 | 10% |
| D | Poor | 0 | 0% |

Inference: The above table points out that the working environment is better in their past companies

5. SUMMARY OF FINDINGS

Most of the recruitment is done through Job portals and employee referrals.

- Employees hired by planman Pvt. Co. Ltd are dedicated and consistent in their performance.
- Interviews are done on daily basis at different branches.
- Daily selected candidate's tracker is maintained.
- Most of the employees from pharmaceutical sector are preferring the insurance industry.
- In spite of having direct walk-ins, Employee referrals, the percentage of present employees is mostly from Job portals only.
- Maximum number of respondents said that career growth is the one which attract the people to join the company.
- Many of the respondents stated that there is a correct hierarchy, structured plan and the organization will take care of their employees.

- Rewards and recognition, incentives provided, training are becoming the motivational factors to the employees. Employees who have resigned are satisfied with their past company and the supervisors.
- Main reason behind the employee resignation is personal reasons like family issues, Higher education Etc. other than this there is no problem with the company.
- According the result of the survey there is no problem for the sales persons in the company but the operations persons are facing more work pressure.
- Once the Initial year is done, there is a stability in the employees

Suggestions

There is no proper interaction with the employees to the HR. Suggested to have a proper interaction with the employee, try to understand if he/she facing any issues and can mainly concentrate on the employee who are from different sector so that they get moral support and try to understand company norms better.

- There is no weekly motivational/ Energize programs to the employees in the company. To conduct such programs in every 15 days so that the employees may feel interest and be dedicated to the work is suggested.
- There are some back outs of the candidates who are selected after their interview. Suggested to find out the main reason for drop outs and take some measure.
- By the above data analysis we can see that candidates from Pharmaceutical industry are interested rather than FMCG and other industries. So concentrate more on pharma sales persons who fit right to the company requirement is suggested.
- More emphasis on operations team also along with the sales persons is suggested.

Continuous Recruitment is needed in Consultancy companies.

- The study of the profile of the sales manager is depending on their industry background i.e. their work experience and the age wise distribution.
- Most of the hiring is happening through Job portals.
- Turnover rate is increasing monthly basis..
- Majority of the employees who left the organization are going to higher education, some are jobless, and some are into other sector.
- All the employees having very good relationship with their supervisor in their past company. This shows that employees are indeed very happy which will in turn reflect in their productive work.
- Exited employees like to recommend the skilled and capable persons that they fit to the job because of the cooperation from the supervisor, working culture, Training methods which are very adaptable, Incentives and Bonus given to the employees.

BIBLIOGRAPHY

1. Aswathappa .K, (2010), "Human Resource and Personnel management", McGraw-Hill Education.
2. De Cenzo, David. A and Robbins, Stephen. P, (2007), "Human Resource Management", Wiley-India Publishers.
3. Rao, VSP (2007), "Human Resource Management", Excel books.
4. Robbins, Stephen. P, (1996), "Organizational behavior", Prentice Hall of India.

JOURNALS & ARTICLES

1. IRDA JOURNAL

2. BROCHURES & REPORTS OF THE COMPANY

WEBSITES

1.

<http://dspace.knust.edu.gh:8080/jspui/bitstream/123456789/4294/1/FINAL%20THESIS%20%20EDWARD%20DJABATEY.pdf>

2. www.citehr.com

3. www.economictimes.com

4. www.planmanhr.com

5. www.skope.ox.ac.uk/sites/default/files/SKOPEWP88.pdf

IMPORTANCE OF LISTENING SKILLS OVER OTHER SKILLS

A.Madhavi Latha, Assistant Professor, Malla Reddy college of Engineering, Hyderabad.

ABSTRACT: One of the important causes for miscommunication is poor listening skills. It is a fact that if a person does not listen to the speaker effectively, then there are more chances that he is not communicating properly; as a result, he may not understand the speaker's message. The same applies with the second language learning. Of the four linguistic activities, Listening, Speaking, Reading, Writing; Listening is the most important skill to be acquired but it is ironical to note that this is only the skill being overlooked. Records say that Listening occupies 45 per cent of the time spent in communication where speaking accounts for 30 per cent, and reading and writing, which make up 16 per cent and nine per cent respectively. Despite its importance, students (and even teachers) often fail to pay attention to Listening. . This is all the more remarkable as learners often say that listening is the most challenging of all the skills in any language. Unfortunately the tasks for Listening are not practiced in the labs unlike for the speaking skills. More emphasis should be given on Listening skills which can be taught through direct, integrated, incidental, eclectic and dialogue approaches.

KEYWORDS: Listening skills; language learners; listening practice

INTRODUCTION

Language is a social activity comprising speaking, listening, writing and reading. Of the four linguistic activities, it is listening that most learners ignore. Listening plays a pivotal role in efficient communication. Importance of listening lies in the fact that it enables students become aware of the use of

the language both grammatically and contextually. It should be noted that the learner of a language could not excel in other skills until and unless he/she has good Listening skills..Listening skills are not confined to a single area like learning second language, but its importance lies in different fields like Medicine, Science, IT, Agriculture, Trade, etc along with the personal life. Therefore a learner has to be aware of the fact that in order to have efficient communication skills one has to par 'take listening skills. A teacher should also take precautionary steps to use a variety of techniques to help students acquire effective listening skills.

Why Listening Is Vital for Language Learners

Listening unlike Hearing is a complex process which involves identifying, understanding and analyzing spoken languages.It also helps students to identify the accent of the speakers and thus helps them motivate to learn the accent and acquire detailed comprehension and makes them aware how language is used contextually and grammatically. It assists students learn a foreign language with greater confidence and expectation of success. Activities in listening stimulate the learner's imagination, motivate them to think and inspire them to speak. Students highly involved in listening learn better and faster and have sounder judgments and take good decisions about what is heard. If listening skills are improved then there is gradual development in speaking skills.

IGNORANCE OF LISTENING SKILLS

Many language learners focus on either speaking or reading or writing skills. They don't put conscious efforts on listening alone.

Listening seems like it should be simple, or secondary to other more active language skills. To the surprise of many new learners, listening to a foreign language is difficult. If you've ever had to sit for a second language test, you'll know that the listening section is almost always the hardest.

But, listening is a vital skill for language learning.

Research shows that during the process of communication, people spend around 40-50% of our time listening, 25-30% speaking, 11-16% reading and only 9% writing that means we spend about half the time listening!

Now the question arises:

Do we spend half of our language learning time on listening exercises?

... We probably don't.

But if an individual needs to learn a foreign language which comprises Speaking, reading, writing skills he/she has to definitely excel in Listening skills & spend more time listening in our second language. However, it's vital that we learn to listen effectively.

But the learners are not specifically taught how to listen in a foreign language, or if they have, they have not been taught properly. Listening is a challenging skill for the foreign language learners because this skill requires substantial endeavors by the

learners. In case of acquiring our mother tongue we listen and speak, and then learn reading and writing but it is totally opposite when we are learning English— reading and writing and then so occasionally listening and speaking (*ibid*). Therefore, students face difficulty in case of listening English and they need to employ sufficient endeavors to acquire this skill. Unfortunately students are never given that chance, because as Saha (2008:193) explains that in the schools, colleges and even in the university education, learners are never directed how to listen.

As the learners are never exposed to listening they fail to manage any kind of interaction. (Bhattacharjee, (2008:18). Alam and Sinha (2009:20) claim that the neglect of listening skill in our language classes makes the learners less proficient in the spoken language also. It has been noticed that in most of the language courses in our country, listening is never taught (Saha, 2008) except in some of the institutions like EFLU and others.

To be efficient in English language it is necessary to be proficient in listening, speaking, reading and writing skills

The following reasons can be easily stated to observe practice of poor listening skills.

- Most of the educational institutions provide adequate practice of listening skills.
- Inappropriate syllabus and insufficient logistic support do not permit teachers to practice listening skills in the classrooms. So, language teachers hardly give attention towards this skill.
- Lack of exposure to listening due to limited resources. And if there is exposure through Audio-Visual aids, the source is in foreign accent which

makes the students hard to understand the foreign accent.

- Teachers do not focus on the local materials; instead, focus on foreign culture-accent. While contextual background is necessary for understanding, lack of schematic knowledge dispels the learners' interest and participation and as a result language learning does not progress.
- Sometimes the audio of a listening source may not be clear, as a result, the student gets bored and loses interest.
- Lack of proper equipment updated software hinders the process of learning.
- A language class should not exceed 15-20 students,
- Marking system should be initiated even for listening skills
- Listening activities need to be practiced through argumentative and Authentic topics.

Apart from this the following are recommended

- Effective and ideal English language courses need to be introduced to help the learners to be better listeners.
- Syllabus should emphasize the listening skills and university authorities need to provide the necessary logistic support for the teaching of this skill;
- Outlines should be prepared by allocating marks for the listening skills;
- Teachers need to be trained to take the language classes;
- Teachers should be mentally prepared to teach the listening activities with the existing constraints;

- Effective materials should be produced by the teachers to make the learning enjoyable and in this regard teachers need some expertise to prepare those.
- Materials should be used according to the learners' level and they should be given the scope to use their background knowledge to connect with the materials.
- Curiosity to learn and interest should be aroused among the learners to involve them in the listening activities.
- Exposure to sufficient English speech is necessary and in this regard Conversational clubs can be

established

To be efficient in English language, it is necessary to be proficient in listening, speaking, reading and writing skills. Every individual should take initiative to acquire proper Listening skills instead of completely relying on the teaching system. The following are some **Barriers to Effective Listening which an interested learner should know so that he/she can overcome to become an efficient communicator.**

Common Barriers to Listening :

- Listening to more than one conversation at a time,
- Paying attention to the physical appearance of the speaker rather than listening to his words.
- You are not interested in the topic/issue being discussed and become bored.
- Not focusing and being easily distracted, fiddling with your hair, fingers, a pen etc. or gazing out of the window or focusing on objects other than the speaker.

- Feeling unwell or tired, hungry, thirsty or needing to use the toilet.
- Identifying the speaker's words rather than empathising
- Sympathizing the speaker rather than empathising
- Having prejudices or a closed mind regarding the speaker.

CREATING AWARENESS OF LISTENING SKILLS:

If one wants to improve listening skills, one has to know the following;

If the situation becomes difficult for a listener to comprehend then he can tap into background knowledge of the topic, the situation or context, the type of text, and the language. This background information activates a set of expectations that assist the listener to interpret what he has heard and anticipate what he will hear next.

Listening for the major idea, Predicting, Drawing assumptions cutting the listener depends on the language in the message, that is, the arrangement of words, sound, and grammar that creates meaning are text based - Listening for specific information Recognizing cognates Recognizing word-order patterns. Listening for general details-also helps the listener to understand the situation.

They should put into use top-down and bottom-up strategies that are appropriate to the listening Students' comprehension improve and their confidence increases when they use top-down and bottom-up strategies simultaneously to construct meaning.

They should check knowledge while listening and when the listening task is ended. This helps students to detect

comprehension failures, directing them to apply other strategies.

FOCUS ON LISTENING:

- To achieve this goal, instructors focus on the process of listening rather than on its product.
- Develop students' awareness of the listening process and listening strategies by asking students to think and talk about how they listen in their native language.
- Allow students to practice the full repertoire of listening strategies by using authentic listening tasks.
- Behave as authentic listeners by responding to student communication as a listener rather than as a teacher. When working with listening tasks in class, they show students the strategies that will work best for the listening purpose and the type of text.
- Explain how and why students should use the strategies. They have students practice listening strategies in class and ask them to practice outside of class in their listening assignments.
- Encourage students to be conscious of what they're doing while they complete listening tape assignments.
- Encourage students to evaluate their comprehension and their strategy use immediately after completing an assignment.
- Build comprehension checks into in-class and out-of-class listening assignments, and periodically review how and when to use particular strategies.
- Encourage the development of listening skills and the use of listening strategies by using the target language to conduct classroom

business: making announcements, assigning homework, describing the content and format of tests.

- Mention how a particular strategy can be used in a different type of listening task or with another skill. By raising students' awareness of listening as a skill that requires active engagement, and by explicitly teaching listening strategies, instructors help their students develop both the ability and the confidence to handle communication situations they may encounter beyond the classroom. In this way they give their students the foundation for communicative competence in the new language.

Ways to improve listening skills :

Non-Verbal communication plays a key role in efficient listening skills

1. Focus on using inviting body language, such as making eye contact, uncrossing your arms, and turning your shoulders so you're facing the person speaking. Use your body to show your interest and concern such as nodding ourhead.
2. Avoid thinking about what you're going to say next. Try not to get ahead of the speaker by finishing his or her thoughts in your mind before the person is finished speaking
3. Participate in active listening by encouraging the speaker with nods and affirmative words.
4. Paraphrase and repeat what you heard when it's your turn to talk. Don't interrupt – If you're interrupting the person speaking to get your point across, you're not listening

5. Ask questions or request examples for clarification and to get a better understanding of what is being said.
6. Stop doing other things — fidgeting, texting, reading, etc., — while someone is speaking to you.
7. Focus on content, not delivery. If you find yourself counting the number of times someone clears their throat, touches their nose or says uh, your attention is not on the subject matter and you need to refocus more on the message.
8. Ask open ended questions. Closed questions close the door to further conversation by giving a yes or no answer. Whereas, open questions allow for access to further dialogue. For example, the speaker might say,
9. Pay close attention to a speaker's body language – posture, eye movement and facial expressions. This will give you cues to the meaning behind the words being spoken and what he or she is really trying to convey.

Conclusion

This paper throws light on the prevailing issue that listening skill is neglected and ignored in almost all the institutions in general and arrives at a point that the Basic English or Fundamentals of English courses of private universities are incomplete without practicing listening skill. Without this skill student can be found inefficient in English language. At the same time the findings of the study suggests that the use of appropriate strategies can improve the learners' listening skills as well as knowledge of English if listening skills are dealt with utmost care and intensive

treatment. It also makes the readers aware that the learner of the language should

also uphold the responsibility to improve efficiency in listening.

REFERENCES :

International Journal of Education and Information Studi ISSN 2277-3169 Volume 4, Number 1 (2014), pp. 59-63 © Research India Publications

- <http://www.ripublication.com>

Nichols, Ralph G., and Leonard Stevens. Are You The benefits of good listening go beyond help- Listening? New York: McGraw-Hill, Inc., 1957. ing business. They also help the individual. One Barbara, Dominick.

The Art of Listening. Spring important benefit of listening is gaining in forma field: Charles C. Thomas Publishers, 1958 tion .

Kashen, S. (1985). *The Input Hypothesis: Issues and Implications*. Cambridge University Press.

Krashen, S. (1981). *Second Language Acquisition and Learning*. London: Pergamon.

Khan, H. R. (2005). Teaching English in Primary Schools: Pros and Cons. *Bangladesh Education Journal*. Vol. 4, No. 1, 25-31.

Littlewood, W. (1981). *Communicative Language Teaching*. United Kingdom: Cambridge University Press.

Long, R. D. (1987). Listening Comprehension: Need and Neglect. *Hispania*. Vol. 70, No. 4, 1921-1928.

Morely, J. (2001). Aural Comprehension Instruction Principles and Practices. In M. C.

Murcia (Ed), *Teaching English as a second or foreign Language*. (3rd ed. pp 69-85). USA: Heinle & Heinle.

Maniruzzaman, D. M. (2002). *Basic English Language Skills*. Dhaka: Friends Book Corner.

Mannan, A. (2009, December 30). Private Universities-A Half Glass Full. *The Daily*

A STUDY ON GREEN MARKETING PRACTICES IN HOSPITALS TOWARDS A SUSTAINABLE HEALTHCARE

K. Srikanth, Research Scholar, School of Management Studies,

University of Hyderabad, Hyderabad. E-Mail: kotla.sri@gmail.com

M. Shiva, Assistant Professor, Dept. of Business Management, Malla Reddy College of

Engineering, Hyderabad. E-Mail: shivavallimanukonda@gmail.com

S. Amulya, Student Business Management, Dept. of Business Management, Malla Reddy College of Engineering, Hyderabad. E-Mail: amulya1268@gmail.com

ABSTRACT

Healthcare is one of the India's largest and fastest-growing sectors comprising of Hospitals, Medical Infrastructure, Medical Devices, clinical Trials, Outsourcing, Telemedicine, Health Insurance all of which delivers goods and services to treat patients on preventive, curative, rehabilitative, and palliative care basis. The Indian Healthcare industry is expected to reach US\$ 160 billion by 2018. Emerging trends in Healthcare industry includes the rise of medical tourism, emerging health insurance market, the growth of telemedicine, expansion of healthcare infrastructure, rising opportunities in pharmaceutical industry, rise of clinical trials and the Green Management concept. Green hospital concepts will play an important part in the curative process, and as the issue of Global Warming is rapidly evolving, every Healthcare facility requires the Green Building concepts. In the present study to discuss Green Marketing practices in Healthcare sector, select Green Marketing Initiatives were considered and how it leads to a sustainable healthcare has been discussed, as sustainability is becoming widely adopted and this industry has begun to embrace a sustainability mindset as the linkage between the greener operations, improved healthcare and lower operating costs is becoming more apparent. Hospitals

are starting to place greater emphasis on greener products for use in delivering patient care as well as the materials used throughout their facilities, such as cleaning products and office supplies. Hence the present research paper is an attempt to revisit the literature that is intended to highlight the relevance of green management practices in healthcare and to inform healthcare procurement professionals, executives, administrators and providers about the importance of sustainable and greener products in the healthcare industry.

Keywords: Green Marketing, Global warming, Healthcare, Sustainability.

INTRODUCTION

The Health Care industry is composed of multiple segments pertaining to different practices in medicine that provide different services. These services deal with different procedures and methods that address a variety of medical needs. The Health Care sector, in India, is at an inflection point and is poised for rapid growth in the medium term. Indian Healthcare Industry is currently estimated at USD 40 Billion. The industry is expected to grow to ~USD 79 Billion by 2012 and USD 280 Billion by 2020. The average CAGR for the next 10 years, has been estimated at 21

percent. The recent Emerging Trends in Healthcare includes Medical Tourism, Quality Accreditation Systems, Public Private Partnership Models, Green Management concept.

Sustainability in the Healthcare Industry

Sustainability is no longer a fleeting trend but rather a business approach being adopted by organizations to maintain competitive positions. This is increasingly true of the healthcare sector, which represents approximately 10% of GDP on average among the Organization for Economic Co-operation and Development (OECD) countries. Given the scale and complexity of healthcare industry, it is not surprising that it also has a large environmental footprint. In the United States, one estimate indicates healthcare facilities generate more than 5-9 millions tonnes of waste annually. A recent research letter in the *Journal of American Medical Association* estimates hospitals contribute approximately eight percent of green house gas emissions resulting from human activity. Sustainability measures especially those that are designed to reduce energy, waste and water, as well as the associated costs have a direct financial return on investment. Other sustainability initiatives such as the procurement of non-toxic cleaners, medical devices with less chemicals, or more wholesome foods, can lead to healthier outcomes for patients.

Integrating sustainability into hospital or clinical operations can be particularly challenging, given the complex facilities and range of activities involved in delivering healthcare services. However more emphasis is being placed on linking the mission of healing to sustainable healthcare operations – from the construction of greener facilities and efficient use of resources, to a preference for less toxic chemicals

in cleaning products and providing healthier food options.

NEED FOR THE STUDY

Green Management is more prevalent to Health Care than any other sector. The first Ethical imperative in health Care sector is First Do No Harm to patient. Patients can no longer tolerate Hospital-acquired conditions such as Nosocomial Infections and falls, Injuries to staff, subjecting patients to noisy, confusing environments that increase stress and anxiety, all of these which have negative impacts on patients, staff and attendants. Besides these Hospitals also generate a lot of Radio Active Hazardous and Non-Hazardous waste, Air Emissions, and waste water that can, if not properly managed, significantly contribute to Air, Soil and Water pollution, which pollute the environment. Hence we need to embrace the clear connection between well designed healing environments and improved healthcare safety and quality for patients, family and staff, and the associated cost savings. Given the Implications, Green Management practices have much role to play in the Health Care sector.

OBJECTIVES OF STUDY

- The primary objective of this study is to review the published literature regarding green initiatives in healthcare.
- The secondary objective is to propose suitable eco friendly sustainable development strategies towards green management concept based on the reviewed literature

METHODOLOGY

Qualitative content analysis has been used to analyze secondary data sources so as to examine the relevance of green management practices in healthcare and to inform healthcare procurement professionals, executives, administrators and providers about the importance of sustainable and greener products in the healthcare industry.

Green Marketing Initiatives

An increasing body of evidence points to the value of a green facility in improved patient outcomes and staff health risk. Following are some examples:

1. A study at the Mackenzie Health Sciences Centre in Edmonton, Alberta, Canada, found that depressed patients in sunny rooms recover faster. Researchers wrote that those in sunny rooms had an average stay of 16.9 days compared to 19.5 days for those in dull rooms, a difference of 2.6 days(15%) ("Sunny Hospital Rooms Expedite Recovery from Severe and Refractory Depressions," K.M.Beauchemin and P.Hays, Journal of Affective Disorders, Sept. 1996) .
2. A study at Inha University Hospital in Korea found a 41% reduction in Average Length of Stay for Gynecology patients in sunlit rooms over patients in dull rooms. The study found 26% reduction similarly for surgical ward patients ("Study of relationship between Indoor Daylight Environments and Patient Average Length of Stay (ALOS) in HealthCare Facilities," Joon Ho Choi, M.Sc. thesis, Texas A&M University).

3. A study of 17 hospitals in Canada examined Tuberculin conversion (a positive tuberculin test result) among employees working in patient rooms. The researchers concluded that "tuberculin conversion among health care workers was strongly associated with inadequate ventilation in general patient rooms". They found a 71% reduction in risk for workers in rooms with ventilation rates greater than two air changes per hour(ACH) (Hospital Ventilation and Risk for Tuberculosis Infection in Canadian Health Care Workers", Dick Menzies, Anne Fanning, Lilian Yuan, and J.Mark Fitz Gerald, Canadian Collaborative Group in Nosocomial Transmission of TB, Annals of Internal Medicine, Nov. 2000).

Eco friendly Green Management strategies in Healthcare sector

1. Pollution prevention, energy conservation, green building design and sustainable food sourcing.

Pollution prevention can reduce the impact of air pollution by using materials, processes, or practices that reduce or eliminate air pollution at the source. Examples of changes in work practices that help reduce air pollution include:

A. Replacing Sources of Mercury

- Using alternatives to Mercury Thermometers, Mercury Blood Pressure Cuffs, and other equipment.
- Switching to Mercury-free Preservatives.
- Insisting on using recovered and recycled Mercury in all products that do not yet have Mercury-Free alternatives.

B. Locating Sources of Mercury

- Using a Mercury Audit on a regular basis to locate sources of Mercury.
- Formulate a plan to reduce sources of Mercury.

C. Communicating Mercury Dangers

- Developing a training and communication program.
- Train employees to look for ways to reduce Mercury pollution.
- Develop and implement a protocol to prevent Hospital employees from improperly disposing of Mercury.

D. Reducing PVC Use

- Conducting a PVC audit.
- Look for PVC-free products to replace PVC products.
- Use PVC-free medical devices, construction and furnishing products whenever possible.

2. Xeriscaping, which is a type of landscaping that minimizes water usage.

It is an environmentally friendly landscaping practice. Hospitals doesn't need an irrigation system to water the flowers and plants on campus. The landscaping is carefully planned with selections that are compatible with the soil and weather conditions.

3. Energy conservation, renewable energy outlets, building design, waste management, recycling and sustainable foods.

A growing body of research shows that the physical design of health care settings unintentionally contributes to negative outcomes. On the other hand, thoughtful evidence-based facility design can help bring the patient, staff and families into the center of the health care experience, increase patient safety and enhance the overall quality of care provided.

(Evidence for Innovation, NACHRI and The Center for Health Design)

4. Healthy Building Design.

Healthy Building Design practices adopted by Hospitals are

- Single patient rooms
- Adequate space for families to spend the night
- Access to natural areas - indoor and outdoor gardens
- Ample natural light
- Artwork on walls and other positive distraction tools (TV, music, etc.)
- Noise reduction wherever possible
- Reduction of high light levels
- Access to hand washing stations/dispensers
- Use of music therapy

5. Developing Sustainable Food policies and reducing Toxic and Hazardous Waste.

- Reduce risk or liability exposure related to environmental, social and health concerns
- Set a positive examples for students, patients and other constituents or stakeholders
- Deliver morale and health benefits for employees and students/patients/customers

6. Recycled Building supplies and Low Volatile Organic Compound materials.

Benefits of using low VOC building materials include

- Improved regional Air Quality.
- Improved worker safety and health.

- Reduced incidents of eye and respiratory irritation, headaches, fatigue and other symptoms of “Sick Building” syndrome.
- Cleaner indoor Air Quality for a more comfortable and productive environment.

7. Geothermal system to heat and cool the facility, workspaces that maximize daylight, native plants and safer CPVC piping.

One green technology that is becoming a gold standard — both for heating and cooling as well as for Green Initiatives in general — is Geothermal energy. Geothermal energy via heat pumps is a specific "Earth Energy" system that provides heating and cooling through the renewable temperature resources within the Earth. The Environmental Protection Agency actually recognizes these types of Geothermal systems as the most "Green" way to provide heating and cooling, as it does not emit Carbon Di Oxide or other Green House Gases.

8. Adoption of a Co Generation Power Plant and upgraded Exterior Lighting.

The number of hospitals using CHP systems has grown steadily in recent years. Hospitals using cogeneration are taking advantage of favorable utility rate structures and hedging against rising electricity prices. Because cogeneration uses waste heat to produce thermal energy for heating and cooling, hospitals that use CHP systems are more energy efficient. Reduced emissions lessen their impact on the environment as well. Hospitals are ideal candidates for combined heat and power (CHP) systems. Because hospitals function 365 days a year, 24/7, they require round-the-clock energy. Combined systems enable hospitals to reduce energy costs, improve environmental

performance, and increase energy reliability. Resources saved are often redirected to improve patient care.

CONCLUSIONS

Healthcare organizations and manufacturers have made significant strides during the past two decades, in embracing and integrating environmental, social and financial sustainability throughout the industry. Suppliers are rethinking what goes into products and the ways they are made. Hospitals and healthcare systems are increasing recycling using greener cleaning products and providing healthier food options. It is inevitable that sustainability will only continue to grow in importance as the link between environmental and human health becomes stronger. To conclude the emerging growth areas in green management include energy-efficiency and sustainable energy, waste reduction (particularly packaging and Styrofoam), elimination of halogenated flame retardants and other toxic chemicals and sourcing local, healthier food. Hence there is a strong need for Green initiatives in Healthcare sector which will be treated as win-win situation for both hospital management and patients.

REFERENCES

1. <http://ezinearticles.com/?What-is-the-Nature-of-the-Healthcare-Industry?&id=3424018>
2. http://www.kpmg.com/IN/en/IssuesAndInsights/ThoughtLeadership/Emrging_trends_in_healthcare.pdf
3. <http://www.slideshare.net/maxwellranasinghe/nature-scope-and-evolution-of-marketing>
4. http://en.wikipedia.org/wiki/Green_marketing
5. <http://www.beckershospitalreview.com/lists/50-of-the-greenest-hospitals-in-america.html>
6. http://www.epa.gov/airquality/community/guide/healthcare_comm_info.pdf

7. <http://www.ecommunity.com/s/communitys-outh-about-us/going-green>
8. http://www.aashe.org/resources/pdf/food_policy_guide.pdf
9. <http://www.intechopen.com/download/get/type/pdfs/id/32821>
10. <http://www.cleanaircounts.org/lowvocbuildingmaterials.aspx>
11. http://apps1.eere.energy.gov/buildings/publications/pdfs/alliances/hea_chp_fs.pdf

Improvement of resonance frequency in Sub woofer Driver

Shashi kumar Jakkaraju

Associate Professor in the Dept. of Physics ,Malla Reddy College of Engineering, Secunderabad - 500014, India
email id:jskshashiphy1@yahoo.co.in

Dr. Y.Markandeya

Assistant professor,Dept. of Physics,Nizam College,Osmania university,Hyderabad.India.

Sultan Baba

Assistant professor,Dept. of Physics,Malla Reddy College of Engineering, Secunderabad - 500014, India

Abstract—Present days reproducing of sound with high quality has demand and increasing day by day ,Ideally, the high-fidelity equipment,like high end audio systems,power amplifiers,audiophile,home audio system must produce less noise and distortion and a flat frequency response within the human listening frequency range.A lot of research is going on to develop popular type of system for reproducing music since from 1970's.the audio equipment must be able to produce the sound of audioable rang i.e,for healthy young person it ranges from 20Hz to 20,000Hz.the electrical technology is so developed that audio receivers can produce humans range quite easily.the out put of audio signal generated by high-fidelity systems should be again feed into the suitable audio drivers which can reproduce the sound,because of this reason the demands of production of loudspeakers has increased producing human range frequency drivers is not that easy and it is very expensive.miniature has great demand.in the present paper the parameters that influence the production of low frequency is presented.The thiele parameters that influences for the production of low frequency drivers is discussed,they are Peak Diaphragm Displacement Volume (V_d),suspension compliance (C_{ms}),Displacement-Limited acoustic power output rating(P_{AR}),the voice coil movement in one direction without leaving the magnetic zone (X_{max}),the compliance of the air inside the box(V_{as}),excursion limit (X_{lim}),the effective surface area of the diaphragm (S_D) and the weight of the cone assembly plus the 'driver radiation mass load'(M_{ms}).the resonance frequency of any driver generally depends on the reciprocal of stiffness and effective mechanical mass of the driver these in turn depends on other parameters.by improving these we can construct drivers for producing low frequency.

Key words—thiele parameters, resonance frequency , suspension compliance, excursion limit, Total mechanical mass of driver,maximum linear peak excursion, Displacement-Limited acoustic power output rating

1.INTRODUCTION:

There is a great demand for studio monitors,bookshelf speakers,sub woofer systems which are useful for the production of sound radio studios,film making,recording studios and television studios.If we want to design these we should know and have a sound knowledge of the performance data of every individual loud speaker while constructing enclosure for them.many affordable methods was proposed and several technical papers was presented to audio engineering society.Thiele and small made many efforts and discovered the parameters which can give the relation between enclosures and speakers.they named it as "thiele-small parameter" thiele was a senior engineer of design and development for Australian broadcasting commission and small is a common wealth post graduate research student in the school of electrical engineering at university of Sydney.the general parameters which give the performance data are

S_d - Total piston radiating area of driver [m^2].

X_{max} - Maximum peak linear excursion of driver [mm].

R_e - DC resistance of voice coil [ohms].

L_e - Inductance of voice coil [H].

F_s - Driver free air resonance [Hz]. Point at which driver impedance is maximum.

F_3 - -3 dB cutoff frequency [Hz].

V_{as} - It is the volume of air that has the same stiffness as the driver's suspension when acted on by a piston of the same area (S_D) as the cone.

V_d - Maximum linear volume of displacement of the driver [m^3].

Q_{ms} - Q of driver due to mechanical losses at resonance[dimensionless].

Q_{es} - Q of driver due to electrical losses at resonance [dimensionless].

Q_{ts} - Q of driver due to all losses at resonance [dimensionless].

C_{ms} - Mechanical compliance which is reciprocal of stiffness of driver [m/N].

M_{ms} - total mechanical mass of driver which including air load and measured in [mg] or total moving mass of a driver including air loads

Rms - Mechanical losses of driver [kg/s]

B - Magnetic flux density in gap [T].

l - Length of wire immersed in magnetic field [m].

c - Propagation velocity of sound [~ 342 m/s].

ρ_0 = Density of air(1.18 kg/m³)
 α = system compliance ratio
 V_B = net internal volume of enclosure
 P_{AR} =Displacement-Limited acoustic power output rating
 k_p = power rating constant.
 k_η = efficiency constant
 η_0 =Half space acoustic load
 k_3 = frequency ratio constant for system

2.DERIVATION OF BASIC THEORY:

From large signal system specifications[1] the value of M_{ms} and C_{ms} can be derived as

$$M_{ms} = \frac{\rho_0 c^2}{4\pi^2 k_3^2 \alpha} \frac{S_D^2}{f_3^2 V_B}$$

But

$$S_D^2 = \frac{P_{AR}}{X_{max}^2 k_p f_3^4}$$

$$M_{ms} = \frac{\rho_0 c^2}{4\pi^2 k_3^2 \alpha k_p} \frac{P_{AR}}{X_{max}^2 f_3^6 V_B}$$

$$M_{ms} = \frac{\rho_0 c^2 k_\eta^2}{4\pi^2 k_3^2 \alpha k_p} \frac{V_B P_{AR}}{X_{max}^2 \eta_0^2}$$

for C_{ms}

$$C_{ms} = \frac{\alpha k_p}{\rho_0 c^2 k_\eta^{4/3}} \frac{X_{max}^2 \eta_0^{4/3}}{P_{AR} V_B}$$

Resonance frequency of a driver is given as

$$f_0 = \frac{1}{2\pi} \sqrt{\frac{1}{M_{ms} C_{ms}}}$$

Equivalent volume of compliance depends on

$$V_{AS} = \rho_0 c^2 C_{ms} S_D^2$$

3.DISCUSSIONS FROM RESULTS:

Resonance frequency(F_0)

the frequency at which the driver moves with minimal effort is called resonance frequency of the driver.this is the key parameter,it will tell the min frequency that a speaker can deliver .the moving parts mass of the speaker and the stiffness of the suspension and the spider will decides the resonance frequency of the speaker. when you tap a speaker it will make a sound with the same frequency as its resonant frequency.If the driver reaches below the resonance frequency F_0 ,its starts to roll off.Below F_0 , the frequency response starts to fall

down.Therefore the lower the F_0 ,the better is the sub woofer. Better sub woofer should have a minimum of resonance frequency 20Hz.The mid range woofers will produce 250Hz to 2000Hz and high frequency producers tweeters produces 2000Hz to 20kHz, the resonance frequency will be more and significantly higher.the resonance frequency of driver depends on C_{ms} , M_{ms} keele equations of large system specification they depend on X_{max} , P_{AR} this again depends on square of peak displacement volume of the driver diaphragm V_d [6]

Q parameters

Q_{ms} , Q_{es} , and Q_{ts} are Q parameters measurements which will control the suspension when it reaches the resonant frequency (F_0). The suspension will prevent the voice coil to touch the pole of the magnet when placed. Q_{ms} is a measurement of the control coming from the speaker's mechanical suspension system,the mechanical suspension is made by using the spider. Q_{es} is a measurement of the control coming from the speaker's electrical suspension system which comprise of the voice coil and the magnet. When the voice coil is kept in the uniformed constant magnetic field it generates the current and oppose the coil motion this is called as electrical damping. Q_{ts} is called the 'Total Q' of the driver and is derived from an equation and is product of Q_{es} and Q_{ms} and the result is divided by the sum of the both.

C_{ms}

C_{ms} is the force exerted by the mechanical suspension of the speaker and the reciprocal of stiffness which is measured in meters per Newton.It is also called as the compliance of the speaker. the cone of the speaker is suspended with certain stiffness. If the suspension is stiff, the driver is not having good compliance. So, the easy it is to move the speaker cone, the more compliance it has.

the equation given by B.D.Keele [1] of C_{ms} it is evident that force exerted by mechanical suspension of the speaker depends on the the voice coil that can move in one direction before hard limit occurs .A higher C_{ms} will yield a lower F_s . X_{max} plays vital role in deciding the roll off frequency of the drive.suspension compliance is inversely proportional to square of the effective surface area of the diaphragm [1].

M_{ms}

This parameter is the combination of the weight of the cone assembly plus the 'driver radiation mass load'

The equation derived From large signal system specifications for M_{ms} by B.N.Keele[1].he has given the beautiful relations among the M_{ms} , C_{ms} and X_{max} .the values of X_{max} will effect the M_{ms} in turn influence the natural frequency of the driver.the equation also depends on effective surface area of the diapharam. M_{ms} is also influenced by the S_D ,the more it is the more the value it has.For cinema halls and outdoor studio monitors speakers should have more S_D .

V_d

It is the Peak Diaphragm Displacement Volume it depends on P_{AR} [6]— in other words the volume of air the cone will move depend on Displacement-Limited acoustic power output rating. It is the product of X_{max} ,Maximum peak linear excursion of

drive and S_d the Surface area of the cone. It is noted in cc. The low frequency drivers like subwoofers will have highest V_d figure.

$V_d = X_{max} * S_d$, the value of the Peak Diaphragm Displacement Volume depends on the surface area of cone [1], it is evident the value of the peak Diaphragm displacement volume influence the roll-off frequency of the drive. because of this reason for generation of distortion-less and smooth frequencies Large diaphragm drivers are used. this is suitable for only outdoor application not for living room.

X_{max}/X_{lim} .

In the typical structure of speaker voice coil assembly, the zone between the pole piece and the magnet on the outside of the voice coil the magnetic field is uniform constant and strong. the voice coil has to move linearly and should maintains a constant number of turns within this zone, then only the sound signal are reproduced faithfully. If we increase voice coil moves that is beyond the excursion limit, It results in less turns of the voice coil being within this zone. If this takes place, the signal longer reproduced is no longer proper and hence distortion occurs noise is produced and even damages the speaker. thus we should take care that voice coil should move that distance in one direction X_{max} which will maintains same number of turns with in the magnetic zone always. If excursion is increased beyond the limit, the back of the voice coil former will eventually slam into the magnet, risking permanent damage to the driver. X_{lim} is the amount by which the voice coil can move in one direction before this hard limit occurs. In other words it is the "excursion limit". X_{lim} is always larger than X_{max} . A good driver can have an X_{lim} that is $X_{max} * 2$ but $X_{lim} = X_{max} + 25\%$ is more realistic. many people say $X_{lim} = X_{max} + 10\%$ gives a better estimation of how the sub is likely to be used. it is fairly safe and driver is not damaged.

From Moving-Coil Loudspeaker Topology As An Indicator Of Linear Excursion Capability[2], starts by defining X_{max} as for voice coil height > air gap height as

$$X_{max} = \frac{\text{voice coil height} - \text{air gap height}}{2}$$

for voice coil height < air gap height it is defined as

$$X_{max} = \frac{\text{voice coil height} - \text{air gap height}}{2} * 15\% \text{ voice coil height}$$

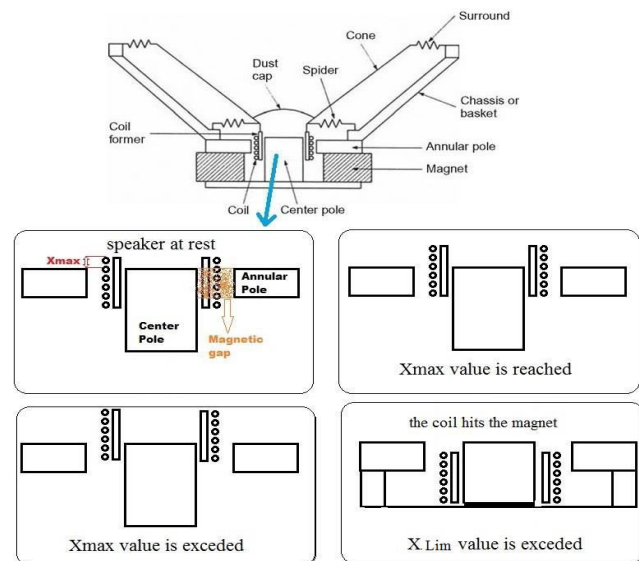
In Design Parameters and Trade-Offs in Large Diameter Transducers[3]

$$X_{max} = \frac{H_c - H_g}{2} + 0.25 * T$$

Where T=top plate thickness

For finding X_{max} , many people has given their opinion, by creating more its value the resonance is lowered, this parameter plays vital role for construction of sub woofers

| tiele-Small Parameter | Free-air Resonance | Diaphragm Diameter | Maximum Excursion | Driver Radiating Area |
|-----------------------|--------------------|--------------------|-------------------|-----------------------|
| Measurement Unit | (Hz) | (inches) | (mm) | (cm ²) |
| Parameter Name | F_0 | Diameter | X_{max} | S_d |
| 128H | 20,00 | 10,20 | 7,87 | 527,0 |
| 2215B | 20,00 | 13,20 | 4,06 | 883,0 |



from 2 JBL subwoofer of model 128H & 2215B by increasing X_{max} value and by decreasing S_d we can generate same frequencies thus we construct compact size subwoofers for living room

V_{as}

The air inside the cabinet has its own compliance. When you try to compress the air inside a box, you will encounter resistance. If the box is small, the air is harder to compress and therefore less compliant, and if the box is larger, the air is easier to compress, therefore more compliant. In conclusion, V_{as} describes the volume of the air inside the cabinet, where the compliance of the speaker matches the compliance of the air inside the box. there is a direct dependency of V_{as} on force exerted by the mechanical suspension of the speaker. the roll-off frequency of the sub woofer also depends on V_{as} .

4.CONCLUSIONS:

low frequency generation drivers are important. by having the knowledge of driver specification one can design desired driver. generating 20hz range driver is very difficult. the Diaphragm Displacement Volume (V_d), suspension compliance (C_{ms}), the voice coil movement in the magnetic zone (X_{max}), the compliance of the air inside the box (V_{as}), excursion limit (X_{lim}), the surface area of the diaphragm (S_d) and the weight of

the cone assembly plus the 'driver radiation mass load' (M_{ms}) influence the resonance frequency of driver. more over S_D of the driver says how much volume of air can be displaced and it is clear the it does not appear in small-signal response[4]. this will tell we can design different diameter drivers which can have same $F_s, Q_{es}, Q_{ms}, V_{as}, V_d$ values and can be used in identical enclosures[4]. In home theater systems LFE is important, the bass frequencies are of order 20Hz to 125Hzs. using big S_D is not recommended like 12 inches, 15 inches & 18 inches in living rooms. we can design driver of 4, 5 & 6 inches having same thiele parameters to produce the same frequency as the big drivers do, but the draw back is they produce more modulation distortion. the discussions in the present paper will help in producing the low frequency drivers. putting [5] drivers in the vented boxes can also bring the frequency down and response considerably below resonance frequency.

REFERENCES

- [1] D.B. Keele, "Direct Low-Frequency Driver Synthesis from System Specifications J. Audio Eng. Soc. vol. 30, pp. 800 - 814 (1982 November).
- [2] Mark R. Gander, Moving-Coil Loudspeaker Topology As An Indicator Of Linear Excursion Capability, 64th AES Convention New York City, pre print no. 1554, November 1979
- [3] Douglas J. Button, Design Parameters and Trade-Offs in Large Diameter Transducers, 91st AES Convention New York, preprint no. 3192, October 1991.
- [4] R. H. Small, "Direct-Radiator Loudspeaker System Analysis," J. Audio Eng. Soc., vol. 20, no. 5 (June 1972). 5 R. H. Small, "Cl
- [5] Thiele, A. N., "Loudspeakers in Vented Boxes: Parts I and II," J. Audio Eng. Soc., vol. 19 No.5 May 1971, pp. 382-392 and No. 6 June. 1971, pp. 471-483; a reprint of Proc. IRE (Australia), vol. 22, p. 487-, 1961.
- [6] R.H. Small, "Closed-Box Loudspeaker Systems," J. Audio Eng. Soc., vol. 20, p. 798 (Dec. 1972), and vol. 21, p. 11 (Jan./Feb. 1973).

Role Plays in Teaching Language through Literature

G.Srinivas, Asst. Prof of English at Malla Reddy College of Engineering

P.Prasad, Asst. Prof of English at Malla Reddy College of Engineering

Abstract: This paper looks at how literature can be effectively utilized as a rich source for teaching language, especially in the context of engineering students. Communication skills in life are of utmost importance starting with establishing social contact to achieve success in one's professional life. Literature comes in handy when looked at from linguistic point of view. Role plays as a technique is crucial in getting students involved actively in the process of learning and language can be taught effectively through. In fact, my paper lays more focus on effective teaching of more advance communicative aspects of language like politeness. Because the students with engineering background, it is observed, usually lack behind the skill of politeness when it comes to English as a second language. Bataineh (2014: 139) opines that language learning can become productive when we combine it with literature in the course of teaching.

1. Introduction

Research in inter-language pragmatics and communication studies suggest that students with

considerable grammatical and language competence in an SL seriously face problems when it comes to the aspects like polite language behavior and reaching goals of interaction. Therefore, it is imperative to teach pragmatic aspects of communication like speech acts, implicature and maxims and principles of cooperative and polite communication (Locastro, 2003, Kasper, 1993, Blum-Kulka & Olhstain 1984, Kasper, Blum-Kulka and House 1993). The above researchers found out that different techniques were prevalent among native and non-native speakers of a language like English. Naturally, native English speakers, on the one hand, had different resources to convey politeness and convey indirect meaning or conduct a conversation. Non-native speakers, however, had limited resources of conveying politeness or derived them from politeness models of their own languages, on the other. Consequently, non-native speakers were taken to be rude and cooperative by the native speakers of English. Especially, when they made request and sought apologies they sounded very direct and less polite. They were new to the linguistic and cultural background of the language and geographical space. And their conversations with native speakers suffered

cooperation or interpretation. Hence cross-cultural communicative practices need to given more attention in making it less harmful.

2. Pragmatic competence

Since Chomsky proposed the notion of linguistic competence in relation to first language of speakers, many sociolinguists came up with the notions like communicative or sociolinguistic or pragmatic competence to counter him. Linguistic competence is the knowledge the native speakers possess about the grammatical system of the language they speak. Pragmatic or communicative competence, on the other hand, is the understanding they gain from their exposure and social participation regarding the use of language in day to day communication. In other words, pragmatic competence refers to appropriate use of language along the line of their varying contextual demands and expectations.

3. Teaching Pragmatic Competence

My paper argues that pragmatic competence plays a crucial role in learning and effectively using a language, a second language in particular and foreign language in general. This would enable students to get exposure and learn about how distinct elements of the language carry varying conversational effects. So teaching of the conversational elements like the

pragmatic ones acquires a central place in the teaching of second language for communicative purposes.

Language related mistakes of grammatical and structural sort can sometimes be ignored because they be comprehended on the basis of language. But, politeness and social norms of language use go beyond the level of tolerance as they are governed and can cause serious problems at the level of social life, activity and relations.

Cooperation and politeness maxims proposed by Grice (1989) and Leech (1983) respectively can add to their understanding of how to be cooperative and polite while communicating in a second language. Implicatures by Grice (1975) can help them how to understand what is conveyed in the face of what is said on the basis of contextual information and also convey the same. Speech act theory proposed by Austin (1962) and Searle (1969) are important in terms of understanding which communicative aspects, like requests or apologies, need to be executed using which particular types of utterances or speech acts. Thus, above pragmatic theories need to be part of teaching a language and its communicative side.

4. Literary texts and Role plays for teaching language

It is a known fact that literary texts can be used as a wide resource for teaching language. Not only for teaching language but also for teaching life skills and getting the students involved in the process of learning a language. Role plays then compliment teaching methods. However, sometimes they can be time consuming and boring. Still, role plays have been utilized largely in teaching. While teaching a second language and its contextual elements role plays enable students to get first-hand experience of language use and not just be passive learners.

Literary texts like short stories and others can be selected in this point of view and students can be encouraged to play varying roles of from the texts and use language appropriate to the role they playing and the contextual information like the gender, topic and culture in which the language is being used. In this students can understand what kind of linguistic aspects carry what kind of significance. Gradually their exposure to different contexts and roles can be increased so that they get enough exposure come to a general understanding of how the language is used. In short, they can learn polite and appropriate use of language. Further, this can benefit teachers to get student participation and make their teaching interesting and productive and so on.

▪ Conclusion

In this manner, my paper reviews how literature can suffice our purpose of communicative language teaching goals. Additionally, role plays as a kind of activity in communicative language teaching method also helps to this job done rather effectively. Thus both of them help in teaching pragmatic competence which is at the heart of language learning and communication.

Bibliography

Bataineh, A. 2014. The Effect of Teaching Literature on EFL Students' Pragmatic Competence. *Journal of Education and Practice*. Vol. 5, No.3. pp. 137-156.

Crystal, D (2003). *The Cambridge Encyclopedia of Language*. UK- Cambridge University Press.

Falvey, P & Kennedy, P (2006). *Learning Language through Literature*. Hong Kong University Press.

Kasper, G (ed). 1993. *Interlanguage Pragmatics*. New York: Oxford University Press.

Locastro, V. 2003. *An Introduction to Pragmatics-Social Action for Language Teachers*. Ann Arbor- University of Michigan Press.

TRIBOLOGICAL PROPERTIES OF FLY ASH REINFORCED ALUMINIUM 6061 COMPOSITE

- 1) Niranjan J Nanjayyanamath Assistant Professor at Sri Dutta institute of Engg and Science, Hyderabad.
- 2) Mahantesh S. Arakeri Lecturer at B.V.V.S Polytechnic(Autonomous) Bagalkot.
- 3) Santosh Balanayak Assistant Professor at Sri Dutta institute of Engg and Science, Hyderabad.

Abstract— Aluminium 6061 alloy (Al6061) is most broadly used base material because of its unique blend of low density, high strength, good mechanical properties, higher corrosion resistance, low electrical resistance and better machinability. However its relatively poor wear resistance has restricted its use in certain tribological applications. In recent years, various fiber reinforced and particulate reinforced Al 6061 composites have shown significant enhancement in their mechanical as well as tribological properties. In view of the above, an attempt has been made to study the mechanical and tribological properties of fly ash reinforced Al 6061 composites, processed using the stir casting route. Three sets of composite samples were prepared with 5, 10 and 15 weight percentage of fly ash with particle sizes in the ranges of 5-20, 25-30 and 50-60 μm in each set. Wear tests of these composites were carried on pin on disc apparatus. It was found that as the content of fly ash increased from 0 to 10%, wear rate was decreased. With further increase in the distribution of fly ash up to 15 wt-%, wear rate increased. With the increase in particle size of the fly ash, wear rate decreased.

Index Terms— Al6061, Fly ash, Tribological properties, Microstructure

I. INTRODUCTION

Aluminium based metal matrix composites (MMCs) are engineering materials that has the combination of various properties such as high specific strength, high specific stiffness and high hardness. Reinforced alloys show better resistance to wear compared to unreinforced alloys. Aluminium based MMCs are widely used in different structural applications such as helicopter parts, rotor vanes in compressors and in aero-engines [1]. High manufacturing cost of continuous fiber reinforced MMCs has led to the use of particle reinforced and whisker reinforced MMCs [2]. Particles such as mica, alumina (Al_2O_3), graphite, boron and silicon carbide (SiC) have been used as fillers with aluminium alloys. Fly ash from thermal power plants in India pose threat to surroundings causing health hazards. It is probable that, of 90 mega tons (Mt) of coal combustion by-products generated per annum, only 25% is currently used, much of it is in the form of extenders in cement and in polymers; the remainder is ending up in land filling. It is expected that fly ash particles as reinforcement in aluminium alloys would promote yet another use of this by-product [3]. Tribological properties of components used in aircraft fittings, valves, pistons rings, brake drums, cam and follower play important role. Because light metal alloys usually have poor wear resistance, they require surface treatments like coating with oxides or nitrides.

II. TRIBOLOGICAL PROPERTIES

significant work have been conducted and found that they are designed to improve tribological properties of aluminium alloys. Uyyuru et al. [4] studied tribological behavior of Al-Si-SiCp composites / automobile brake pad system under dry sliding conditions using pin-on-disc machine where the aluminium MMC was used as disc, whereas the brake pad material forms the pin. They found that both wear rate and friction coefficient varied with applied normal load and sliding speed. With increase in the applied normal load, the wear rate was observed to increase whereas the friction coefficient decreased. However, both the wear rate and friction coefficient were observed to vary proportionally with the sliding speed. Anilkumar et al. [5] investigated the wear behavior of aluminium fly ash composites, containing fly ash in required quantities (10, 15, and 20 percent by weight) in weighed quantity of aluminium. They tested aluminium fly ash composite using a pin-on-disc wear testing machine with aluminium fly ash MMC as pin. They found that as the content of fly ash increased, the volumetric wear rate of the composite decreased.

Gurcan and Baker [6] investigated the wear resistance of four AA6061 MMCs together with the monolithic AA6061 alloy, all in the T6 condition, using a pin-on-disc test. In addition to the widely studied 20 volume percent Saffil MMCs, their investigation considered a hybrid of 11% Saffil + 20% SiCp and a high volume fraction SiCp MMC, AA6061 + 60% SiCp. The wear behaviour against P400 SiC grit adhesive bonded paper and against BS817M40 (EN24) steel were explored under an applied load of 9.8 N with a nominal contact pressure of 0.5 MPa. It was observed that after testing against SiC grit,

AA6061 + Saffil showed little advantage over the monolithic alloy, but the other three composites had a significant improvement in wear resistance. The hybrid and the AA6061 + 60% SiC showed the best performance. Only small improvements were noted for AA6061 + Saffil and AA6061 + 20% SiC over the monolithic alloy, when tested against steel.

III. EXPERIMENTAL DETAILS

Al6061 has the good casting properties and due to its strength it is chosen as matrix material having chemical composition mentioned in Table 3.1. Fly ash collected from Raichur thermal power plant was used as filler material and its composition is given in Table 3.2.

Table3.1: Chemical composition of Al6061 alloy (wt-%)

| Mg | Si | Fe | Cu | Ti | Cr | Zn | Mn | Al |
|------|------|------|------|------|------|------|------|---------|
| 0.91 | 0.76 | 0.24 | 0.21 | 0.08 | 0.11 | 0.05 | 0.04 | balance |

Table3.2: Chemical composition of Fly ash used in present study (wt-%)

| Al ₂ O ₃ | SiO ₂ | Fe ₂ O ₃ | TiO ₂ | Loss of ignition |
|--------------------------------|------------------|--------------------------------|------------------|------------------|
| 29.56 | 59.8 | 4.99 | 3.1 | 1.44 |

Tribological (wear) tests were conducted on samples with fly ash of particle size 25-30 microns and 50-60 microns. A pin on disc apparatus (Fig. 3.8) was used to investigate the dry sliding wear behavior of Aluminium alloy and its composites as per ASTM G99-95 standards. The specimen of size 8 x 8 x 4 mm was cut from samples, machined and then polished metallographically. The tests was carried out with the load 1 kg (9.81 N) and 3 kg (29.43 N) sliding speed 1.11 m/s, 2.086 m/s and sliding distance 1000, 1500 and 2000 m.

IV. RESULTS AND DISCUSSION

4.1 Microstructure

The microstructure shows the important features relating to wear performance of the alloy and its composites. The microstructure of MMCs was analyzed using scanning electron microscope (SEM) to study the distribution of fly ash in the matrix. The microstructure of as cast Al6061 and Al6061 with fly ash are shown in Figs. 4.1a-j. The distribution of reinforced particles was found to be reasonably uniform in all the samples without voids and discontinuities.

Figure 4.1(a) Microstructure of bare Al 6061

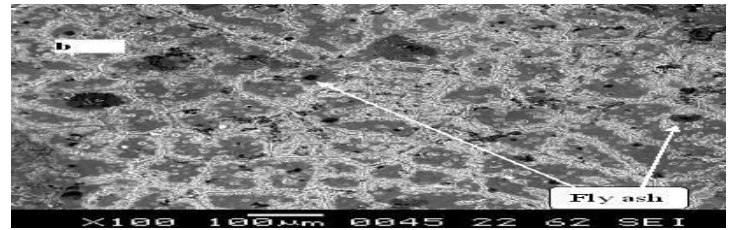


Figure 4.1(b) Microstructure of Al 6061 with 5 wt-% fly ash of particle size 5-20µm.

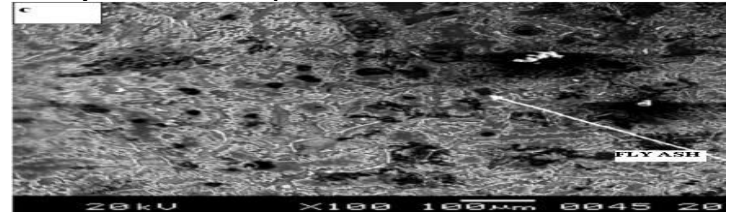


Figure 4.1(c) Microstructure of Al 6061 with 10 wt-% of fly ash of particle size 5-20µm.

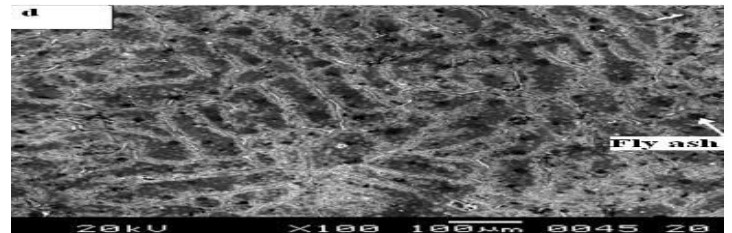


Figure 4.1(d) Microstructure of Al 6061 with 15% weight fraction of fly ash of particle size 5-20µm.

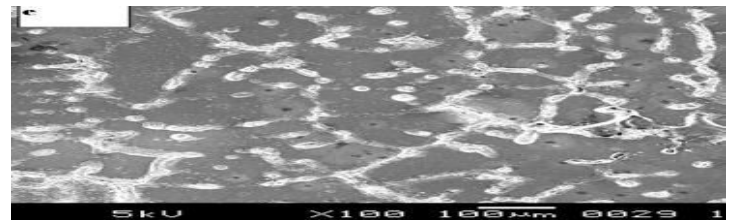


Figure 4.1(e) Microstructure of Al 6061 with 5% weight fraction of fly ash of particle size 25-30µm.

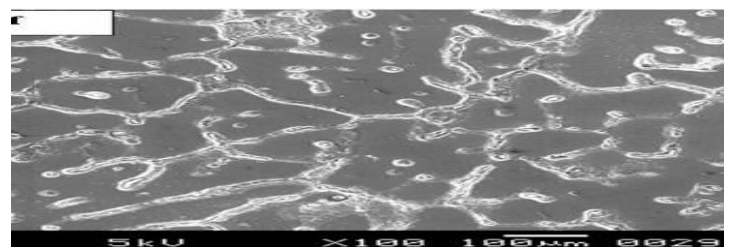


Figure 4.1(f) Microstructure of Al 6061 with 10% weight fraction of fly ash of particle size 25-30µm.

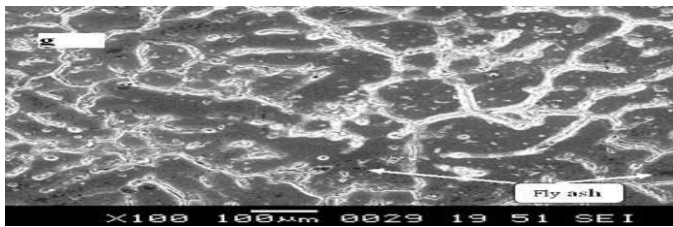


Figure 4.1(g) Microstructure of Al 6061 with 15% weight fraction of fly ash of particle size 25-30 μm.

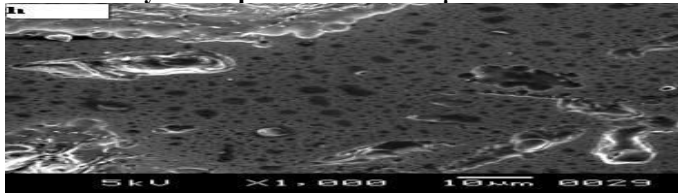


Figure 4.1(h) Microstructure of Al 6061 with 5% weight fraction of fly ash of particle size 50-60 μm.

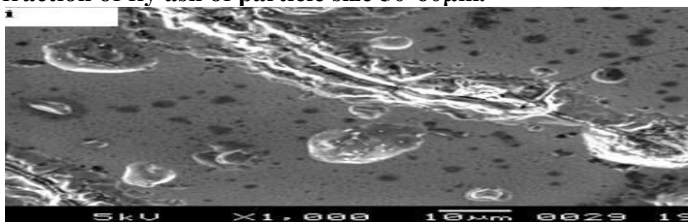


Figure 4.1(i) Microstructure of Al 6061 with 10% weight fraction of fly ash of particle size 50-60 μm.

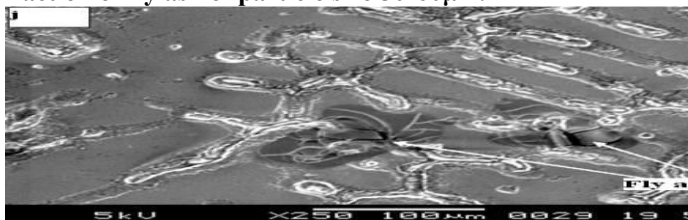


Figure 4.1(j) Microstructure of Al 6061 with 15% weight fraction of fly ash of particle size 50-60 μm.

Tribological tests were conducted on samples with fly ash of particle size 25-30 microns and 50-60 microns. The results of the variation of wear rate with the content of fly ash are shown in Figs. 4.6 - 4.13. Tables 4.5- 4.12 show the percentage development in wear rate of Al6061 alloy matrix by reinforcements. The percentage improvements with different weight fractions of reinforcements are also given. From the Figure 4.6 to 4.13 it is clear that as the weight fraction increases from 0% (pure Aluminium) to 10% wear rate decreases, having a minimum value at 10 wt-%, then it again increases. This may be due to the fact that strength and hardness of the composite increases till 10 wt-% and decreases afterwards, attaining the maximum value at 10 wt-%. This is

due to the higher bonding between fly ash particles and Al alloy matrix.

Table 4.5 Results of variation of wear rate with weight percent of fly ash of particle size 25-30 μm; Load: 9.81 N; Sliding velocity: 1.11 m/s

| Sliding distance (meters) | Weight percent of reinforcement | Wear rate |
|---------------------------|---------------------------------|-----------|
| 1000 | 0 | 3.0 |
| | 5 | 2.7 |
| | 10 | 2.9 |
| | 15 | 3.0 |
| 1500 | 0 | 3.6 |
| | 5 | 3.1 |
| | 10 | 3.0 |
| | 15 | 3.6 |
| 2000 | 0 | 3.6 |
| | 5 | 3.5 |
| | 10 | 2.5 |
| | 15 | 4.5 |

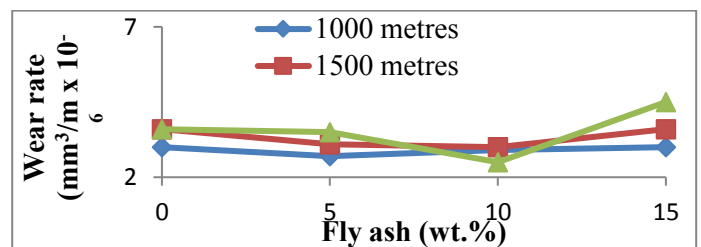


Fig.4.6 Variation of Wear rate with weight percent of fly ash of particle size 25-30 μm; Load: 9.81 N; Sliding velocity: 1.11 m/s

Table 4.6 Results of variation of wear rate with weight percent of fly ash of particle size 25-30 μm; Load: 9.81 N; Sliding velocity: 2.086 m/s

| Sliding distance (meters) | Weight percent of reinforcement | Wear rate |
|---------------------------|---------------------------------|-----------|
| 1000 | 0 | 3.3 |
| | 5 | 2.9 |
| | 10 | 3.1 |
| | 15 | 3.5 |
| 1500 | 0 | 3.7 |
| | 5 | 3.2 |
| | 10 | 3.4 |
| | 15 | 3.8 |
| 2000 | 0 | 4.8 |
| | 5 | 4.3 |
| | 10 | 2.2 |
| | 15 | 2.8 |

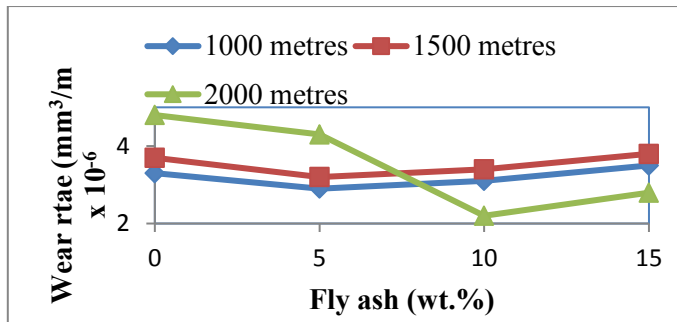


Fig.4.7 Variation of Wear rate with weight percent of fly ash of particle size 25-30 μm ; Load: 9.81 N; Sliding velocity: 2.086 m/s

Table 4.7 Results of variation of wear rate with weight percent of fly ash of particle size 25-30 μm ; Load: 29.43 N; Sliding velocity: 1.11 m/s

| Sliding distance (meters) | Weight percent of reinforcement | Wear rate |
|---------------------------|---------------------------------|-----------|
| 1000 | 0 | 5.4 |
| | 5 | 4.8 |
| | 10 | 4.2 |
| | 15 | 5.4 |
| 1500 | 0 | 5.3 |
| | 5 | 4.6 |
| | 10 | 4.5 |
| | 15 | 5.7 |
| 2000 | 0 | 6.4 |
| | 5 | 5.3 |
| | 10 | 4.4 |
| | 15 | 4.7 |

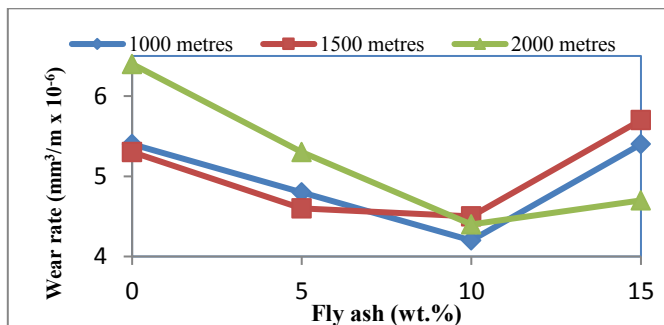


Fig.4.8 Variation of Wear rate with weight percent of fly ash of particle size 25-30 μm ; Load: 29.43 N; Sliding velocity: 1.11 m/s

Table 4.8 Results of variation of wear rate with weight percent of fly ash of particle size 25-30 μm ; Load: 29.43 N; Sliding velocity: 2.086 m/s

| Sliding distance (meters) | Weight percent of reinforcement | Wear rate |
|---------------------------|---------------------------------|-----------|
| 1000 | 0 | 6.4 |
| | 5 | 4.3 |
| | 10 | 4.8 |
| | 15 | 6.8 |
| 1500 | 0 | 5.4 |
| | 5 | 4.9 |
| | 10 | 4.9 |
| | 15 | 5.5 |
| 2000 | 0 | 7.4 |
| | 5 | 5.5 |
| | 10 | 4.5 |
| | 15 | 5.5 |

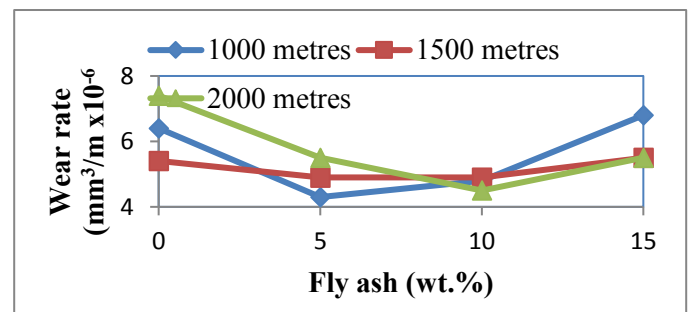


Fig.4.9 Variation of Wear rate with weight percent of fly ash of particle size 25-30 μm ; Load: 29.43 N; Sliding velocity: 2.086 m/s

Table 4.9 Results of variation of wear rate with weight percent of fly ash of particle size 50-60 μm ; Load: 9.81 N; Sliding velocity: 1.11 m/s

| Sliding distance (meters) | Weight percent of reinforcement | Wear rate |
|---------------------------|---------------------------------|-----------|
| 1000 | 0 | 3 |
| | 5 | 2.6 |
| | 10 | 3 |
| | 15 | 2.8 |
| 1500 | 0 | 3.6 |
| | 5 | 3.1 |
| | 10 | 2.8 |
| | 15 | 2.9 |
| 2000 | 0 | 3.6 |
| | 5 | 2.9 |
| | 10 | 2.4 |
| | 15 | 3.6 |

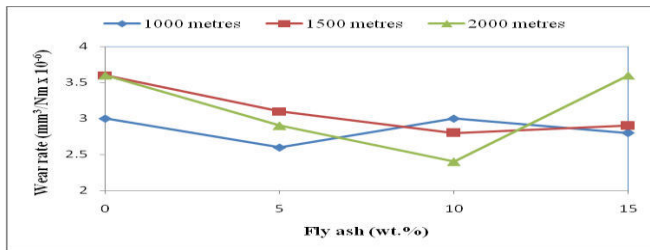


Fig.4.10 Variation of Wear rate with weight percent of fly ash of particle size 50-60µm; Load: 9.81 N; Sliding velocity: 1.11 m/s

Table 4.10 Results of variation of wear rate with weight percent of fly ash of particle size 50-60µm; Load: 9.81 N; sliding velocity: 2.086 m/s

| Sliding distance (meters) | Weight percent of reinforcement | Wear rate |
|---------------------------|---------------------------------|-----------|
| 1000 | 0 | 3.3 |
| | 5 | 2.7 |
| | 10 | 2.6 |
| | 15 | 2.9 |
| 1500 | 0 | 3.7 |
| | 5 | 3.5 |
| | 10 | 3.3 |
| | 15 | 3.4 |
| 2000 | 0 | 4.8 |
| | 5 | 2.7 |
| | 10 | 2.2 |
| | 15 | 3.5 |

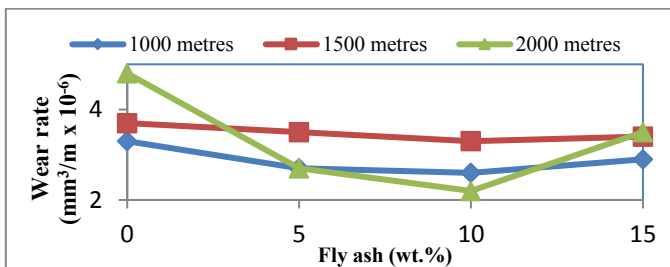


Fig.4.11 Variation of Wear rate with weight percent of fly ash of particle size 50-60µm; Load: 9.81 N; sliding velocity: 2.086 m/s

Table 4.11 Results of variation of wear rate with weight percent of fly ash of particle size 50-60µm; Load: 29.43 N; sliding velocity: 1.11 m/s

| Sliding distance (meters) | Weight percent of reinforcement | Wear rate |
|---------------------------|---------------------------------|-----------|
| 1000 | 0 | 5.4 |
| | 5 | 4.2 |
| | 10 | 3.2 |

| | | |
|------|----|-----|
| 1500 | 15 | 4.4 |
| | 0 | 5.3 |
| | 5 | 4.5 |
| | 10 | 4.6 |
| | 15 | 5.4 |
| 2000 | 0 | 6.4 |
| | 5 | 6 |
| | 10 | 5 |
| | 15 | 4.5 |

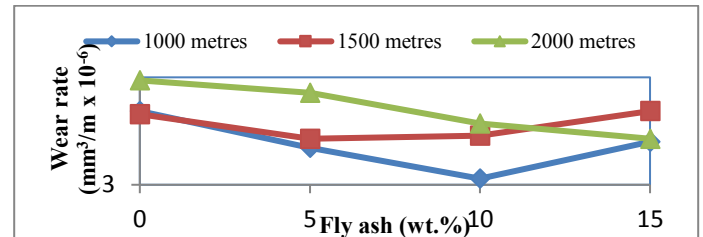


Fig.4.12 Variation of Wear rate with weight percent of fly ash of particle size 50-60 µm; Load: 29.43 N; Sliding velocity: 1.11 m/s

Table 4.12 Results of variation of wear rate with weight percent of fly ash of particle size 75-100 µm; Load: 29.43 N; Sliding velocity: 2.086 m/s

| Sliding distance (m) | Content of reinforcement (wt.%) | Wear rate |
|----------------------|---------------------------------|-----------|
| 1000 | 0 | 6.4 |
| | 5 | 6.2 |
| | 10 | 3.5 |
| | 15 | 4.9 |
| 1500 | 0 | 5.4 |
| | 5 | 4.5 |
| | 10 | 4.3 |
| | 15 | 5.7 |
| 2000 | 0 | 7.4 |
| | 5 | 6.6 |
| | 10 | 5.3 |
| | 15 | 5.9 |

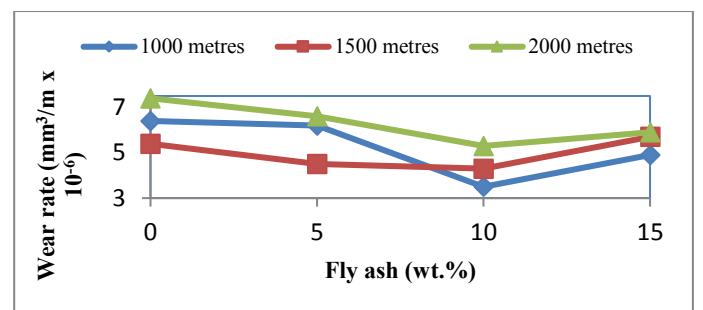


Fig. 4.13 Variation of wear rate with content of fly ash of particle size 50-60 µm; load 29.43 N; sliding velocity 2.086 m/s

Wear behaviour was conducted at room temperature are presented in Figs. 4.6-4.13. Assessment of wear properties of the fly ash as well as matrix in the interface region is important on these counts. These properties help to evaluate the integrity of the material, and to understand the material behavior under the condition of wear in critical components used in various applications. A normal load of 1kg and 3kg were used for all samples and they registered a gradual decrease in wear rate as the content of fly ash increased up to 10 wt-%. During wear test, thermal stress gradient may be generated within the sample and this gradient may produce cracks. Reinforcements in the form of fly ash can stop these cracks hence higher content of fly ash will lead to higher probability of stopping of cracks. Therefore, higher contents of fly ash show lower wear rate. During friction and wear process a considerable heat is generated between any two sliding surfaces. If the surface contains more content of fly ash i.e. 10 wt-%, the amount of heat generated will be less compared to material with lower fly ash.

If the sample contains more content of fly ash i.e. 15wt-% the amount of small cracks will be more and more of matrix is easy to break. In the present study, it is concluded that matrix wears out faster than fly ash. Hence, wear loss is caused mainly by matrix wear but fly ash only gets removed when matrix completely wears out. This could be revealed from SEM micrograph shown in Fig. 4.14.

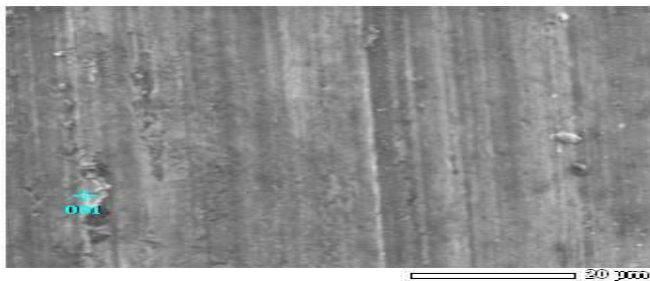


Fig. 4.14 Micrograph of worn surface of fly ash 50-60 μm and 15 wt-% at sliding velocity 2.086m/s, load 29.43 N, sliding distance 2000m

V. CONCLUSIONS

1. As the percentage of reinforcement fly ash was increased from 0% (pure Aluminium) to 10% wear rate decreases, having a minimum value at 10%, then it again increases.
2. Increasing the grain size of fly ash particle wear rate of composite decreases in most of the working conditions.
3. From the SEM analysis it has been concluded that as the fly ash content increases the distribution of fly ash evenly throughout the specimen.

REFERENCES

- [1] S.K. Acharya P.K. Mahanta, and P.K Pattanaik, Wear behaviour of aluminium fly ash composite, *Journal of Institution of Engineers (India)*, 83, 2002, 50-53.
- [2] U. Cocen, K. Onel, Ductility and strength of extruded SiCp/aluminium alloy composites, *Composites Science and Technology*, 62,2002, 275-282.
- [3] R. Kumar, A.K. Mahur, D. Sengupta, and R. Prasad, Radon activity and exhalation rates measurements in fly ash from a thermal power plant, *Radiation Measurements*, 40, 2005, 638-641.
- [4] Uyyuru.R.K, Surappa.M.K, Brusethaug.S (2006). "Tribological behavior of Al-Si-SiCp composite/Automobile Brake Pad system under Dry Sliding conditions." *Tribology international*. 1-9.
- [5] Anilkumar H.C, H.Suresh Hebbar (2011), "Mechanical Properties of fly ash reinforced aluminium alloy (Al6061) composites is published in international journal of Mechanical and Material Engineering (IJMME), Vol. 6, No. 1, 41-45.
- [6] Gurcan, A.B., Baker, T.N. (1995). "Wear behavior of AA6061 aluminium alloy and its composites." *Wear*, 188, 185-191.

DETERMINATION OF PANTOPRAZOLE IN BULK AND PHARMACEUTICAL FORMULATIONS BY VALIDATED RP-HPLC METHOD

Satyadev TNVSS^{1*}, M Madhu², K Gowri³ Dr T V Reddy⁴

1. *Assistant Professor, PBSiddhartha College of Arts & Science, Vijayawada, Andhra Pradesh, India.*
2. *Lecturer, PBSiddhartha College of Arts & Science, Vijayawada, Andhra Pradesh, India*
3. *Research Scholar, Acharya Nagarjuna University, Nagarjuna Nagar, Guntur Dt, AP, India.*
4. *Professor, Mallareddy College of Engineering, Hyderabad.*

Abstract

A sensitive, highly specific validated, stability indicating RP-HPLC method for the determination of Pantoprazole in bulk and pharmaceutical dosage forms. The method was developed using Luna CN (250×4.6 mm, 5µm) and a mixture of Water: Acetonitrile in the ratio of 30:70 v/v was used as mobile phase at a flow rate of 1.0 mL/min with UV detection at 215 nm for Pantoprazole. The retention time of the drug was 3.7 minutes. The developed method was validated for specificity, linearity, precision, accuracy and robustness as per ICH guidelines. Linearity was found in the range of 10-150 µg/ml. The mean recovery of the drug was 102.0 %. The proposed method could be used for routine analysis of Pantoprazole in their dosage forms and the method is accurate, precise, simple, sensitive and rapid and can be applied successfully for the estimation of Pantoprazole in bulk and in pharmaceutical formulations without interference and with good sensitivity.

Keywords: Liquid Chromatography, Pantoprazole, dosage forms, determination, Validation

INTRODUCTION

Drug Profile

Pantoprazole [6-(difluoromethoxy)-2-[3,4-dimethoxy pyridine-2-yl)methylsulfinyl]-1H-benzimidazole. M W: 383.36 g/mol, $C_{16}H_{15}F_2N_3O_4S$ and Freely soluble in water.] is a proton pump inhibitor^[1-5] (PPI) that suppresses the final step in gastric acid production by covalently binding to the (H^+, K^+) -ATPase enzyme system at the secretory surface of the gastric parietal cell. This effect leads to inhibition of both basal and stimulated gastric acid secretion, irrespective of the stimulus. The binding to the (H^+, K^+) -ATPase results in a duration of antisecretory effect that persists longer than 24 hours for all doses tested (20 mg to 120 mg).

Pantoprazole^[6-13] is contraindicated in patients with known hypersensitivity to any component of the formulation or any substituted benzimidazole. Hypersensitivity reactions may include anaphylaxis, anaphylactic shock, angioedema, bronchospasm, acute interstitial nephritis, and urticaria. Short-term treatment (7 to 10 days) of patients with gastroesophageal reflux disease (GERD) who have a history of irritation of the esophagus. It may be used for conditions that cause your body to make too much stomach acid (eg, Zollinger-Ellison syndrome).

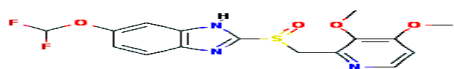


Fig 1: Pantoprazole Structure

Pantoprazole sodium For Delayed-Release Oral Suspension, 40 mg

has been shown to be comparable to PROTONIX (pantoprazole sodium) Delayed-Release Tablets in suppressing pentagastrin-stimulated MAO in patients (n = 49) with GERD and a history of EE. In this multicenter, pharmacodynamic crossover study, a 40 mg oral dose of PROTONIX for delayed-release Oral Suspension administered in a teaspoonful of applesauce was compared with a 40 mg oral dose of PROTONIX Delayed-Release Tablets after administration of each formulation once daily for 7 days. Both medications were administered thirty minutes before breakfast. Pentagastrin-stimulated (MAO) was assessed from hour 23 to 24 at steady state.

Several analytical methods^[14-28] have been reported for the determination of Methyl hydroxyl benzoate in pure drug, pharmaceutical dosage forms and in biological samples using spectrophotometry, liquid chromatography, electro kinetic chromatography high performance thin layer chromatography either in single or in combined forms.

MATERIALS AND METHODS

Instrumentation:

Waters HPLC containing LC 20AT pump and variable wavelength programmable UV-Visible detector and Rheodyne injector was employed for investigation. The chromatographic analysis was performed on a Luna CN 5 μ m (4.6 x 250 mm) or equivalent. Degassing of the mobile phase was done using a Unichrome ultrasonic bath sonicator. A Ohaus Analytical balance was used for weighing the materials.

Chemicals and Solvents:

The reference sample of Pantoprazole(API) was obtained from Sun Pharma Pvt Ltd. The Formulation Pantoprazole was procured from the local market. Acetonitrile used was of HPLC grade and purchased from Merck Specialties Private Limited, Mumbai, India.

The Mobile Phase:

A mixture of Water : Acetonitrile in the ratio of 30:70 v/v was prepared and used as mobile phase.

Preparation of Standard solution

100 µg/ml of Pantoprazole is prepared by diluting with mobile phase. This solution is used for recording chromatogram.

Preparation of Sample Solution

20 tablets (each tablet contains Pantoprazole 40 mg) were weighed and taken into a mortar and crushed to fine powder and uniformly mixed. Tablet stock solutions of Pantoprazole (µg/ml) were prepared by dissolving weight equivalent to 5 mg of Pantoprazole dissolved in sufficient mobile phase. After that the solution is filtered using 0.45-micron syringe filter and sonicated for 5 min and dilute to 50ml with mobile phase. Further dilutions are prepared in 5 replicates of 100 µg/ml of Pantoprazole.

METHOD DEVELOPMENT

For developing the method ^[37-43], a systematic study of the effect of various factors was undertaken by varying one parameter at a time and keeping all other conditions constant. Method development consists of selecting the appropriate wave length and choice of stationary and mobile

phases. The following studies were conducted for this purpose.

Detection wavelength:

The spectrum of Pantoprazole solution was recorded separately on UV spectrophotometer. The peak maximum of absorbance wavelength was observed. The spectra of Pantoprazole were showed maximum absorbance at 215nm [Fig-2].

Choice of stationary phase and Mobile Phase:

Finally the expected separation and peak shapes were obtained on Luna CN 5µm (4.6cmX250 mm) column. A mixture of Water : Acetonitrile in the ratio of 30:70 v/v was proved to be the most suitable for all the combinations since the chromatographic peak obtained was better defined and resolved and almost free from tailing.

Flow rate:

Flow rates of the mobile phase were changed from 0.5 – 1.5 mL/min for optimum separation. It was found from the experiments that 1.0 mL/min flow rate was ideal for the successful elution of the analyte.

Optimized chromatographic conditions

Chromatographic conditions as optimized above were shown in Table 1. These optimized conditions were followed for the determination of Pantoprazole in bulk samples and in its formulations. The chromatograms for Standard Drug and Placebo are identified. Among all these for the Placebo no significant peaks are detected.

VALIDATION OF PROPOSED METHOD AND REQUIREMENTS:

The proposed method ^[29-36] was validated as per ICH guidelines. The parameters studied for validation were specificity, linearity, precision, accuracy, robustness, system suitability, limit of detection, limit of quantification, and stability.

SPECIFICITY

Blank interference

Specificity studies included application of the proposed method for blank, placebo solution, sample solution (control sample), standard solution. A study to establish the interference of blank was conducted. Diluent was injected into the chromatograph in the above defined chromatographic conditions and the blank chromatogram was recorded. Chromatogram of Blank solution (Fig. no.- 4) showed no peaks at the retention time of Pantoprazole peak. This indicates that the diluent solution used in sample preparation do not interfere in estimation of Pantoprazole in Protonix tablets. Similarly typical representative chromatogram of standard and sample were also shown in figure -5 & 6.

Forced Degradation

The specificity studies also include deliberate degradation of the tablet sample by exposure to stress conditions. Forced Degradation study was carried out by treating the sample under the acidic, alkaline, thermal and photo conditions. Weighed ten tablets of pantoprazole and powdered uniformly in a mortar. An

accurately weighed portion powder equivalent to 50 mg was transferred into 100 mL volumetric flask. The contents of the flask were sonicated for about 15 min for complete solubility of the drug and the volume was made up to 50 mL with mobile phase. Then the mixture was filtered through a 0.45 μ membrane filter. The results pertaining to these degradation conditions were given in table - 2

SYSTEM SUITABILITY

System suitability is a measure of the performance and chromatographic quality of the total analytical system – i.e. instrument and procedure. Six replicate injections of API working standard solution were injected according to the method of analysis. The percentage relative standard deviations (% RSD) for the peak responses were determined. The % RSD of the peak responses due to Pantoprazole for six injections must be less than or equal to 5.0 %. The analytical system complies with the requirements specified by the system suitability. The Results are tabulated in the Table 3

Linearity and range

In the concentration range of 10.0 – 150.0 μ g/ml for Pantoprazole standard curve was obtained. A statistical method known as linear regression analysis was used to evaluate the linearity of the curve. To assess the linearity of the proposed method slope, intercept and correlation coefficient [r^2] of standard curve was calculated and was given in Figure-5. The results were given in the Table- 4 & 5. From the data obtained (For

Pantoprazole), the method was found to be linear within the proposed range. The linearity chromatograms were given in figure- 7 -12

Accuracy

Accuracy is defined as the closeness of results obtained by that method to the true value for the sample. Accuracy is expressed in terms of percentage recovery. Recovery % is determined by the standard addition method. In the present study recovery studies were carried out at 50%, 100% and 150% spiked levels. The results of Recovery % were given in Table - 6 and the chromatograms were given in Figures 13-21.

Precision

The closeness of replicate results obtained from analysis of the same homogeneous sample is known as precision of the method. The precision of the method was assessed by six replicate injections of 100% test concentration. The precision was expressed in terms of standard deviation and %RSD. The results were given in Table 7. The system precision was also analyzed and the results were given in the same table.

Ruggedness

Degree of reproducibility of test results obtained by analyzing the same sample under variety of normal test conditions such as different analysts, instruments, days, reagents, column etc. The Ruggedness of the method was verified by analyzing the six samples of same batch for method precision as per test method on two different days. The analysis was carried out for six sample of the same batch on two different day's .Calculated %RSD on two different days in six samples for ruggedness

results with the method precision. The results of ruggedness were given in Table 8

Robustness

The ability of the developed method to remain unaffected by the small changes in the parameters is known as Robustness. Robustness was assessed by varying the parameters such as percent organic content, pH of the mobile phase, buffer concentration, temperature, injection volume and flow rate. In the present investigation, a variation of ± 0.1 mL/min in the flow rate, change in organic content of mobile phase were adopted to study Robustness. The results were tabulated in Table -9.

RESULTS AND DISCUSSION

To optimize the HPLC parameters, several mobile phase compositions were tried. A satisfactory separation and good peak symmetry was found in a mixture of Water : Acetonitrie in the ratio of 30:70 v/v and 1.0 mL/min flow rate proved to be better than the other mixtures in terms of resolution and peak shape. The optimum wavelength for detection was set at 215nm at which much better detector responses for drug was obtained as shown in Fig 2. The retention time was 3.7 min for Pantoprazole. Good number of theoretical plates were found, which indicates efficient performance of the column. A system suitability test was applied to representative chromatograms for various parameters. The results obtained were within acceptable limits and are represented in Table 3. Thus, the system meets suitable criteria.

The calibration curve was obtained for a series of concentration in the range of 10-150 µg/ml and it was found to be linear. Seven points graphs was constructed covering a concentration range 10-150 µg/ml. The standard deviation of the slope and intercept were low. The data of regression analysis of the calibration curves are shown in Table 5.

Mean percentage recovery is found to be 102. The proposed method has been applied for the assay of the commercial tablets containing Pantoprazole. Sample was analyzed for five times after extracting the drug as mentioned in assay sample preparation of the experimental section. The results presented good agreement with the labeled content. Low values of standard deviation denoted very good repeatability of the measurement. Thus it was showing that the equipment used for the study was correctly calibrated and hence the developed analytical method is highly repetitive. For the intermediate precision analysis was carried out by different analysts working on the same day indicated a RSD of 0.1. This indicates good method precision.

The system suitability parameter like capacity factor, asymmetry factor, tailing factor and number of theoretical plates were also calculated. It was observed that all the values are within the limits. The statistical evaluation of the proposed method revealed good linearity, reproducibility and its validation for different parameters and can be concluded that it could be used for the rapid and reliable determination of Pantoprazole in tablet formulation.

Table 1 Optimized chromatographic conditions for estimation Pantoprazole

| S.NO | PARAMETERS | CHROMATOGRAPHIC CONDITIONS |
|------|--------------------|--|
| 1. | Mobile phase | Water : ACN 30:70 |
| 2. | Column | LUNA CN, 250×4.6mm ID, 5µm Particle size |
| 3. | Flow rate | 1.0 ml/min |
| 4. | Column temperature | Room temperature(20-25°C) |
| 5. | Sample temperature | Room temperature(20-25°C) |
| 6. | Wavelength | 215 nm |
| 7. | Injection volume | 10 µl |
| 8. | Run time | 6 min |
| 9. | Retention time | 2.7 min Pantoprazole |

Table No 2: Forced Degradation Studies

| S. no | Degradation Parameters | Time | Peak Area | %Recovery | %Degradation |
|-------|------------------------|-------|-----------|-----------|--------------|
| 1. | Acid | 10min | 2779976 | 78.22 | 21.6 |
| 2. | Base | 10min | 2745314 | 75.42 | 20.8 |
| 3. | Peroxide | 10min | 2700219 | 76.25 | 24.74 |
| 4. | Thermal | 10min | 2779976 | 75.22 | 26.78 |
| 5. | Humidity | 10min | 2780814 | 76.46 | 22.75 |
| 6. | Heat | 10min | 2773748 | 78.37 | 21.52 |
| 7. | Photolytic | 10min | 2741099 | 75.36 | 23.56 |
| 8. | Reduction | 10min | 2776007 | 78.64 | 24.33 |
| 9. | Hydrolysis | 10min | 2724933 | 79.22 | 21.7 |

Table :3 System Suitability results

| Injection | Retention time (min) | Peak area | Theoretical plates (TP) | Tailing factor (TF) |
|-----------|----------------------|-----------|-------------------------|---------------------|
| 1 | 3.772 | 3428156 | 5825 | 1.11 |
| 2 | 3.721 | 3415872 | 5821 | 1.04 |
| 3 | 3.746 | 3428793 | 5863 | 1.01 |
| 4 | 3.735 | 3457893 | 5842 | 1.02 |
| 5 | 3.731 | 3432579 | 5827 | 1.06 |
| 6 | 3.708 | 3475632 | 5856 | 1.08 |
| Mean | 3.745 | 3415963 | -- | -- |
| SD | 0.1258 | 1852.14 | -- | -- |
| %RSD | 0.12 | 0.5304 | -- | -- |

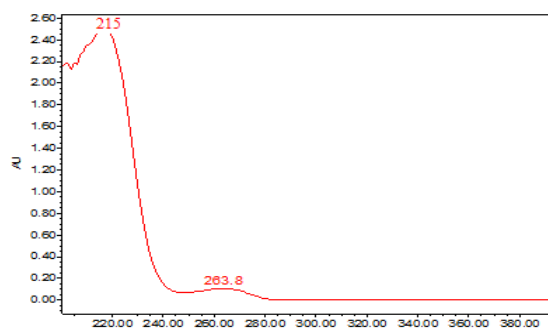


Fig 2: Pantoprazole absorbance at 215nm

Table No 4: Linearity of Detector Response for Pantoprazole

| S. No | Conc.(µg/ml) of Pantoprazole | Area | Acceptance criteria |
|-------|------------------------------|--------------|---|
| | | Pantoprazole | |
| 1 | 10 µg/ml | 341712 | Square d correlation coefficient should be not less than 0.999. |
| 2 | 25 µg/ml | 853955 | |
| 3 | 50 µg/ml | 1707911 | |
| 4 | 100 µg/ml | 3415823 | |
| 5 | 125 µg/ml | 4269778 | |
| 6 | 150 µg/ml | 5123734 | |

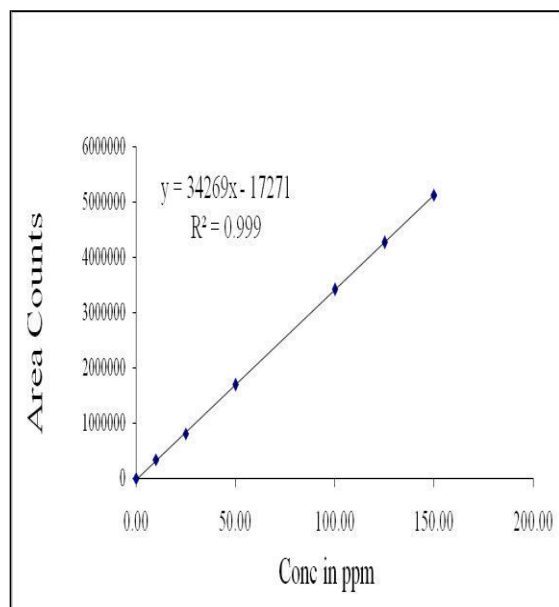
Table No 5: linearity Summary for Pantoprazole

| S.No | Linearity Parameters | Pantoprazole |
|------|-------------------------|----------------|
| 1. | Linearity range | 10-150 µg/ml |
| 2. | Correlation coefficient | 0.999 |
| 3. | Y intercept | 34269x - 17271 |

Table No 6: - Accuracy data of Pantoprazole

| Recovery level | Accuracy Pantoprazole | | | | | %RSD |
|----------------|-----------------------|---------|--------------|---------------------------|-----------|------|
| | Amount taken (mcg/ml) | Area | Average area | Amount recovered (mcg/ml) | %Recovery | |
| 50% | 50 | 1741363 | 1741006 | 100.55 | 100.5 | 0.18 |
| | 50 | 1741916 | | | | |
| | 50 | 1741739 | | | | |
| 100% | 100 | 3483786 | 3482827 | 100.26 | 100.2 | 0.26 |
| | 100 | 3483414 | | | | |
| | 100 | 3483280 | | | | |
| 150% | 125 | 5125949 | 5123834 | 100.58 | 100.5 | 0.52 |
| | 125 | 5124797 | | | | |
| | 125 | 5125755 | | | | |

Linearity graph of Pantoprazole:



FigureNo 3: linearity of detector response graphs for Pantoprazole

Table No 7: - Method precision data for 100mg

| Pantoprazole | | |
|--------------|-------|---------|
| S.No. | Rt | Area |
| 1 | 3.715 | 3430293 |
| 2 | 3.721 | 3465113 |
| 3 | 3.712 | 3432722 |
| 4 | 3.727 | 3446699 |
| 5 | 3.720 | 3414899 |
| 6 | 3.721 | 3425974 |
| Avg | 3.720 | 3402617 |
| St dev | 0.148 | 2826.84 |
| %RSD | 0.46 | 1.082 |

Table No 9: Flow rate and Organic Phase variations

| Parameters | Pantoprazole | | %RSD |
|---------------|----------------|----------------|------|
| Flow rate | Retention time | Tailing factor | |
| 0.8ml/min | 3.711 | 1.19 | 1.46 |
| 1.0ml/min | 3.432 | 1.20 | 0.16 |
| 1.2ml/min | 2.863 | 1.17 | 1.64 |
| Organic phase | | | |
| 65:35 | 3.823 | 1.17 | 1.67 |
| 70:30 | 3.421 | 1.20 | 0.16 |
| 75:25 | 3.628 | 1.19 | 1.37 |

Table No 8: Intermediate precision data of Pantoprazole

| S.No | Analyst-1 | | Analyst-2 | |
|------|-----------|---------|-----------|---------|
| | Peak area | % assay | Peak area | % assay |
| 1. | 3439641 | 100.8 | 3423786 | 100.2 |
| 2 | 3422962 | 100.6 | 3496414 | 100.4 |
| 3 | 3454852 | 100.5 | 3414755 | 100.1 |
| 4 | 3448131 | 100.4 | 3480335 | 100.2 |
| 5 | 3458903 | 100.7 | 3465113 | 100.7 |
| 6 | 3444468 | 100.1 | 3476505 | 100.2 |
| Mean | 3448160 | 100.6 | 3442818 | 100.1 |
| %RSD | 0.41 | 0.22 | 0.85 | 1.21 |

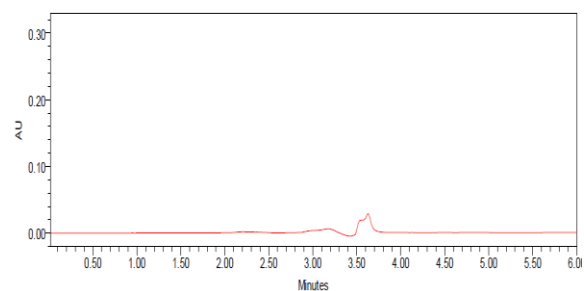


Fig 4: Blank chromatogram

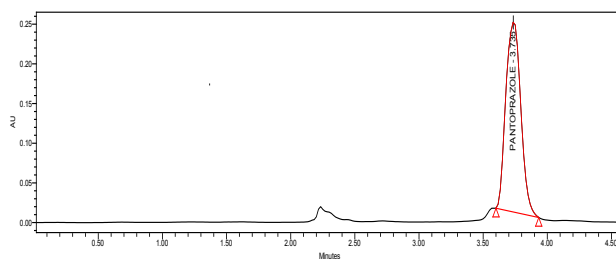


Fig 5: - Typical chromatogram of sample

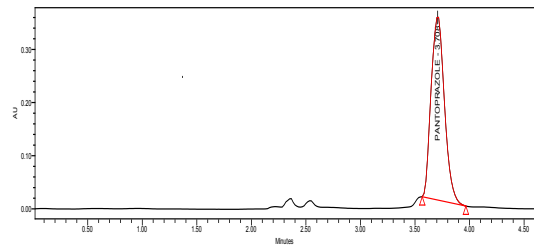


Fig 6:Typical Chromatogram of Standard

Chromatograms of linearity:

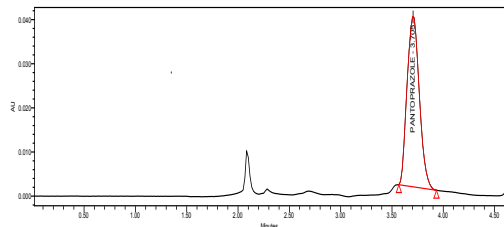


Fig 7: -Typical chromatogram of linearity 10 µg/ml

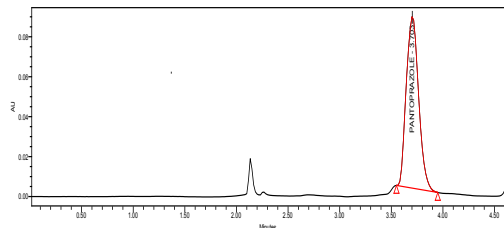


Fig 8: - Typical chromatogram of linearity 25 µg/ml

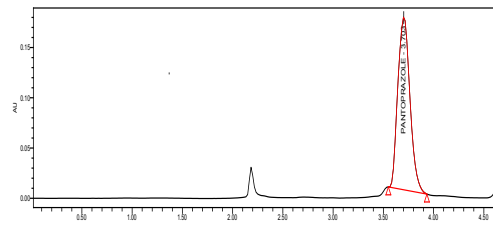


Fig 9: - Typical chromatogram of linearity 50 µg/ml

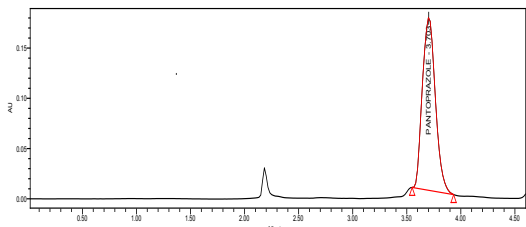


Fig 10: - Typical chromatogram of linearity 100 µg/ml

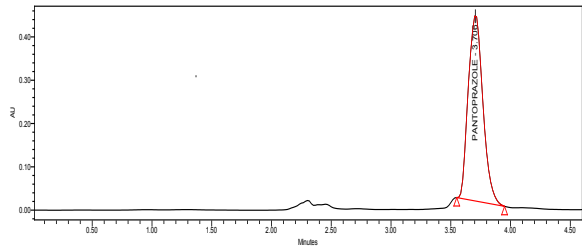


Fig 11: - Typical chromatogram of linearity 125 µg/ml

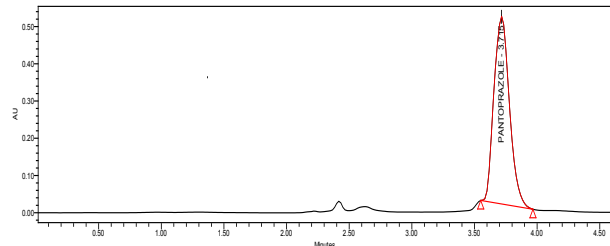


Fig 12: - Typical chromatogram of linearity 150 µg/ml

Chromatograms of accuracy:

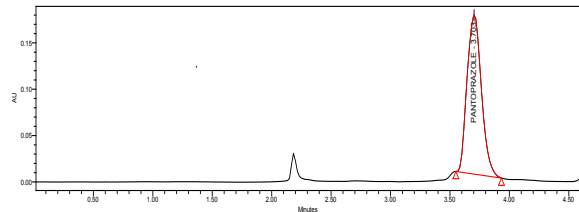


Fig 13: - Typical chromatogram of accuracy 50%-1

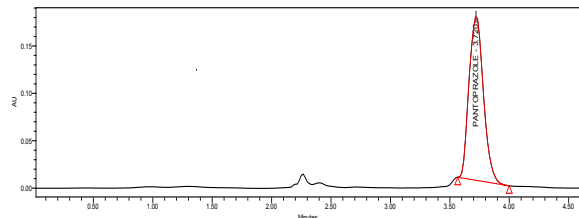


Fig 14: - Typical chromatogram of accuracy 50%-2

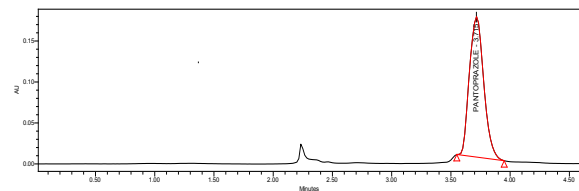


Fig 15: - Typical chromatogram of accuracy 50%-3

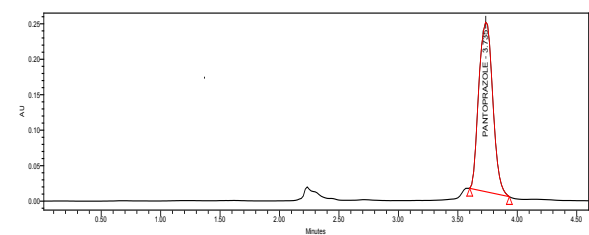


Fig 16: - Typical chromatogram of accuracy 100%-1

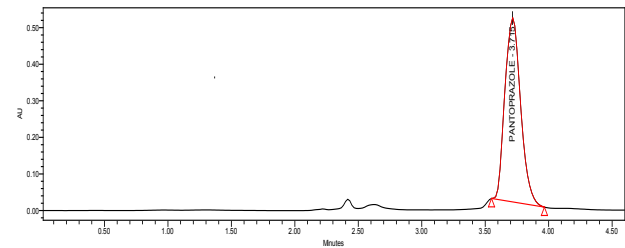


Fig 21: - Typical chromatogram of accuracy 150%-3

Precision chromatograms of Pantoprazole.

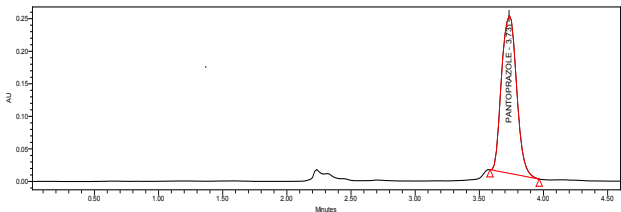


Fig 17: - Typical chromatogram of accuracy 100%-2

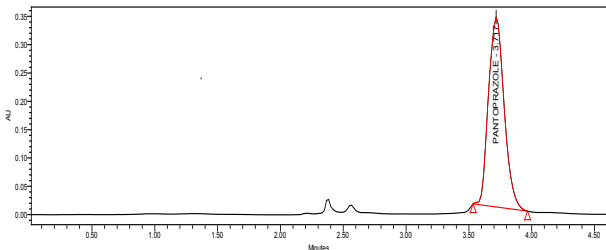


Fig 22: - Typical chromatogram of precision (injection-1)

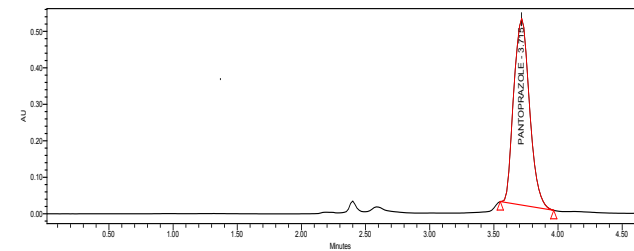


Fig 18: - Typical chromatogram of accuracy 100%-3

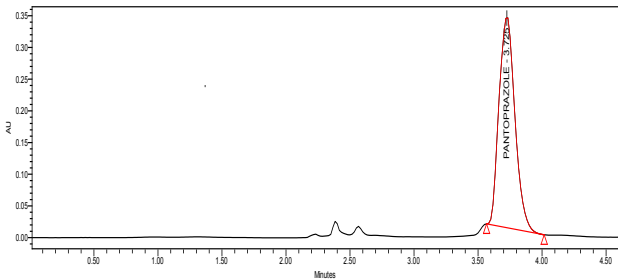


Fig 23: - Typical chromatogram of precision (injection-2)

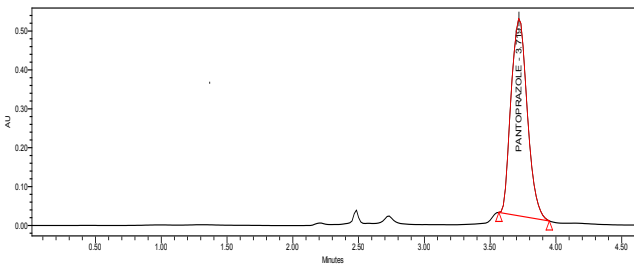


Fig 19: - Typical chromatogram of accuracy 150%-1

Robustness Chromatograms.

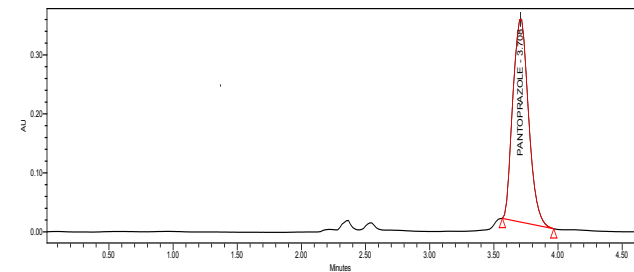


Fig 20: - Typical chromatogram of accuracy 150%-2

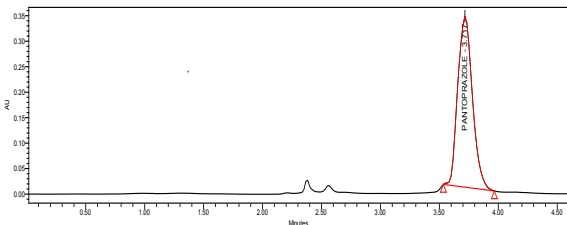


Fig 24: Chromatogram of robustness (flow rate 0.8ml/min)

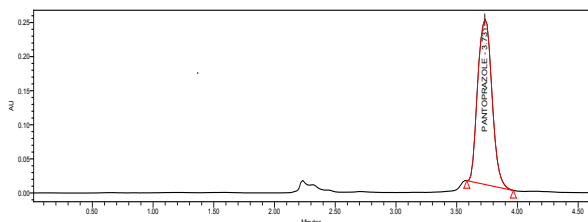


Fig 25: Chromatogram of robustness(Flow rate 1.2ml/min)

Forced Degradation Studies:

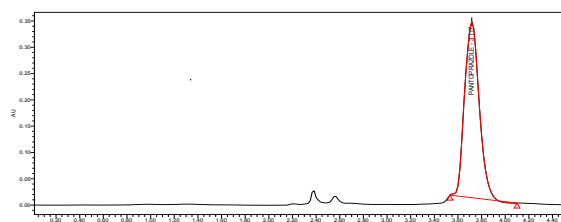


Fig 26: - Acidic degradation study

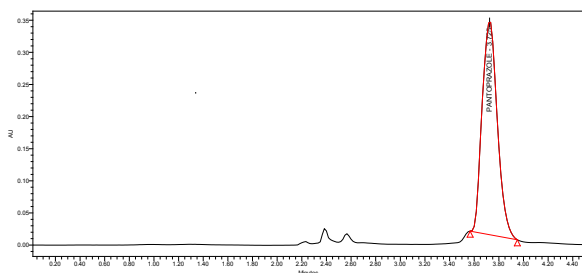


Fig 27:-Base degradation study

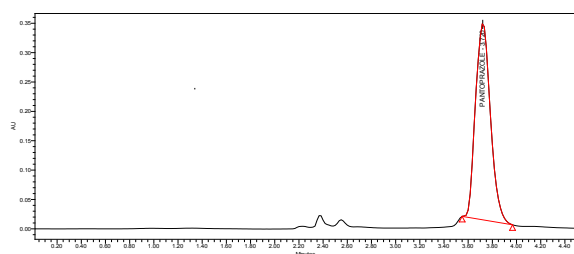


Fig 28:-Peroxide degradation

REFERENCES:

1. Meyer, U A "Metabolic interactions of the proton-pump inhibitors lansoprazole, omeprazole and pantoprazole with other drugs". European journal of

- gastroenterology & hepatology. (1996), **8** (Suppl 1): S21–25
2. Wolfe, MM; Sachs, G. "Acid suppression: optimizing therapy for gastroduodenal ulcer healing, gastroesophageal reflux disease, and stress-related erosive syndrome". *Gastroenterology*. February 2000,**118** (2 Suppl 1): S9–31.
3. Martindale the Extra Pharmacopoeia, 2005. 34th ed. Royal Pharmaceutical Society, London, p. 1283.
4. Mathews, S; Reid, A; Tian, C; Cai, Q. "An update on the use of pantoprazole as a treatment for gastroesophageal reflux disease". *Clinical and experimental gastroenterology*. 2010, **3**: 11–6.
5. Richardson, Paul; Hawkey, Christopher J.; Stack, Dr William A.. "Proton Pump Inhibitors". *Drugs*. 2012-11-29, **56** (3): 307–335.
6. Dammann, Hans-Gerd; Fölsch, Ulrich R.; Hahn, Eckhart G.; Von Kleist, Detlef-Hasso; Klör, Hans-Ulrich; Kirchner, Thomas; Strobel, Sonja; Kist, Manfred. "Eradication of *H. pylori* with Pantoprazole, Clarithromycin, and Metronidazole in Duodenal Ulcer Patients: A Head-to-Head Comparison Between Two Regimens of Different Duration". *Helicobacter*. 2000-03-01 **5** (1): 41–51.
7. Herzig, SJ; Doughty, C; Lahoti, S; Marchina, S; Sanan, N; Feng, W; Kumar, S "Acid-suppressive medication use in acute stroke and hospital-acquired pneumonia". *Annals of Neurology*. November 2014, **76** (5): 712–8.
8. Ricketson, Jeffrey; Kimel, Gil; Spence, James; Weir, Rene. "Acute allergic

- interstitial nephritis after use of pantoprazole". *Canadian Medical Association Journal*. 2009-03-03, **180** (5): 535–538.
9. Sachs, George; Shin, Jai Moo; Hunt, Richard. "Novel Approaches to Inhibition of Gastric Acid Secretion". *Current Gastroenterology Reports*. 2010-10-06, **12** (6): 437–447.
10. Research, Center for Drug Evaluation and. "Drug Safety and Availability - FDA Drug Safety Communication: Low magnesium levels can be associated with long-term use of Proton Pump Inhibitor drugs (PPIs)". *www.fda.gov*. Retrieved 2015-11-03.
11. Research, Center for Drug Evaluation and. "Postmarket Drug Safety Information for Patients and Providers - FDA Drug Safety Communication: Possible increased risk of fractures of the hip, wrist, and spine with the use of proton pump inhibitors". *www.fda.gov*. Retrieved 2015-11-03.
12. Curtiss, FR "Perspectives on the "generic cliff"--pushing and falling". *Journal of managed care pharmacy*. April 2008, **14** (3): 318–21.
13. Senn-Bilfinger, Jörg; Sturm, Ernst. "6. The Development of a New Proton-Pump Inhibitor: The Case History of Pantoprazole". In Fischer, János; Ganellin, C. Robin. *Analogue-based drug discovery*. Weinheim: Wiley-VCH. 2006, pp. 115–136.
14. Sivakumar Thanikachalam, Manavalan Rajappan, Valliappan Kannappan, Stability-Indicating HPLC Method for Simultaneous Determination of Pantoprazole and Domperidone from their Combination Drug Product. *Chromatographia*, January 2008, Volume 67, Issue 1–2, pp 41–47.
15. Safwan Ashour, Soulaifa Omar A modified high-performance liquid chromatographic method for the analysis of pantoprazole sodium in pharmaceutical dosage forms using lansoprazole as internal standard. *Arabian Journal of Chemistry*, Volume 9, Supplement 1, September 2016, Pages S114-S119
16. Letica J, Marković S, Zirojević J, Nikolić K, Agbaba D. High-performance liquid chromatographic determination of pantoprazole and its main impurities in pharmaceuticals. *J AOAC Int*. 2010 Jul-Aug; **93**(4):1121-8.
17. E. Doyle, R. Huber, and V.S. Picot. Direct injection/h.p.l.c. methods for the analysis of drugs in biological samples. *Xenobi -otica* 22(7): 765–74 (1992).
18. M. Tanaka and H. Yamazaki. Direct determination of pantoprazole enantiomers in human serum by reversed-phase high-performance liquid chromatography using a cellulose-based chiral stationary phase and column-switching system as a sample cleanup procedure. *Anal. Chem.* 68(9): 1513–16 (1996).
19. Q.B. Cass, A.L. Degani, N.M. Cassiano, and J.J. Pedrazzoli. Enantiomeric determination of pantoprazole in human plasma by multidimensional high-performance liquid chromatography. *J. Chromatogr. B* 766(1): 153–68 (2002).
20. Saurabh Pandey, Preeti Pandey, Durgesh Mishra, Umesh Kumar Singh, A validated stability indicating HPLC method for the determination of process-related impurities in pantoprazole bulk drug and formulations. *Braz. J. Pharm. Sci.* vol.49 no.1 São Paulo Jan./Mar. 2013.
21. Tanaka, M., Yamazaki, H., Hakushi, H., 1995. Direct HPLC separation of

- enantiomers of pantoprazole and other benzimidazole sulfoxides using cellulose-based chiral stationary phases in reversed-phase mode. *Chirality* 7, 612.
22. Tanaka, M., Yamazaki, H., 1996. Direct determination of pantoprazole enantiomers in human serum by reversed-phase high-performance liquid chromatography using a cellulose-based chiral stationary phase and column-switching system as a sample clean up procedure. *Anal. Chem.* 68, 1513.
 23. Wahbi, A.M., Abdel-Razak, O., Gazy, A.A., Mahgoub, H., Moneeb, M.S., 2002. Spectrophotometric determination of omeprazole, lansoprazole and pantoprazole in pharmaceutical formulations. *J. Pharm. Biomed. Anal.* 30, 1133
 24. Tivesten, A., Folestad, S., Schonbacher, V., Svensson, K., 1999. Nonaqueous capillary electrophoresis for the analysis of labile pharmaceutical compounds. *Chromatographia* 49, S7.
 25. Storms, M.L., Stewart, J.T., 2002. Development of a reversed-phase liquid chromatographic method for the analysis of amoxicillin, metronidazole and pantoprazole in human plasma using solid-phase extraction. *J. Liq. Chromatogr. Rel. Technol.* 25, 2433.
 26. Syed, A., Syeda, A., 2008. Spectrophotometric determination of certain benzimidazole proton pump inhibitors. *Indian J. Pharm. Sci.* 70, 507
 27. Ramakrishna, N.V.S., Vishwottam, K.N., Wishu, S., Koteswara, M., 2005. High-performance liquid chromatography method for the quantification of pantoprazole in human plasma. *J. Chromatogr. B* 822, 326.
 28. Mansour, A.M., Sorour, O.M., 2001. High performance liquid chromatographic determination of pantoprazole in tablet dosage form. *Chromatographia* 53, S478.
 29. International Conference on Harmonization (ICH) of Technical Requirements for the Registration of Pharmaceuticals for Human Use; "Validation of analytical procedures: definitions and terminology"; Geneva (1996).
 30. U.S. FDA; Title 21 of the U.S. Code of Federal Regulations: 21 CFR 211—Current good manufacturing practice for finished pharmaceuticals.
 31. U.S. FDA - Guidance for Industry (draft) Analytical Procedures and Methods Validation: Chemistry, Manufacturing, and Controls and Documentation, 2000.
 32. ISO/IEC 17025, General requirements for the competence of testing and calibration laboratories, 2005.
 33. International Conference on Harmonization (ICH) of Technical Requirements for the Registration of Pharmaceuticals for Human Use, Validation of analytical procedures: Methodology, adopted in 1996, Geneva.
 34. U.S. EPA, Guidance for methods development and methods validation for the Resource Conservation and Recovery Act (RCRA) Program, Washington, D.C. (1995). <http://www.epa.gov/sw-846/pdfs/methdev.pdf>.
 35. General Chapter 1225, Validation of compendial methods, United States Pharmacopeia 30, National Formulary 25, Rockville, Md., USA, The United States Pharmacopeial Convention, Inc., (2007).
 36. U.S. FDA - Guidance for Industry, Bioanalytical Method Validation.
 37. G. C. Hokanson, A life cycle approach to the validation of analytical methods during pharmaceutical product

- development, Part I: The initial validation process, Pharm. Tech., Sept. 1994, pp. 118–130.
38. “Q2A: Text on Validation of Analytical Procedures”; International Conference on Harmonization; Federal Register; 1995; 60(40): 11260–11262.
 39. “Q2B: Validation of Analytical Procedures: Methodology; Availability”; International Conference on Harmonization; Federal Register; 1997; 62(96): 27463–27467.
 40. "Analytical Procedures and Methods Validation: Chemistry, Manufacturing and Controls Documentation; Availability"; FDA; Federal Register (Notices); 2000; 65(169): 52776 – 52777.
 41. www.fda.gov/cder/guidance/cmc3.pdf.
 42. USP 25–NF 20; “Validation of Compendial Methods Section (1225) (United States Pharmacopeal Convention, Rockville, Maryland, USA, 2002)”; 2256.
 43. G.A. Shabir; “Validation of HPLC Chromatography Methods for Pharmaceutical Analysis”; Understanding the Differences and Similarities between Validation Requirements of FDA, the US Pharmacopeia and the ICH; J. Chromatogr. A; 2003; 987(1-2): 57-66.

A Study on Futures and Options

B. Surya Kumar, Student Business Management,
Dept. of Business Mngement, Malla Reddy College
of Engineering, Hyderabad. E-Mail:
balasurya28@gmail.com

MD. Salman Khan, Student Business Management,
Dept. of Business Mngement, Malla Reddy College
of Engineering, Hyderabad. E-Mail:
salman201093@gmail.com

B. Srinivas Jaswanth Raj, Student Business
Management, Dept. of Business Mngement, Malla
Reddy College of Engineering, Hyderabad. E-Mail:
jaswanthraj4847@gmail.com

M. Priyanka, Student Business Management, Dept.
of Business Mngement, Malla Reddy College of
Engineering, Hyderabad. E-Mail:
didhigoud@gmail.com

Abstract: The emergence of the market for derivative products, most notably forwards, futures and options, can be traced back to the willingness of risk-averse economic agents to guard themselves against uncertainties arising out of fluctuations in asset prices.

Keywords: Derivatives, Futures, Options

Introduction:

The emergence of the market for derivative products, most notably forwards, futures and options, can be traced back to the willingness of risk-averse economic agents to guard themselves against uncertainties arising out of fluctuations in asset prices. By their very nature, the financial markets are marked by a very high degree of volatility. Through the use of derivative products, it is possible to partially or fully transfer price risks by locking-in asset prices. As instruments of risk management, these generally do not influence the fluctuations in the underlying asset prices. However, by locking-in asset prices, derivative products minimize the impact of fluctuations in asset prices on the profitability and cash flow situation of risk-averse investors.

Definitions:

Derivatives are risk management instruments, which derive their value from an underlying asset. The underlying asset can be bullion, index, share, bonds, currency, interest etc. Banks, securities firms, companies and investors to hedge risks, to gain access to cheaper money and to make profit, use derivatives. Derivatives are likely to grow even at a faster rate in future.

Derivative is a product whose value is derived from the value of an underlying asset in a contractual manner. The underlying asset can be equity, forex, commodity or any other asset.

Securities Contracts (Regulation) Act, 1956 (SC(R) A) defines “derivative” to include –

1. A security derived from a debt instrument, share, loan whether secured or unsecured, risk instrument or contract for differences or any other form of security.

2. A contract which derives its value from the prices, or index of prices, of underlying securities.

Participants

The following three broad categories of participants in the derivatives market.

Hedgers: Hedgers face risk associated with the price of an asset. They use futures or options markets to reduce or eliminate this risk.

Speculators: Speculators wish to bet on future movements in the price of an asset. Futures and options contracts can give them an extra leverage; that is, they can increase both the potential gains and potential losses in a speculative venture.

Arbitrageurs: Arbitrageurs are in business to take advantage of a discrepancy between prices in two different markets. If, for example, they see the futures price of an asset getting out of line with the cash price, they will take offsetting positions in the two markets to lock in a profit.

Functions of Derivatives Market: The following are the various functions that are performed by the derivatives markets. They are:

- ❖ Prices in an organized derivatives market reflect the perception of market participants about the future and lead the prices of underlying to the perceived future level.
- ❖ Derivatives market helps to transfer risks from those who have them but may not like them to those who have an appetite for them.
- ❖ Derivative trading acts as a catalyst for new entrepreneurial activity.
- ❖ Derivatives markets help increase savings and investment in the long run.

Types of Derivatives: The following are the various types of derivatives. They are:

Forwards: A forward contract is a customized contract between two entities, where settlement takes place on a specific date in the future at today's pre-agreed price.

Futures: A futures contract is an agreement between two parties to buy or sell an asset at a certain time in the future at a certain price.

Options: Options are of two types - calls and puts. Calls give the buyer the right but not the obligation to buy a given quantity of the underlying asset, at a given price on or before a given future date. Puts give the buyer the right, but not the obligation to sell a given quantity of the underlying asset at a given price on or before a given date.

Warrants: Options generally have lives of upto one year; the majority of options traded on options exchanges having a maximum maturity of nine months. Longer-dated options are called warrants and are generally traded over-the-counter.

Leaps: The acronym LEAPS means Long-Term Equity Anticipation Securities. These are options having a maturity of upto three years.

Baskets: Basket options are options on portfolios of underlying assets. The underlying asset is usually a moving average of a basket of assets. Equity index options are a form of basket options.

Swaps: Swaps are private agreements between two parties to exchange cash flows in the future according to a prearranged formula. They can be regarded as portfolios of forward contracts. The two commonly used swaps are:

Interest rate swaps:

These entail swapping only the interest related cash flows between the parties in the same currency.

Currency swaps: These entail swapping both principal and interest between the parties, with the cash flows in one direction being in a different currency than those in the opposite Direction.

Swaptions: Swaptions are options to buy or sell a swap that will become operative at the expiry of the options. Thus a swaption is an option on a forward swap.

Rationale behind the Development of Derivatives:

Holding portfolio of securities is associated with the risk of the possibility that the investor may realize his returns, which would be much lesser than what he expected to get. There are various factors, which affect the returns:

1. Price or dividend (interest).
2. Some are internal to the firm like –
 - Industrial policy
 - Management capabilities
 - Consumer's preference
 - Labor strike, etc.

These forces are to a large extent controllable and are termed as non systematic risks. An investor can easily manage such non-systematic by having a well – diversified portfolio spread across the companies, industries and groups so that a loss in one may easily be compensated with a gain in other.

There are yet other types of influences which are external to the firm, cannot be controlled and affect large number of securities. They are termed as systematic risk. They are:

1. Economic

2. Political

3. Sociological changes are sources of systematic risk.

For instance, inflation, interest rate, etc. their effect is to cause prices of nearly all individual stocks to move together in the same manner. We therefore quite often find stock prices falling from time to time in spite of company's earnings rising and vice versa.

Rationale behind the development of derivatives market is to manage this systematic risk, liquidity and liquidity in the sense of being able to buy and sell relatively large amounts quickly without substantial price concessions.

In debt market, a large position of the total risk of securities is systematic. Debt instruments are also finite life securities with limited marketability due to their small size relative to many common stocks. Those factors favour for the purpose of both portfolio hedging and speculation, the introduction of a derivative security that is on some broader market rather than an individual security.

India has vibrant securities market with strong retail participation that has rolled over the years. It was until recently basically cash market with a facility to carry forward positions in actively traded 'A' group scrips from one settlement to another by paying the required margins and borrowing some money and securities in a separate carry forward session held for this purpose. However, a need was felt to introduce financial products like in other financial markets world over which are characterized with high degree of derivative products in India.

Derivative products allow the user to transfer this price risk by looking in the asset price

thereby minimizing the impact of fluctuations in the asset price on his balance sheet and have assured cash flows.

Derivatives are risk management instruments, which derive their value from an underlying asset. The underlying asset can be bullion, index, shares, bonds, currency etc.

Regulatory Framework

The trading of derivatives is governed by the provisions contained in the SC (R) A, the SEBI Act, the and the regulations framed there under the rules and byelaws of stock exchanges.

Regulation for Derivative Trading:

SEBI set up a 24 member committee under Chairmanship of Dr.L.C.Gupta develop the appropriate regulatory framework for derivative trading in India. The committee submitted its report in March 1998. On May 11, 1998 SEBI accepted the recommendations of the committee and approved the phased introduction of Derivatives trading in India beginning with Stock Index Futures. SEBI also approved the “Suggestive bye-laws” recommended by the committee for regulation and control of trading and settlement of Derivatives contracts.

The provisions in the SC (R) A govern the trading in the securities. The amendment of the SC (R) A to include “DERIVATIVES” within the ambit of ‘Securities’ in the SC (R) A made trading in Derivatives possible within the framework of the Act.

1. Any exchange fulfilling the eligibility criteria as prescribed in the L.C. Gupta committee report may apply to SEBI for grant of recognition under Section 4 of the

SC (R) A, 1956 to start Derivatives Trading.

The derivatives exchange/segment should have a separate governing council and representation of trading / clearing members shall be limited to maximum of 40% of the total members of the governing council. The exchange shall regulate the sales practices of its members and will obtain approval of SEBI before start of Trading in any derivative contract.

2. The exchange shall have minimum 50 members.
3. The members of an existing segment of the exchange will not automatically become the members of the derivative segment. The members of the derivative segment need to fulfill the eligibility conditions as lay down by the L.C.Gupta Committee.
4. The clearing and settlement of derivatives trades shall be through a SEBI approved Clearing Corporation / Clearing house. Clearing Corporation / Clearing House complying with the eligibility conditions as lay down By the committee have to apply to SEBI for grant of approval.
5. Derivatives broker/dealers and Clearing members are required to seek registration from SEBI.
6. The Minimum contract value shall not be less than Rs.2 Lakh. Exchanges should also submit details of the futures contract they purpose to introduce.

The trading members are required to have qualified approved user and sales person who have passed a certification programme approved by SEBI.

DESCRIPTION OF THE METHOD:

The following are the steps involved in the study.

1. Selection of the scrip: The scrip selection is done on a random basis and the scrip selected is RELIANCE COMMUNICATIONS. The lot size of the scrip is 500. Profitability position of the option holder and option writer is studied.

2. Data collection: The data of the RELIANCE COMMUNICATIONS has been collected from the “The Economic Times” and the internet. The data consists of the March contract and the period of data collection is from 30th December 2008 to 31st January 2009.

3. Analysis: The analysis consists of the tabulation of the data assessing the profitability positions of the option holder and the option writer, representing the data with graphs and making the interpretations using the data.

ANALYSIS:

The objective of this analysis is to evaluate the profit/loss position of option holder and option writer. This analysis is based on the sample data, taken RELIANCE COMMUNICATIONS scrip. This analysis considered the March ending contract of the SBI. The lot size of SBI is 500. The time period in which this analysis is done is from 30/12/2016 To 31/01/2017

The closing price of RELIANCE COMMUNICATIONS at the end of the contract period is 654.80 and this is considered as settlement price.

The following table explains the amount of transaction between option holder and option writer.

❖ The first column explains the trading date.

- ❖ The second column explains the market price in cash segment on that date.
- ❖ The call column explains the call/put options which are considered. Every call/put has three sub columns.
- ❖ The first column consists of the premium value per share of the contracts, second column consists of the volume of the contract, and the third column consists of total premium value paid by the buyer.

OBSERVATIONS AND FINDINGS:

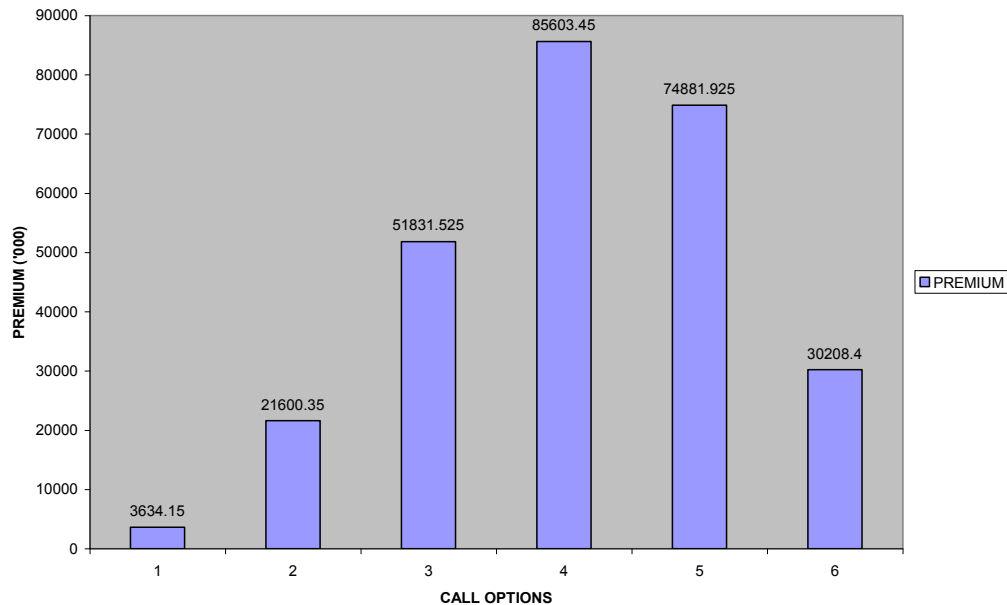
- ❖ Six call options are considered with six different strike prices.
- ❖ The current market price on the expiry date is Rs.654.80 and this is considered as final settlement price.
- ❖ The premium paid by the option holders whose strike price is far and greater than the current market price have paid high amounts of premium than those who are near to the current market price.
- ❖ The call option holders whose strike price is less than the current market price are said to be In-The-Money. The calls with strike price 640 are said to be In-The-Money, since, if they exercise they will get profits.
- ❖ The call option holders whose strike price is less than the current market price are said to be Out-Of-The-Money. The calls with strike price of 660, 680, 700, 720, 740 are said to be Out-Of-The-Money, since, if they exercise, they will get losses.

The premium of the options with strike price of 700 and 720 is high, since most of the period of the contract the cash market is moving around 700 mark.

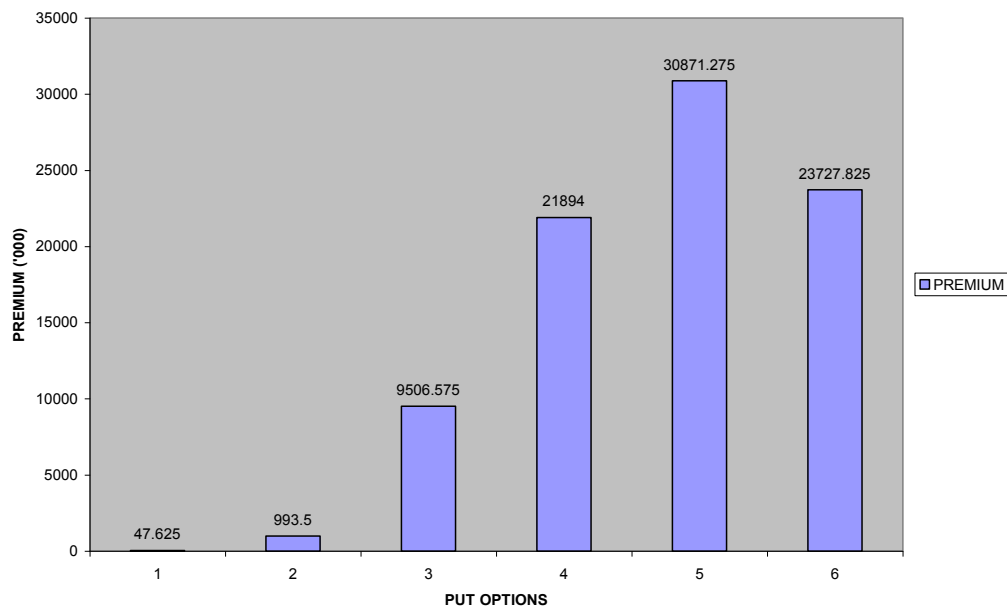
❖ The contracts with strike price 660, 680, 700, 720, 740 get no profit, since their strike price is more than the settlement price.

❖ The contract with strike price 640 gets the profit.

GRAPH SHOWING THE PREMIUM AMOUNT TRANSACTED FOR A CALL OPTION



GRAPH SHOWING THE AMOUNT OF PREMIUM TRANSACTED OF PUT OPTIONS



FINDINGS:

- ❖ The premium of the option with strike price 700 is higher when compared to other strike prices. This is because of the movement of the cash market price of the SBI between 640 and 720.
- ❖ The put option holders whose strike price is more than the settlement price are In-The-Money.
- ❖ The put options whose strike price is less than the settlement price are Out-Of-The-Money.

The cash market price of the SBI is moving along with the futures price.

- ❖ If the buy price of the futures is less than the settlement price, then the buyer of the futures get profit.
- ❖ If the selling price of the futures is less than the settlement price, then the seller incur losses.

Summary:

- ❖ Derivatives market is an innovation to cash market. Approximately its daily turnover reaches to the equal stage of cash market.
- ❖ Presently the available scrips in futures are 89 and in options segment are 62.
- ❖ In cash market the profit/loss of the investor depends on the market price of the underlying asset. The investor may incur huge profits or he may incur huge losses. But in derivatives segment the investor enjoys huge profits with limited downside.
- ❖ In cash market the investor has to pay the total money, but in derivatives the investor has to pay premiums or margins, which are some percentage of total money.
- ❖ Derivatives are mostly used for hedging purpose.
- ❖ In derivative segment the profit/loss of the option holder/option writer is purely depended on the fluctuations of the underlying asset.

Conclusions:

- ❖ In bullish market the call option writer incurs more losses so the investor is suggested to go for a call option to hold, where as the put option holder suffers in a bullish market, so he is suggested to write a put option.
- ❖ In bearish market the call option holder will incur more losses so the investor is suggested to go for a call option to write, where as the put option writer will get more losses, so he is suggested to hold a put option.
- ❖ In the above analysis the market price of State Bank of India is having low volatility, so the call option writers enjoy more profits to holders.

Recommendations:

- ❖ The derivative market is newly started in India and it is not known by every investor, so SEBI has to take steps to create awareness among the investors about the derivative segment.
- ❖ In order to increase the derivatives market in India, SEBI should revise some of their regulations like contract size, participation of FII in the derivatives market.
- ❖ Contract size should be minimized because small investors cannot afford this much of huge premiums.
- ❖ SEBI has to take further steps in the risk management mechanism.
- ❖ SEBI has to take measures to use effectively the derivatives segment as a tool of hedging.

BIBLIOGRAPHY

BOOKS:

- FUTURES AND OPTIONS - N.D.VOHRA, B.R.BAGRI
DERIVATIVES CORE MODULE
WORKBOOK - NCFM MATERIAL
FUTURES AND OPTIONS - R.MAHAJAN

WEBSITES:

www.nseindia.com

www.equitymaster.com

www.peninsularonline.com

NEWS EDITIONS:

THE ECONOMIC TIMES

BUSINESS LINE

Role of Joint Ventures in Profitability Strategies

S. Sampath Kumar, Student Business
Management, Dept. of Business
Management, Malla Reddy College of
Engineering, Hyderabad.

E-Mail: sampathkumar979@gmail.com

R. Bharath Kumar, Student Business
Management, Dept. of Business
Management, Malla Reddy College of
Engineering, Hyderabad.

E-Mail: rbharathvkab45@gmail.com

P S Shivani Yadav, Student Business
Management, Dept. of Business
Management, Malla Reddy College of
Engineering, Hyderabad.

E-Mail: shivaniyadav666@gmail.com

P. Sai Kumar, Student Business
Management, Dept. of Business
Management, Malla Reddy College of
Engineering, Hyderabad.

E-Mail: saikumarpk1@gmail.com

Abstract: The logistics operations in India is gearing up in India due to many reasons like FDI, Increase in Manufacturing in line with Make in India Initiatives etc., which has created a tremendous demand for trucks, tippers with wide range of capacities, models etc., In this case study Eicher which is an Indian Company based out of Gurgaon which has a strategic alliance with Swedish based truck manufacturer Volvo in capturing business demand in India with technological and strategically aspects by protecting their individual business objectives and profitability getting ahead of competition.

Introduction:

Profitable Growth, a term most often used by CEOs when describing their firm's

strategic objective. Profitable growth is the combination of profitability and growth, more precisely the combination of Economic Profitability and Growth of Free cash flows. Profitable growth is aimed at reducing the financial community; it emerged in the early 80's when shareholder value creation became firms' main objective. Profitable Growth stresses that Profitability and Growth should be jointly achieved. It is a break from previous firms' development models which advocated growth at first to achieve economies of scale and then profitability (see BCG Growth-share matrix).

Objectives of the case study:

To understand the Logistics & Supply Chain Management Industry trend in India.

How Indian companies are trying to come up with the Increasing demand in line with increasing the market share.

How strategically the foreign companies are entering into Indian markets either individually or in association with Indian companies.

The Association of Eiche and Volvo (VE Commercial vehicles) in meeting the demand of trucks in India and how it leads to mutual benefits.

Need of the Study:

Any business if it has to grow irrespective of Industry or the nation is purely based on the trends in the industry and increase in economy of the particular country/nation. Indian GDP, Per Capita Income is increasing as the Industrialization is growing as a part of Make in India or the Government initiatives like foreign policy, Industrial Policy, Foreign Direct Investment etc., lead to tremendous change and demand in Indian Supply Chain, Warehouse Management, Logistics and allied segments and Industries and Heavy and Normal commercial Vehicles and one of the key components in transportation etc., Based on above mentioned reasons I felt there is need and because of my interest I have selected

this case study for assessment on how Volvo has streamlined their business in India after series of concerns, issues and damages etc.,

The scope of the Study:

The Scope of the study is confined to Eicher which is one of the leading truck manufacturers in India and the Volvo which is a Swedish truck manufacturing company and the scopes here is further confined to the trends in the market and their business growth etc., which will not speak about the key strategies and decision-making, key points in alliance and the financials.

Limitations:

The major limitation is the data availability. The major data analysis is purely based on the strengths, weakness, opportunities, and threats of Volvo and Eicher inline of their association to tap Indian Market as per increasing demand. The financials, top line, bottom line, legal terminologies, etc, were not discussed or not evaluated which is a limitation while arriving for the conclusion and writing suggestions and recommendations. The time is one more constraint along with the getting the data from companies associates and even from the market.

Research Methodology:

The case taken in this study is how Volvo has resolved its issues while entering into Indian market which came with a plan of penetrating into the Indian market and the methodology used in this study is:

Primary data & Secondary data was collected from the websites of the Volvo & Eicher Companies. The merging business-related data is been collected from different articles and the theoretical part of data pertaining to business metrics has been collected from academic and other books. The SWOT analysis was the technique used in this case study to arrive at a conclusion and to give suggestions and recommendations.

Data Analysis & Interpretation:

SWOT Analysis & PESTLE Analysis:

Strengths:

Eicher:

Eicher is an Indian Company which has its presence in the automobile business since 1948 which entered into Heavy trucks business in 1986 with vast experience on Market.

Infrastructure facilities: Recently Eicher has built world-class facility at Gurgaon which is built on green concepts where there are

maximum resources which are renewable. It's based on Mantra "Maximum utilization of available resources"

Availability of resources: There is the availability of wide range of resources like Manpower, Infrastructure, Government subsidies etc., which will help them to expand.

Volvo:

Financially Strong: Volvo has Invested Rs.1083 Crore in India on VECV (Volvo Eicher Commercial Vehicles) which has given a boost to Eicher to get set and go.

Technology: It took 7 years for Eicher to build a truck and the cost Implication is Rs 25 Crore after association with Volvo Eicher has Managed to produce trucks with the very low process. The technology and changing demands and needs of the market helped Eicher and Volvo to capture the market. The vehicles from 6 ton capacity to 40 ton capacity with the latest technology were made to cater the needs of the Industry in India.

Weakness:

Eicher:

Technology: Eicher has got experience in service and retail model business of

Automobile and it has no R & D facility and even the latest technology to build high-end commercial vehicles.

Expansion: The commercial truck manufacturing and selling business are viable only if the business is carried out in more than one country whereas Eicher don't have operations other than India.

Financial: Eicher cannot afford to build high-end trucks and sell them within India and even expanding business across the horizons which is an obstructive aspect of Eicher.

Volvo:

They don't have an understanding of the needs of the logistics, warehousing, Supply Chain, Manufacturing, power etc. in India which is a demand.

The cost Implications will be more if they have to start from scratch.

The government policies on FDI & may change because it is a political area and the Investment etc., will go on the toss.

Opportunities:

Eicher:

Eicher can improve technologically as they are associated with world No. 2 truck

manufacturer Volvo and the strategies and the mode of operandi can also be Improvised.

Eicher can expand its business in other parts of the world as they have expertise in maintaining retail business in Automobile Industry along with service centers.

Volvo:

Volvo can get exposure and expertise in Indian Market.

Volvo can sell its vehicles like trucks and buses in India with low cost in India.

It can have trusted service centers in India as it is in association with Eicher.

Threats:

Eicher:

If Volvo gets market leader position in India it will have a wide range of opportunities and which may affect the market presence of Eicher.

As Volvo is Investing on Eicher in terms of technology, etc. and Eicher is providing only Infrastructure facility may lead to misperceptions.

Volvo:

Eicher can adopt the technology, mode of operandi etc., from Volvo and can Start its own manufacturing and produce high-end commercial vehicles at low cost.

Volvo has already Invested Rs. 1083 Crore in India as a part of Joint Venture / Strategic Alliance and if anything goes wrong there may be so many legal consequences which will lead to stake of Brand Reputation etc.,

PESTLE Analysis:

Political:

The Political stability and if the government is firm on its policy on foreign direct investment etc. will give a positive wave to this alliance.

The legalities and the inconsistency in Politics and the governments at the state level and central level may lead to unnecessary obligations.

Economical:

As the economy, GDP & Per Capita Income grows the earning capacity Increases which lead to business transactions at various levels which is a boost to Industry.

Social:

The people in India are emotional and sentimental and as Volvo is a foreign company it always has to ensure that the

emotion of Indians is been taken care of Business at various levels like Promotional activities, designing the product etc.

Technological:

Volvo may be very strong in Technology but the Roads and Infrastructure challenge any technology which means the technology has to be customized as per the requirements and Infrastructure of India and the locations.

Legal:

The constitution of Indian and the legal framework of India is a typical framework which will give results often after postmortem of the issue.

Volvo & Eicher has to focus more on a legal framework which has to be in long-term relationship in line with their respective business needs and objectives.

Environmental:

The Eicher Plant at Gurgaon is strategically located where the climatically it is a cool place and the chance of natural calamities are low. The connectivity to different parts of the country and logistically to the ports and other means of transport is good.

Findings:

Swedish based company Volvo is the second largest manufacturer of trucks in the world

after Daimler which is from Germany has tied up with Indian truck manufacturer Eicher to expand their Business in India by Investing Rs. 1083 Crore which is equal to 50% share.

Volvo has contributed and brought their advances technology in Manufacturing, Warehousing, Retail and after-sales service in Eicher in India.

Volvo is clear in Expanding its business India and on the other hand, Eicher is keen on and working towards expanding its business through exports to other nations keeping India as a base.

VECV Volvo Eicher Commercial Vehicles has Invested Rs. 1300 Crore on New facility which is been set up in Pithanpur, Madhya Pradesh which has got the capacity of making 100000 Engines/ Year out of which the target is to export 30% of the engines to Europe. The VEVV has also Invested Rs. 1200 Crore on Body Shop plant to make closed body trucks.

The growth rate of VEVV is consistent by recording 27 % growth every year. The VEVV has crossed the turnover of Rs. 5443 Crore with a cash surplus of Rs. 700 Crore recording net profit of Rs. 366 Crore.

The exports of 4% were recorded for neighboring countries like Srilanka, Nepal, Bangladesh & Bhutan whereas 12% exports were to Southeast Asia, West Asia & Africa.

Conclusion & Recommendations:

Joint venture will always have tricky issues as there will be an alliance of two businesses with two philosophies. VEVV has to concentrate more on Management principles: Convergence, Complementaries, Compatability, and the Commitment. Now VEVV stood as 5th Largest commercial Vehicle manufacturer at the Global level and they have to strive hard to keep this alliance alive and expand strategically t other locations as they have reached only 50% of the targeted exports.

A STUDY ON GREEN MARKETING PRACTICES IN HOSPITALS TOWARDS A SUSTAINABLE HEALTHCARE

K. Srikanth, Research Scholar, School of Management Studies,

University of Hyderabad, Hyderabad. E-Mail: kotla.sri@gmail.com

M. Shiva, Assistant Professor, Dept. of Business Management, Malla Reddy College of

Engineering, Hyderabad. E-Mail: shivavallimanukonda@gmail.com

S. Amulya, Student Business Management, Dept. of Business Management, Malla Reddy College of Engineering, Hyderabad. E-Mail: amulya1268@gmail.com

ABSTRACT

Healthcare is one of the India's largest and fastest-growing sectors comprising of Hospitals, Medical Infrastructure, Medical Devices, clinical Trials, Outsourcing, Telemedicine, Health Insurance all of which delivers goods and services to treat patients on preventive, curative, rehabilitative, and palliative care basis. The Indian Healthcare industry is expected to reach US\$ 160 billion by 2018. Emerging trends in Healthcare industry includes the rise of medical tourism, emerging health insurance market, the growth of telemedicine, expansion of healthcare infrastructure, rising opportunities in pharmaceutical industry, rise of clinical trials and the Green Management concept. Green hospital concepts will play an important part in the curative process, and as the issue of Global Warming is rapidly evolving, every Healthcare facility requires the Green Building concepts. In the present study to discuss Green Marketing practices in Healthcare sector, select Green Marketing Initiatives were considered and how it leads to a sustainable healthcare has been discussed, as sustainability is becoming widely adopted and this industry has begun to embrace a sustainability mindset as the linkage between the greener operations, improved healthcare and lower operating costs is becoming more apparent. Hospitals

are starting to place greater emphasis on greener products for use in delivering patient care as well as the materials used throughout their facilities, such as cleaning products and office supplies. Hence the present research paper is an attempt to revisit the literature that is intended to highlight the relevance of green management practices in healthcare and to inform healthcare procurement professionals, executives, administrators and providers about the importance of sustainable and greener products in the healthcare industry.

Keywords: Green Marketing, Global warming, Healthcare, Sustainability.

INTRODUCTION

The Health Care industry is composed of multiple segments pertaining to different practices in medicine that provide different services. These services deal with different procedures and methods that address a variety of medical needs. The Health Care sector, in India, is at an inflection point and is poised for rapid growth in the medium term. Indian Healthcare Industry is currently estimated at USD 40 Billion. The industry is expected to grow to ~USD 79 Billion by 2012 and USD 280 Billion by 2020. The average CAGR for the next 10 years, has been estimated at 21

percent. The recent Emerging Trends in Healthcare includes Medical Tourism, Quality Accreditation Systems, Public Private Partnership Models, Green Management concept.

Sustainability in the Healthcare Industry

Sustainability is no longer a fleeting trend but rather a business approach being adopted by organizations to maintain competitive positions. This is increasingly true of the healthcare sector, which represents approximately 10% of GDP on average among the Organization for Economic Co-operation and Development (OECD) countries. Given the scale and complexity of healthcare industry, it is not surprising that it also has a large environmental footprint. In the United States, one estimate indicates healthcare facilities generate more than 5-9 millions tonnes of waste annually. A recent research letter in the *Journal of American Medical Association* estimates hospitals contribute approximately eight percent of green house gas emissions resulting from human activity. Sustainability measures especially those that are designed to reduce energy, waste and water, as well as the associated costs have a direct financial return on investment. Other sustainability initiatives such as the procurement of non-toxic cleaners, medical devices with less chemicals, or more wholesome foods, can lead to healthier outcomes for patients.

Integrating sustainability into hospital or clinical operations can be particularly challenging, given the complex facilities and range of activities involved in delivering healthcare services. However more emphasis is being placed on linking the mission of healing to sustainable healthcare operations – from the construction of greener facilities and efficient use of resources, to a preference for less toxic chemicals

in cleaning products and providing healthier food options.

NEED FOR THE STUDY

Green Management is more prevalent to Health Care than any other sector. The first Ethical imperative in health Care sector is First Do No Harm to patient. Patients can no longer tolerate Hospital-acquired conditions such as Nosocomial Infections and falls, Injuries to staff, subjecting patients to noisy, confusing environments that increase stress and anxiety, all of these which have negative impacts on patients, staff and attendants. Besides these Hospitals also generate a lot of Radio Active Hazardous and Non-Hazardous waste, Air Emissions, and waste water that can, if not properly managed, significantly contribute to Air, Soil and Water pollution, which pollute the environment. Hence we need to embrace the clear connection between well designed healing environments and improved healthcare safety and quality for patients, family and staff, and the associated cost savings. Given the Implications, Green Management practices have much role to play in the Health Care sector.

OBJECTIVES OF STUDY

- The primary objective of this study is to review the published literature regarding green initiatives in healthcare.
- The secondary objective is to propose suitable eco friendly sustainable development strategies towards green management concept based on the reviewed literature

METHODOLOGY

Qualitative content analysis has been used to analyze secondary data sources so as to examine the relevance of green management practices in healthcare and to inform healthcare procurement professionals, executives, administrators and providers about the importance of sustainable and greener products in the healthcare industry.

Green Marketing Initiatives

An increasing body of evidence points to the value of a green facility in improved patient outcomes and staff health risk. Following are some examples:

1. A study at the Mackenzie Health Sciences Centre in Edmonton, Alberta, Canada, found that depressed patients in sunny rooms recover faster. Researchers wrote that those in sunny rooms had an average stay of 16.9 days compared to 19.5 days for those in dull rooms, a difference of 2.6 days(15%) ("Sunny Hospital Rooms Expedite Recovery from Severe and Refractory Depressions," K.M.Beauchemin and P.Hays, Journal of Affective Disorders, Sept. 1996) .
2. A study at Inha University Hospital in Korea found a 41% reduction in Average Length of Stay for Gynecology patients in sunlit rooms over patients in dull rooms. The study found 26% reduction similarly for surgical ward patients("Study of relationship between Indoor Daylight Environments and Patient Average Length of Stay (ALOS) in HealthCare Facilities," Joon Ho Choi, M.Sc. thesis, Texas A&M University).

3. A study of 17 hospitals in Canada examined Tuberculin conversion (a positive tuberculin test result) among employees working in patient rooms. The researchers concluded that "tuberculin conversion among health care workers was strongly associated with inadequate ventilation in general patient rooms". They found a 71% reduction in risk for workers in rooms with ventilation rates greater than two air changes per hour(ACH) (Hospital Ventilation and Risk for Tuberculosis Infection in Canadian Health Care Workers", Dick Menzies, Anne Fanning, Lilian Yuan, and J.Mark Fitz Gerald, Canadian Collaborative Group in Nosocomial Transmission of TB, Annals of Internal Medicine, Nov. 2000).

Eco friendly Green Management strategies in Healthcare sector

1. Pollution prevention, energy conservation, green building design and sustainable food sourcing.

Pollution prevention can reduce the impact of air pollution by using materials, processes, or practices that reduce or eliminate air pollution at the source. Examples of changes in work practices that help reduce air pollution include:

A. Replacing Sources of Mercury

- Using alternatives to Mercury Thermometers, Mercury Blood Pressure Cuffs, and other equipment.
- Switching to Mercury-free Preservatives.
- Insisting on using recovered and recycled Mercury in all products that do not yet have Mercury-Free alternatives.

B. Locating Sources of Mercury

- Using a Mercury Audit on a regular basis to locate sources of Mercury.
- Formulate a plan to reduce sources of Mercury.

C. Communicating Mercury Dangers

- Developing a training and communication program.
- Train employees to look for ways to reduce Mercury pollution.
- Develop and implement a protocol to prevent Hospital employees from improperly disposing of Mercury.

D. Reducing PVC Use

- Conducting a PVC audit.
- Look for PVC-free products to replace PVC products.
- Use PVC-free medical devices, construction and furnishing products whenever possible.

2. Xeriscaping, which is a type of landscaping that minimizes water usage.

It is an environmentally friendly landscaping practice. Hospitals doesn't need an irrigation system to water the flowers and plants on campus. The landscaping is carefully planned with selections that are compatible with the soil and weather conditions.

3. Energy conservation, renewable energy outlets, building design, waste management, recycling and sustainable foods.

A growing body of research shows that the physical design of health care settings unintentionally contributes to negative outcomes. On the other hand, thoughtful evidence-based facility design can help bring the patient, staff and families into the center of the health care experience, increase patient safety and enhance the overall quality of care provided.

(Evidence for Innovation, NACHRI and The Center for Health Design)

4. Healthy Building Design.

Healthy Building Design practices adopted by Hospitals are

- Single patient rooms
- Adequate space for families to spend the night
- Access to natural areas - indoor and outdoor gardens
- Ample natural light
- Artwork on walls and other positive distraction tools (TV, music, etc.)
- Noise reduction wherever possible
- Reduction of high light levels
- Access to hand washing stations/dispensers
- Use of music therapy

5. Developing Sustainable Food policies and reducing Toxic and Hazardous Waste.

- Reduce risk or liability exposure related to environmental, social and health concerns
- Set a positive examples for students, patients and other constituents or stakeholders
- Deliver morale and health benefits for employees and students/patients/customers

6. Recycled Building supplies and Low Volatile Organic Compound materials.

Benefits of using low VOC building materials include

- Improved regional Air Quality.
- Improved worker safety and health.

- Reduced incidents of eye and respiratory irritation, headaches, fatigue and other symptoms of “Sick Building” syndrome.
- Cleaner indoor Air Quality for a more comfortable and productive environment.

7. Geothermal system to heat and cool the facility, workspaces that maximize daylight, native plants and safer CPVC piping.

One green technology that is becoming a gold standard — both for heating and cooling as well as for Green Initiatives in general — is Geothermal energy. Geothermal energy via heat pumps is a specific "Earth Energy" system that provides heating and cooling through the renewable temperature resources within the Earth. The Environmental Protection Agency actually recognizes these types of Geothermal systems as the most "Green" way to provide heating and cooling, as it does not emit Carbon Di Oxide or other Green House Gases.

8. Adoption of a Co Generation Power Plant and upgraded Exterior Lighting.

The number of hospitals using CHP systems has grown steadily in recent years. Hospitals using cogeneration are taking advantage of favorable utility rate structures and hedging against rising electricity prices. Because cogeneration uses waste heat to produce thermal energy for heating and cooling, hospitals that use CHP systems are more energy efficient. Reduced emissions lessen their impact on the environment as well. Hospitals are ideal candidates for combined heat and power (CHP) systems. Because hospitals function 365 days a year, 24/7, they require round-the-clock energy. Combined systems enable hospitals to reduce energy costs, improve environmental

performance, and increase energy reliability. Resources saved are often redirected to improve patient care

CONCLUSIONS

Healthcare organizations and manufacturers have made significant strides during the past two decades, in embracing and integrating environmental, social and financial sustainability throughout the industry. Suppliers are rethinking what goes into products and the ways they are made. Hospitals and healthcare systems are increasing recycling using greener cleaning products and providing healthier food options. It is inevitable that sustainability will only continue to grow in importance as the link between environmental and human health becomes stronger. To conclude the emerging growth areas in green management include energy-efficiency and sustainable energy, waste reduction (particularly packaging and Styrofoam), elimination of halogenated flame retardants and other toxic chemicals and sourcing local, healthier food. Hence there is a strong need for Green initiatives in Healthcare sector which will be treated as win-win situation for both hospital management and patients.

REFERENCES

1. <http://ezinearticles.com/?What-is-the-Nature-of-the-Healthcare-Industry?&id=3424018>
2. http://www.kpmg.com/IN/en/IssuesAndInsights/ThoughtLeadership/Emrging_trends_in_healthcare.pdf
3. <http://www.slideshare.net/maxwellranasinghe/nature-scope-and-evolution-of-marketing>
4. http://en.wikipedia.org/wiki/Green_marketing
5. <http://www.beckershospitalreview.com/lists/50-of-the-greenest-hospitals-in-america.html>
6. http://www.epa.gov/airquality/community/guide/healthcare_comm_info.pdf

7. <http://www.ecommunity.com/s/communitys-outh-about-us/going-green>
8. http://www.aashe.org/resources/pdf/food_policy_guide.pdf
9. <http://www.intechopen.com/download/get/type/pdfs/id/32821>
10. <http://www.cleanaircounts.org/lowvocbuildingmaterials.aspx>
11. http://apps1.eere.energy.gov/buildings/publications/pdfs/alliances/hea_chp_fs.pdf

COMPARATIVE ANALYSIS OF CAPITAL STRUCTURE OF SME'S AT NSIC

T. Nakhil, Student Business Management,
Dept. of Business Management,
Malla Reddy College of Engineering,
Hyderabad. E-Mail:

nakhil.thadoju333@gmail.com

T. Pragya Abhishek, Student Business
Management, Dept. of Business
Management, Malla Reddy College of
Engineering, Hyderabad. E-Mail:
sabithatella17@gmail.com

N. Sindhu, Student Business Management,
Dept. of Business Management,
Malla Reddy College of Engineering,
Hyderabad. E-Mail:

sindhunagamalla1996@gmail.com

MD. Imran Sulthan, Student Business
Management, Dept. of Business
Management, Malla Reddy College of
Engineering, Hyderabad. E-Mail:
mohammedimransulthan786@gmail.com

ABSTRACT: One of the most critical areas of the finance function is to make decisions about the firm's capital structure. Capital is required to finance investments in plant and machinery, inventory, accounts receivable and so on. Capital structure is the part of financial structure, which represents long term sources. It is the permanent financing of the company represented primarily by shareholders' funds and long term debt and excluding all short-term credit. To quote Walker, "The term capital structure is generally defined to include only long term debt and total stockholder's investment" (Walker). It refers to the Capitalization of long term sources of funds such as debentures, preference share capital, long term debt and equity share capital including reserves and surplus (retained earnings). According to Bogen, "The capital structure

may consist of a single class of stock, or it may be complicated by several issues of bonds and preferred stock, the characteristics of which may vary considerably". In other words, "capital structure refers to the composition of capitalization i.e., to the proportion between debt and equity that make up capitalization.

1. Introduction

The financing decisions occupy a pivotal role in the overall finance function in a corporate firm which mainly concerns itself with an efficient utilization of the funds provided by the owners or obtained from external sources together with those retained or ploughed back out of surplus or undistributed profits. These decisions are mainly in the nature of planning capital structure, working capital and mechanism through which funds can be raised from the

capital market whenever required. The financing decisions explain how to plan an appropriate mix with least cost, how to raise long term funds, and how to mobilize the funds for working capital within a short span of time. Such a financing policy provides an appropriate backdrop for formulating effective policies for investment of funds as well as management of earnings. It contributes to magnifying the earnings on equity as profitability (expressed as return on equity), to a large extent, is dependent on the degree of leverage in the capital structure. Besides, the valuation of the structure of physical assets depends fundamentally on the financing mix. This makes it necessary for the management of a firm to pursue a well thought out financing policy, which ought to be framed initially, incorporating, among other things, the proportion of the debt and equity, types of debts and own funds to be used and volume of the funds to be raised from each source or combination of sources, to enable the firm to have a proper capitalization. In the absence of this, the firm may face the problem of either over-capitalization or under-capitalization impeding its smooth financial functioning. It is obvious that financing decisions are extremely important for corporate firms. Such decisions, in management parlance, are

termed as capital structure decisions. The term capital structure is used to describe the combination of various sources of finance employed to raise funds. It implies, in other words, that when a firm chooses to use a group of sources in certain proportions the resulting pattern is referred to as capital structure of the firm. The sources of finance could be divided in terms of ownership of funds and duration of funds. The former comprises owned and borrowed funds while the latter includes long, medium and short term funds. Of the two, the duration-based classification is useful for preparing a plan to meet long term as well as short term capital requirements while ownership-based classification is useful for selection of specified sources, determining debt-equity ratio and analyzing impact of capital structure decisions on the earnings on equity. As the ownership based classification suggests that there are two types of sources of finance, namely owned and borrowed funds, the capital structure represents the component relationship between owned and borrowed funds. The owned funds which are also described as equity fund may be defined as funds provided by or belonging to the share-holders. In the opinion of Rajwant Singh and Brij Kumar, the capital structure is made up of the long term borrowings, the preferred

stock and the common stock equity including all related net worth accounts. Similarly Morarka.R observes that the capital structure implies a degree of permanency and normally omits short term borrowings of less than one year but would include other intermediate and long term borrowings. The financial institutions consider only long term sources of finance for computing the debt-equity ratio of corporate firm.

Definition

A mix of a company's long-term debt, specific short-term debt, common equity and preferred equity, the capital structure is how a firm finances its overall operations and growth by using different sources of funds. Debt comes in the form of bond issues or long-term notes payable, while equity is classified as common stock, preferred stock or retained earnings. Short-term debt such as working capital requirements is also considered to be part of the capital structure

Theories of capital structure

Different kinds of theories have been propounded by different authors to explain the relationship between capital structure, cost of capital and the value of the firm. The main contributors to the theories are Durand, Ezra, Solomon, Modigliani and Miller.

The important theories are discussed below:

- Net Income Approach

- Net Operating Income Approach.
- The Traditional Approach.
- Modigliani and Miller Approach.

1. Net Income Approach. According to this approach, a firm can minimize the weighted average cost of capital and increase the value of the firm as well as market price of equity shares by using debt financing to the maximum possible extent. The theory propounds that a company can increase its value and decrease the overall cost of capital by increasing the proportion of debt in its capital structure. This approach is based upon the following assumptions:

- The cost of debt is less than the cost of equity.
- There are no taxes.
- The risk perception of investors is not changed by the use of debt.

2. Net Operating Income Approach.

This theory as suggested by Durand is another extreme of the effect of leverage on the value of the firm. It is diametrically opposite to the net income approach. According to this approach, change in the capital structure if a company does not affect the market value of the firm and the overall cost of capital remains

constant irrespective of the method of financing. It implies that the overall cost of capital remains the same whether the debt- equity mix is 50:50 or 20:80 or 0:100. Thus, there is nothing as an optimal capital structure and every capital structure is the optimum capital structure. This theory presumes that:

- The market capitalizes the value of the firm as a whole.
- The business risk remains constant at every level of debt equity mix;
- There are no corporate taxes.

3. The Traditional Approach. The traditional approach, also known as *intermediate approach*, is a compromise between extremes of net income approach and net operating income approach. According to this theory, the value of the firm can be increased initially or the cost of capital can be decreased by using more debt as the debt is a cheaper source of funds than equity. Thus, optimum capital structure can be reached by a proper debt-equity mix. Beyond a particular point, the cost of equity increases because increased debt increases the financial risk of the equity shareholders. The advantage of

cheaper debt at this point of capital structure is offset by increased cost of equity. After this there comes a stage, when the increased cost of equity cannot be offset by the advantage of low-cost debt. Thus, overall cost of capital, according to this theory, decreases up to a certain point, remains more or less unchanged for moderate increase in debt thereafter; and increases or rises beyond a certain point. Even the cost of debt may increase at this stage due to increased financial risk.

Objectives

The present study aims at endeavoring the following objectives:

- To analyze the pattern of capital structure;
- To assess of long-term solvency; and
- To ascertain the justification for the use of debt.

Capital structure means the mixture of share capital and other long term liabilities. In capital structure, we include equity share capital, preference share capital, debenture and long term debt. Some of companies want to become smart. They slowly decrease equity share capital and increases loan excessively which may be very risky because these company has to pay fixed cost of

interest and has to manage repayment of loan after some time. Some mistake in it, may be risky for its solvency. So, decision relating to capital structure is very important for company

Need for capital structure

For the real growth of the company the financial manager of the company should plan an optimum capital for the company. The optimum capital structure is one that maximizes the market value of the firm. There are significant variations among industries and companies within an industry in terms of capital structure. Since a number of factors influence the capital structure decision of a company, the judgment of the person making the capital structure decisions play a crucial part. A totally theoretical model can't adequately handle all those factors, which affects the capital structure decision in practice. These factors are highly psychological, complex and qualitative and do not always follow accepted theory, since capital markets are not perfect and decision has to be taken under imperfect knowledge and risk.

An appropriate capital structure or target capital structure can be developed only when all those factors, which are relevant to the company's capital structure decision, are properly analyzed and balanced. The capital

structure should be planed generally keeping in view the interest of the equity shareholders and financial requirements of the company. The equity shareholders being the owner of the company and the providers of risk capital (equity), would be concerned about the ways of financing a company's operations. However, the interest of other groups, such as employee, customers, creditors, society and government, should be given reasonable consideration when the company lays down its objective in terms of the shareholders wealth maximization, it is generally compatible with the interest of other groups. The management of companies may fix its capital structure near the top of this range in order to make maximum use of favorable leverage, subject to other requirements such as flexibility, solvency, control and norms set by the financial institutions- The Security Exchange Board of India (SEBI) and Stock Exchanges.

Scope and coverage

The present study is confined to SME. This study is restricted to assess the pattern of capital structure in SME with the help of the ratio analysis. The time period considered for evaluating the study is four years

Research methodology

“Research Methodology is a systematic and objective process of identifying and

formulating the problem by setting objectives and methods for collecting, editing, calculating, evaluating, analyzing, interpreting and presenting data in order to find justified solutions.”

Research design:

The Descriptive research design has been using in this study. Descriptive research studies, which are concerned with describing the characteristics of a particular individual or of a group or a situation. Studies concerned with specific predictions, with narration of facts and characteristics concerning individual, group or a situation are examples of descriptive research studies. In this project, income and balance statements are evaluated to know the state of affairs as it existed during the years 2010-2015. This helps to know the performance of the schemes.

Sources of Data:

There are two sources of data namely:

1. Primary data
2. Secondary data

Primary Data:

Primary data are those which are collected for the first time and so are in crude form. They are original in character. If an individual or an office collects the data to study a problem, the data are the raw material of the enquiry. Primary data are always collected from the

source. It is collected either by the investigator himself or through his agents.

Secondary Data:

Secondary data are those which have already been collected by someone for the purpose and are available for the present study. The choice to a large extent depends on the preliminaries to data collection some of the commonly used methods are discussed below;

In this research, the various sources of secondary data, which are used, are:

- Literature Reviews
- Journals
- Magazines
- Balance sheets

Tools of analysis

The present study is confined to SME. This study is restricted to assess the pattern of capital structure in SME with the help of the ratio analysis. The time period considered for evaluating the study is four years

Limitations

- It requires a small business to make regular monthly payments of principal and interest.
- Availability is often limited to established businesses.
- Since lenders primarily seek security for their funds, it can be difficult for unproven businesses to obtain loans.

- Very complicate and expensive to administer.

REVIEW OF LITERATURE

Study on capital structure has become one of the most significant subjects of interest in modern finance. It has acquired lot of recognition from researchers during recent years. There exists a vast body of literature that has examined the determinants of the capital structure of companies in developed economies. Empirical works based on theories of capital structure has been previously conducted for Australia (Cassar and Holmes, 2003; Johnsen and McMahon, 2005), Spain (Sorgorb, 2005), UK (Hall et al., 2000) and the US (Gregory et al., 2005). However studies on capital structure have been extended to the developing economy contexts only in recent past. The level of development of a country's legal and financial systems has been shown to influence the capital structure of its enterprises (Fan et al., 2006). In economies with relatively weak investor protection, enterprises are more likely to employ short-term debt than long-term debt in their capital structure. This is in contrast to enterprises in economies with active stock markets and

large banking sectors which have more long-term debts (Demirguc-Kunt and Maksimovic (1999). Despite of the growing volume of literature on the determinants of capital structure in the developing economy context is available, there has been limited work conducted on SMEs in these countries. One possible reason for this discrepancy is that SME data is often scarce and sometimes not reliable, since these firms are not officially required to disclose detailed information or to have their reports audited. Some preliminary work has been carried out for Poland (Klapper et al., 2006), Vietnam (Nguyen and Ramachandran, 2006), and Ghana (Abor and Biekpe, 2007). All these studies implies to the fact that the that theories of capital structure developed to explain the financing decisions of SMEs in developed economies are not equally applicable in developing economies, due to their institutional and organizational differences. Many authors suggested the firm size as a potential determinant of capital structure decision.

Thorsten Beck in this paper presents recent research on access to finance by small and medium-size enterprises (SMEs). SMEs form a large part of private sector in many developed and developing countries. While cross-country research sheds doubt on a causal link between SMEs and economic

development, there is substantial evidence that small firms face larger growth constraints and have less access to formal sources of external finance, potentially explaining the lack of SMEs' contribution to growth. Financial and institutional development helps alleviate SMEs' growth constraints and increase their access to external finance and thus levels the playing field between firms of different sizes. Specific financing tools such as leasing and factoring can be useful in facilitating greater access to finance even in the absence of well-developed institutions, as can systems of credit information sharing and a more competitive banking structure.

“Small and medium-size enterprises: Access to finance as a growth constraints, June 2006

-Thorsten

Beck”

Sheridan Titamin and Robert wessel's in this paper analyzes the explanatory power of some of the recent theories of optimal capital structure. The study extends empirical work on capital structure theory in three ways. First, it examines a much broader set of capital structure theories, many of which have not previously been analyzed empirically. Second, since the theories have different empirical implications in regard to different types of debt instruments, the

authors analyze measures of short-term, long-term, and convertible debt rather than an aggregate measure of total debt. Third, the study uses a factor-analytic technique that mitigates the measurement problems encountered when working with proxy variables.

D K Y Abeywardhana states in his study is to investigate empirically the impact of capital structure on firm performance. This study examined the impact of capital structure on firm performance of manufacturing sector SMEs in UK for the period of 1998-2008. The authors hypothesize that there is a negative relationship between capital structure and firm performance. To examine the association, the authors run a Pearson correlation and multiple regression analysis. Results of this study reveals that there is a significant negative relationship between leverage and firm performance (ROA, ROCE), strong negative relationship between liquidity and firm performance and highly significant positive relationship between size and the firm performance. This study concluded that firms which perform well do not rely on debt capital and they finance their operations from retained earnings and specially SMEs have less access to external finance and face difficulties in borrowing funds. It is recommended that firm should

establish the point at which the weighted average cost of capital is minimized and to maintain the optimal capital structure and thereby maximize the shareholders wealth.

About the Company: National small industries corporation (NSIC), AN ISO 9001: 2008 certified company and a govt. of India enterprise has been working to fulfill its mission of promoting, aiding and fostering the growth of micro, small & medium enterprises in the country. Over a period of five decades of transition, growth and development, NSIC has proved its strength within the country and abroad by promoting modernization, up gradation of technology, quality consciousness, strengthening linking with large and medium enterprises and enhancing exports-projects from small industries.

NSIC operation through country wide network of 123 offices and technical centre's in the country. In addition, NSIC has 48 training cum incubation centers & with a large professional manpower; NSIC provides a package of services as per the needs of MSME sectors. To manage operations in African countries, NSIC operates from its office in Johannesburg, South Africa.

This cell provides a single point contact to collect database relating to bulk buyers in government, public and private sectors, the detail of exporters, international buyers and technology suppliers. Besides, the information on trade leads and products wise buyers and sellers as well as database relating to DGS & D suppliers with prices of their products, shall also be provided by this NSIC marketing intelligence cell to help MSMEs in getting appropriate information at one place and at the right time which will enable MSMEs in enhancing their ability to gauge and be at par with the global demand.

MSMEs need to be provided with market related information, new avenues for their products, new business practices, both domestically as well as overseas. MSMEs are handicapped because of non availability of information pertaining to central government / state government policies and programs, the support schemes and services of central /state PSUs availability of new technologies, international and national tenders, opportunities available in various countries for products and project exports. The NSIC marketing intelligence cell will integrate the available information at one strengthen their efforts in focused manner.

DATA INTERPRETATION AND ANALYSIS

Ratio analysis:

Ratio analysis is one of the oldest methods of financial statements analysis. It was developed by banks and other lenders to help them choose amongst competing companies asking for their credit. Two sets of financial statements can be difficult to compare. The effect of time, of being in different industries and having different styles of conducting business can make it almost impossible to come up with a conclusion as to which company is a better investment. Ratio analysis helps creditors solve these issues.

Ratio analysis is a tool that was developed to perform quantitative analysis on numbers found on financial statements. Ratios help link the three financial statements together and offer figures that are comparable between companies and across industries and sectors. Ratio analysis is one of the most widely used fundamental analysis techniques.

However, financial ratios vary across different industries and sectors and comparisons between completely different types of companies are often not valid. In addition, it is important to analyze trends in company ratios instead of solely emphasizing a single period's figures.

What is a ratio? It's a mathematical expression relating one number to another, often providing a relative comparison. Financial ratios are no different—they form a basis of comparison between figures found on financial statements. As with all types of fundamental analysis, it is often most useful to compare the financial ratios of a firm to those of other companies.

Financial ratios fall into several categories. For the purpose of this analysis, the commonly used ratios are grouped into four categories: activity, liquidity, solvency and profitability.

Following ratios have been used to analyze and interpret the result of the study:

- Debt – Equity ratio.
- Solvency ratio.
- Interest coverage ratio.
- Earnings per share ratio.

5.2 Computation of ratio

5.2.1 Debt-equity ratio

The main object of calculating the debt-equity ratio is to measure the relative interest of owners and creditors in the firm. From the creditors' point of view, it measures the extent to which their interest is covered by owned funds. A standard debt-equity norm for all industrial units is neither desirable nor practicable. Different standard debt-equity ratios are used for different industry groups.

However, in less developed countries, such standards cannot be accepted. Therefore, this ratio depends upon industry, circumstances, and prevailing practices and so on. The generally accepted standard norm of debt-equity ratio is 2:1. The ratio may be calculated in terms of the relative proportion of long term debt i.e. borrowed funds and shareholders' equity i.e. net worth. This is a vital ratio to determine the efficiency of the

financial management of business undertakings (Roy Chowdhary).

Debt - equity ratio is calculated by using the following formula:

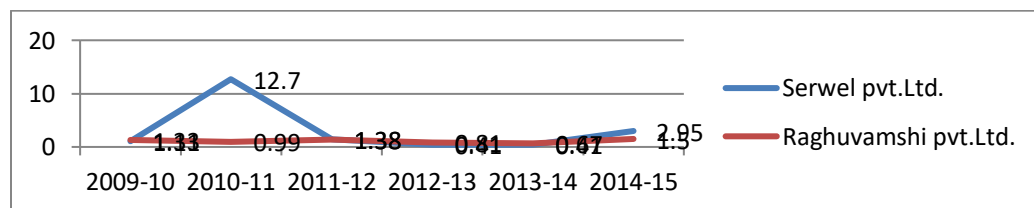
$$\text{Debt - Equity Ratio} = \frac{\text{Long Term Debt}}{\text{Net Worth}}$$

The debt - equity ratio of Serwel private Limited and Raghuvamsi private limited is presented in

Table -5.1

| Serwel private Ltd. | | | | Raghuvamsi private Ltd. | | | |
|---------------------|-----------------|-------------------|-------|-------------------------|-----------------|-------------------|-------|
| Year | Debt (in Rs) | Equity (in Rs) | Ratio | Year | Debt (in Rs) | Equity (in Rs) | RATIO |
| 09-10 | 90194572 | 80883376 | 1.11 | 09-10 | 25361218 | 19017075 | 1.33 |
| 10-11 | 18201951 | 142525426 | 12.7 | 10-11 | 20800000 | 20915100 | 0.99 |
| 11-12 | 28083967 | 20292436 | 1.38 | 11-12 | 28083967 | 20292436 | 1.38 |
| 12-13 | 44902047 | 269394812 | 0.41 | 12-13 | 42042434 | 51438286 | 0.81 |
| 13-14 | 87183784 | 208336107 | 0.41 | 13-14 | 39409580 | 58572104 | 0.67 |
| 14-15 | 288095383 | 97369359 | 2.95 | 14-15 | 47741624 | 31786007 | 1.5 |

5.1(a) Graph showing the variation of ratios between serwel and raghuvamsi



5.1(b) Interpretation:

- Table 1 shows Debt-Equity ratio of Serwel pvt. Ltd. And Raghuvamshi pvt.Ltd. The Debt-Equity ratio is calculated by dividing the long term debt and Net worth.

- It is evident that long term debt of the company serwel decreased remarkably from Rs.90194572 in 2009 to 87183784 in 2014 and again a rapid increase of Rs.288095383 in 2015. Net Worth had a gradual rise of Rs.80883376 in 2010

and a rapid fall in 2014 by Rs. 26939481 and again rose by Rs. 97369359 in 2015. In other words Net Worth is fluctuating in the entire study in serwel electronics pvt.Ltd.

- It is evident that long term debt of the company raghuvamshi increased remarkably from Rs. 25361218 in 2010 to Rs.47741624 in 2015. Net worth is also rapidly increasing from Rs.19017075 in 2010 to Rs.31786007 in the year 2015.
- Debt-Equity ratio had varied from the higher of 1.3 times in 2010 to the lowest 2.9 in 2015. The ratio is well slight above than the standard ratio of 2:1. It means that the debt employed by the company

was slight high from the point of view as the standard ratio. However, the interest of the debt-holders of the company was well protected.

5.2.2 Solvency ratio

Solvency is the term which is used to describe the financial position of any business which is capable to meet outside obligations in full out of its own assets. So their ratio establishes relationship between total liabilities and total assets.

Solvency ratio is calculated by using the following formula:

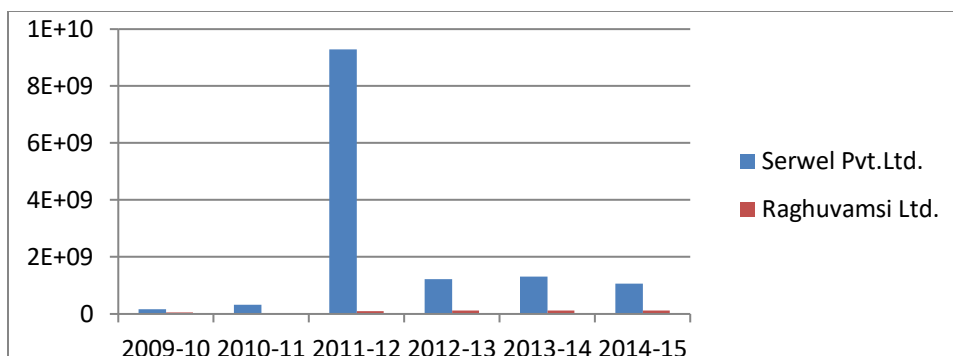
Solvency ratio = total liabilities / total assets.

The solvency ratio of Serwel private Limited and Rraghuvamshi private limited is presented in

Table – 5.2

| SURWELL PVT. LTD. | | | | RAGHUVAMSI PVT. LTD. | | | |
|-------------------|-------------------------------|--------------------------|-------|----------------------|----------------------------|--------------------------|-------|
| Year | Total liabilities (in Rs.) | Total assets (in Rs.) | Ratio | Year | Total liabilities (in Rs.) | Total assets (in Rs.) | Ratio |
| 09-10 | 172610403 | 172610403 | 1 | 9-10 | 57368776 | 5736776 | 1 |
| 10-11 | 327250093 | 327250093 | 1 | 10-11 | 8495300 | 8495300 | 1 |
| 11-12 | 927662724 | 9277662724 | 1 | 11-12 | 102138072 | 102138072 | 1 |
| 12-13 | 1225470915 | 1225470915 | 1 | 12-13 | 116767188 | 116767188 | 1 |
| 13-14 | 1311264590 | 1311264590 | 1 | 13-14 | 114422012 | 114422012 | 1 |
| 14-15 | 1074191635 | 1074191635 | 1 | 14-15 | 110996369 | 110996369 | 1 |

5.2(a) Graph showing solvency ratio of serwel and raghuvamshi pvt.Ltd.



5.2(b) Interpretation:

- Table 2 shows solvency ratio of Serwel pvt. Ltd. And Raghuvamshi pvt.ltd. Solvency ratio is calculated by dividing total liabilities by total assets giving 1 as ratio from the year 2010 to 15.
- Total assets and liabilities had a gradual rise in 2011 of Rs.172610403 and a rapid fall in 2015 by 1074191635 in serwel electronics and also it is rise from Rs.5736776 in 2010 to Rs.110996369 in 2015 in raghuvamsi electronic Pvt. Ltd.In other words Net Worth is fluctuating in the entire study.

5.2.3 Interest coverage Ratio = EBIT/interest

Interest Coverage Ratio, sometimes called Times Interest Earned Ratio and the abbreviation TIE is used. It is a term that indicates how many times the total income covers interest payments. The interest coverage indicates the size of safety cushion for creditors. The indicator is one of the balance sheet debt ratios (of long-term financial stability).

Calculation: Interest Coverage Ratio = EBIT / Total Interest Payable

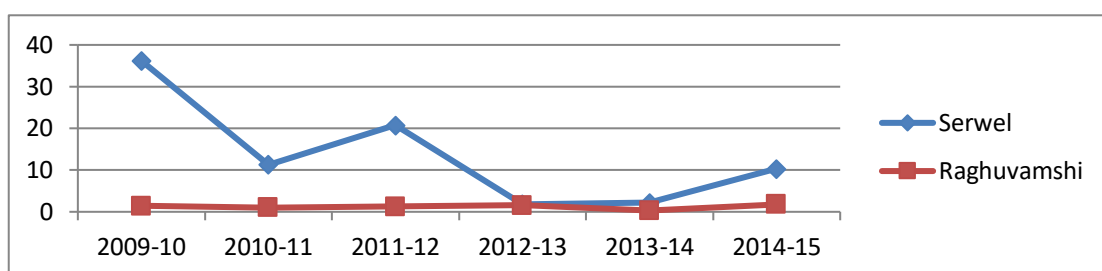
The interest coverage ratio of Serwel private Limited and Rraghuvamshi private limited is presented in

Table - 5.3

| Serwel Pvt.Ltd. | | | | Raghuvamsi Pvt.Ltd. | | | |
|-----------------|---------------|-------------------|-------|---------------------|---------------|-------------------|-------|
| Year | EBIT (in Rs.) | Interest (in Rs.) | Ratio | Year | EBIT (in Rs.) | Interest (in Rs.) | Ratio |
| 09-10 | 36095913 | 9945333 | 36.2 | 09-10 | 5477108 | 3839642 | 1.42 |

| | | | | | | | |
|-------|-----------|----------|-------|-------|----------|---------|------|
| 10-11 | 71508287 | 16491369 | 11.32 | 10-11 | 3689174 | 3515770 | 1.04 |
| 11-12 | 89018291 | 4294877 | 20.74 | 11-12 | 5665064 | 4580779 | 1.23 |
| 12-13 | 111747738 | 60437125 | 1.85 | 12-13 | 10277314 | 6699981 | 1.53 |
| 13-14 | 152821207 | 69432605 | 2.26 | 13-14 | 10736974 | 5462317 | 0.31 |
| 14-15 | 951254340 | 91997441 | 10.32 | 14-15 | 8524233 | 4841782 | 1.76 |

5.3(a) Graph showing variation in EBIT ratios in serwel and raghuvamshi electronics pvt.Ltd.



5.3(b) Interpretation

- Table 3 shows EBIT ratio of Serwel pt. Ltd. And Raghuvamshi pt. ltd. EBIT ratio is calculated by dividing EBT by interest from the year 2010 to 2015.
- EBIT had a gradual rise in 2011 of Rs.71508287 and increasing gradually to Rs.951254340 in 2015 in Serwel electronics Ltd. In the same way RAGHU VAMSI company has rise from Rs.5477108 in 2010 to Rs. 8524233. In other words EBIT has been increasing from past few years.

- Graph shows that Serwel Company has decreased EBIT ratio from year 2010 of 36.2 to 2015 of 10.3 where as raghuvamshi company has increased EBIT ratio from 2010 of 1.4 to 1.7 in 2015.

5.4 Earnings per share

The portion of a company's profit allocated to each outstanding share of common stock. Earnings per share serve as an indicator of a company's profitability.

Calculated as = **Earnings after tax**

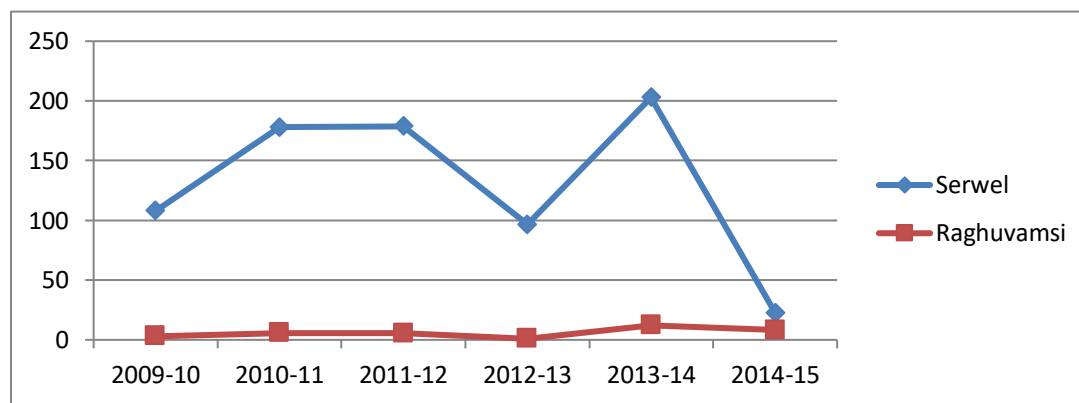
No. of shares

The EPS of Serwel private Limited and Raghuvamsi private limited is presented in table

Table – 5.4

| Serwel pvt.Ltd. | | | | Raghuvamshi pvt.Ltd. | | | |
|-----------------|--------------|---------------|-------|----------------------|--------------|---------------|-------|
| Year | EAT (in Rs.) | No. Of shares | Ratio | Year | EAT (in Rs.) | No. of shares | Ratio |
| 09-10 | 20161351 | 1863300 | 108.2 | 09-10 | 590475 | 190170.7 | 3.1 |
| 10-11 | 33191254 | 186330 | 178.1 | 10-11 | 1160252 | 202925.3 | 5.7 |
| 11-12 | 57590554 | 321920 | 178.8 | 11-12 | 113017 | 201795.1 | 5.6 |
| 12-13 | 40278831 | 417370 | 96.5 | 12-13 | 246608 | 257191.4 | 0.9 |
| 13-14 | 84683957 | 417370 | 202.8 | 13-14 | 3566909 | 292860.5 | 12.1 |
| 14-15 | 22058556 | 973693.59 | 22.6 | 14-15 | 2544574 | 317860 | 8.05 |

5.4(a) Graph shows EPS ratio of serwel and Raghuvamashi pvt.Ltd.



5.4(b) Interpretation

- Table 4 shows EPS ratio of Serwel pt. Ltd. And Raghuvamsi pvt. ltd. EBIT ratio is calculated by dividing EAT by no. of shares. EPS is calculated here from the year 2010 to 2015.

- EAT had a gradual rise in 2010 of Rs. 20161351 and is being increasing in 2015 by 22058556 in serwel electronics and in Raghuvamsi company Rs. 590475 in 2010 rose to Rs. 2544574 in 2015. In other words EAT has gained profits in entire study.

- Earnings per share ratio is 108.2 in 2010 and has increased to 22.6 in 2015 in serwel and 3.1 in 2010 and raised to 8.05 in 2015 in Raghuvamsi company.

FINDINGS, SUGGESTIONS & CONCLUSIONS

FINDINGS

- The average ratio of debt and equity is better in serwel as compared to raghuvamsi electronics. It shows that serwel is more using debt financing in its capital structure pattern as compared to raghuvamsi electronics. It implies that company is adopting NOI approach of capital structure. The more use of debt financing in this industry is increasing the value of the firm and minimising the cost of capital resulting in overall wealth maximisation of shareholders.
- It has been found from the study that average of debt equity ratio of serwel in 2014-15 i.e. 2.97 where as the average of debt equity ratio in Raghu vamsi pvt.Ltd. is only 1.5 as per the standard norm of 2:1 of debt equity ratio for the industries.
- It has been found from the study that the average solvency ratio is

maintained as 1:1 from the last five years in both raghuvamsi and serwel electronics.

- The average EBIT ratio of serwel is better compared to Raghuvamsi in past few years and the ratio has been declined from 36.2 in 2010 to 10.6 in 2015, where as raghuvamsi is maintained with 1.4 in 2010 to 1.7 in 2015.
- The EPS of Serwel private Limited is far better compared to Raghuvamsi private limited in the year 2014-15 is 22.6 and 8.05 respectively.
- The rising overall average of trend of debt and equity in case of both the SME's this implies that these industries have access to market for both equity and debt financing. Initially, companies were raising maximum debt fund to reduce the cost of capital but which resulted in increase in financial risk. So they shifted to equity financing also. They are maintaining a trade-off between debt and equity.

SUGGESTIONS

- The SERWEL and Raghuvamsi industries should improve their debt equity ratio as it is not as per the standard norm. These industries are

not using as much debt as expected from them.

- The average ratio of debt and equity is not better in raghuvamsi industry as compared to serwel industry. The Raghuvamsi industry should pay more attention towards their reserves and surpluses, because due to this they are not getting higher profits. They should more focus towards debt financing to maximise the wealth of shareholders.
- Both the SME's are advised to maintain a trade –off between debt and equity in future also so as to achieve the objective of optimum capital structure.
- The solvency ratio of Serwel private Limited and Raghuvamshi private limited presented is good and if maintained in the same manner would be profitable.
- The EPS of Serwel private Limited and Raghuvamsi private limited presented shows that serwel has better yields in as profits, if Raghu vamshi shareholders investment is to be increased in coming years then this would excellent opportunity for raghuvamsi to maximize the profits.

- The interest coverage ratio of serwel is great compared to raghuvamsi capital structure of Raghuvamsi is to be increased for good profit returns.

CONCLUSION

Results of the present empirical study revealed that long term funds had apportioned nearly two-third of total funds when compared to short term funds in the SMEs selected for the study. The firms had utilized more owned funds than borrowed funds. The SMEs had shown an inclination in strengthening long term funds consisting of both shareholders' funds as well as long term borrowed funds in order to finance its assets requirement. The financial risk of the firms is comparatively low since it mostly depended on equity financing. The mobilization of the debt funds by the company means that it could raise the external funds to bring the optimum capital structure i.e. minimize the cost of capital and maximize the share value of the firm. This may due to the tax deductibility of the interest paid on debt. Thus the benefits of financial leverage can be reaped for improving the financial performance of the firm. The behaviour of the interest coverage ratio was unpredictable. The interest charges are fully covered by the earnings before interest and taxes. A higher interest coverage ratio is desirable, but

too high ratio indicates that the firm is very conservative in using debt, and it is not using debt to the best advantage of the shareholders. Hence, it is suggested that SMEs shall tap the debt funds optimal to maintain a balanced capital structure. The financial performance of a firm is greatly influenced by its capital structure. An optimal capital structure maximizes the shareholder's wealth with best combination of debt and equity mix thereby minimizing the cost of capital

BIBLIOGRAPHY

References

1. Khan M Y., Financial Services, Tata McGraw Hill Education Private Ltd. Fifth Edition, 2010.
2. I M Pandey., financial management, vikas publishing house Pvt Ltd.,Tenth edition,2010.
3. Gordan E ., Natrajan K., Financial markets and services, Himalaya publishing house,2013
4. Jean J. Chen-Determinants of capital structure of Chinese-listed companies., Journal of business research,2004
5. Thorsten Beck, Small and medium-size enterprises: Access to finance as a growth constraints, Elsevier publications, Journal of business research.2006
6. Sheridan Titman and Roberto Wessel's., The Determinants of capital structure choice,Weily Publications,1998.
Stable URL:
<http://www.jstor.org/stable/2328319>
7. Kenny Bell and Ed Vos., SME Capital Structure: The Dominance of Demand Factors,SSRN,August,2009.
Stable URL:
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1456725
8. D K Y Abeywardhana, Impact of Capital Structure on Firm Performance: Evidence from Manufacturing Sector SMEs in UK,WBI conference., November 2015.
Stable URL:
<http://www.wbiworldconpro.com/pages/paper/melbourne-conference-2015-november/3392>

Work and Leisure among the agrarian societies

Divya Teja Pasupuleti , Senior Research Fellow, Anthropology, University of Hyderabad.
email:divyateja2323@gmail.com

Abstract:

Since the period of industrialization, the concepts of work and leisure have become pioneer to understand the working system among different social groups and organizations. Though the concepts of work and leisure differ among industrialized and non industrialized societies, the growth of industries and urbanization have made the concepts more complex. This paper aims to understand and analyze the concepts of work and leisure among the agrarian societies in the contemporary social setups.

Introduction:

Work and leisure has become two of the pioneer concepts that were concentrated from the recent past both in academics and non academics. It was from 1970s, many scholars from U.S.A and U.K concentrated and focused on planning the future with the increase in the growth of leisure researchers. With the beginning of industrialization, concepts of work and leisure were given high regard in understanding work culture among the people. The literary works of nineteenth century concentrated on the struggles between the labour masses and dominating capital world regarding work and leisure time during industrialization and urbanization. The studies of work took its initial concern from the capitalistic domain. Many definitions on work and leisure were based on the concepts relating to industrialized societies. But it is a fact that the definitions which were prescribed by western scholars are not applicable to non western societies and they believe that the concept of leisure and work are similar and universal to many other societies. It is evident that very less amount of work and focus were given to the understanding of concepts of work and leisure among the non western societies by the scholars of work and leisure studies. It is believed by many scholars that non industrialized societies pass through the phase of globalization and urbanization which ultimately results in industrialized phase of social setup. Nevertheless, the fact that the concept of work and leisure among the non western societies are not similar and some times overlap with each other. This is because

of the lack of clear division between work and leisure among non industrial societies, that is, between the time spent on work for earning livelihood and time spent on other activities. Some times, the time spent on other activities can also be viewed as time spent on earning a livelihood or 'working' among the non industrialized societies. As per Rojek, (2000:115) "Human culture did not begin with the need to work, it began with language, dancing, laughing, acting, mimicking, ritual and a variety of play forms". This explains that the leisure activity was born in the lives of humans way earlier than the emergence of concept of work. But in the contemporary western societies, work is viewed as a progress of human development and the progress at both individual and social level. Development, both at individual and societal level leads to procurement of materialistic artifacts which defines the progress of human life. But it is always the major task for humans to achieve a balance between the material needs, work and leisure. In spite of the major task of achieving satisfactory balance, globalization and urbanization have tremendous effect on creating societal imbalance. Though the concepts of work and leisure are overlapping one another among the non western societies, it is visible that distinction and discrimination always exists within the social setups among these groups.

Leisure and Work in rural villages:

Leisure in India has always been aligned with rich cultural heritage. The leisure activities in India have evolved with the influence of folk and classical heritage which have a long history and distinct forms. Based on the descriptions in the literature in epics and social histories, it is evident that the leisure activities have been often distinguished between the high class of leisure and low or mundane class of leisure. The high class of leisure was always related with classical forms of leisure and the lower class or mundane class was related with folk forms of leisure activities. Leisure activities in India includes singing, dancing, visiting pilgrimage centers (an ancient tradition of tourism), playing games, participating in religious festivals, attending cultural functions, picnics, social

gatherings etc are some of the major activities that have been existed as leisure activities. It is evident that certain factors like economic status, social position, education, gender, age etc influence the preference and participation in such leisure activities. Of all the various leisure activities, games and sports are the major pastime activities that were played by both children and adults in the villages. There are different types of games, some of which could be called as sports that are played in villages. Certain games are significant to certain regions depending on the social and cultural significance of the game. Though the leisure activities seem to be available to every one in the society, it is understood that only a certain privileged section of the people enjoy the concept of leisure.

Fieldwork conducted by the researcher at a village in coastal Andhra Pradesh in 2016 made way for a better expansion and analysis of the concepts of work and leisure in agrarian societies. Through the ethnographic data that was collected from the fieldwork, it has been understood that the dominating community in that village belongs to the caste of Reddy who are landlords. Attempts are made to understand the perception and implications of work and leisure among the community of Reddy. Similarly, a lower community Maala, who are agrarian laborers, are considered for the purpose of understanding and analyses. People of Maala community are of a low income profile and work for daily wages at the Landlords. Their work involves a lot of physical toil and they are the people who actually work on ground to result in the successful agricultural yield. The landlords here are affluent and make the people of lower caste communities work for their agricultural fields. Other than the occasional supervision, checking of the accounts and planning, there is no physical toil involved in the work of the landlords. They are, hence, with a lot of accessibility to leisure time and involve in various activities all through the day. On the other hand, the Maala workers at the fields work for a minimum of six to eight hours in the fields in hot sun and have lunch in the field itself. Their day starts at around seven in the morning and continues till evening. Sometimes it is observed that some of these workers remain at the fields to safeguard the crop and the yield during the nights. Despite such variations in their lifestyles both the landlords and the workers spend time towards leisure activities, though the attributes of such leisure are extremely different and the perception of the same by themselves and the rest of the society are also varied. When a Maala worker spends his time in a leisurely activity, it is majorly towards smoking, sitting and chatting with other workers in the fields, gossips, drinking rice beverage (Kallu), playing small board games etc. In the community of Reddy, the leisure time activities include spending time with the higher community people in the name of social networking, watching television, discussing politics with the fellow community people, drinking alcoholic beverages etc. Though both the

communities do similar activities during leisure times, the perception of leisure by the people is diverse. The time spent on leisure activities by the Maala workers is often criticized by the Reddy communities as a futile time waste activity or addiction or valueless chatter which doesn't make any sense.

When the Maala workers are asked about the leisure time activities, they said that they do not have any leisure time at all. This explains that any work gaps that they go through during the day is not perceived as a leisure time by them. They further said that flocking together for a chit chat is an attempt to understand the world better and to gain the essential support of the fellow men. They reason drinking rice beverage as a relief from their body pains and fatigue because of continuous physical strain at the fields. A game played at the field is perceived as a brief relief while they say that they still continue to keep an eye on the field when they do it. This explains the meaning of leisure among the Maala community people as different when compared to the one that was explained by the western societies. On the other hand, when the people of Reddy community are asked about their leisure time activity, there is a sense of pride that exists in their talk to explain about various things that they do as leisure time activities. They tend to expect the listeners to appreciate their hobby instincts, taste for aesthetics and their humble attitude despite their profound affluence. The instinct to bet in games such as rooster fights and poker games is boasted as an adventurous way of living life, rightfully lived as they own the affluence but don't value its possession. They comment on the leisure time chit chat of the lower communities as the illiterate and unknowledgeable chatter and advise the working communities to focus on their work for the improvement of their lives. They further claim that their affluence is because of their smart hard work and discipline though it is most of the time properties descended from their previous generations.

In the field village, a sample of 200 people belonging to Maala and Reddy communities was studied focusing on the employment and unemployment thus prevailing (Table: I). It is visible that the number of male workers in agriculture sector is more than females. The Maala community works as agriculture labour at the agriculture fields where as Reddy community people own the lands of agriculture. In the recent periods, there is a shift of higher communities moving from agriculture industry to other industries like business, financing, shifting to urban cities for private jobs and Government employment etc. There is also a shift among the lower community people from agriculture labour to construction works, brick industry, factories, migration to urban cities for the posts of watchmen, labour contracts, etc. This shift from villages to cities and towns, in fact, is not providing lower communities to progress through their existing economic or social status. The work

among the lower communities that is available at the urban setups is considered as a lower level of work among the people living back at the villages.

Table I. Employment by Gender.

| Community | Employed | | | | Unemployed | |
|--|-------------|----|-----------------|----|------------|----|
| | Agriculture | | Non Agriculture | | | |
| | M | F | M | F | M | F |
| Reddy | 78 | 10 | 36 | 4 | 14 | 58 |
| Maala | 87 | 50 | 15 | 10 | 20 | 18 |
| M- Male. F- Female. (Total Sample Size 400 people) (200 from each community) | | | | | | |

Women, work and Leisure:

It is a general perception of male members of all the communities universally in the village that the work of any sort done by women are trivial and are in no condition at par with the males do in the society. The work done by women at homes is not considered as work at all. Raising of children, cooking, taking care of the family members and elders, participating in social gatherings and family bondings etc are all not many times are not considered as work as they do not yield money. This happens to women across all the communities irrespective of their higher or lowers economic or social status. Men sometimes describe the condition of women as a day full of leisure despite her tightly packed day schedule with the handling of many responsibilities and activities. This is reflected in the wages that are paid to the women as well. Despite the clear legal guide lines that stipulate equal pay to men and women, the wages paid to the women are lesser than what are paid to the men. Equal Remuneration Act, 1976 guarantees equal pay to both men and women in the country. But, even then, this way of thinking is further supported by saying that men work for a higher or better yield because of their physical strength. In fact, in a true condition there is no difference in the quantity of work or yield and sometimes women are reputed to work the whole day with minimum time spent towards relaxation. Men are observed to take breaks during the work for smoking and tea, while women generally take breaks when they want to go to toilet, have lunch or take care of their child.

Women of higher communities do not go to work. Not working is not treated as an inability or lapse. Further, it is considered by the men and women of the higher communities that their women going to work is a stigma to their status and that their affluence does not necessitate women to go to work. Though the women have any hidden interests to work for themselves, such interest is suppressed by the rest of the members of the families of the higher communities. The idea of working for themselves in women itself is killed at a very early age as it has become a part of the culture of the village. But in the case of women of the lower communities, work of women is treated as an essential support to the families. Men in lower communities also support women working and earning for the sake of supporting their families. In some cases, it is also observed that the men completely depend on the earnings of the women who go, work and bring the payment.

Leisure is a product of Freedom and Independence. Freedom and independence are scarce for women in patriarchal societies. The stringent social and cultural setups in the rural societies generally restrict the women from acting independently or emancipating themselves from the tight chains and cuffs of the restrictive lifestyle. Women are often in the fear of being criticized by their own families and societies and hence don't participate in expressing their ideas of freedom and thought. The women of higher caste communities are encouraged to refrain from the concept of leisure and any activity that is dear to heart as they fancy. The idea thus imposed again by the society on a women is that they should spend their leisure time in pious activities such as worshipping God or visiting a temple only. Along with the concept of worship, activities like embroidery, learning musical instruments, learning to cook various recipes etc; which cater to the advantage of the men and family are considered to be meaningful leisure activities. Playing indoor games, watching television, chit chatting, activities that require woman to step out of the house are treated as trivial activities. In the case of lower community women, freedom and independence are integral parts of their lifestyle. The freedom thus brought in by the social setup and the economical necessity of the lower community women offers an ease to do any leisure time activity as they wish, though they are considered trivial. The social constraints that are prevailing over the rest of the society are implemented in a lesser magnitude and intensity because of a necessity driven, freedom oriented, independent lifestyle of the lower community women. This situation is made use by the lower community women to escalate in terms of the ability to understand and maneuver through any situation as exposure to multiple conditions always builds experience. Influence of education and urbanization is also visible on the social setup. The women who go to the village from an urban setup with the tag of being well educated is not considered of any low look even if she participates in any

of the restricted activities and further all the socially restricted activities are in fact demonstrated in pride to the women by men themselves. This emphasizes that education along with caste and class, influences the status of women positively when they are educated despite all the social restrictions.

Conclusion:

Among the non industrialized societies, the concept of work and leisure differs with the concept of western societies. The social and cultural setups of the people in the villages influence the concepts of work and leisure in the non western societies. India, being a caste and class driven society, the understanding of work and leisure gets influenced by the hierarchical setup that is prevailing over a long period of time. Though work and leisure are two different entities, one has to study the two concepts as a single entity, such that it helps in understanding the pattern of work and leisure among these societies. Work, though is defined as something which is serious, result oriented, not play etc differs from its stereotypic explanation and reflects a much complicated concept in relation to the social setups. Leisure is always viewed as a time pass and not a serious activity. But the meaning of leisure differs when compared with the concept that is shared among men and women from the same society. What is leisure for one may not be a leisure for other and thus, it is always better to understand what leisure is in a complete sense by comparing it with the concept of work and its social and cultural dimensions.

Reference:

Rojek, C. *Leisure and Culture*. London: Macmillan, 2000.

John T. Haworth and A. J. Veal. *Work and Leisure*. New York: Routledge. 2004.

Dynamic Construal of Experience - Exploitation of Human Memory Functions for the purposes of Advertising - Experiential Learning may be an illusion.

Sangeeth Konala, Graduate Student - MBA, Institute of Aeronautical Engineering -Dundigal, Hyderabad.
email: sungeeth@gmail.com

Abstract: In the recent times, advertising of products and services has taken the form of subjecting consumers to an experiential learning curve instead of trying to directly impact the consumers with the mere visibility of the brand, celebrity endorsement or consumer testimonials. Blogs that are setup to sell a particular product are increasingly being masked as the places where genuine comparisons of the entire product line in the market are published. Consumers are often engaged in the task of reading through the entire material or browsing through a series of videos to discover the intended product as the best which could influence their purchase decisions. Such decision a consumer arrives at itself could be a programmed outcome of the subliminal advertising intentions of the publisher as the consumers tend to believe in what they learnt or discovered after their own learning attempts than in any direct endorsement or testimonial. Further, human memory itself has the trait of implementing retrievals through the hybrid processing of fragments of available information stored in the past and the information of the current context and environment in which the subject is at the time of retrieval. This emphasizes that the the judgment of consumers after experiencing a product could also be altered with the influence of a hybrid advertising strategy. Hence experiential learning which is often thought to be the most credible way of understanding a product itself could be a programmed illusion created by a well-planned advertising strategy. The paper attempts to analyse how the purchase decisions of consumers are being influenced by subliminal ways of delivering product information in the masks of knowledge or information dissemination and experiential learning and how post experiential construal as well could become influenced through strategic advertising.

Conceptual Basis : Retrieval of an experience from a human memory is always a hybrid process in which the fragments of memory from various regions of the brain are interwoven and

developed in the ambience of the current context and environment which include the information fed to the subject during or just a few moments before the commencement of the retrieval process. "Post experience information is most likely to distort when it is very similar to, or conjures up images which may be mistaken for, the actual experienced information as said by Braun, K. A. (1999: 4)". When the decision making mechanism of the human thought process is reviewed, it could be understood that memory and retrieval of experience-related memories is important to arrive at a judgment or decision especially when dealing with an entity which has become part of the subject's experience before.

Experiment Design

The experiment has been conducted in two phases. We made sure that the subjects are unaware of the beverage in discussion before by making them answer to a questionnaire in which we included brand names of various types of products and asked them to tick the brands that they are familiar with. All the subjects that are selected for the experiment have not mentioned any familiarity with Tonic water , the brand that we included in the list of beverage brands. All the subjects are in the age group of 20-30. For the purpose of strengthening the outcomes, the beverage that was selected was tonic water which is a controversial carbonated water beverage as it leaves a bitter taste on the tongues of its consumers when they have it. Tonic water originally relies on its brand schema designed around Quinine, the base ingredient that causes the bitter taste. Quinine was originally consumed in the past as a prophylactic against malaria. Quinine glows in the ultraviolet light in all fluorescence and this made Tonic Water an interesting ingredient to make mock tails and cocktails in pubs around the world.

A total of 36 people participated in the experiment with 18 taken as experimental group and 18 taken as control group. The experiment was conducted at Goa, Varca beach.

Phase I

In Phase I, we offered 5 types of beverages in 30 ml containers to each of the subjects and requested them to taste each of them and rate their experience of the taste on a printed sheet in which we had the following

1st Beverage

(Select a minimum of two options to describe your experience of taste)

() Delicious () Exotic () Classic () Stylish () Nice Fragrance
() Routine () Gross () Smells like medicine () Digestive Drink
() Cannot finish drinking ()

In a tabular format, we have the same question asked for all the five beverages individually. For the purpose of keeping their experience distinct, we purposefully added only tonic water which is of a distinct taste and didnt add any controversial tasting beverages in the rest of them. The following are the beverages that are given to them.

1. Roohafzah 2. Tropicana Pineapple Juice 3. Tonic Water 4. Tropicana Litchi Juice 5. Mountain Dew

Between Phase 1 and Phase 2 we made sure that there is a considerable gap of 6 hours. During these six hours, both the groups had the best of activities filled with all the fun and frolic. The experiment was conducted in a resort and hence there was scope for ample activity.

Phase 2

In Phase 2, The experimental group was subjected to a lot of marketing material about Tonic water and to amplify the effect we utilised the quinine's medicinal usage in the past as a treatment against malaria in the marketing material and further amplified it by saying that the ingredient is of Indian Origins (This has been told to raise the feelings of nationalism to amplify the advertising effect). We also included in the marketing material that the drink is best to be had after dinner and is known to have the effect of increased metabolism in the body for better digestion. We also told them a story through a mock video that every year India is exporting large amounts of quinine for the purpose of making tonic water to Europe and other Western countries.

In Phase 2, the control group were not subjected to any marketing, though they spent their time just like the experimental group in all the fun driven activities at the resort. Both the control group and experimental group were given a large tumbler of Tonic water (300 ml)The experimental group were offered the drink in a fully branded tin , while the control group received it in a disposable tumbler. Now the drink was asked to be rated using the same tabular format. We only added a blank to comment below the table to test if there is anyone who wants to say that it tasted like one of the drinks they tasted that morning. To both the groups, it was told that tonic water is a drink that is newly being launched.

A total of 36 people participated in the experiment with 18 taken as experimental group and 18 taken as control group. By the end of the experiment these are the tabulated results.

Table I. Response of Control Group (A) to various beverages in Phase I

| Phase I Control Group (Group A) | | | | | | | | | | |
|---|--------------------------------------|---|----|---|----|----|----|---|---|----|
| | Ticked Options Describing Experience | | | | | | | | | |
| Drink | D | E | C | S | N | R | G | M | D | X |
| Roohafza | 9 | 8 | 5 | | 14 | | | | | |
| Tropicana Pineapple | 18 | 4 | 4 | 1 | | 8 | 1 | | | |
| Tonic Water | | | 1 | | | | 11 | 9 | 4 | 11 |
| Tropicana Litchi Juice | 15 | 6 | | 1 | 8 | 6 | | | | |
| Mountain Dew | 2 | 2 | 12 | 3 | | 17 | | | | |
| (D) Delicious. (E) Exotic. (C) Classic. (S) Stylish .(N) Nice Fragrance. (R) Routine. (G) Gross. (M) Smells like Medicine (D) Digestive Drink. (X) Cannot Finish Drinking | | | | | | | | | | |

Table II. Response of Experiment Group (B) to various beverages in Phase I

| Phase I Control Group (Group A) | | | | | | | | | | |
|---------------------------------|--------------------------------------|----|---|---|----|----|---|---|---|---|
| | Ticked Options Describing Experience | | | | | | | | | |
| Drink | D | E | C | S | N | R | G | M | D | X |
| Roohafza | 6 | 10 | 6 | | 14 | | | | | |
| Tropicana Pineapple | 6 | 6 | | 2 | 4 | 18 | | | | |

| | | | | | | | | | | |
|---|----|----|---|---|----|----|----|----|---|---|
| Tonic Water | | | | 2 | | | 13 | 10 | 2 | 9 |
| Tropicana Litchi Juice | 10 | 4 | 4 | | 10 | 8 | | | | |
| Mountain Dew | 5 | 10 | 5 | | | 16 | | | | |
| (D) Delicious. (E) Exotic. (C) Classic. (S) Stylish .(N) Nice Fragrance. (R) Routine. (G) Gross. (M) Smells like Medicine (D) Digestive Drink. (X) Cannot Finish Drinking | | | | | | | | | | |

Table III. Response of Control Group (A) to Tonic Water in Phase II

| Phase II Control Group (Group A) | | | | | | | | | | |
|---|--------------------------------------|---|---|---|---|---|---|---|---|---|
| | Ticked Options Describing Experience | | | | | | | | | |
| Drink | D | E | C | S | N | R | G | M | D | X |
| Tonic Water | | | | 1 | | | 5 | 3 | | 9 |
| (D) Delicious. (E) Exotic. (C) Classic. (S) Stylish .(N) Nice Fragrance. (R) Routine. (G) Gross. (M) Smells like Medicine (D) Digestive Drink. (X) Cannot Finish Drinking | | | | | | | | | | |

Table IV. Response of Experiment Group (B) to Tonic Water in Phase II

| Phase II Experiment Group (Group B) | | | | | | | | | | |
|---|--------------------------------------|---|---|---|---|---|---|---|---|---|
| | Ticked Options Describing Experience | | | | | | | | | |
| Drink | D | E | C | S | N | R | G | M | D | X |
| Tonic Water | | 5 | | 8 | | | 1 | 1 | 1 | 1 |
| (D) Delicious. (E) Exotic. (C) Classic. (S) Stylish .(N) Nice Fragrance. (R) Routine. (G) Gross. (M) Smells like Medicine (D) Digestive Drink. (X) Cannot Finish Drinking | | | | | | | | | | |

When we examine the results, it is evident that there is a clear shift from a negative direction to the positive direction in terms of the perception of the taste. Two aspects are to be taken into consideration as we analyse the tabular data we arrived at. One aspect is that only 1 of the people of the control group reported that he observed the taste as something similar to one of the drinks they were given in the morning. The other aspect is that

the ones who reported that the taste of Tonic Water was “Gross” or “Cannot Finish Drinking” in the morning changed their opinion towards “stylish” in the evening. Only 2 persons reported “Cannot Finish Drinking” both in Phase I and Phase II. Among the control group the opinions remained majorly towards the negative direction and they are were not willing to finish a drink that had the bitter taste. Many of the control group people didn’t complete drinking it at all as they didn’t like its taste. The opinion of the control group was considerably static in both Phase I and Phase II. This emphasizes that post experience opinion was subjected to a change when exposed to a strategic implementation of product promotion. The brand schema setup to a product with the careful design of its promotion is thus essential to keep the consumers glued to the opinion that is advertised. It has been also observed that the ones who rated the beverage as stylish in the 2nd phase had a common topic to further the discussion about the drink with the others in the experiment group sharing a positive opinion about the drink's taste.

Conclusion

Firstly parameters through strategic promotion have been setup to appreciate the distinct taste of the drink. Now that the brand schema started to work over the individuals who said it was distinct and stylish in taste in such a way that all the ones who shared such an opinion connect to a common belongingness to the group of appreciators and consider themselves to have known about a worthy drink. This sort of thinking established the brand schema and brought in the success of tonic water in the global beverages industry as well. The otherwise bitter and not a desirable taste is brought to the appreciation of the people by intelligent design of promotion.

Several marketing theorists have found post experience information has affected consumer judgments and have described these effects in terms of a belief updating process (Hoch and Ha 1986; Levin and Gaeth 1988; Smith 1993) Though by way of experiment it may still remain to be analysed whether such opinion shift is permanent or temporary and also what are the effects of exposing the subjects to a systematic regular promotion strategy, it is evident that post experience as well there is scope for the construal of such experience to change and align with the newly fed promotional concepts. It is also observed that people tend to believe in their own opinions that are inferred through experience rather any promotion. Now that in this strategy, since the experiential learning is influenced by the promotion, it is also about how true and objective are the subjects' opinions.

References

Braun, K. A. (1999, Mar). Post experience advertising effects on consumer memory. *Journal of Consumer Research Inc.*25(4), pp. 319-334.

Allison, Ralph I. and Kenneth P. Uhl (1964), ‘*Influence of Beer Brand Identification on Taste Perception,*’ *Journal of Marketing Research*, 1 (August), pp. 36–39.

A Study on Brand Equity and Media Efficiency

A. Vyshnavi, Student Business Management, Dept. Of Business Management, Malla Reddy College Of Engineering, Hyderabad.

A. Prathyusha, Student Business Management, Dept. Of Business Management, Malla Reddy College Of Engineering, Hyderabad.

E. Mail: Prathyushanaidu725@Gmail.Com

CH. Manga, Student Business Management, Dept. Of Business Management, Malla Reddy College Of Engineering, Hyderabad.

Abstract: This Study Essentially Is About How A Brand Equity Advertising Campaign Is Different. A Company's And Media Efficiency Trying To Establish For Itself A New Advertising Campaign May Be Carried Out With The Help Of The Identity And Image. It Studied Further As To What Obstacles And

Shortcomings It Faces As It Tries To Create For Itself A Modern Image. This Study Further Ascertains The Advertising Marketing Mechanisms That Saint-Gobain Has Adopted To Date And Then With The Help Of External Customers. This Study Also

Aims At Finding The Gaps Between The Perception Of The Management And The Customers. With The Help Of The Above In Consultation And Continuous Interaction With The Saint-Gobain Management, We Have Attempted To Provide Suggestions As

Regard Both Advertising Techniques And Practices As Well As What Kind Of An Advertising Campaign The Company May Undertake. Finally, We Have Taken A Close Look At The Customer Retention And Loyalty Programs Of The Company And Have Suggested For The Improvements Of The Same.

Introduction: Advertising Is The Promotion Of Goods, Services, Companies And Ideas, Usually By An Identified Sponsor. Marketer See Advertising As Part Of An Overall Promotional Strategy. Other Components Of The Promotional Mix Include Publicity, Public Relations, Personal Selling And Sales Promotion. Advertising Is A Management Function. While Advertising Is The Event, Advertising Management Is The Whole Process A Function Of Marketing Starting From Market Research Continuing Through Advertising Leading To Actual Sales Or Achievement Of Objective. But Advertising Management Does Not Stop Here. It Goes Further In Regard To Evaluation Of The Whole Cost Benefits That Were Involved In The Whole Exercise. This Means That If There Is A Public Service Advertising With An Objective To Increase Domestic Saving, The Evaluation Would Take Place In Terms Of The Actual Increase In Domestic Savings As Can Be Found From Banks And Other Financial Institutions. If It's About A Launch Of A New Product, Then The Evaluation Would Be In Terms Of Benefits Derived From The Cost Sunk In The Advertising Campaign.

Advertising Management Incorporates Various Specialized Sub-Functions Like Media Strategy, Message Strategy, Media Planning, Media Buying Etc. While Advertising Management Is An Inseparable Part Of The Marketing Department, Usually, And The Marketing Department Of An Organization Is Concerned More With Market Research And Evaluation Of Results. Every Element

Research Methodology

The Methodology Adopted To Conduct The Research (Primary And Secondary) For This Study Is As Follows:
Primary Research Work:

Initial Step Was To Have An Extensive Discussion With The Saint-Gobain Management Regarding The Strategies That They Follow In Order To Build And Maintain Their Brand In The Market.

Based On The Discussions, Customer Satisfaction Survey Questionnaires Were Designed In Order To Carry Out The Surveys.

Questions Regarding The Brand Equity Among The Customers And Media Efficiency Towards The Brand Were Asked From The Dealers Of Saint-Gobain.

After The Surveys Were Conducted, The Results Of The Same Were Analyzed And Interpreted Which Can Be Seen In The Latter Part Of This Project Report.

Secondary Research Work:

This Entailed Collection Of Available Data And Information

The Primary Sources Of This Data Was Saint-Gobain Office Located At Hyderabad.

The Other Source Was The Company's Website, I.E.,

The Material Collected Included In-House And External Promotional Material, Along With The Company's Annual Report, Basic Policy Documents Etc.

Questionnaire Analysis:

1. Personal Details

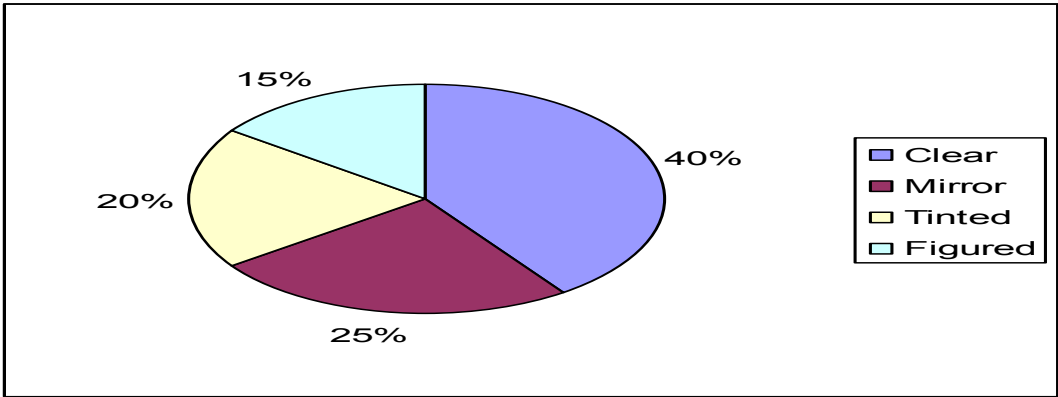
Name:
Shop Name:
Address:
Phone:

How many years you have been associated with glass business

last 10-15 years

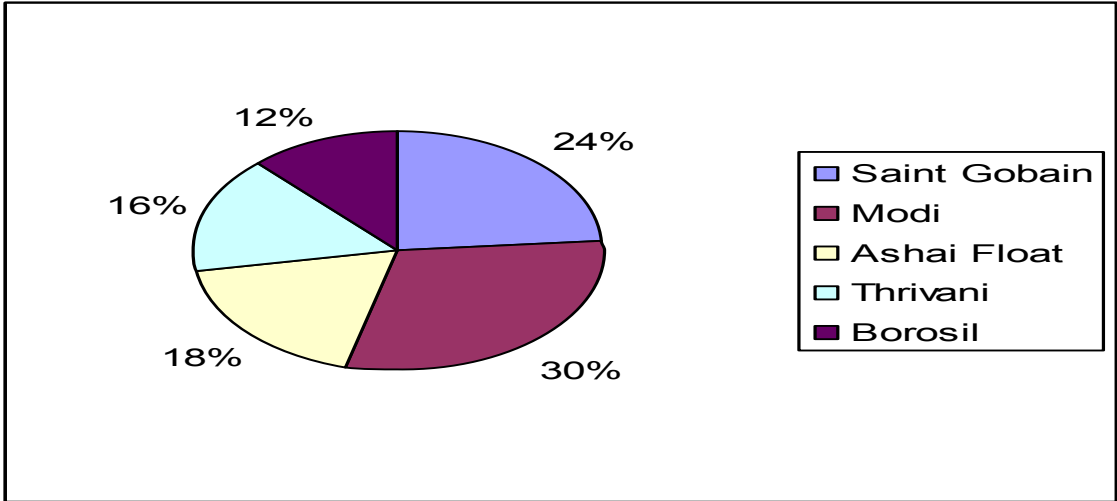
2. What types of glass you sell in your shop?

☐ Clear ☐ Mirror ☐ Tinted Glass ☐ Figured Glass/ Pin Head



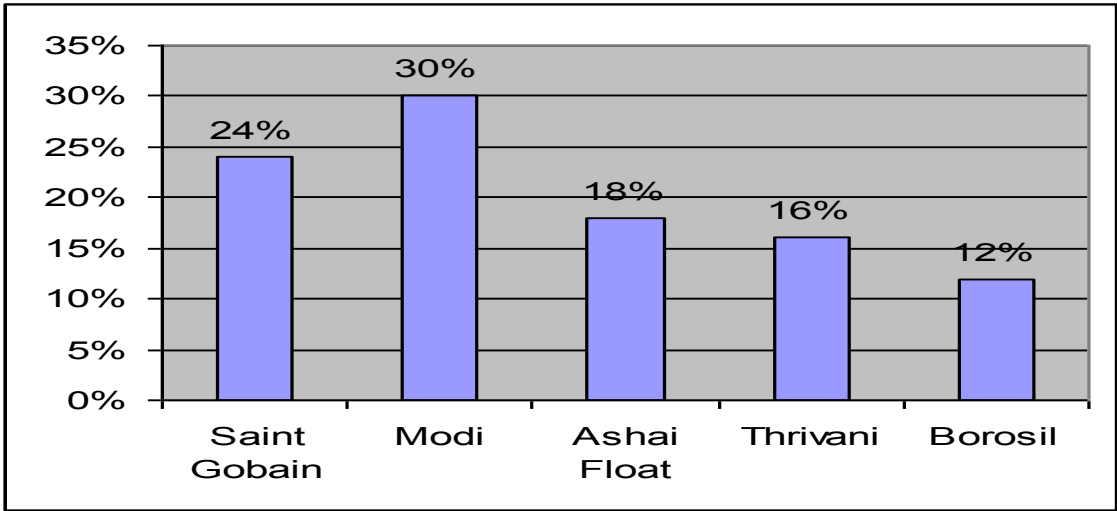
3. What Are The Brands That Are Available In Glass Market?

☐ Saint-Gobain ☐ Modi/Ggl ☐ Ashai Float/Ais ☐ Thrivani ☐ Borosil

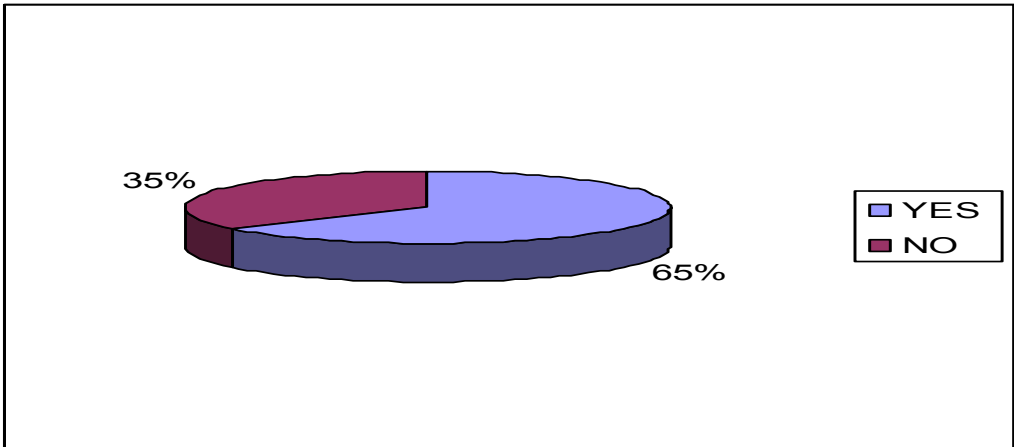


4. What Are The Brands You Sell In Your Shop?

☐ Saint-Gobain ☐ Modi Glass ☐ Ashai Flot/Asi ☐ Thrivani ☐ Borosil

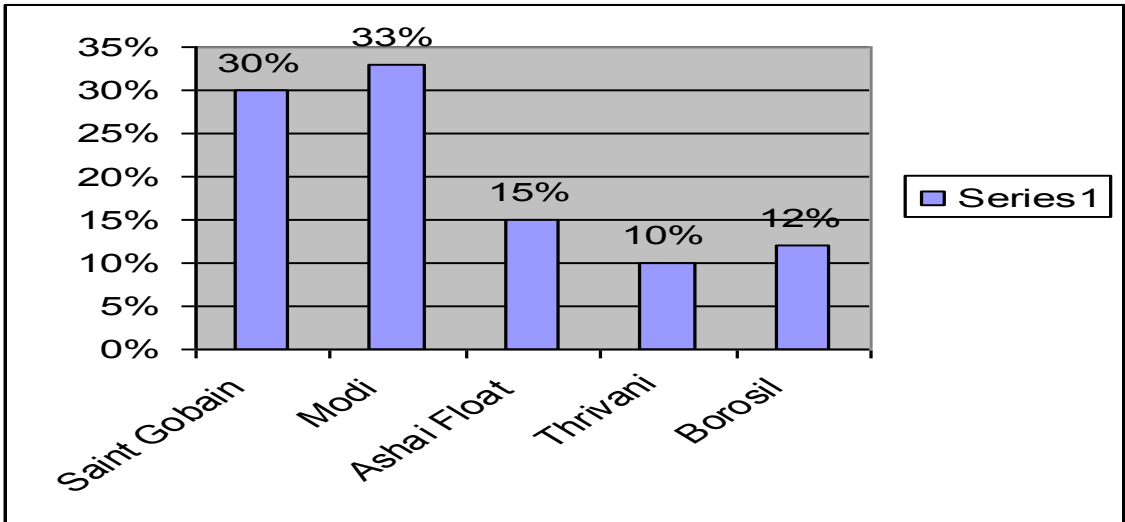


5. Your Customer Asks The Glass By Brand Name?



6. If Yes Which Brand Is a Popular Choice?

☐ Saint-Gobain ☐ Modi Glass ☐ Ashai Flot/Asi ☐ Thrivani ☐ Borosil

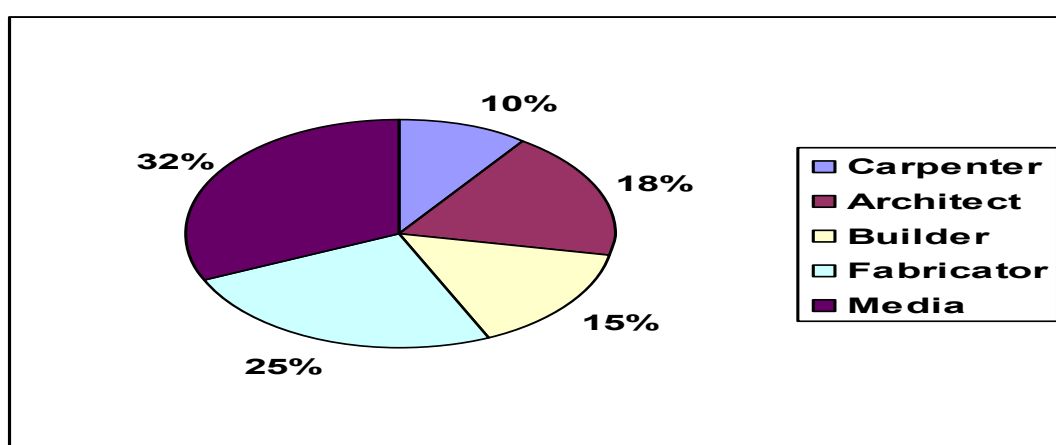


7. Brand Choice Of Your Customer For The Following Products

| | |
|---------------------------------|------------|
| Clearthine (2.5mmto6mm) | 10% |
| Clearthike (8mmto12mm) | 20% |
| Tintedglass/Design Glass | 15% |
| Mirror | 30% |
| Reflective | 25% |

8. By Whose Suggestion People Ask Brand Names?

☐ Carpenter ☐ Architect ☐ Fabricator ☐ Builder ☐ Media/Advertising



9. What Is Your Reflective Glass Sales Per Month1.5.....In Tonnes

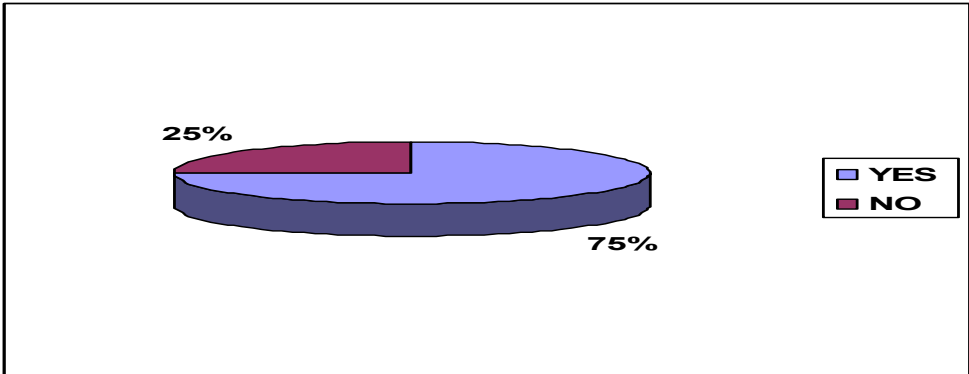
10. What Colours Are Sold In Branded Reflective Glass?

| Colour | Thick Ness |
|------------|------------|
| Light Gold | 4-5-6 Mm |
| Bronze | 4-5-6 Mm |
| Blue | 4-5-6 Mm |
| Green | 4-5-6 Mm |

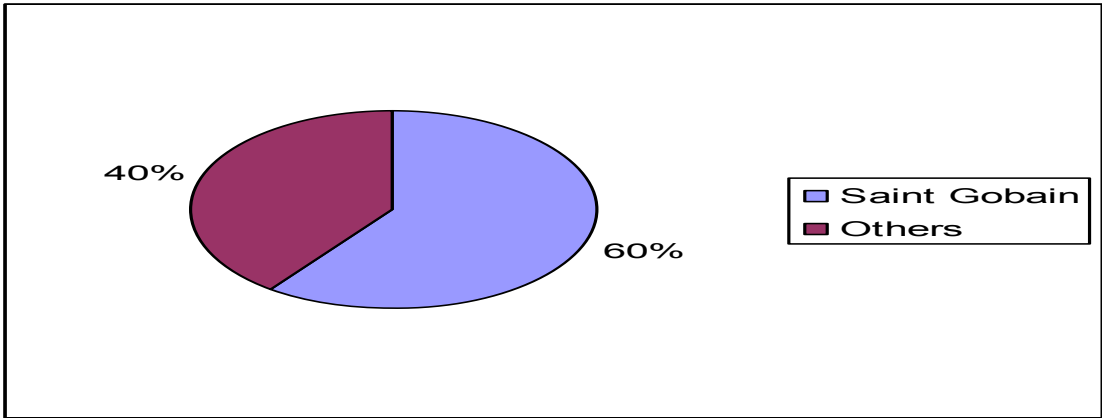
11. What Colours Are Sold In Imported Reflective Glass?

| Colour | Thick Ness |
|-------------|------------|
| Grey | 4-5-6 Mm |
| Parsol Gold | 4-5-6 Mm |
| Bronze | 4-5-6 Mm |
| Light Gold | 4.5 Mm |

12. Do You Purchase Directly From Company?



13. If Not, From Whom Do You Purchase Glass.....



14. How Many Customers Insist On A Brand Name Based On Tv Commercial.....

A.) 25/50 Dealers Said Most of Them

15. What Are the Advertisements of Glass You Have Seen?

| Product | Company | Channel |
|-------------|--------------|---------|
| Clear Glass | Saint Gobain | G Tv |
| Mirror | Modi | Hbo |
| Reflective | Asahi Float | Espn |

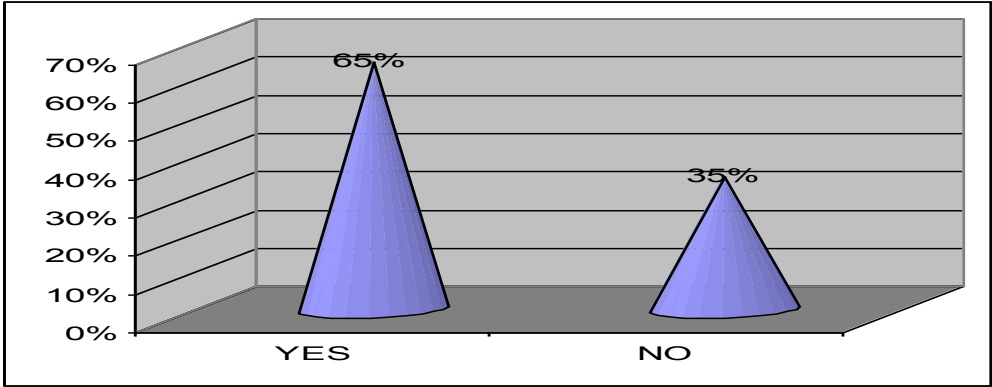
16. What Is the Preferable Local Channel for the Advertising?

1. News Channels
2. Sun Network

17. Advertisement Feed Back

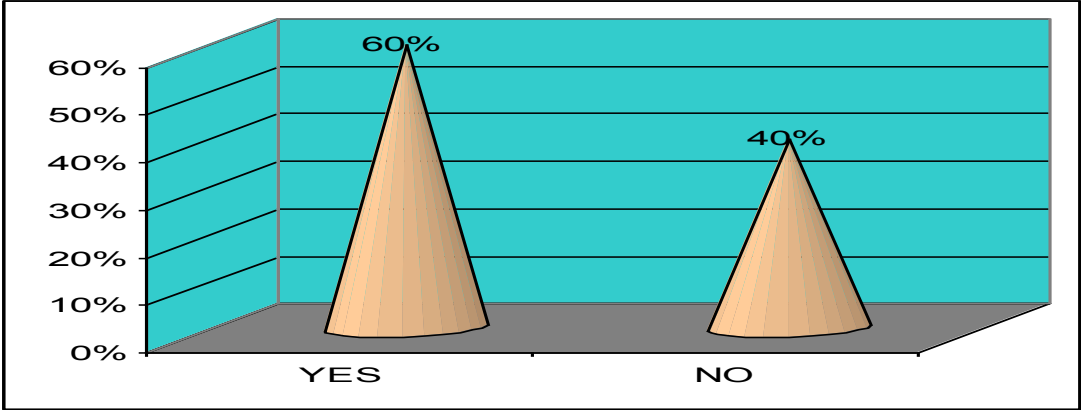
Clear Glass Adds

* Ha Add. Have You Seen This Add?



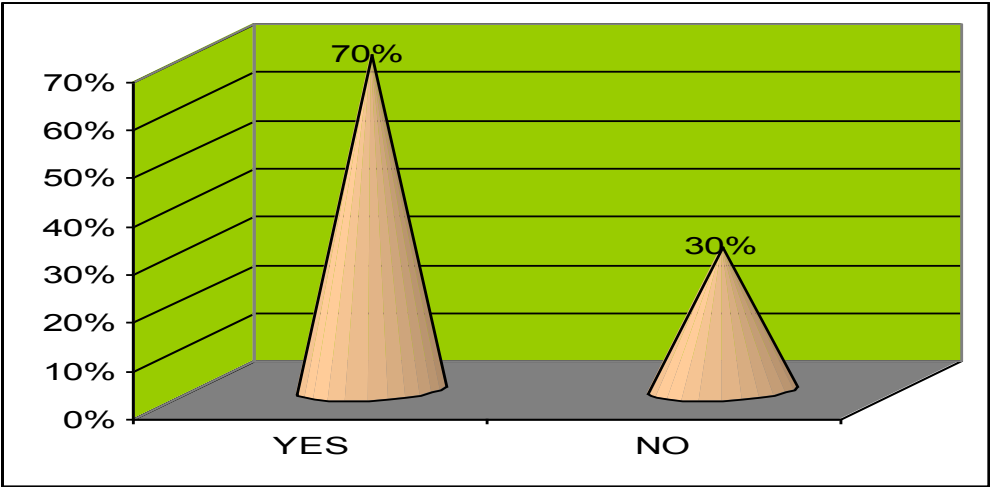
What You Pursued From The Advertisement?
It's Very Clear

* Restaurant Advertisement. Have You Seen This Advertisement?



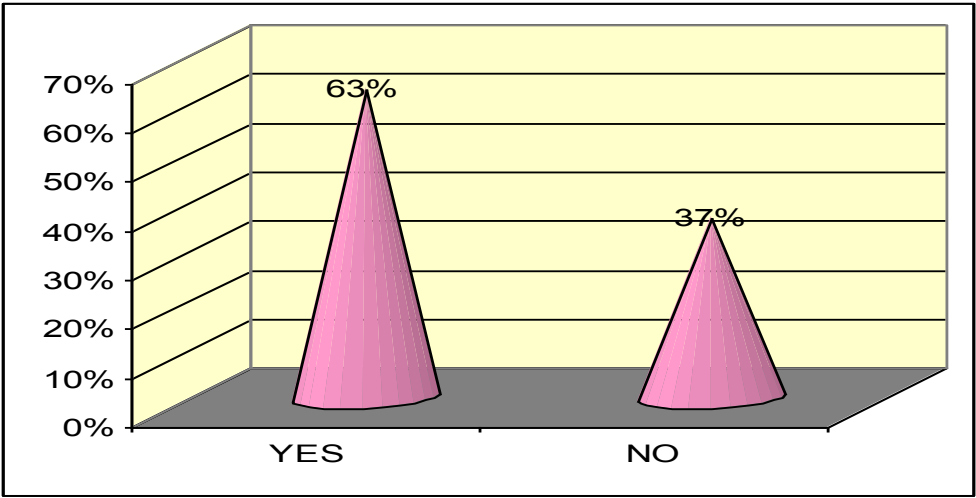
What You Pursued From The Advertisement?
It's Effective Advertisement and Entertaining

* Entrance Door Add. Have You Seen This Add?



What Do You Pursued From The Advertisement?
The Glass Is Not Visible

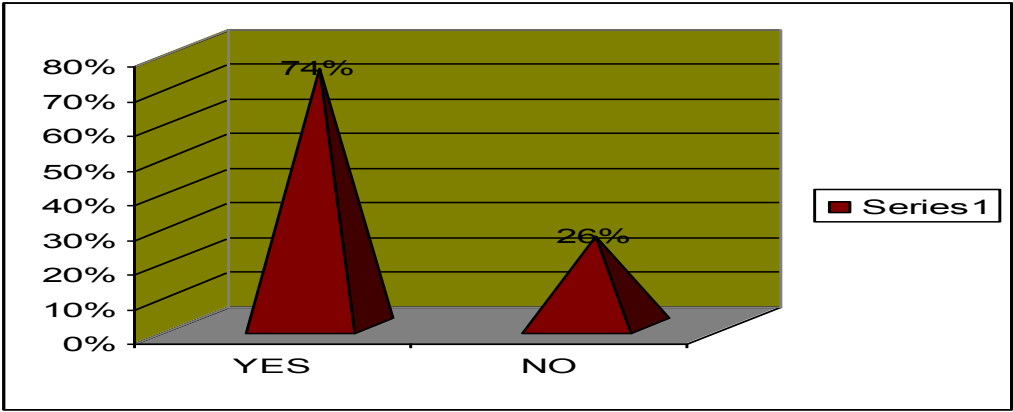
* Kid Drawing Advertisement. Have You Seen This Advertisement?



What You Pursued From The Advertisement?
The Boy Showing a Glass Here Which Is Not Visible To the Viewers?

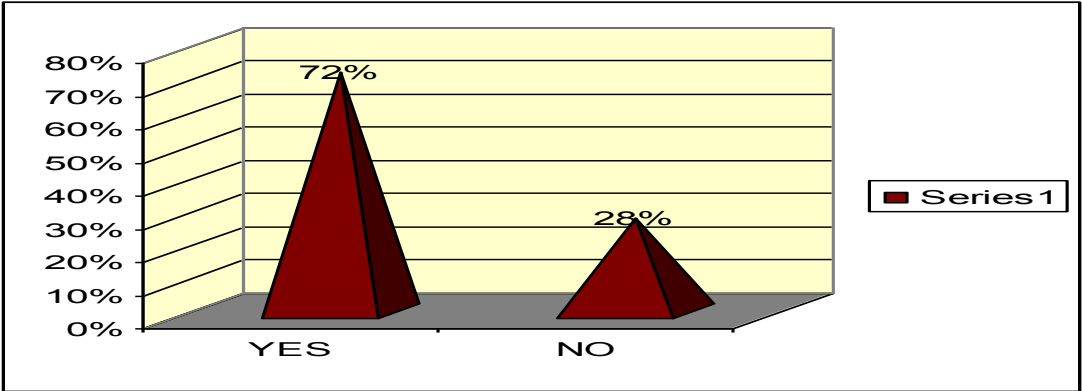
18. Reflective Glass

Crabe Add. Have You Seen This Advertisement?



What You Pursued From The Advertisement?
Enjoyed By All & Reflects Heat and Make the Portion Cool and One Side Transparent

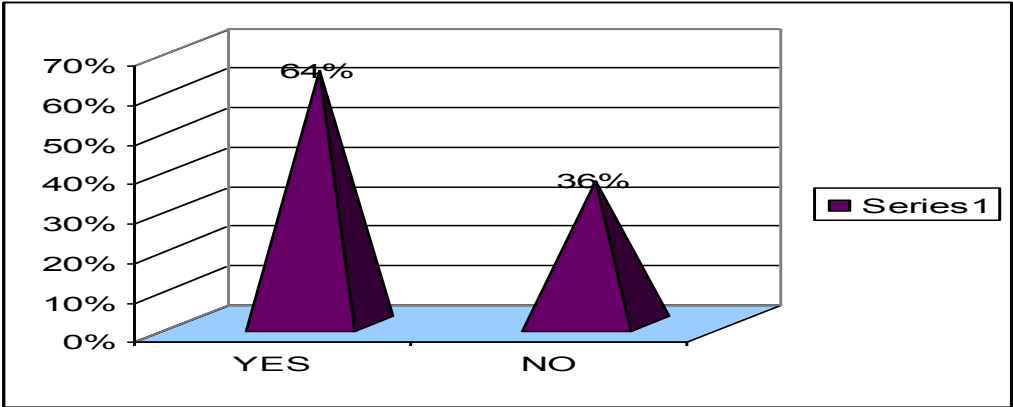
* Bay Watch Add. Have You Seen This Advertisement?



What You Pursued From The Advertisement?
Every One Is Enjoying & Reflects Heat and Makes the Portion Cool and One Side Transparent

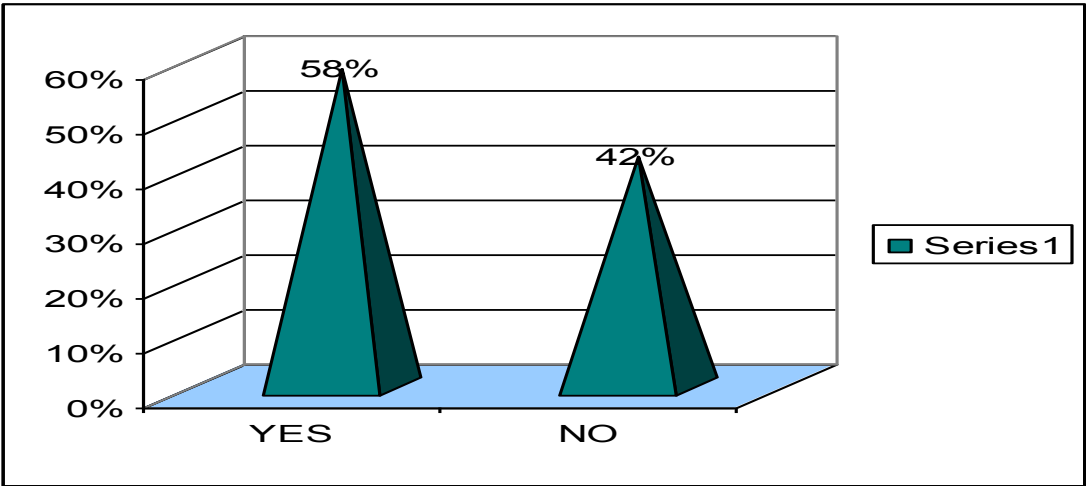
19. Mirror Glass

Boy Toilet. Have You Seen This Advertisement?



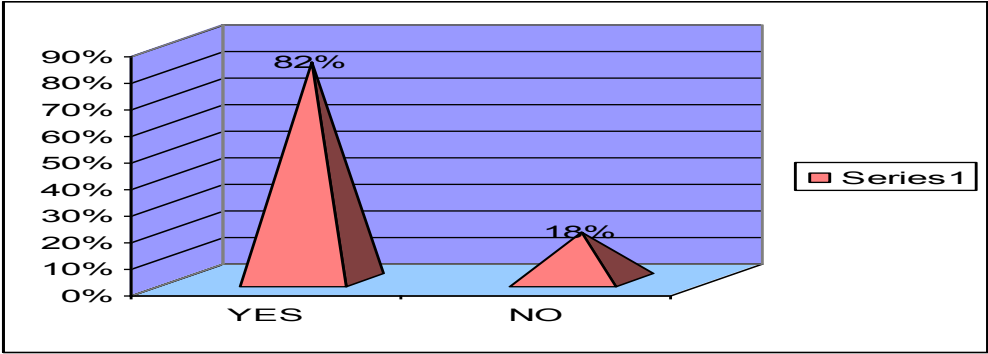
What You Pursued From The Advertisement?
As Clear As Original Look

* Museum Advertisement. Have You Seen This Advertisement?



What You Pursued From The Advertisement?
It Is Very Useful For All. As Clear As Original Look

* Super Market Advertisement. Have You Seen This Add?



What You Pursued From The Advertisement?
Glass Is Very Clear So in Situations like This It May Be Dangerous

Rank The Following Media

Tv Advertising

| | | | | |
|-----|---|---|---|---|
| ✓ 1 | 2 | 3 | 4 | 5 |
|-----|---|---|---|---|

Print Media (News Paper)

| | | | | |
|---|-----|---|---|---|
| 1 | ✓ 2 | 3 | 4 | 5 |
|---|-----|---|---|---|

Out Door / Hoardings

| | | | | |
|---|---|-----|---|---|
| 1 | 2 | ✓ 3 | 4 | 5 |
|---|---|-----|---|---|

Dangers/Banners/Posters/Pop

| | | | | |
|---|---|---|---|-----|
| 1 | 2 | 3 | 4 | ✓ 5 |
|---|---|---|---|-----|

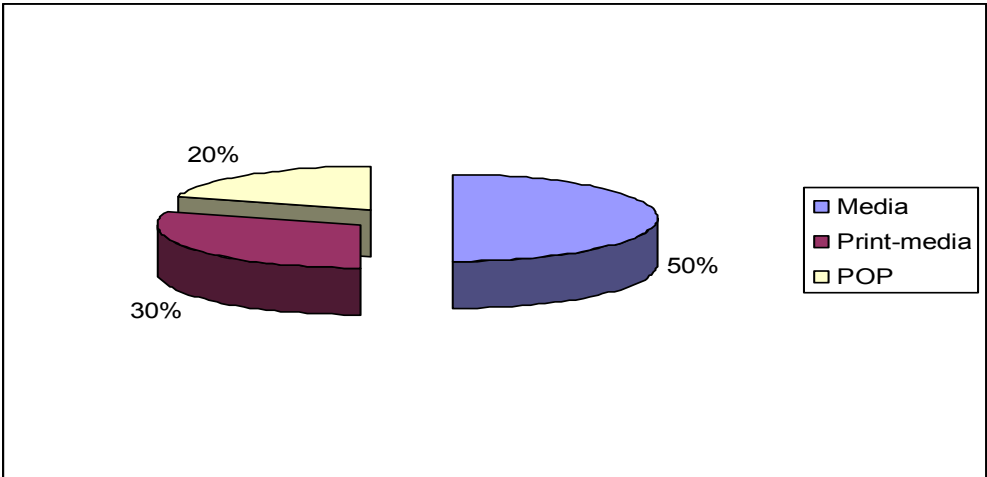
Internet /Call Center

| | | | | |
|---|---|---|-----|---|
| 1 | 2 | 3 | ✓ 4 | 5 |
|---|---|---|-----|---|

Budget Analysis of Saint-Gobain

Saint-Gobain Spending 10crores For Advertising And Media Efficiency In Media And Print-Media Point Of Purchase In India Per Annum.

- 50% - Media Advertising.
- 30% - Print-Media.
- 20% - Point Of Purchase.



Brand Equity and Media Efficiency of the Saint-Gobain

Customer Perceived Quality
Brand Loyalty
Brand Awareness
Media Efficiency

Customer Perceived Quality:

According To The Survey Done By Our Group, 70% Of The Customers Surveyed Fall In Good And Very Good Category Where As 30% Of The Customers Fall In Fair And Poor Category In Terms Of Service Quality Provide By Saint-Gobain To Its Customers. This Means Saint-Gobain Has Not Been Able To Serve Their Customers Up To The International Standards Since 30% Of The Customers Feel The Services Are Not Up To The Mark.

Saint-Gobain As A Brand Is Still Perceived Favorably By The Customers But In Order To Make The Brand Saint-Gobain More Strong And Powerful It Needs To Improve Upon Its Brand Equity. And If It Does It, It May Become The Most Favored Brand Among The Customers.

Brand Loyalty:

The Survey Done By Our Group Reveals That A Large Chunk Of Customers (65%) Have Recommended The Brand Saint-Gobain To Others And Another 82% Of Them Would Definitely Recommend Others. This Reflects That The Customers Were Loyal And Indifferent Towards The Brand. Some Of The Customers Surveyed Had Intense Loyalty Towards The Brand.

Therefore, We Could Infer From The Above That Brand Saint-Gobain Enjoys Customer Loyalty To The Highest Levels. This Means Saint-Gobain As A Single Brand Is Very Strong In The Views Of Its Customers Which Would Help Saint-Gobain In Building Its Brand Very Strong.

Brand Awareness:

The Brand Saint-Gobain Was Successful At Building Awareness. According To The Survey Conducted On The Customers By Our Group, All Of Them Were Aware Of The Brand Saint-Gobain. And The Customers To Whom Saint-Gobain Was Referred And Recommended Also Knew About Brand Saint-Gobain. They Had Positive Approach Towards The Brand Saint-Gobain. The Brand Recall Was Also Very Strong Among The Customers Of Saint-Gobain. Saint-Gobain Is Able To

Maintain The Brand Recall Approximately The Same As Its Competitors Most Of Which Had Been Supported By The Advertising Activities That Has Been Undertaken By Them.

Brand Communication Is A Long-Term Exercise That Has To Be Carried Out With A Great Degree Of Regularity And Consistency. With The Efforts That Saint-Gobain Has Put Behind The Brand In The Last Two To Three Years, They Have Derived Good Mileage. Brand Research Shows That Saint-Gobain Now Has An Unaided Brand Recall With 1/5th Of Our Targeted Audience And Is Now In The Consideration Set Of Most Investors.

Media Efficiency:

The Company Is Using Only Few Medias Such As Visual Media, Print Media, And Point Of Purchase As The Sources According To The Customer Survey Visual Media And Print Media Are Placed 1&2nd

So The Saint Gobain Has Been Using Effective Medias For Their Promotion.

Suggestions:

- Saint-Gobain Mostly Preferring For Advertising Like Media And Print-Media And Internet & Call Centers. But According To Customer Opinion Like
- Tv Commercials Are Very Popular (Increase Advertising Many Channels).
- Glass Company Should Concentrate More In Reflective Glass Because Of
- Growing Infrastructure Expenditure.
- As Now A Days Builders Prefer Colour Glass For Construction. So Therefore
- Increase Variety In Colours In Reflective Glass.
- Company To Increase Their On Desk Champions To Increase The Rtile Business.

References:

www.saint-gobain.com

www.google.com

www.wikipedia.com

[Company Brochures](#)

GST: IMPACT ON POWER SECTOR

Dr. Syed Azhar, Lecturer

Brilliant Degree College, Hyderabad

Email: azharsyed4617@gmail.com

B. Ramesh, Research Scholar

School of Management Studies, UOHYD

Email: rameshbyshtetty@gmail.com

Abstract: The study has attempts to understand the implication of GST on power sector in reference to India. The author found that there are some segments of power sector which has undoubtedly benefited but the other have not after implementation of GST. The thermal power has been benefitted due to decrease in taxes on coal where as the costs of turbines, boiler and generator equipment have increased the cost of establishing a thermal power projects. Further the GST has a negatively impacted the wind energy due to the increase in capital cost, higher tax rates on wind turbine generator. The cost of electricity for distribution have been reduced which will help them in reducing losses which are persisting over many years. The author suggests that India should focus on the renewable sources of energy such as solar power, hydro and bio-gas instead of non-renewable sources of energy such as thermal. Due to depletion of fossil fuels, solar or hydro power will be the future of India energy. Therefore the government should also decrease the tax on turbines, solar panels etc which are used in establishing solar plants and hydro power.

Keywords: GST, Power sector, Power Generation, Power Distribution,

Introduction

India is the world's third largest energy producer and fourth largest consumer of electricity. During the recent times, the power sector has gained a rapid pace in terms of indicators like the quantum of electricity generation, installed generating capacity, per capita consumption of electricity, number of villages electrified etc. (Azhar, 2015). Due to the extinction of fossil fuels, there has been a major shift in production of electricity from non renewable sources of energy to renewable sources.

Power sector is a core sector in any economy since power is a vital requirement for every commercial activity and

development of overall economy. India being a developing country requires vast production of electricity to meet the rising demands of all the segments of the economy including industrial, agricultural and household consumers. This sector has faced consistent losses in all the three segments of the power utilities during early 1990's. Due to prevailing high losses in power sector, an initiative was taken to unbundle the power generation, transmission and distribution from single entity namely SEBs and corporatizing the same for the above activities to improve efficiency levels in each of the areas (Azhar, 2017).

Objective of the Study

To study the impact of good and service tax on power generation and distribution utilities in India.

Methodology

The study is descriptive and analytical in nature. The study has critically analyzed the effect of GST on the power generation and distribution utilities in India. The author has used the information from magazines, leading newspapers, consultancy reports etc to highlight the impact of GST on power sector.

Impact of GST on Power Sector

This section discusses the GST impact on power sector in India.

GST

The Constitutional Amendment Bill for the Goods and Services Tax (GST) was passed in Rajya Sabha in August 2016, and was introduced on 1st April 2017 for the biggest tax reforms in India. GST has implication on all the sectors of the economy; therefore power sector is no exception. The current Indirect tax regime in India provides a complex environment due to

multiplicity of taxes, elaborate compliance obligations and tax cascading. GST was introduced with the aim to create 'One Tax One Market' which aims at providing a unified tax approach across India. It amalgamates several Central and State taxes into a single tax would lessen double taxation, facilitating a common national market.

GST: Impact on Power Generation

Any change in the tax policy on power sector, either it is generation, transmission or distribution utility. Any tax distortion faced by this sector on account of electricity being outside the ambit of GST, will have a cascading effect on the rest of the economy, negating some of the very benefits sought to be brought about by the introduction of GST. Accordingly, it is felt that the Government has missed an opportunity by not integrating generation and distribution of electricity with other supplies which interact with it, under the umbrella of GST. Therefore, the viability of the energy sector, under the current GST regime, would depend upon the exemptions and concessionary tax which may be put in place to counter the impact of different tax regimes on the input and output side. Exemptions in renewable will need to be grandfathered for this sub-sector to remain viable.

Power generation companies may see a rise in costs since all inputs are included in GST but electricity is not. Interstate trade of Goods and Services (IGST) on deemed exports will be payable and can only later be claimed as a refund. Currently, power sector enjoys various exemptions and concessions at both centre and state level to encourage. With GST, all this is bound to end. Presently, power generation companies can procure goods at a concessional rate of 2 percent. It is indicated that the rate might go up to 12 percent or 18 percent and the cost might be passed on to the consumer if GST is implemented.

GST Impact on Thermal Energy

The thermal power generation contributes 58.4% of the total power generation. About 3/5th of the total power generation is produced by using coal. The coal is either extracted domestically or imported from abroad. The change in

tax on coal sector will have a direct implication on the cost of thermal power generation in India. The new tax regime has levied a 5 per cent tax as compared 12 per cent tax earlier. The companies producing thermal electricity will gain due to the new goods and service tax rate on coal. According to ICRA, there will be a marginally negative impact on Boiler, turbine and generator equipment for thermal power projects for which GST would be applicable at the rate of 18 per cent. The cost of power generation through thermal electricity will be relieved despite the increase in the in capital cost due to higher tax rates in boiler, turbine, generator segment (ICRA, 2017). Even despite the local taxes, environmental taxes and other hidden charges have effectively brought down the tax rate by 2-3 per cent, instead of seven per cent (Rakshit, 2017). The companies which use domestic coal will have a positive impact while the companies which depend on imported coal will have negative impact on cost. It is expected that the variable cost of generation for coal-based power companies will decline by 5-6 paise per unit of power generation or about 1% of the current open market tariff (Chandarasekhar, 2017).

GST Impact on Renewable Energy

With the growing need for environmental friendly production of electricity, renewable energy has grown drastically. The introduction of Goods and Services Tax (GST) may be seen as significant reform in Indian economy with lot of benefits but renewable energy sector is worried about impact of GST on them. Currently, the renewable energy sector is enjoying tax incentives including tax holiday on earnings for a period of 10 years, concessions on customs duties and excise etc. These incentives will come to an end with the implementation of unified good and services tax. Therefore, implementation of GST will increase the cost of renewable energy (Rajput Jain & Associates).

The wind energy contributes 9.9% of the total electricity production. The power generation requires purchasing wind turbines, generators etc. The tax on wind turbines generators has increased and has a negatively impact on the wind energy sector in India. Prior to implementation of GST, the wind energy sector has been availing various

concessional rates and tax exemptions. It also said that building winds farms would get costlier by 10-15%. The impact of GST on wind energy is found to be marginally negative due to increase in capital cost, higher tax rates on wind turbine generator. Pre-GST, the wind energy sector has been availing various concessional rates and tax exemptions. In addition, most wind turbines are manufactured locally. With manufacturing costs rising, renewable energy costs are bound to hike.

IGST at 20% would be applicable on inter-State procurements along with an additional tax of 1%. This would lead to a substantial increase in tax costs as compared to the current regime having a direct impact the cost of renewable energy. In that case, the rates will be substantially higher than the rates presently applicable on procurement of goods and services in the renewable energy sector.

Prior to implementation of GST, the solar power projects enjoyed tax exemptions. Equipment which comes under renewable energy segment such as biogas plant, solar water heater, pumps, panels etc. will be attracting 5 per cent GST (Roy, 2017). The solar PV project requires solar panels which constitute 55% of the total cost in case they are imported. According to the statement released by ministry of new and renewable energy, the cost of setting up grid connected solar plants might increase by 12-16% and grid solar plants by 16-20%. According to the Abhishek Poddar, Partner at consulting firm A T Kearney have viewed that the solar tariff is recorded lower than the tariff of thermal power tariff in this year. This may be reason that the rise in solar taxes may be due to the reduction in cost of producing solar power. In the recent, those who were favoring aggressively assuming that the prices of solar panels or modules will have a lower rate will face slight problem for the transition period but I think over time the price economics will adapt to the new regime,” (Dutta, 2017). According to Vinay Rustagi, Managing Director at Bridge to India, a renewable energy-focused consultancy firm, the sector does not need any more subsidies thanks to the sharp reduction in tariffs. “That is a sensible move in the long run because an independently viable non-subsidy dependent sector is naturally

more sustainable,” (Dutta, 2017). Further the small hydro project costs could increase by 1-11%, while that of bio mass projects by 11-14%.

GST Impact on Power Distribution Utilities

Power distribution utilities distribute electricity to the end consumers. They not only connect with the end consumers by providing electricity but are the only revenue generators in entire power chain. Implementation of GST has reduced the tax on coal, due to which the cost of distribution utilities have correspondingly came down. The reduction in cost of distribution utilities does not mean that the distribution utilities will reduce the tariff. However in case the tariff is not reduced, the distribution utilities will cover the losses with the gain in tax benefit.

Conclusion

India is a vast country and the demand for electricity is huge, consequently there is always more demand and less supply of electricity. The implementation of GST has both loss and benefit to the power sector. The decrease in coal is a benefit where as the rise in taxes on wind turbines, boilers, generators, imported solar panels and so on will increase the cost of electricity. The author suggests that the power sector has to focus on the renewable sources of energy instead of non-renewable sources of energy such as thermal. Further the government should also decrease the tax on turbines, solar panels etc which are used in establishing solar plants and hydro power to empower use of renewable energy.

References

- Azhar, Syed. (2015). Problems in Power Distribution Utilities in India (November 19, 2017). Recent Trends in Management, ISBN: 978-93-84869-80-9. Available at SSRN: <https://ssrn.com/abstract=3073853>
- Azhar, Syed (2017). *Working capital management and profitability: A study of select power distribution utilities in India*. Retrieved from Shodhganga
- Barman, Anustup Roy (2017, July 19). Impact of GST on the service sector, *Business Economics*, Retrieved from <http://businesseconomics.in/editorials>
- Chandarasekhar, S (2017, October 01). GST: competitiveness to quell power costs. Retrieved

- from <http://www.thehindu.com/business/Economy/gst-competitiveness-to-quell-power-costs/article19781541.ece>
- Dutta, Anisha. (2017, May, 22). How will the higher tax rate impact the solar power sector?. *ETEnergyWorld*, Retrieved from <https://energy.economictimes.indiatimes.com/news/renewable/how-will-the-higher-tax-rate-impact-the-solar-power-sector/58760692>
- Dutta, Anisha. (2017, May, 30). GST impact on thermal power sector to be marginally positive: ICRA. *ETEnergyWorld*, Retrieved from <https://energy.economictimes.indiatimes.com/news/power/gst-impact-on-thermal-power-sector-to-be-marginally-positive-icra/>
- Kondratieva, Ksenia. (2017). GST regime: Power players weigh gains, losses. *The Hindu-Business Line*, Retrieved from <http://www.thehindubusinessline.com/economy/gst-regime-power-players-weigh-gains-losses/article9708224.ece> Power players weigh gains, losses
- Mondal, Debapriya. (2017, May 19). Power, steel companies set to gain as GST Council keeps coal in lowest tax slab of 5 per cent. *ETEnergy*, Retrieved from World <https://energy.economictimes.indiatimes.com/news/coal/power-steel-companies-set-to-gain-as-gst-council-keeps-coal-in-lowest-tax-slab-of-5-per-cent/58742349>
- Rakshit, Avishek (2017, July 2017). GST impact: Effective coal prices reduce by 2-3% for power sector consumers. *Business Standard*, Kolkata, Retrieved from http://www.business-standard.com/article/economy-policy/gst-impact-effective-coal-prices-reduce-by-2-3-for-power-sector-consumers-117072000874_1.html
- Roy, Subhajit (2017, August, 12). The GST effects. *Eprmagazine*, Retrieved from <http://www.eprmagazine.com/experts-column/the-gst-effects/>
- Samuel, Charlene. (2017, May 19). GST push for thermal power sector. *Industry Outlook*, Retrieved from <https://www.cmie.com/kommon/bin/sr.php?kall=war-ticle&dt=2017-05-19%2011:24:01&msec=39>

A Comparative Study of Life Insurance Corporation of India and Selected Private Life Insurance Companies in India

Bandari Mounika, MBA, Malla Reddy
College of Engineering and Technology,
Hyderabad.

A. Chaithanya, Assistant Professor, TKR
Engineering College, Hyderabad.

Abstract: The Indian life insurance industry has its own origin and history, since its inception. It has passed through many obstacles, hindrances to attain the present status. The objectives of the study are to understand the concept and mechanism of insurance, to compare and analyze the financial performance of selected private sector life insurance companies and Life Insurance Corporation of India and Comparison of Capital Structure, Earning per Shares of the Companies, Claims and Premiums of LIC, HDFC and Max life.

Introduction

The Indian life insurance industry has its own origin and history, since its inception. It has passed through many obstacles, hindrances to attain the present status. Insurance owes its existence to 17th century England. In fact, it took shape in 1688 at a rather interesting place called Lloyd's Coffee House in London, where merchants, ship-owners and underwriters met to discuss and transact business. The first stock companies to get into the business of insurance were chartered in England in 1720. The year 1735 saw the birth of the first insurance company in the American colonies in Charleston. In 1759, the Presbyterian Synod of Philadelphia sponsored the first life insurance corporation in America for the benefit of ministers and their dependents.

Life insurance in its modern form came to India from England in 1818 with the formation of Oriental Life Insurance Company (OLIC) in Kolkata. Indians were also covered by the company. However, it was after 1840 that life insurance really took off in a big way. By 1868, 285 companies were doing business of insurance in India. Earlier these companies were governed by Indian company Act 1866, by 1870, 174 companies ceased to exist, when British Parliament enacted Insurance Act 1870. These companies however, insured European lives. Those Indians who were offered insurance cover were treated as sub-standard lives and were accepted with an extra premium of 15% to 20%. By the end of the 18th century, Lloyd's had brewed enough business to become one of the first modern insurance companies. Life is a roller coaster ride and is full of twists and turns. Insurance policies area safeguard against the uncertainties of

life. As in all insurance, the insured transfers a risk to the insurer, receiving a policy and paying a premium in exchange. The risk assumed by the insurer is the risk of death of the insured in case of life insurance. Insurance policies cover the risk of life as well as other assets and valuables such as home, automobiles, jewelry etc. On the basis of the risk they cover, insurance policies can be classified into two categories:

(a) Life Insurance

(b) General Insurance

Life insurance products cover risk for the insurer against eventualities like death or disability. Non-life insurance products cover risks against natural calamities, burglary; etc. Insurance is system by which the losses suffered by a few are spread over many, exposed to similar risks. With the help of Insurance, large numbers of people exposed to a similar risk make contributions to a common fund out of which the losses suffered by the unfortunate few, due to accidental events, are made good. Insurance is a protection against financial loss arising on the happening of an unexpected event. Insurance policy helps in not only mitigating risks but also provides a financial cushion against adverse financial burdens suffered.

Insurance is defined as a co-operative device to spread the loss caused by a particular risk over a number of persons who are exposed to it and who agree to ensure themselves against that risk. Risk is uncertainty of a financial loss. Insurance is also defined as a social device to accumulate funds to meet the uncertain losses arising through a certain risk to a person injured against the risk. Insurance provides financial protection against a loss arising out of happening of an uncertain event. A person can avail this protection by paying premium to an insurance company.

Insurance is a contract between two parties whereby one party agrees to undertake the risk of another in exchange for consideration known as premium and promises to pay a fixed sum of money to the other party on happening of an uncertain event (death) or after the expiry of a certain period in case of life insurance or to indemnify the other party on happening of an uncertain event in case of general insurance. The party bearing the risk is known as the 'insurer' or 'assurer' and the party whose risk is covered is known as the 'insured' or 'assured'.

According to the U.S. Life Office Management Inc., "Life Insurance provides a sum of money if the person who is insured dies whilst the policy is in effect."

Need of the Study

Insurance is a way of managing risks. When you buy insurance, you transfer the cost of a potential loss to the insurance company in exchange for a fee, known as the premium. Insurance companies invest the funds securely, so it can grow, and pay out when there's a claim.

Insurance helps you:

- Own a home, because mortgage lenders need to know your home is protected
- Drive vehicles, because few people could afford the repairs, health care costs and legal expenses associated with collisions and injuries without coverage
- Maintain your current standard of living if you become disabled or have a critical illness
- Cover health care costs like prescription drugs, dental care, vision care and other health-related items
- Provide for your family in the event of a death
- Run a small business or family farm by managing the risks of ownership
- Take vacations without worrying about flight cancellations or other potential issues

Objectives of the Study

The objectives of the study are as follows:

- To understand the concept and mechanism of insurance.
- To compare and analyze the financial performance of selected private sector life insurance companies and Life Insurance Corporation of India.
- Comparison of Capital Structure, Earning for Shares of the Companies, Claims and Premiums of LIC, HDFC and Max life.

Scope of the Study

The scope of study is confined to Public and Selected Private life insurance companies in India from 2012-13 to 2015-16.

- The study mainly involves analyzing the financial performance and cost efficiency of public and selected private life insurance companies in India.
- The study may be extended to analyzing the financial performance and cost

efficiency of public and all private life insurance companies in India.

- Similar studies may be conducted to compare performance of public and private insurance companies in other countries.

Research Methodology

The research statement studied is entitled, "A comparative study of Life Insurance Corporation of India and Selected Private Life Insurance Companies in India". The present study focuses on the analysis of the financial performance of selected private sector life insurance companies and Life Insurance Corporation of India and Comparison of Capital Structure, Earning per Shares of the Companies, Claims and Premiums of LIC, HDFC and Max life.

Data Collection Methods

Collection of the data is essential part of research. The nature of data which is collected and used for this research is from secondary source.

The relevant and required data has been collected from

1. Journals, Dailies,
2. Annual reports, Magazines, literature
3. Websites of selected companies and through various search engines.

Statistical Methods used

The Present Study Involves the Calculation of Different values to evaluate the financial performance of LIC, HDFC and Max life life insurance companies in India from 2012-13 to 2015-16. Various statistical measures like percentage, values used in this study.

Review of Literature

Boonyasai, Grace, Skipper (2012) examined technical efficiency of Life insurers of 4 Asian countries: Korea, Philippines, Taiwan and Thailand. The study covered 33 life insurers of Korea, 33 life insurers of Philippines, 31 life insurers of Taiwan and 13 life insurers of Thailand. The conclusion of the study was that the productivity of Korea and Philippines was more than Taiwan and Thailand. The technical efficiency of all life insurers had increased.

Madabhushi Sridhar (2012) traces the evolution of the principle of moral hazard in a life insurance contract and its gradual dilution with the changing style of human civilization and understanding the influence of criminal acts on the civil contract. The

study reached a logical conclusion that the principle of moral hazard plays a reduced role in a life insurance contract with reference to suicide and that the terms of the contract should prevail to fix the liability of the insurer to fulfill the purpose and objective of a life insurance contract i.e. to help the dependents to absorb the shock of sudden death of the insured, either by natural or suicidal death, in sane or insane conditions.

Da Han Chung, Yen Lin Hung, Yu Hsuang Lee, Jun Min Wang (2013) compared bancassurance sales and insurer's own team of Taiwan from 2010 to 2012. They used Data Envelopment Analysis approach to compute the efficiencies of bancassurance and traditional channels separately. The conclusion of the research was that the efficiency score of a life insurance company's own sales representatives is significantly higher than that of its

bancassurance representatives and the efficiency relationship between the bancassurance channel and traditional selling channel is independent.

A.K. Jain (2014) revealed that waves of liberalization have done wonders to the insurance occupation. The average mindset, particularly of younger generation in India is very amenable to these changes in insurance as an avenue where exhilarating opportunities were opened up in changed environment.

Chen, Wong (2014) examined determinants of financial health of insurance companies of China from 2011 to 2013. The result showed that size, investment and liquidity are important determinants of financial health of insurance companies.

Tapen Sinha (2015) analyzed the evolution of insurance in India. He concluded that India is fast becoming a global economic power. India is among the important emerging insurance markets in the world. The fundamental regulatory changes in the insurance sector in 1999 will be critical for future growth. Despite the restriction of 26% on foreign ownership, large foreign insurers have entered the Indian market. State-owned insurance companies still have dominant market positions. But, this would probably change over the next decade.

Barros, Barroso, Borges (2015) covered 27 life and non-life insurers of Portugal country during 2005 to 2011. In this study they found technical efficiency, pure technical efficiency and scale efficiency by using DEA method. The study concluded that the technical efficiency improved over time but deteriorated in terms of technological change. At the same time pure technical efficiency and scale efficiency had increased.

AK Sukla (2016) reviewed the measures of liberalization initiated in insurance sector. Six years into competitive market, the Indian insurance industry exhibited a healthy growth trend of new business and market share. The life insurance industry saw the new players stabilize their

operations keenly matched by LIC of India and the premium numbers brought out the fact that the size of the insurance market grew over the six years of liberalization. He also viewed that with liberalization, India was penning the script of insurance convergence and not Insurance divergence. It clearly indicated the comfort zone of operation of the players.

Cummins et al. (2016) were the first to explicitly investigate the relationship between risk management, financial intermediation, and economic efficiency. In their application to the US property-liability industry, they analyzed whether both activities contribute to efficiency through reducing costs of providing insurance. In order to show the contribution of risk management and financial intermediation to efficiency, they estimated shadow prices of these two activities. They found positive shadow prices of both activities and concluded that they significantly contribute to increasing efficiency.

Badunenko, Grechanyuk, Talavera (2016) studied technical and scale efficiency of 163 life and non life insurers of Ukraine country from 2013 to 2015 by using Data Envelopment Analysis method. They found that increased capitalization requirements have positively influenced Ukrainian markets and helped to improve both technical and scale efficiency.

Limitations of the Study

The present research work is undertaken to maximize objectivity and minimize the errors. However, there are certain limitations of the study, which are to be taken in to consideration for the present research work.

1. The study is based on the analysis of the five years data only.
2. The study fully depends on financial data collected from the published financial statements of companies. This study incorporates all the limitations that are inherent in the financial statements.
3. The data for analysis is basically derived from financial statements. They are not adjusted for inflation.

Theoretical Framework

Insurance

Life is a roller coaster ride and is full of twists and turns. Insurance policies area safeguard against the uncertainties of life.

Concept of Insurance

As in all insurance, the insured transfers a risk to the insurer, receiving a policy and paying a premium in exchange. The risk assumed by the insurer is the risk of death of the insured in case of life insurance. Insurance policies cover the risk of life as well as other assets and valuables such as home, automobiles, jewelry etc. On the basis of the risk they cover, insurance policies can be classified into two categories:

(a) Life Insurance

(b) General Insurance

Life insurance products cover risk for the insurer against eventualities like death or disability. Non-life insurance products cover risks against natural calamities, burglary, etc. Insurance is a system by which the losses suffered by a few are spread over many, exposed to similar risks. With the help of Insurance, large numbers of people exposed to a similar risk make contributions to a common fund out of which the losses suffered by the unfortunate few, due to accidental events, are made good. Insurance is a protection against financial loss arising on the happening of an unexpected event. Insurance policy helps in not only mitigating risks but also provides a financial cushion against adverse financial burdens suffered.

Definition

Insurance is defined as a co-operative device to spread the loss caused by a particular risk over a number of persons who are exposed to it and who agree to ensure themselves against that risk. Risk is uncertainty of a financial loss. Insurance is also defined as a social device to accumulate funds to meet the uncertain losses arising through a certain risk to a person injured against the risk. Insurance provides financial protection against a loss arising out of happening of an uncertain event. A person can avail this protection by paying premium to an insurance company. Insurance is a contract between two parties whereby one party agrees to undertake the risk of another in exchange for consideration known as premium and promises to pay a fixed sum of money to the other party on happening of an uncertain event (death) or after the expiry of a certain period in case of life insurance or to indemnify the other party on happening of an uncertain event in case of general insurance. The party bearing the risk is known as the 'insurer' or 'assurer' and the party whose risk is covered is known as the 'insured' or 'assured'.

According to the U.S. Life Office Management Inc., "Life Insurance provides a sum of money if the person who is insured dies whilst the policy is in effect."

Significance of Insurance

The significance of insurance, in terms of the following advantages offered by it:

(i) **Concentration on Business Issues:** Insurance helps businessmen to concentrate their attention on business issues, as their risks are undertaken by the insurance company. Insurance gives them peace of mind. Thus due to insurance, business efficiency increases.

(ii) **Better Utilization of Capital: Businessmen,** in the absence of insurance, will maintain funds for meeting future contingencies. Insurance does away with this need to maintain contingency funds by them. Thus businessmen can better utilize their funds for business purposes.

(iii) **Promotion of Foreign Trade:** There are many risks in foreign trade much more than involved in home trade. Insurance of risks involved in foreign trade gives a boost to its volume, which is a healthy feature of economic development.

(iv) **Feeling of Security to Dependents:** Life insurance provides a feeling of economic security to the dependents of the insured, on whose life insurance is affected.

(v) **Social Welfare:** Life insurance also provides for policies in respect of education of children, marriage of children etc. Such special policies provide a sense of security to the poor who take these policies. Thus life insurance is a device for ensuring social welfare.

(vi) **Speeding Up the Process of Economic Development:** Insurance companies mobilize the savings of community through collection of premiums, and invest these savings in productive channels. This process speeds up economic development. Huge funds at the disposal of LIC (Life Insurance Corporation) available for investment purposes support the above-mentioned point of advantage of insurance.

(vii) **Generation of Employment Opportunities:** Insurance companies provide a lot of employment in the economy. This is due to the ever growing business done by insurance companies.

Principles of Insurance

Insurance is based upon:

(a) Principles of Co-operation

Insurance is a co-operative device. If one person is providing for his own losses, it cannot be strictly insurance because in insurance the loss is shared by a group of persons who are willing to co-operate.

(b) Principles of Probability

The loss in the form of premium can be distributed only on the basis of theory of probability.

The chances of loss are estimated in advance to affix the amount of premium. Since the degree of loss depends upon various factors, the affecting factors are analyzed before determining the amount of loss. With the help of this principle, the uncertainty of loss is converted into certainty. The insurer will not have to suffer loss as well as gain windfall.

Therefore, the insurer has to charge only so much of amount which is adequate to meet the losses.

Functions of Insurance

The functions of Insurance can be bifurcated into three parts:

(a) Primary Functions

- Provide Protection
 - Assessment of risk
- Collective bearing of risk
 - Savings and investment

(b) Secondary Functions

- Prevention of Losses
 - Small capital to cover large risks
- Contributes towards the development of large industries
 - Source of Earning Foreign Exchange
- Risk Free Trade
 - Insurance provides security and safety
- Insurance affords peace of mind
 - Insurance protects mortgaged property
- Insurance eliminates dependency
 - Life Insurance encourages saving
- Life Insurance provides profitable investment
 - Business efficiency is increased with insurance
- Enhancement of Credit
 - Business continuation
- Welfare of Employee

(C) Society

- Wealth of the society is protected
 - Economic Growth of the country

Types of Life Insurance Policies

A life insurance policy could offer pure protection (insurance), another variant could offer protection as well as investment while some others could offer only investment. In India, life insurance has been used more for investment purposes than for protection in one's overall financial planning. Followings are the types of life insurance policy:

- Term Life Insurance Policy

As its name implies, term life insurance policy is for a specified period. It depends on the length of time. It has one of the lowest premiums among insurance plans and also carries an added advantage of fixed payments that do not increase during the term of the policy. In case of the policy holder's untimely demise, the benefit amount specified in the insurance agreement goes to the nominees.

- Whole Life Insurance Policy

Whole life insurance policies do not have any fixed term or end date and is only payable to the designated beneficiary after the death of the policy holder. The policy owner does not get any monetary benefits out of this policy. Because this type of insurance involves fixed known annual premiums, it's a good option to ensure guaranteed financial benefits for surviving family members.

- Money Back Plan

With a money back plan, policyholder receives periodic payments, which are a percentage of the entire amount insured, during the lifetime of policy. It's a plan that offers insurance coverage along with savings. These policies provide for periodic payments of partial survival benefits during the term of the policy itself. A unique feature associated with this type of policies is that in the event of death of the insured during the policy term, the designated beneficiary will get the full sum assured without deducting any of the survival benefit amounts, which have already been paid as money-back components. Moreover, the bonus on such policies is also calculated on the full sum assured.

- Pension Plan

Pension plans are different from other types of life insurance because they do not provide any life insurance cover, but ensure a guaranteed income, either for life or for a certain period. The Policyholder makes the investment for pension plan either with a single lump sum payment or through installment paid over a certain number of years. In return, he gets a specific sum every year, every half-year or every month, either for life or for a fixed number of years. In case of the death of the insured, or after the fixed annuity period expires for annuity payments, the invested annuity fund is refunded, usually with some additional amounts as per the terms of the policy.

- Endowment Policy

It is the most popular life insurance plan. This policy combine's risk cover with objective of savings and investment. If the policy holder dies during the policy period, he will get the assured amount. Even if he survives he will receive the assured amount. The advantage of this policy is if the policy holder survives after the completion of policy tenure, he receives assured amount plus additional benefits like bonus from the insurance company. Designed primarily to provide a living benefit, along with life insurance protection, the endowment policy makes a good investment if policyholder wants coverage, as well as some extra money.

There are two types of Endowment policy:

(a) Without profit endowment plan

These plans do not participate in the profits the insurance company makes each year. Apart from the

sum assured, the policyholder could possibly get a loyalty bonus, which is a onetime payout.

(b) With-profit endowment plan

These plans share the profits the insurance company makes each year with the policyholder. So they offer more returns than without-profit endowment plans and are more expensive i.e. the premiums will be higher than without-profit endowment plans.

– **Unit-linked insurance plan (ULIP)**

Unit-linked insurance plans give a policyholder greater control on where premium can be invested. The annual premium is invested in various types of funds that invest in debt and equity in a proportion that suits all types of investors. A policyholder can switch from one fund plan to another freely and can also monitor the performance of his plan easily. ULIP is suitable for those who understand the stock market well.

Features of Life Insurance Contract

Human life is an income generating asset. This asset can be lost through unexpected death or made nonfunctional through sickness or disability caused by an accident. On the other hand there is a certainty that death will happen, but its timing is uncertain. Life insurance protects against loss.

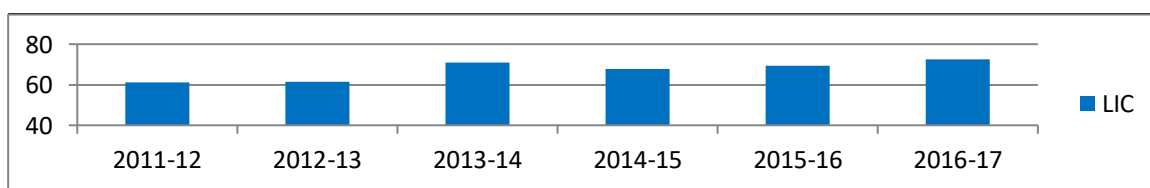
Life insurance contract may be defined as the contract, whereby the insurer in consideration of a premium undertakes to pay a certain sum of money either on the death of the insured or on the expiry of a fixed period. The definition of the life insurance contract is enlarged by Section 2(ii) of the Insurance Act 1938 by including annuity business. Since, the life insurance contract is not an indemnity contract; the undertaking on the part of the insurer

Data Analysis

Standard Life Insurance Co. Ltd & Max New York Life Insurance Co. Ltd Companies Based On Total Premium (%)

| Table: II- Total Premium (%) | | | | | | |
|---------------------------------------|---------|---------|---------|---------|---------|---------|
| Life Insurer | 2011-12 | 2012-13 | 2013-14 | 2014-15 | 2015-16 | 2016-17 |
| LIC | 61.22 | 61.54 | 70.84 | 67.9 | 69.21 | 72.44 |
| HDFC standard Life Insurance Co. Ltd. | 8.89 | 10.41 | 10.11 | 9.43 | 8.63 | 8.83 |
| Max New York Life Insurance Co. Ltd. | 5.35 | 5.23 | 5.31 | 5.27 | 5.98 | 6.12 |

Chart No: 1- Graphical representation of Market Share of LIC



Interpretation: The market share of the LIC 72% in 2016-17 financial years. In the year 2011-12 it was 61% it is consistently increasing since last five years.

is an absolute onto pay a definite sum on maturity of policy at the death or an amount in installment for a fixed period or during the life.

Features of Life Insurance Contract:

(i) Nature of General Contract

- (a) Agreement (offer and acceptance)
- (b) Competency of the parties
- (c) Free consent of the parties
- (d) Legal consideration
- (e) Legal objective

(ii) Insurable Interest

- (a) Insurable interest in owns Life
 - (b) Insurable interest in other's life
- (iii) Utmost Good Faith

- (a) Material facts
- (b) Duty of both parties
- (c) Full and True Disclosure
- (d) Legal Consequence
- (e) Indisputability of Policy

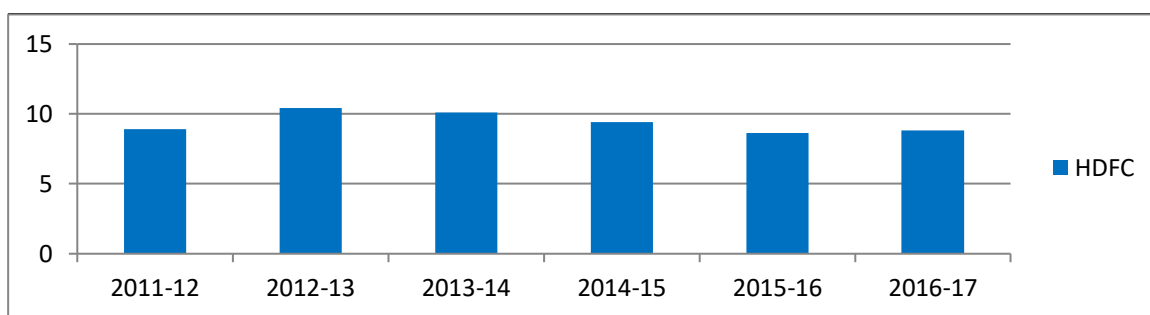
(iv) Warranties

(v) Proximate Cause

- (a) War-risk
- (b) Suicide
- (c) Accident Benefit

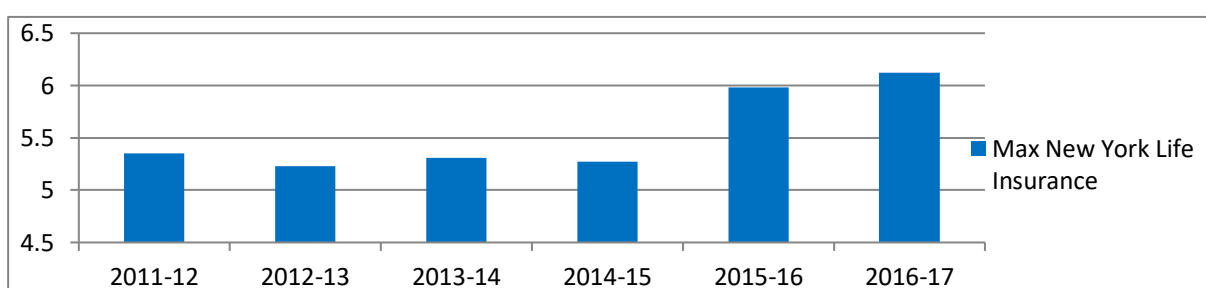
(vi) Assignment and Nomination

Chart No: 2- Graphical representation of Market Share of HDFC



Interpretation: The HDFC market share has a small volatility since last five years overall the market share is around 9%.

Chart No: 3- Graphical representation of Max New York Life Insurance Co. Ltd



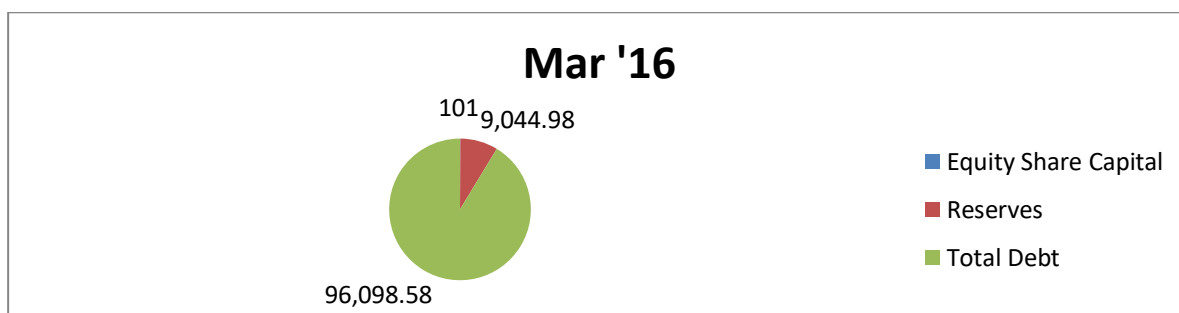
Interpretation: The market share of Max life has consistently holding market position around 5% since last five years.

CAPITAL STRUCTURE OF LIC, HDFC AND MAX LIFE

Capital structure is the way a corporation finances its assets through some combination of equity, debt, or hybrid securities.

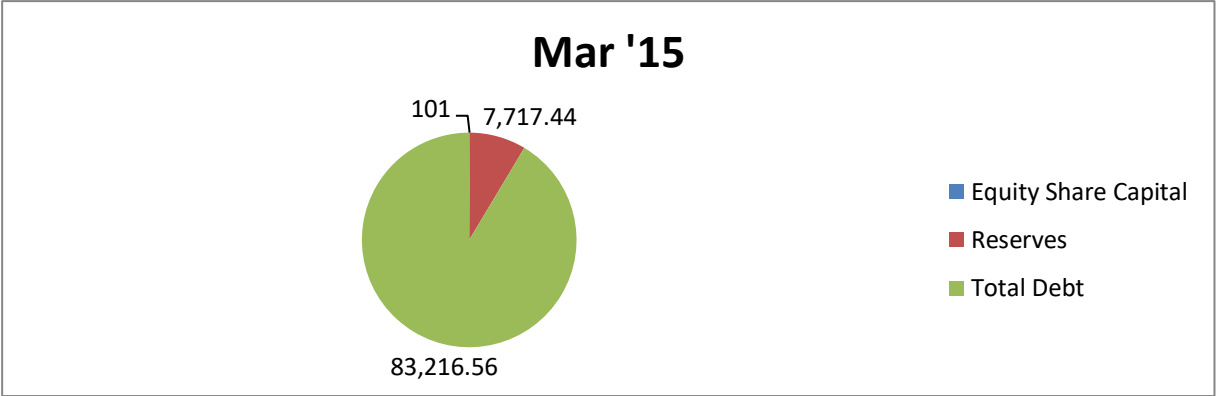
| Table III: LIC Capital Stricture in Cr. | | | | | |
|---|-----------|-----------|-----------|-----------|-----------|
| | Mar '16 | Mar '15 | Mar '14 | Mar '13 | Mar '12 |
| Equity Share Capital | 101 | 101 | 101 | 101 | 101 |
| Reserves | 9,044.98 | 7,717.44 | 7,431.90 | 6,380.29 | 5,581.21 |
| Total Debt | 96,098.58 | 83,216.56 | 71,450.44 | 58,705.18 | 47,869.92 |
| Total Capital | 105244.56 | 91035 | 78983.34 | 65186.47 | 53552.13 |

Chart No: 4- Graphical Presentation of Capital Structure of LIC in 2016



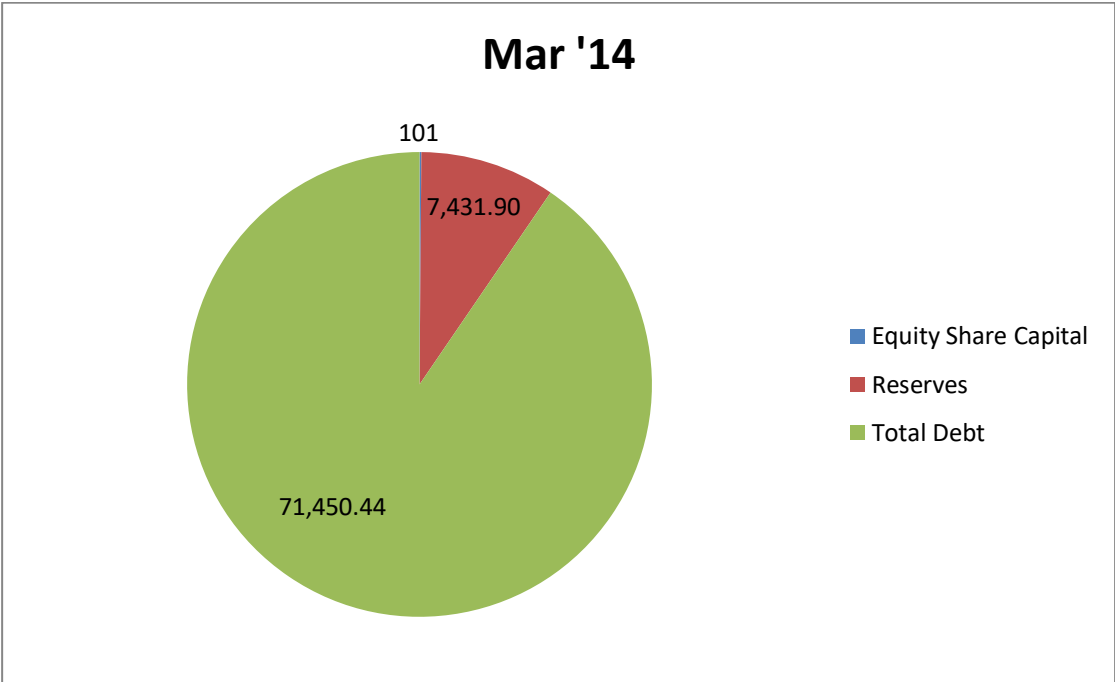
Interpretation: The Capital Structure of LIC has less equity portion it is only 101 cr. whereas reserves has 9044.98 cr. The debt value is 96098.58 cr. in 2016

Chart No: 5- Graphical Presentation of Capital Structure of LIC in 2015



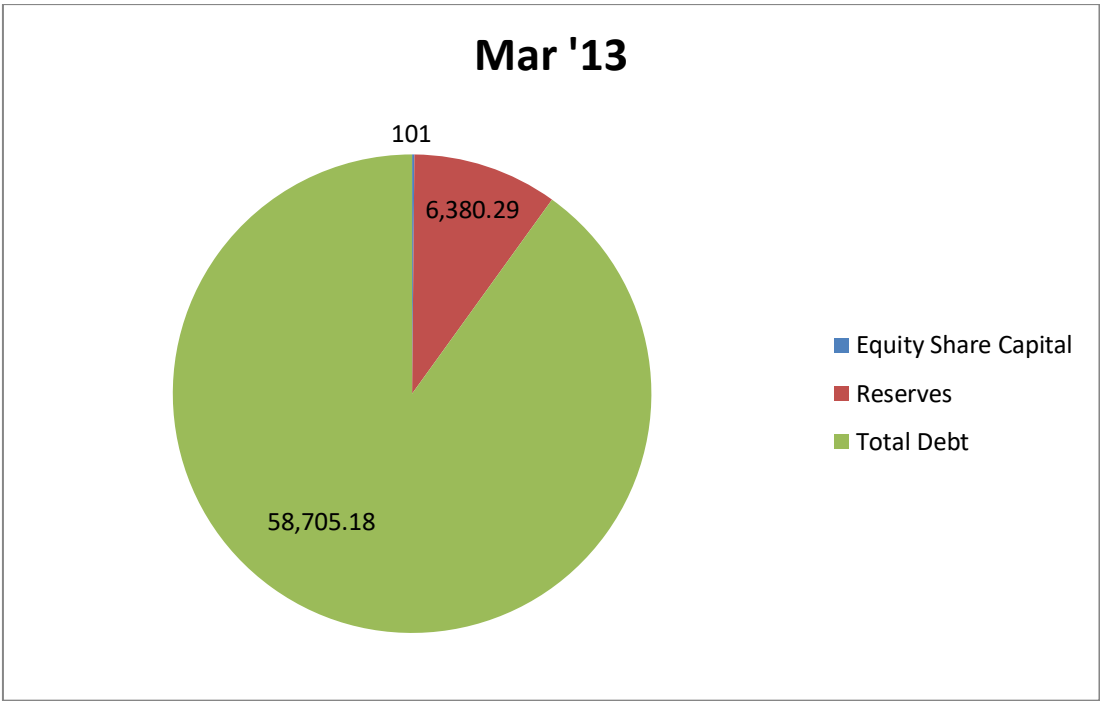
Interpretation: The Capital Structure of LIC has less equity portion it is only 101 cr. whereas reserves has 7717.44 cr. The debt value is 831216.56 cr. in 2015

Chart No: 6- Graphical Presentation of Capital Structure of LIC in 2014



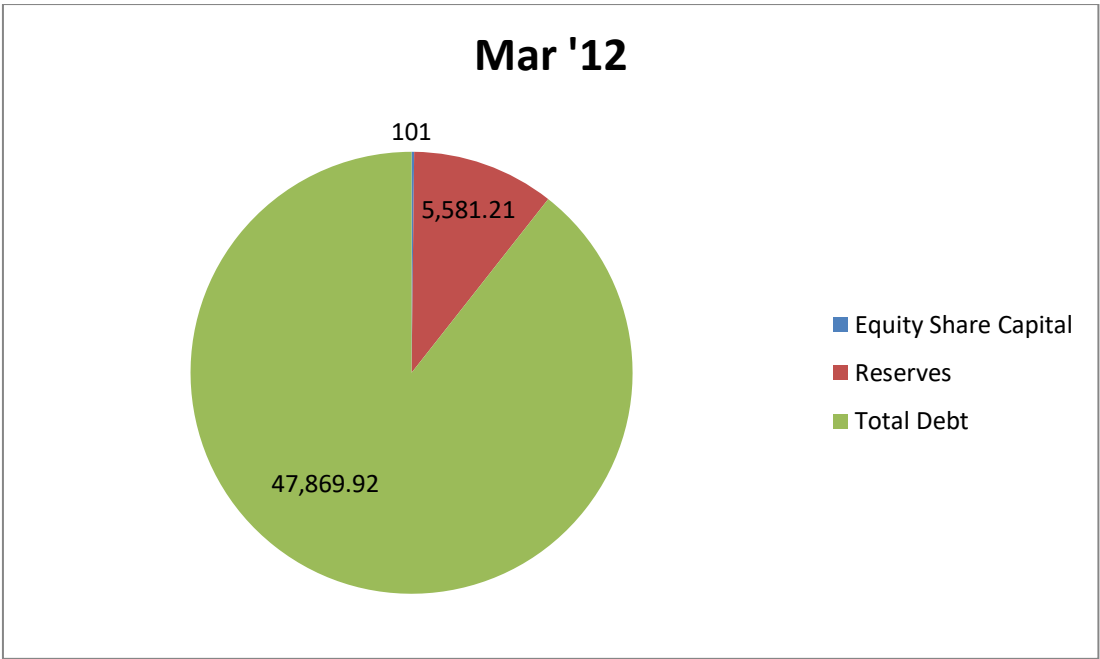
Interpretation: The Capital Structure of LIC has less equity portion it is only 101 cr. whereas reserves has 7431.90 cr. The debt value is 71450.44 cr. in 2014

Chart No: 7- Graphical Presentation of Capital Structure of LIC in 2013



Interpretation: The Capital Structure of LIC has less equity portion it is only 101 cr. whereas reserves has 6380.29 cr. The debt value is 58705.18 cr. in 2013

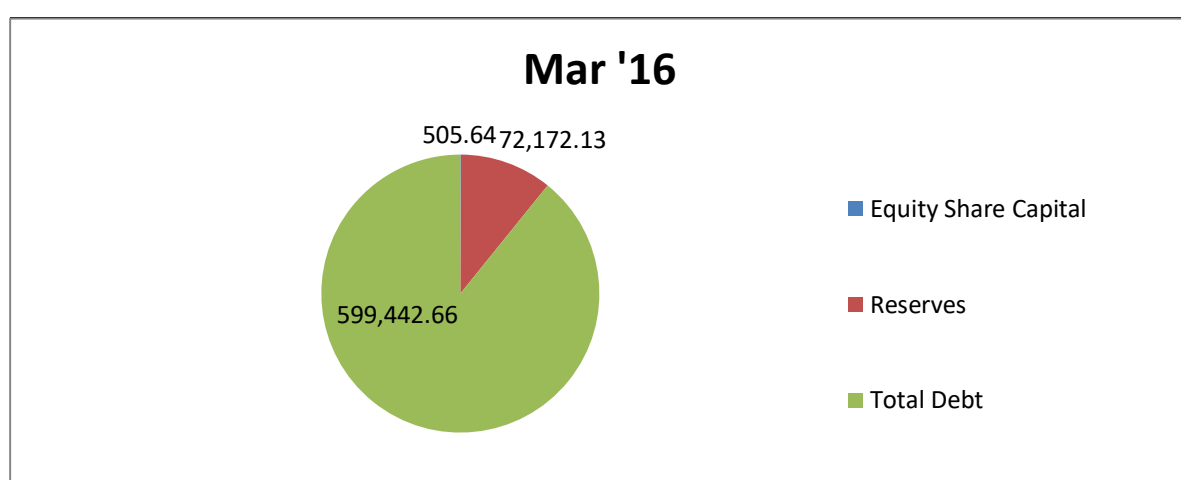
Chart No: 8- Graphical Presentation of Capital Structure of LIC in 2012



Interpretation: The Capital Structure of LIC has less equity portion it is only 101 cr. whereas reserves has 5581.21cr. The debt value is 47869.92 cr. in 2012

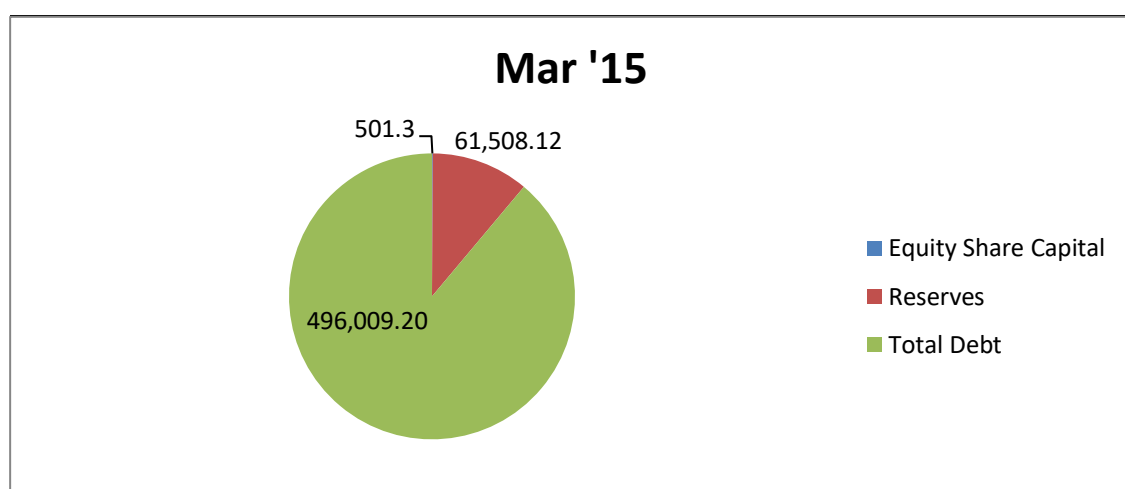
| Table IV: HDFC Capital Structure in Cr. | | | | | |
|--|-------------|-------------|-------------|-------------|-------------|
| | Mar '16 | Mar '15 | Mar '14 | Mar '13 | Mar '12 |
| Equity Share Capital | 505.64 | 501.3 | 479.81 | 475.88 | 469.34 |
| Reserves | 72,172.13 | 61,508.12 | 42,998.82 | 35,738.26 | 29,455.04 |
| Total Debt | 5,99,442.66 | 4,96,009.20 | 4,06,776.47 | 3,29,253.58 | 2,70,552.96 |
| Total Capital | 672120.43 | 558018.62 | 450255.1 | 365467.72 | 300477.34 |

Chart No: 9- Graphical Presentation of Capital Structure of HDFC in 2016



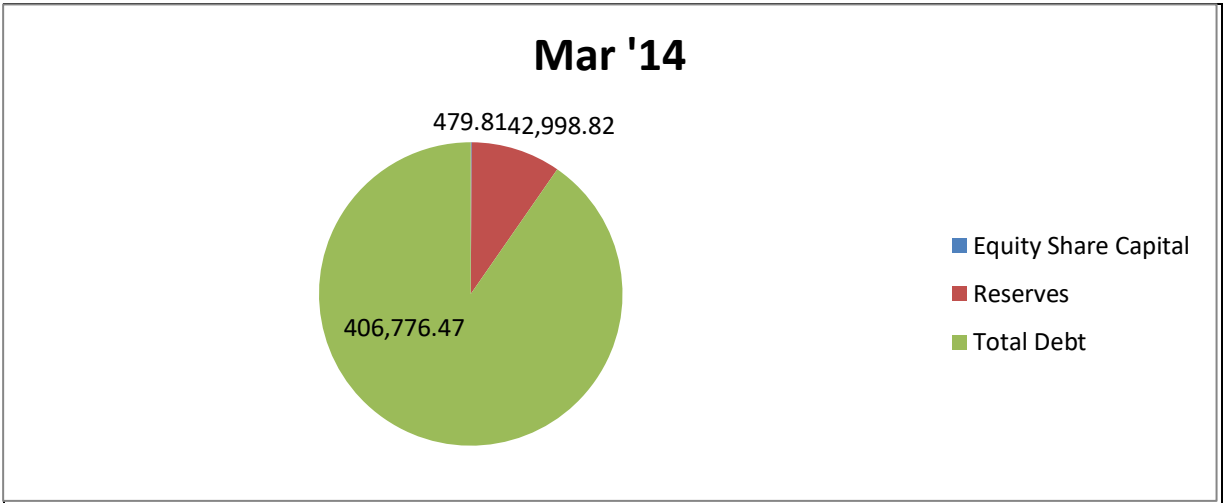
Interpretation: The Capital Structure of HDFC has less equity portion it is only 505 cr. whereas reserves has 72172.13 cr. The debt value is 599442.66 cr. in 2016

Chart No: 10- Graphical Presentation of Capital Structure of HDFC in 2015



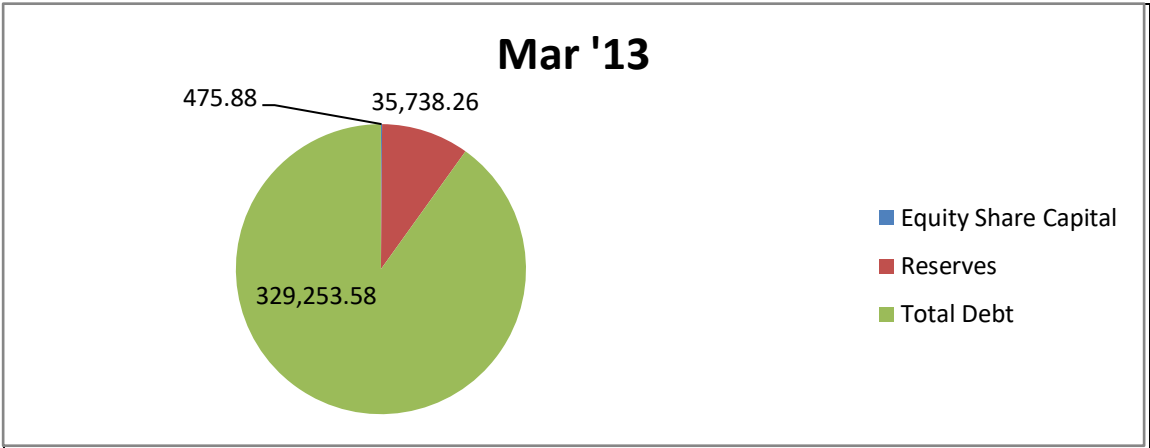
Interpretation: The Capital Structure of HDFC has less equity portion it is only 501 cr. whereas reserves has 61508.12 cr. The debt value is 496009.20 cr. in 2015

Chart No: 11- Graphical Presentation of Capital Structure of HDFC in 2014



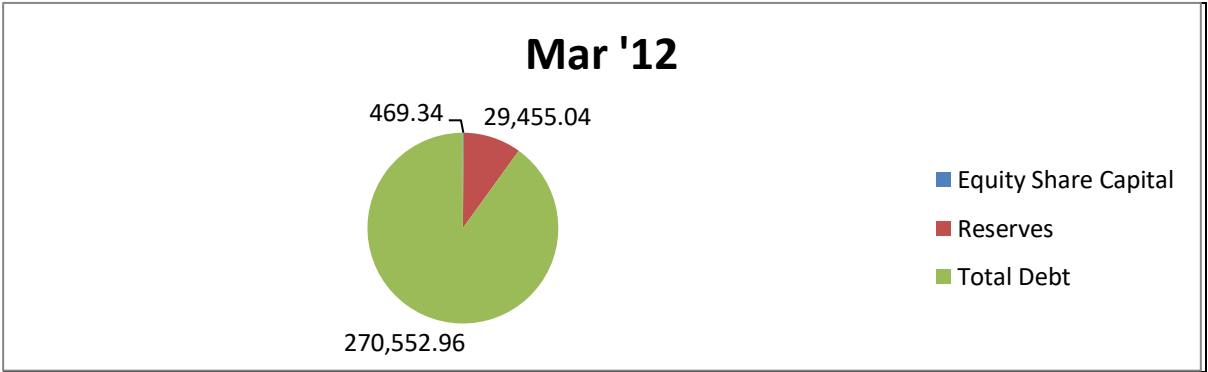
Interpretation: The Capital Structure of HDFC has less equity portion it is only 479 cr. whereas reserves has 142998.82 cr. The debt value is 406776.47 cr. in 2014

Chart No: 12- Graphical Presentation of Capital Structure of HDFC in 2013



Interpretation: The Capital Structure of HDFC has less equity portion it is only 475 cr. whereas reserves has 35738.26 cr. The debt value is 329253.58 cr. in 2013

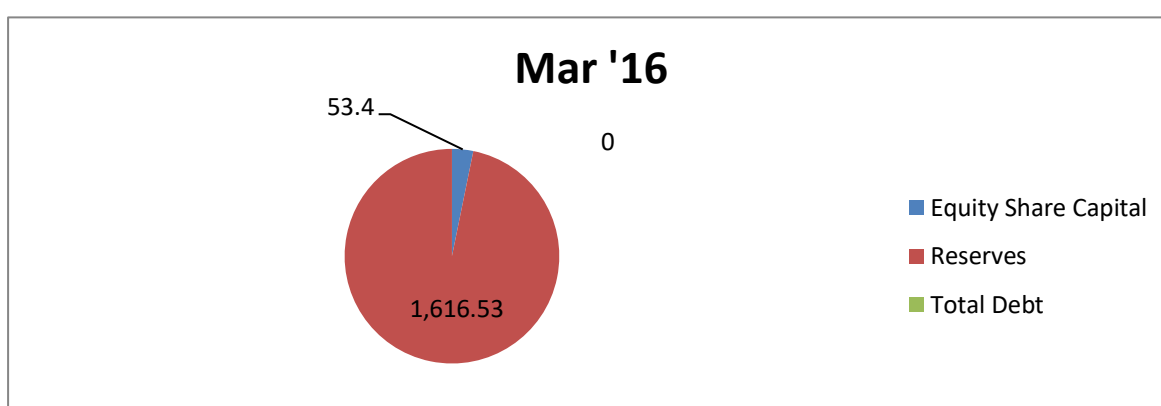
Chart No: 13- Graphical Presentation of Capital Structure of HDFC in 2012



Interpretation: The Capital Structure of HDFC has less equity portion it is only 469 cr. whereas reserves has 29455.04 cr. The debt value is 270552.96 cr. in 2012

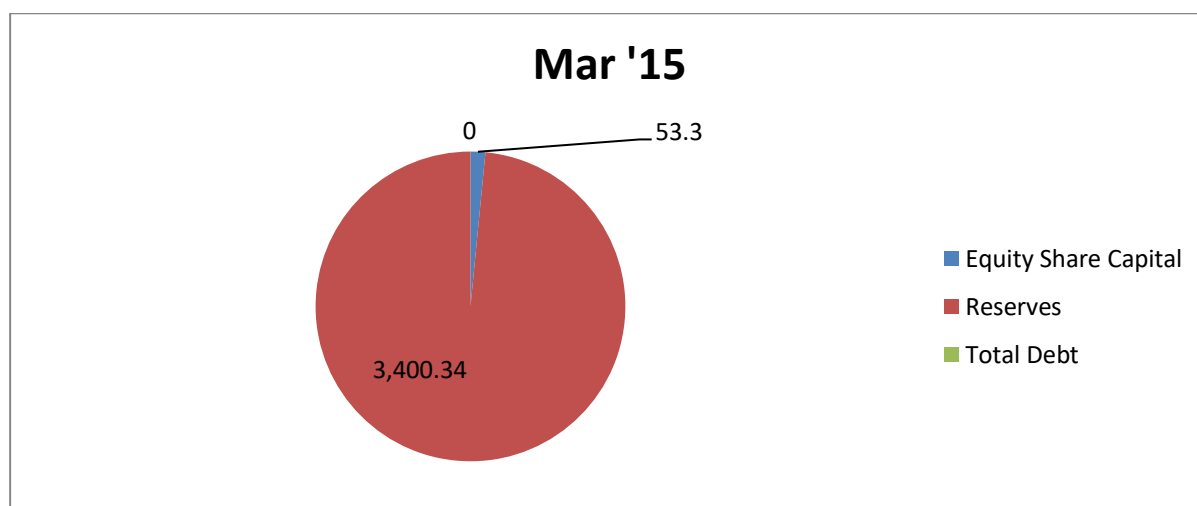
| Table V: Max life Capital Structure in Cr. | | | | | |
|---|--------------|--------------|--------------|--------------|--------------|
| | Mar '16 | Mar '15 | Mar '14 | Mar '13 | Mar '12 |
| Equity Share Capital | 53.4 | 53.3 | 53.25 | 53.1 | 52.91 |
| Reserves | 1,616. 53 | 3,400. 34 | 3,133. 09 | 3,032. 83 | 2,818. 74 |
| Total Debt | 0 | 0 | 157.8 4 | 133.2 3 | 96.25 |
| Total Capital | 1669. 93 | 3453. 64 | 3344. 18 | 3219. 16 | 2967. 9 |

Chart No: 14- Graphical Presentation of Capital Structure of Max life in 2016



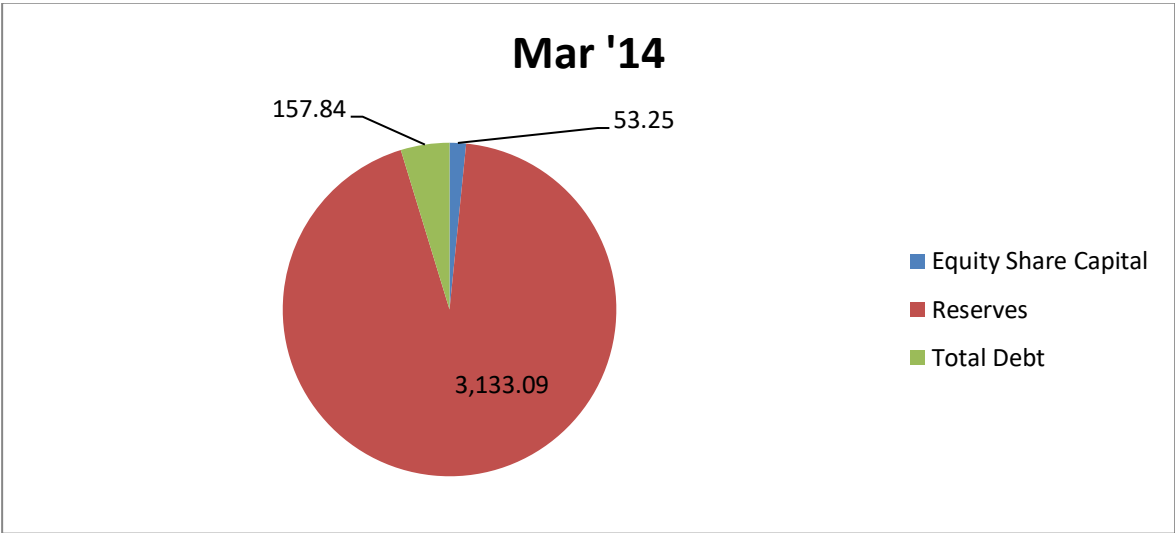
Interpretation: The Capital Structure of Max life has equity portion it is 53.4 cr. whereas reserves has 1616.53 cr. There is no debt value in 2016

Chart No: 15- Graphical Presentation of Capital Structure of Max life in 2015



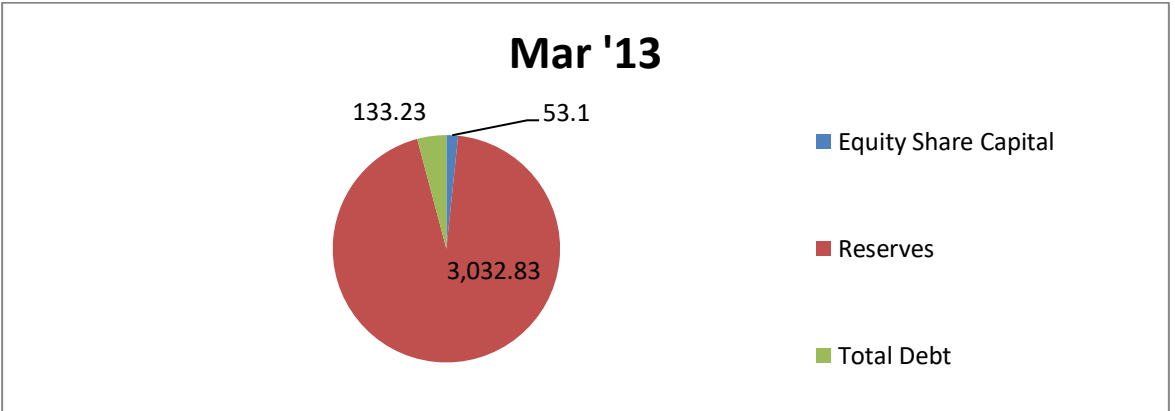
Interpretation: The Capital Structure of Max life has equity portion it is 53.3 cr. whereas reserves has 3400.34 cr. There is no debt value in 2015

Chart No: 16- Graphical Presentation of Capital Structure of Max life in 2014



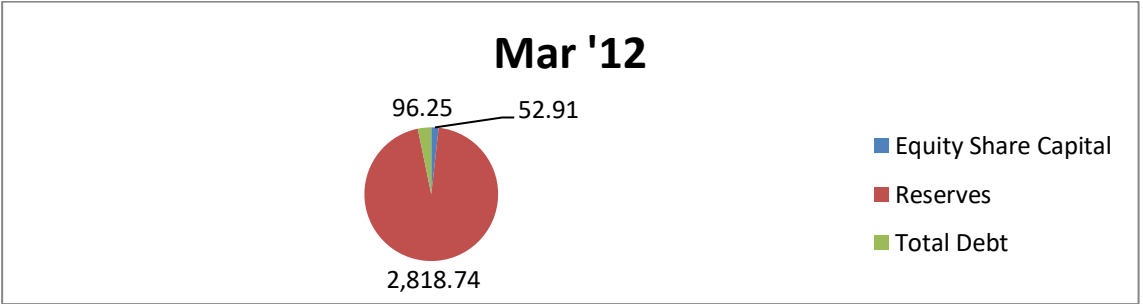
Interpretation: The Capital Structure of Max life has less equity portion it is only 53.25 cr. whereas reserves has 3133.09 cr. The debt value is 157.84 cr. in 2014

Chart No: 17- Graphical Presentation of Capital Structure of Max life in 2013



Interpretation: The Capital Structure of Max life has less equity portion it is only 53.1 cr. whereas reserves has 3032.83 cr. The debt value is 133.23 cr. in 2013

Chart No: 18- Graphical Presentation of Capital Structure of Max life in 2012

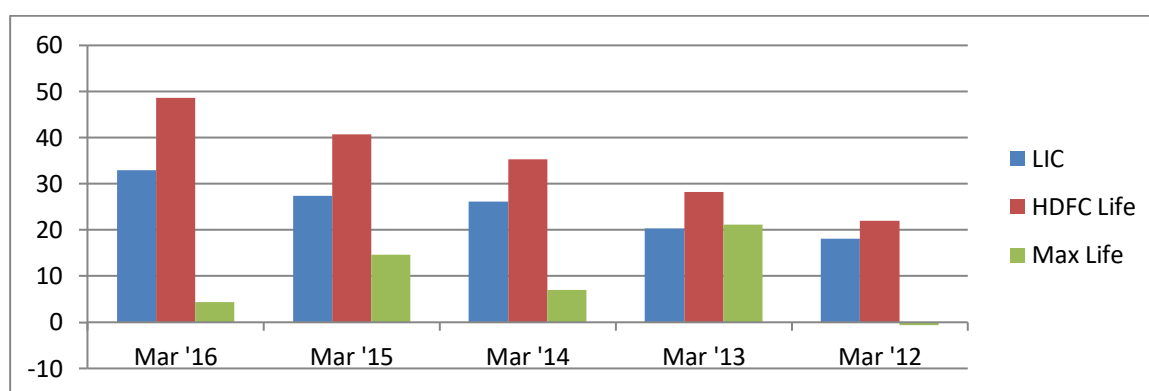


Interpretation: The Capital Structure of Max life has less equity portion it is only 52.91 cr. whereas reserves has 2818.74 cr. The debt value is 96.25cr.in 2012

PROFIT AND LOSS ANALYSIS OF LIC, HDFC LIFE AND MAX LIFE

| Table VI: Earnings per Share value Comparison | | | | | |
|--|---------|---------|---------|---------|---------|
| | Mar '16 | Mar '15 | Mar '14 | Mar '13 | Mar '12 |
| LIC | 32.91 | 27.47 | 26.1 | 20.28 | 18.11 |
| HDFC Life | 48.64 | 40.76 | 35.34 | 28.27 | 22.02 |
| Max Life | 4.32 | 14.67 | 6.95 | 21.15 | -0.58 |

Chart No: 19- Graphical Presentation of Earning Per Share of LIC, HDFC and Max Life



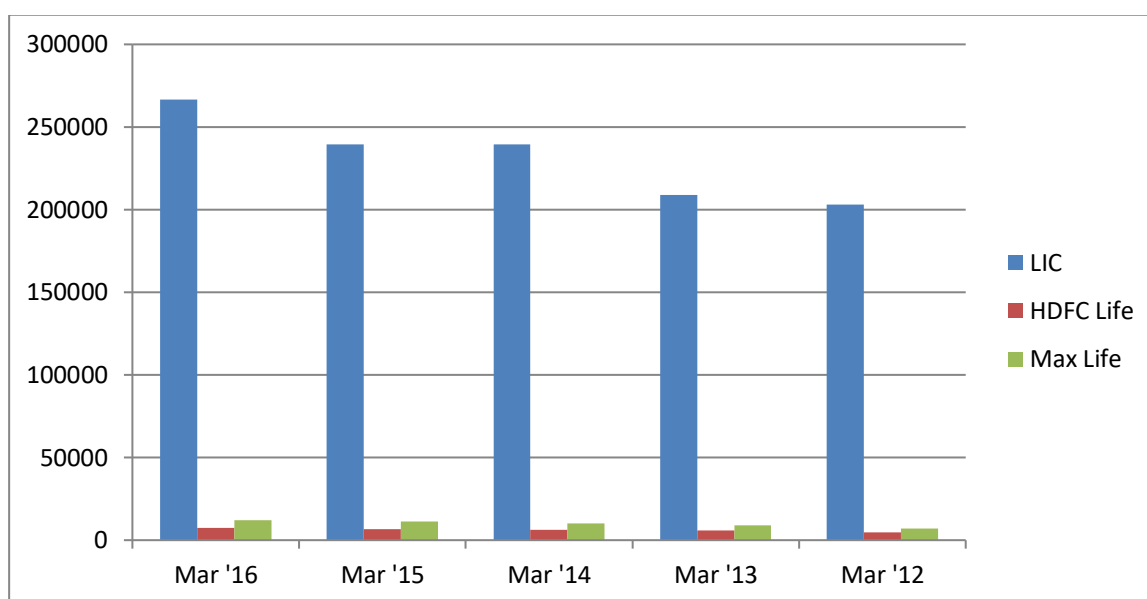
Interpretation: The comparison of Profit and Loss of each company is not possible because the capital structure of each company is different and the capital value also differs from each other company. The Earning per share (EPS) is compared of these three companies.

As per the observation the LIC and HDFCs Earning per Share (EPS) is consistently growing since last five years where as max life Earning per share Value fluctuating since last 5 Years.

Premium Collection of LIC, HDFC and Max Life Insurance Companies

| Table VII: Premium Collected by Insurance Companies in Cr. | | | | | |
|---|-----------|-----------|-----------|----------|----------|
| | Mar '16 | Mar '15 | Mar '14 | Mar '13 | Mar '12 |
| LIC | 266444.21 | 239667.65 | 239667.65 | 208803.6 | 202889.3 |
| HD FC Life | 7278.54 | 6638.7 | 6390.53 | 5812.63 | 4860.54 |
| Max Life | 12062.9 | 11322.68 | 10202.4 | 9004.17 | 7005.1 |

Chart No: 20- Graphical Presentation of Premium Collection of LIC, HDFC and Max Life

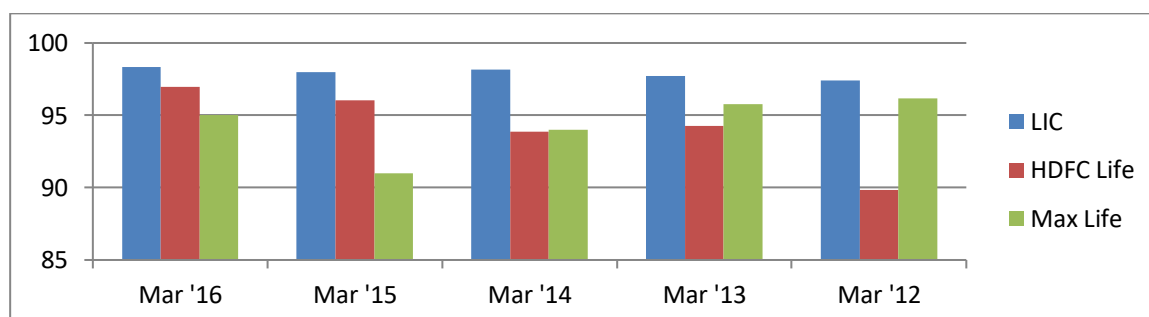


Interpretation: The LIC has a big Market share in Total Premium collection. In 2016 LIC has around 99% of share in premium collection. In 2016 LIC has a market share of 72%. So comparison of LIC, HDFC and Max Life is not possible.

Claims Ratio of LIC, HDFC and Max Life

| Table VIII: Claims ratio of LIC, HDFC and Max Life Companies | | | | | |
|--|---------|---------|---------|---------|---------|
| | Mar '16 | Mar '15 | Mar '14 | Mar '13 | Mar '12 |
| LIC | 98.33 | 98 | 98.14 | 97.73 | 97.42 |
| HDFC Life | 96.95 | 96.03 | 93.86 | 94.25 | 89.84 |
| Max Life | 95.02 | 91 | 94.01 | 95.76 | 96.17 |

Chart No: 21- Graphical Presentation of Claims of LIC, HDFC and Max Life



Interpretation: The LIC has an average of 98% claims since last five years, HDFC and Max Life average claims are around 94%. The Slandered Deviation of LIC claims 0.36 whereas HDFC and Max Life standard deviation 2.7 and 2.0 respectively.

Findings, Suggestions and Conclusion

Findings

Performance of LIC was evaluated by measuring the growth of significant variables annual premium, number of policies and sum assured. These are the key performance indicators defined by IRDA.

1. The Capital Structure of LIC has less in equity it is only 0.096% in 2012 it is 0.19%.
2. The reserves 9% reserves approximately 8 to 11% since last 5 years.
3. Total debt capital has higher portion it is consistently increasing every year since 2012 it has 90% in total capital.
4. The Capital Structure of HDFC also looks like LIC the debt capital dominating in total capital.
5. The debt capital has less more than 90% in Total Capital since last 5 years.
6. Equity capital not more than 1% in total capital whereas reserves around 10%.
7. The Max life capital structure different from LIC and HDFC it has more proportion in Reserves and less in equity. In last two years Max life don't have and debt capital.
8. The capital structure of three companies where not equal the Max life capital structure differ from LIC and HDFC hence the Hypothesis is accepted.
9. The comparison of Profit and Loss of each company is not possible because the capital structure of each company is different and the capital value also differs from each other company. The Earning per share (EPS) is compared of these three companies.
10. As per the observation the LIC and HDFCs Earning Per Share (EPS) is consistently growing since last five years where as max life Earning per share Value fluctuating since last 5 Years hence the Hypothesis is accepted.

Suggestions

- The research suggests that insurance companies should promise and pay assured returns in form of Bonus to policy holders.
- If is also suggests that to get better returns on the investments insurance companies should invest their premium collection in mutual funds and stock market instead of low yield government securities.
- The study formed that many times insurance companies are not transparent in the policy terms and condition forcing policy holder to stay any form investing their savings in insurance policies hence, it is suggested that insurance companies should be value transparent.
- Trust plays an impartment in insurance business. The man trust worthy an insurance company is the more people then to invest in their policies and schemes.

- It is further suggested that increase in their revenues, to strengthen their marketing and sells force in regional languages.
- it is observed that insurance premium from local aria are value list compared to urban areas this is becomes poor awareness about insurance schemes any linked population.
- Finally it is suggested that insurance is a concept and relate policy holder with company for long relation insurance companies should build nearly good long term relation with policy holder and other Stock holders.

Conclusion

The Indian life insurance industry has its own origin and history, since its inception. It has passed through many obstacles, hindrances to attain the present good financial status. The LIC of India proved that it can meet Maximum number of claims with its huge reserves & Market share and especially with wide spread of branches to cover all geographical locations of India. The fundamental regulatory change in the insurance sector in 1991 & 1999 leads to the end of monopoly of LIC and encourages the strong players in this sector to meet the expectations of customers from various sectors. This comparison in between Capital Structure, Earning Per Shares of the Companies, Claims reveals that LIC is comparatively Higher position. As there is still growth especially rural and backward areas of various Geographical locations which allows further growth of this sector.

Bibliography

Websites

1. www.cea.assur.org
2. www.licindia.com
3. www.bimaonline.com
4. www.irdaindia.org
5. www.moneycontrol.com
6. www.yahoofinance.com

Newspapers

1. The Business World
2. Financial Express
3. The Economic Times of India
4. The Economic times of Mumbai
5. Times of India -15th January
6. The Business World

Text Books

1. India Insurance Guide Paperback – 2014 by Dr. L. P. GUPTA (Author)
2. Fundamentals of Life Insurance: Theories and Applications Edition by Kaninika Mishra (Author)
3. Modern Law Of Insurance In India by K.S.N.murthy (Author), K.V.S. Sarma (Author)

4. Principles of Risk Management and Insurance
Author(S):George E. Rejda

ABOUT MRGI

Malla Reddy group of Institutions is one of the biggest conglomerates of hi-tech professional educational institutions in the state of Telangana, established in 2001 sprawling over 200 acres of land. The group is dedicated to impart quality professional education like pharmacy, Engineering & Technology, MCA, MBA courses. Our sole objective is to turn out high caliber professionals from those students who join us.

ABOUT MRCE

Malla Reddy group of Engineering (Formerly CM Engineering College) has been established under the aegis of the Malla Reddy Group of Institutions in the year 2005, a majestic empire, founded by chairman Sri Ch.Malla Reddy Garu. He has been in the field of education for the last 22 years with the intention of spearheading quality education among children from the school level itself. Malla Reddy College of Engineering has been laid upon a very strong foundation and has ever since been excelling in every aspect. The bricks of this able institute are certainly the adept management, the experienced faculty, the selfless non-teaching staff and of course the students.

ABOUT ICTIMES

ICTIMES started long back with its banner to promote the vision of future technologies that change the trends of life on this planet earth. Under this banner, the Department of Humanities Sciences and Management at MRCE organizes the ICAHSM - International Conference on Advances in Humanities Sciences and Management to provide a scholarly platform to ignite the spirit of Research and bring out the latent potential in teaching fraternity and student community. ICAHSM accommodates major areas like, English Language, Literature, Phonetics, Mathematics, Physics, Chemistry and Management Sciences.

ABOUT ICAHSM

International Conference on Advances in Humanities Sciences and Management (ICAHSM-2017) will bring together innovative academicians, researchers and industrial experts in the field of Humanities Sciences and Management to a common forum. The idea of the conference is, for the scientists, scholars, engineers and students from the Universities across the world and the industry as well, to present ongoing research activities, and hence of foster research relations between the Universities and the industry with the rapid development of trends and studies in the fields concerned. ICAHSM-2017 will provide a heartwarming platform to researchers, scholars, faculty and students to exchange their novel ideas face to face together.