

INTERNATIONAL JOURNAL OF RESEARCH IN COMMERCE, IT & MANAGEMENT

I
J
R
C
M



A Monthly Double-Blind Peer Reviewed Refereed Open Access International e-Journal - Included in the International Serial Directories

Indexed & Listed at:

Ulrich's Periodicals Directory ©, ProQuest, U.S.A., EBSCO Publishing, U.S.A., Index Copernicus Publishers Panel, Poland,

Open J-Gate, India [link of the same is duly available at Infibnet of University Grants Commission (U.G.C.)]

as well as in Cabell's Directories of Publishing Opportunities, U.S.A.

Circulated all over the world & Google has verified that scholars of more than Hundred & Thirty Two countries/territories are visiting our journal on regular basis.

Ground Floor, Building No. 1041-C-1, Devi Bhawan Bazar, JAGADHRI – 135 003, Yamunanagar, Haryana, INDIA

www.ijrcm.org.in

CONTENTS

Sr. No.	TITLE & NAME OF THE AUTHOR (S)	Page No.
1.	BRAND THEOLOGY: CONDITIONING AND CONFIGURING CONSUMER BEHAVIOUR ANM FARUKH	1
2.	IMPACT OF EMPLOYEE SATISFACTION AND UNION – MANAGEMENT RELATION ON ENHANCED CUSTOMER SATISFACTION- REGRESSION ANALYSIS: A STUDY OF ANDHRA PRADESH STATE ROAD TRANSPORT CORPORATION (A.P.S.R.T.C) A. R. VIJAYA CHANDRAN, DR. MOHAMMED ABBAS ALI & DR. V. M. PRASAD	5
3.	A STUDY OF THE ATTITUDE OF THE YOUTH TOWARDS ADOPTION OF INTERNET ENTERPRENEURSHIP IN NIGERIA DR. I C NWAIZUGBO & V N O AGHARA	7
4.	THE IMPACT OF SMALL BUSINESS MANAGEMENT ON SOCIETAL MARKETING PRACTICES IN LAGOS MEGA CITY, NIGERIA DR. HALIRU BALA	11
5.	IMPACT OF HUMAN ERROR IN MAINTENANCE MANAGEMENT AND MINIMIZING METHODOLOGY N. K. K. PRASANNA & TUSHAR N. DESAI	15
6.	INTERPERSONAL RELATIONSHIP-AN ATTEMPT AT QUANTIFYING IT T K PARAMESWARAN NAIR	21
7.	PERFORMANCE APPRAISAL SYSTEM IN TEXTILE INDUSTRY WITH SPECIAL REFERENCE TO TIRUPUR- AN EXPLORATORY STUDY DR. S. KUPPUSAMY, E.DEEPA & M. STELLA	27
8.	MANAGERIAL PERCEPTION TOWARDS INDUSTRIAL SUBSIDY AND ITS IMPACT ON INDUSTRIALIZATION IN UTTARAKHAND: AN EMPIRICAL STUDY DR. D S CHAUBEY, SIDHESWAR PATRA & PRAVEEN KUKRETI	33
9.	EMPLOYEE'S DISSONANCE TOWARDS SAFETY, HEALTH AND ENVIRONMENT (SHE) IN CONFECTIONERY INDUSTRY DR.MU.SUBRAHMANIAN & P. RENGANATHAN	40
10.	ACCEPTANCE AND USAGE OF MANAGEMENT INFORMATION SYSTEM (MIS) IN SMALL SCALE INDUSTRIES C.G. RAMACHANDRA & T.R. SRINIVAS	43
11.	DEVELOPING RIGHT HUMAN EQUATION BY SELF KNOWLEDGE FOR CHANGE MANAGEMENT: LEARNING FROM INDIAN MYTHOLOGY DR. K. V. ALIAS. BALAJI, DR. M.SIVAGNANASUNDARAM & BIDYANAND JHA	47
12.	A STUDY ON WORK- LIFE BALANCE AMONG WOMEN TEACHERS WORKING IN SELF-FINANCING ENGINEERING INSTITUTIONS S.PATTU MEENAKSHI & DR. K. RAVICHANDRAN	51
13.	THE EFFECT OF TEAM PROCESS AND KEY COMPENSATION FACTORS WHILE MOTIVATING HIGH PERFORMANCE IN PHARMACEUTICAL SALES TEAMS DR. SURENDRA KUMAR	56
14.	SUPPLY CHAIN MANAGEMENT IN TWO WHEELER INDUSTRY - A STUDY ON HERO HONDA AND BAJAJ AUTO SUPPLY CHAIN PRACTICES R.VENKATESHWAR RAO.	61
15.	OPTIMUM PERFORMANCE OF TURMERIC EXTRACTION FIRMS: AN INPUT-OUTPUT ANALYSIS V.ABIRAMI & DR. HANSA LYSANDER MANOHAR	67
16.	ANALYSIS OF PERSISTENCY IN THE MONTHLY COIMBATORE RAINFALL TAMIL SELVI .S & SAMUEL SELVARAJ. R	71
17.	PROS AND CONS OF IMPLEMENTING EMPLOYEE EMPOWERMENT IN SERVICE SECTOR- A META ANALYSIS OF RESEARCH LITERATURE ELIZABETH GEORGE & DR. ZAKKARIYA K.A.	73
18.	STUDY OF CONSUMER AWARENESS ABOUT E-BANKING SERVICES AND ITS APPLICATION IN SELECT AREA OF PUNE CITY KRISHNA MOHAN SHARMA & VINEETA DEOLIA	77
19.	CSR – A NEW ROLE ENTRUSTED TO EDUCATIONAL INSTITUTIONS PRAGATI CHAUHAN & YOGITA SHARMA	80
20.	A STUDY ON EFFECTIVENESS OF CAPITAL STRUCTURE AMONG SELECTED PRIVATE TEXTILE COMPANIES IN INDIA VIVEK SUBRAMANIAM	84
21.	IMPACT OF GLOBAL FINANCIAL CRISIS ON BUSINESS CYCLES IN DEVELOPING ASIA AND THE DECOUPLING HYPOTHESIS DR. RAVI SINGLA	91
22.	SYSTEMATIC RISK AND RETURN ANALYSIS IN SECURITY MARKET NIVEDHITA.J & REVATHI.P	97
23.	ASSETS FORMATION AND BUSINESS IN PUNJAB NATIONAL BANK: A CASE STUDY NAMITA MAINI	102
24.	GOVERNANCE AND RESPONSIBILITY - A JOINT VENTURE (WITH SPECIAL REFERENCE TO TATA) RADHAKRISHNA MISHRA & MALAVIKA PATTNAIK	105
25.	FACTORS EFFECTING READING DECISION OF PRINT ADVERTISEMENT: AN EXPLORATORY AND EXPERIMENTAL STUDY ANUPAMA SUNDAR & JATIN PANDEY	108
26.	WORKING CAPITAL MANAGEMENT AND PROFITABILITY –A CASE STUDY OF BALRAMPUR CHINNI MILLS LIMITED DR. P. C. NARWARE	111
27.	ROLE OF ICT MICRO ENTERPRISES ON WOMEN DEVELOPMENT IN KERALA DR. C.S. SIVA PRAKASH	115
28.	ENTREPRENEURSHIP AMONG RURAL WOMEN -A STUDY IN ANDHRA PRADESH DR. NANU LUNAVATH	122
29.	BUSINESS EXCELLENCE MODELS: QUANTIFYING THE IMPLEMENTATION AND MATURITY LEVEL – A STATISTICAL APPROACH RUCHIK GANDHI & JUBIN MEHTA	130
30.	STUDENT'S ATTITUDE TOWARDS APPLICATION OF STATISTICS: A STUDY OF UNIVERSITY OF JAMMU ANJU THAPA & ANKUSH BHARTI	135
	REQUEST FOR FEEDBACK	138

CHIEF PATRON

PROF. K. K. AGGARWAL

Chancellor, Lingaya's University, Delhi
Founder Vice-Chancellor, Guru Gobind Singh Indraprastha University, Delhi
Ex. Pro Vice-Chancellor, Guru Jambheshwar University, Hisar

PATRON

SH. RAM BHAJAN AGGARWAL

Ex. State Minister for Home & Tourism, Government of Haryana
Vice-President, Dadri Education Society, Charkhi Dadri
President, Chinar Syntex Ltd. (Textile Mills), Bhiwani

CO-ORDINATOR

AMITA

Faculty, Government M. S., Mohali

ADVISORS

DR. PRIYA RANJAN TRIVEDI

Chancellor, The Global Open University, Nagaland

PROF. M. S. SENAM RAJU

Director A. C. D., School of Management Studies, I.G.N.O.U., New Delhi

PROF. M. N. SHARMA

Chairman, M.B.A., Haryana College of Technology & Management, Kaithal

PROF. S. L. MAHANDRU

Principal (Retd.), Maharaja Agrasen College, Jagadhri

EDITOR

PROF. R. K. SHARMA

Professor, Bharti Vidyapeeth University Institute of Management & Research, New Delhi

CO-EDITOR

DR. BHAVET

Faculty, M. M. Institute of Management, Maharishi Markandeshwar University, Mullana, Ambala, Haryana

EDITORIAL ADVISORY BOARD

DR. RAJESH MODI

Faculty, Yanbu Industrial College, Kingdom of Saudi Arabia

PROF. SANJIV MITTAL

University School of Management Studies, Guru Gobind Singh I. P. University, Delhi

PROF. ANIL K. SAINI

Chairperson (CRC), Guru Gobind Singh I. P. University, Delhi

DR. SAMBHAVNA

Faculty, I.I.T.M., Delhi

DR. MOHENDER KUMAR GUPTA

Associate Professor, P. J. L. N. Government College, Faridabad

DR. SHIVAKUMAR DEENE

Asst. Professor, Dept. of Commerce, School of Business Studies, Central University of Karnataka, Gulbarga

MOHITA

Faculty, Yamuna Institute of Engineering & Technology, Village Gadholi, P. O. Gadholi, Yamunanagar

ASSOCIATE EDITORS**PROF. NAWAB ALI KHAN**

Department of Commerce, Aligarh Muslim University, Aligarh, U.P.

PROF. ABHAY BANSAL

Head, Department of Information Technology, Amity School of Engineering & Technology, Amity University, Noida

PROF. A. SURYANARAYANA

Department of Business Management, Osmania University, Hyderabad

DR. ASHOK KUMAR

Head, Department of Electronics, D. A. V. College (Lahore), Ambala City

DR. SAMBHAV GARG

Faculty, M. M. Institute of Management, Maharishi Markandeshwar University, Mullana, Ambala, Haryana

PROF. V. SELVAM

SSL, VIT University, Vellore

DR. PARDEEP AHLAWAT

Reader, Institute of Management Studies & Research, Maharshi Dayanand University, Rohtak

S. TABASSUM SULTANA

Associate Professor, Department of Business Management, Matrusri Institute of P.G. Studies, Hyderabad

SURJEET SINGH

Asst. Professor, Department of Computer Science, G. M. N. (P.G.) College, Ambala Cantt.

TECHNICAL ADVISOR**AMITA**

Faculty, Government H. S., Mohali

MOHITA

Faculty, Yamuna Institute of Engineering & Technology, Village Gadholi, P. O. Gadholi, Yamunanagar

FINANCIAL ADVISORS**DICKIN GOYAL**

Advocate & Tax Adviser, Panchkula

NEENA

Investment Consultant, Chambaghat, Solan, Himachal Pradesh

LEGAL ADVISORS**JITENDER S. CHAHAL**

Advocate, Punjab & Haryana High Court, Chandigarh U.T.

CHANDER BHUSHAN SHARMA

Advocate & Consultant, District Courts, Yamunanagar at Jagadhri

SUPERINTENDENT**SURENDER KUMAR POONIA**

CALL FOR MANUSCRIPTS

We invite unpublished novel, original, empirical and high quality research work pertaining to recent developments & practices in the area of Computer, Business, Finance, Marketing, Human Resource Management, General Management, Banking, Insurance, Corporate Governance and emerging paradigms in allied subjects like Accounting Education; Accounting Information Systems; Accounting Theory & Practice; Auditing; Behavioral Accounting; Behavioral Economics; Corporate Finance; Cost Accounting; Econometrics; Economic Development; Economic History; Financial Institutions & Markets; Financial Services; Fiscal Policy; Government & Non Profit Accounting; Industrial Organization; International Economics & Trade; International Finance; Macro Economics; Micro Economics; Monetary Policy; Portfolio & Security Analysis; Public Policy Economics; Real Estate; Regional Economics; Tax Accounting; Advertising & Promotion Management; Business Education; Management Information Systems (MIS); Business Law, Public Responsibility & Ethics; Communication; Direct Marketing; E-Commerce; Global Business; Health Care Administration; Labor Relations & Human Resource Management; Marketing Research; Marketing Theory & Applications; Non-Profit Organizations; Office Administration/Management; Operations Research/Statistics; Organizational Behavior & Theory; Organizational Development; Production/Operations; Public Administration; Purchasing/Materials Management; Retailing; Sales/Selling; Services; Small Business Entrepreneurship; Strategic Management Policy; Technology/Innovation; Tourism, Hospitality & Leisure; Transportation/Physical Distribution; Algorithms; Artificial Intelligence; Compilers & Translation; Computer Aided Design (CAD); Computer Aided Manufacturing; Computer Graphics; Computer Organization & Architecture; Database Structures & Systems; Digital Logic; Discrete Structures; Internet; Management Information Systems; Modeling & Simulation; Multimedia; Neural Systems/Neural Networks; Numerical Analysis/Scientific Computing; Object Oriented Programming; Operating Systems; Programming Languages; Robotics; Symbolic & Formal Logic and Web Design. The above mentioned tracks are only indicative, and not exhaustive.

Anybody can submit the soft copy of his/her manuscript **anytime** in M.S. Word format after preparing the same as per our submission guidelines duly available on our website under the heading guidelines for submission, at the email addresses: infoijrcm@gmail.com or info@ijrcm.org.in.

GUIDELINES FOR SUBMISSION OF MANUSCRIPT

1. COVERING LETTER FOR SUBMISSION:

DATED: _____

THE EDITOR
IJRCM

Subject: SUBMISSION OF MANUSCRIPT IN THE AREA OF _____.

(e.g. Finance/Marketing/HRM/General Management/Economics/Psychology/Law/Computer/IT/Engineering/Mathematics/other. **please specify**)

DEAR SIR/MADAM

Please find my submission of manuscript entitled ' _____ ' for possible publication in your journals.

I hereby affirm that the contents of this manuscript are original. Furthermore, it has neither been published elsewhere in any language fully or partly, nor is it under review for publication elsewhere.

I affirm that all the author (s) have seen and agreed to the submitted version of the manuscript and their inclusion of name (s) as co-author (s).

Also, if my/our manuscript is accepted, I/We agree to comply with the formalities as given on the website of the journal & you are free to publish our contribution in any of your journals.

NAME OF CORRESPONDING AUTHOR:

Designation:

Affiliation with full address, contact numbers & Pin Code:

Residential address with Pin Code:

Mobile Number (s):

Landline Number (s):

E-mail Address:

Alternate E-mail Address:

NOTES:

- a) The whole manuscript is required to be in **ONE MS WORD FILE** only (pdf. version is liable to be rejected without any consideration), which will start from the covering letter, inside the manuscript.
- b) The sender is required to mention the following in the **SUBJECT COLUMN** of the mail:
New Manuscript for Review in the area of (Finance/Marketing/HRM/General Management/Economics/Psychology/Law/Computer/IT/Engineering/Mathematics/other, please specify)
- c) There is no need to give any text in the body of mail, except the cases where the author wishes to give any specific message w.r.t. to the manuscript.
- d) The total size of the file containing the manuscript is required to be below **500 KB**.
- e) Abstract alone will not be considered for review, and the author is required to submit the complete manuscript in the first instance.
- f) The journal gives acknowledgement w.r.t. the receipt of every email and in case of non-receipt of acknowledgment from the journal, w.r.t. the submission of manuscript, within two days of submission, the corresponding author is required to demand for the same by sending separate mail to the journal.

2. **MANUSCRIPT TITLE:** The title of the paper should be in a 12 point Calibri Font. It should be bold typed, centered and fully capitalised.

3. **AUTHOR NAME (S) & AFFILIATIONS:** The author (s) **full name, designation, affiliation (s), address, mobile/landline numbers**, and **email/alternate email address** should be in italic & 11-point Calibri Font. It must be centered underneath the title.

4. **ABSTRACT:** Abstract should be in fully italicized text, not exceeding 250 words. The abstract must be informative and explain the background, aims, methods, results & conclusion in a single para. Abbreviations must be mentioned in full.

5. **KEYWORDS:** Abstract must be followed by a list of keywords, subject to the maximum of five. These should be arranged in alphabetic order separated by commas and full stops at the end.
6. **MANUSCRIPT:** Manuscript must be in **BRITISH ENGLISH** prepared on a standard A4 size **PORTRAIT SETTING PAPER**. It must be prepared on a single space and single column with 1" margin set for top, bottom, left and right. It should be typed in 8 point Calibri Font with page numbers at the bottom and centre of every page. It should be free from grammatical, spelling and punctuation errors and must be thoroughly edited.
7. **HEADINGS:** All the headings should be in a 10 point Calibri Font. These must be bold-faced, aligned left and fully capitalised. Leave a blank line before each heading.
8. **SUB-HEADINGS:** All the sub-headings should be in a 8 point Calibri Font. These must be bold-faced, aligned left and fully capitalised.
9. **MAIN TEXT:** The main text should follow the following sequence:

INTRODUCTION**REVIEW OF LITERATURE****NEED/IMPORTANCE OF THE STUDY****STATEMENT OF THE PROBLEM****OBJECTIVES****HYPOTHESES****RESEARCH METHODOLOGY****RESULTS & DISCUSSION****FINDINGS****RECOMMENDATIONS/SUGGESTIONS****CONCLUSIONS****SCOPE FOR FURTHER RESEARCH****ACKNOWLEDGMENTS****REFERENCES****APPENDIX/ANNEXURE**

It should be in a 8 point Calibri Font, single spaced and justified. The manuscript should preferably not exceed **5000 WORDS**.

10. **FIGURES & TABLES:** These should be simple, centered, separately numbered & self explained, and **titles must be above the table/figure**. Sources of data should be mentioned below the table/figure. It should be ensured that the tables/figures are referred to from the main text.
11. **EQUATIONS:** These should be consecutively numbered in parentheses, horizontally centered with equation number placed at the right.
12. **REFERENCES:** The list of all references should be alphabetically arranged. The author (s) should mention only the actually utilised references in the preparation of manuscript and they are supposed to follow **Harvard Style of Referencing**. The author (s) are supposed to follow the references as per the following:
 - All works cited in the text (including sources for tables and figures) should be listed alphabetically.
 - Use (ed.) for one editor, and (ed.s) for multiple editors.
 - When listing two or more works by one author, use --- (20xx), such as after Kohl (1997), use --- (2001), etc, in chronologically ascending order.
 - Indicate (opening and closing) page numbers for articles in journals and for chapters in books.
 - The title of books and journals should be in italics. Double quotation marks are used for titles of journal articles, book chapters, dissertations, reports, working papers, unpublished material, etc.
 - For titles in a language other than English, provide an English translation in parentheses.
 - The location of endnotes within the text should be indicated by superscript numbers.

PLEASE USE THE FOLLOWING FOR STYLE AND PUNCTUATION IN REFERENCES:**BOOKS**

- Bowersox, Donald J., Closs, David J., (1996), "Logistical Management." Tata McGraw, Hill, New Delhi.
- Hunker, H.L. and A.J. Wright (1963), "Factors of Industrial Location in Ohio" Ohio State University, Nigeria.

CONTRIBUTIONS TO BOOKS

- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

JOURNAL AND OTHER ARTICLES

- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

CONFERENCE PAPERS

- Garg, Sambhav (2011): "Business Ethics" Paper presented at the Annual International Conference for the All India Management Association, New Delhi, India, 19-22 June.

UNPUBLISHED DISSERTATIONS AND THESES

- Kumar S. (2011): "Customer Value: A Comparative Study of Rural and Urban Customers," Thesis, Kurukshetra University, Kurukshetra.

ONLINE RESOURCES

- Always indicate the date that the source was accessed, as online resources are frequently updated or removed.

WEBSITE

- Garg, Bhavet (2011): Towards a New Natural Gas Policy, Political Weekly, Viewed on January 01, 2012 <http://epw.in/user/viewabstract.jsp>

BRAND THEOLOGY: CONDITIONING AND CONFIGURING CONSUMER BEHAVIOUR

**ANM FARUKH
HEAD
DEPARTMENT OF R & D
MUTUAL TRUST BANK LTD.
DHAKA**

ABSTRACT

Background of this study is formed standing against the view that "marketers should customize their Brands as per the Consumer Behaviour". This study takes a reverse view and explores the possibility to find whether consumer behaviour be shaped by brands. If a brand can shape consumer behaviour, would bring splendid outcome to the chronicle of brandings. The aim of this study was to explore the possibility whether consumer behaviour could be shaped by brands in this world of cluttered Brands. The method of this study was completely Meta Analysis based on secondary knowledge and information. The core method of this study was connecting the dotted lines across knowledge of different disciplines even psychology and neuropsychology and getting them ordered to focus the light on objective of this study. The study finds that, Brand Positioning could be used to manipulate and better represent a brand in order to shape consumer behavior. This study further finds that despite the power of data collection and analysis technology, individual's behaviour remains tantalizingly unpredictable, because a great deal of brand choice and purchase behaviour is automatic and no longer exists in the province of consciousness. This study suggests marketers to focus on in-depth issues more; and to less depend on directly asked-answered questionnaire method, as questionnaire-based research work reaches consumer's conscious level, where a few decisions are actually taken, if not all.

KEYWORDS

Brand, Consumer Behavior, Consumer Psychology, New method of Branding.

BACKGROUND

There are now millions of middle-class people looking for an international behaviour and international products. Unilever through market research found that 'metropolitan Thais are more eager to try new products than many other nationalities. Moreover, young women believe that changing their shampoo brands regularly makes their hair look better and there is an increasing number of people becoming "fashion conscious" especially regarding their hair' (Malhotra, 2004).

Based on the information, Unilever has tapped into the market with customized products/brands, and have gained a good amount of profits as Malhotra (2004) mentions taking into account the cultural background and the cultural evolution of the Thai population Unilever has reoriented its strategy. Thus, Thailand has become one of Unilever's key centres for the development of new hair products and Unilever's Organic shampoo was first launched in Thailand before being available worldwide.

In the whole scenario, brand was designed and positioned according to the behaviour and culture of the consumers. This is the mostly used marketing practice by the managers across the globe. Simply this policy is to discover the existing culture and consumers' needs and then to re-position the brands. That is, Consumer Needs help shaping the Brands.

This study seeks for ways to manipulate brand's attributes instead of customizing the brand at regional and cultural level. If a brand's relation with human behaviour can be manipulated so that they can shape consumer behaviour, would bring splendid outcome to the history of brand, which will not only create merely brand loyalty but also the brand will be instilled within the consumer mind in a way, which is hard to change, even if someone wants to. This would definitely create stronger brands.

However, in recent years, the more trade barriers are being removed the tougher business is. That is why, branding has been getting more and more emphasize day by day. At the same time, more and more creative thinking is explored for creating, positioning and communicating brands. In search of creative ways of branding, this study explores the relationship between a brand and consumer and the impact a brand may have on consumer behaviour.

BRAND AS A CONSTRUCT

'The word "brand" is derived from the Old Norse brandr meaning "to burn." It refers to the practice of producers burning their mark (or brand) onto their products' (Wikipedia, 2011). 'The Italians were among the first to use brands, in the form of watermarks on paper in the 1200s' (Colapinto, 2011). Although today's modern commercial concept of branding developed in late 18th century especially in England and the USA. Among the commodities of that era "Sunlight" is a brand of household soap originally produced by the British company Lever Brothers (Later used as Lever) in 1885. 'It was the world's first packaged, branded laundry soap' (BBC, 2011). Previously Lever and other companies in England used to sell in huge 10kg slabs. Lever introduced 100gm piece of soap with every soap branded with its unique logo, another reason for this launch was an attempt to protect counterfeit and make the product stand out. They also wrapped every 100gm soaps with paper printed Sunlight 'branded' across it. The role of the Sunlight label was shorthand: a promise that a customer would get a certain quality standard every single time that commodity was purchased. On that era the effect was instead of asking for just soap, consumer started to ask by Lever's Sunlight. This also brought a consistent level of promise for consumer that every time they purchase a Lever's Sunlight they were assured to get a certain level of quality. For this proposition of delivering assured quality consistently, Lever charged premium (and market was ready to pay) over any other soaps in the market during that period which was merely a commodity in that time. Naturally this phenomenon occurring in England was not the only example of the world's getting into the era of commercial branding. The same period, across the Atlantic in the USA, 'a chemist by the name of John Pemberton from Atlanta had created a cola beverage that made labourers feel miraculously refreshed. He branded his product Coca Cola in an attempt to distinguish his product from other similar competitors' (Pendergrast, 2000).

A number of definitions were found for 'Brand'. Simoes & Dibb (2001) says 'A brand embodies a whole set of physical and socio-psychological attributes and beliefs which are associated with the product. It is more than the shaping of distinctiveness: it is the forging of associations.' While Hankinson & Cowking (1993) says 'A product or service made distinctive by its positioning relative to the competition and by its personality, which comprises a unique combination of functional attributes and symbolic values'. Chernatony & Dall'Omo (1998) suggest that 'the brand is a multidimensional construct whereby managers augment products or services with values and this facilitates the process by which consumers confidently recognise and appreciate these values'. Kapferer (1997) mentioned that "the brand is a sign therefore external whose function is to disclose the hidden qualities of the product which are inaccessible to contact" (p. 28).

In culmination to the above definitions, first of all it can be said that, Brand is a multi dimensional construct and thus its definition is multi facet. Brand is a set of physical and socio-psychological attributes and beliefs associated with the product. Brand is distinctive by its positioning relative to competition and by its personality that combines unique functional attributes and symbolic values. Brand facilitates consumers confidently recognise it. Brand is a sign that discloses the hidden qualities of the product.

In exploring links between brand and its impact on consumer behaviour the above definition provides insights important to the topic. As it is said product associated Socio – psychological attributes and beliefs are subsets to brand, indicates that Brand may have impact on consumer psychology through this attribute, and consumer psychology may bring impact on consumer behaviour.

BRAND – CONSUMER RELATIONSHIP

Many of the studies involving brands have focused on the product attributes or benefits. Aaker, D.A., (1991) conducted a study to test whether two brands of beer had established associations with their use contexts in terms of whether the consumers felt “warm”, “friendly”, “healthy”, and “wholesome” in using the beers. The findings were that one brand of beer was associated with “warm” and “friendly” whereas the other brand was evaluated higher on “healthy” and “wholesome”. Other researchers also have shown that brands can be linked to other value, like Cova (1997) says that brands possess a ‘linking value’, which links the brand users into groups or communities. Mihalios Kavaratzis & Ashworth (2005) further extends this ‘community-link’ idea and say that there are strong associations between the adoption of life-styles as group identifiers and the specific brand to the extent that groups themselves become branded with the product (‘Armani set’).

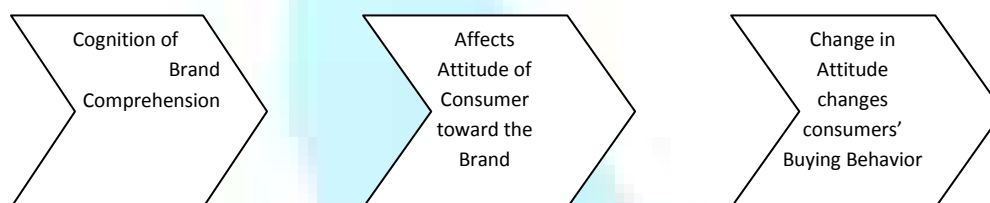
As per the literature, brands have linking value. This value may link the brand itself to an adjective (friendly, healthy) or it may link the brand user/consumer with a group that has strong association with that brand. Consumer’s intention to be included to a particular group is the trigger to use a particular brand and the brand is used as a group identifier.

BRAND – CONSUMER BEHAVIOUR

Several consumer researchers have developed buyer behaviour models which are based on the C-A-B (Cognition, Attitude, and Behaviour) (Kavaratzis & Ashworth, 2005) paradigm as a backbone. For example, Howard and Sheth (1969) in The theory of buyer behaviour have used C-A-B paradigm. In their conceptual framework, brand comprehension affects attitude, which then affects intention or purchase. Fishbein & Ajzen (1975) further added to encompass social pressure on consumer behaviour. In this context, subjective norms refer to perceived social pressures encountered when making a brand choice.

C-A-B PARADIGM MODEL

FIGURE 01: C-A-B PARADIGM (KAVARATZIS & ASHWORTH, 2005)



Sheppard et al.'s (1988, p. 336) meta-analysis revealed “a frequency-weighted average correlation” for the prediction of behavioural intention from attitudes and subjective norms. In other meta-analyses (Kim & Hunter, 1993a & 1993b), attitude was a significant predictor of behaviour. The literature says cognition from brand comprehension affects attitude toward a brand and attitude further affects intention to purchase. Social norms also shape consumer’s brand choice. Evidence shows that, attitude may be used to predict consumer buying behaviour. It is noticeable that, in most of the consumer behaviourists’ works, ‘behaviour’ has been defined as narrowed down to “behaviour related to purchase”.

BRAND PERSONALITY OR BRAND PERSONIFICATION

Considering the existing literature, brands can be described with human like personalities (Plummer, 1984), where personality comprises a set of traits or factors (Eysenck, 1970; Norman, 1963 & Pervin, 2003). In brand personification, consumers are expected to intend to have a relationship with a brand that has personality similar to his/her (Blackston, 1992 & 2000). On the other hand, through marketing activities of the firm, brands iteratively affects consumers’ attitude toward the brand (Dall’Omo Riley & de Chernatony, 2000). Brands might be described, for example, as having friendly or exciting personalities (J. Aaker’s, 1997). Brand personality may help consumers differentiate among the myriad products available in the marketplace (Keller, 2003).

Brand Personality is a Construct that suggests, brands’ personality has an impact on consumers’ buying behaviour. Tendency of higher association between brand and consumer of like personality is the core philosophy of this construct. Moreover, as the literature says, iterative communication of brand attitude may change even unlike consumer’s attitude favorable to the brand.

However, it does not necessarily establish any relationship to show that brand’s personality (independent factor) brings changes to consumer’s personality (dependent factor).

CONSUMERS’ SLEEPER EFFECTS

Sometimes it may happen that, consumers cannot remember being exposed to the ad still they exhibit changes in their perceptions of the advertised stimulus.

This phenomena has been defined as Sleeper Effects by Pashupati (2003), while others have named it as preconscious processing effects (Janiszewski, 1988), incidental ad exposure effects (Shapiro, MacInnis, & Heckler, 1997), unconscious perception effects (Shapiro, MacInnis, Heckler, & Perez, 1999), and implicit memory processes (Holden & Vanhuele, 1999). Krishnan and Chakravarti (1999) also have suggested that consumers can learn, retain and act on information via unconscious and implicit learning processes.

Sleeper’s Effect can be an important factor for marketer as well as consumer behaviourists, as it brings changes in consumer minds though not consciously. Importance to study Sleeper’s Effect rises to immense height, as this does not happen consciously, and there lies the beauty of Sleeper’s Effect, as well as complexity for the consumer behaviourists.

BRAND & NEUROPSYCHOLOGY

The representation of a brand (its mental pattern of connections) at the neuronal level is called a brand engram, a phrase first coined by Robert Heath (2000a & 2000b). Most part of a brand engram is under the authority of subconscious mind, route to which is not merely a question-answer method (Gordon, 2001). Gordon (2001) further says that, individual’s behaviour remains tantalizingly unpredictable, because a great deal of brand choice and purchase behaviour is automatic and no longer exists in the province of consciousness.

Gordon’s findings draw a picture of consumer’s mind dividing into conscious and subconscious level and giving more decision-making weights to subconscious level. That means, in exploring impact of a brand on consumer behaviour, consumers’ minds should be considered at both subconscious and conscious levels while giving more weight to subconscious level.

CONSUMER BEHAVIOUR & CLASSICAL CONDITIONING THEORY

In any endeavor to study human behaviour, classical conditioning theory always precedes any other theories or literature. In psychological term it is defined as a process of behaviour modification by which a subject comes to respond in a desired manner to previously neutral stimulus that has been repeatedly presented along with an unconditioned stimulus that elicits the desired response (Adopted: Wikipedia, 2011).

Many of our behaviours today are shaped by the pairing of stimuli. Have you ever noticed that certain stimuli, such as the smell of cologne or perfume, a certain song, a specific day of the year, and results in fairly intense emotions? It's not that the smell or the song are the cause of the emotion, but rather what that smell or song has been paired with...perhaps an ex-boyfriend or ex-girlfriend, the death of a loved one, or maybe the day you met your current husband or wife. We make these associations all the time and often don't realize the power that these connections or pairings have on us. But, in fact, we have been classically conditioned.

Classical conditioning theory works with advertising too. For example, many beer ads prominently feature attractive young women wearing bikinis. The young women (unconditioned stimulus) naturally elicit a favorable, mildly aroused feeling (unconditioned response) in most men. The beer is simply associated with this effect. The same thing applies with the jingles and music that accompany many advertisements.

Thus, Classical Conditioning Theory establishes its role clearly on relationship between a brand and its consumer. If the brand is effectively successfully associated with a stimulus, whenever consumers would see or experience that particular stimulus, will recall the brand, or the other way, if any stimulus (feeling/experience) is effectively successfully associated with a brand, whenever consumers would see or experience that particular brand, will recall the stimulus (feeling/experience). Here goes the role of classical conditioning theory to comprehend for the marketers.

CONCLUSION

Branding has been getting more and more emphasize day by day. At the same time, more and more creative thinking is explored for creating, positioning and communicating brands. In search of alternative creative ways of branding, this study explores the relationship between a brand and consumer and the impact a brand may have on consumer behaviour.

In summing up, the relationship between a brand and consumer, following factors are important to comply:

1. Brand is a multi dimensional construct and thus its definition is multi facet. Therefore in positioning own brand, a marketer should explore all possible areas that could be used to manipulate and better represent the brand. The possible areas, though not limited to, are: physical and socio-psychological attributes & beliefs associated with the product, distinctiveness of positioning and personality, uniqueness of functional attributes and symbolic values, ease of recognition etc.
2. The marketer may choose to use the socio – psychological attributes and beliefs that are subsets to brand, to stimulate or craft consumer psychology in a desired way, which would be favorable for the brand.
3. Marketers should recognise that, brands have linking value. This value may link the brand itself to an adjective (friendly, healthy) or it may link the brand user/consumer with a group that has strong association with that brand. Consumer's intention to be included to a particular group is the trigger to use a particular brand and the brand is used as a group identifier. Thus, marketers may want to posit their brand in a way, so that it is linked to a positive adjective or linked to a group, which is mostly sought by consumers.
4. Targeting 'Increasing intention to buy' directly may not be that fruitful as purchase behaviour is not changed by brand communications directly. Firstly, cognition of brand comprehension is achieved and then cognition affects attitude toward a brand and attitude further affects intention to purchase.
5. While drawing a Brand's Personality marketer should focus on higher association between brand personality and consumer of like personality. Therefore, the brand personality should be such that consumers intend to follow and enjoy imitating. Brand personality should not sketch out a figure that is drawn based on an alien. An alien-like brand personality would fail to develop the association with consumers of same personality.
6. Ad recall is a mostly used tool in contemporary market research arena that is used to predict ad awareness, or brand awareness. However, this study suggests that consumers may not be able to recall the ad but may display the expected behaviour for the brand. This phenomenon is called Sleeper's Effect and sleeper's effect says that, marketers should not solely depend on 'ad recall' as an indicator of ad awareness or brand awareness.

All marketing personnel in the planet earth have always intended to use data and information around its target group, to predict consumer's behaviour. This study issues a reminder for all marketers that, neuropsychology says that despite the power of high-tech instruments and the vast amount of data collected with it, individual's behaviour remains tantalizingly unpredictable, because a great deal of brand choice and purchase behaviour is automatic and no longer exists in the province of consciousness. Neuropsychology also dictates that, a formal or informal level of questionnaire-based research work may reach consumer's conscious level, where a few decisions are actually taken, though the methodology of the research work may be based up on sound statistical ground. That is why this study suggests the marketer to focus on in-depth issues more while deciding about the consumer behaviour of its target market, instead of directly asked-answered questionnaire method.

REFERENCES

1. Aaker, D.A., (1991), "Managing Brand Equity: Capitalizing on the value of a Brand Name". New York: the Free Press.
2. BBC, (2000), "Unilever: A company history". Retrieved 09 July 2011, from <http://news.bbc.co.uk/2/hi/business/651938.stm>
3. Blackston, M., (1992), "A brand with an attitude: A suitable case for treatment". *Journal of the Market Research Society*, 34, pp. 231–241.
4. Blackston, M., (2000), "Observations: Building brand equity by managing the brand's relationships". *Journal of Advertising Research*, 40, pp. 101–105.
5. Chernatony, d. L. & Dall'Olmo R. F., (1998), "Defining a Brand: Beyond the Literature with Experts". *Interpretations Journal of Marketing Management* 14, pp. 417–443.
6. Colapinto, J., (2011), "Famous Names", *The New Yorker*. Retrieved 09 October 2011, from http://www.newyorker.com/reporting/2011/10/03/111003fa_fact_colapinto
7. Cova, B., (1997), "Community and Consumption: Towards a Definition of the 'Linking Value' of Products and Services". *European Journal of Marketing* 31, pp. 297–316.
8. Dall'Olmo, R. F. & Chernatony, d. L., (2000), "The service brand as relationships builder". *British Journal of Management*, 11, pp. 137–150.
9. Eysenck, H. J., (1970), "The structure of human personality". London: Methuen.
10. Gordon, W., (2001), "The darkroom of the mind – What does neuropsychology now tells us about brands?". *Journal of Consumer Behavior* Vol. 1, 3, pp. 280 – 292, Henry Stewart Publications 1472-0817
11. Hankinson, G. & Cowking, P., (1993), "Branding in Action". London: McGraw-Hill.
12. Heath, R., (2000a), "Low Involvement Processing –A New Model of Brands and Advertising". *International Journal of Advertising*, 19 August 2000.
13. Heath, R. (2000b), "15th Annual Monitoring Advertising Performance Conference". London, WARC, Henley-on-Thames, UK, January 2000.
14. Holden, S. J. S. & Vanhuele, M., (1999), "Know the name, forget the exposure: Brand familiarity versus memory of exposure context". *Psychology & Marketing*, 16, pp. 479–496.
15. Howard, J. A. & Sheth, J. N., (1969), "The theory of buyer behavior". New York: John Wiley.
16. Janiszewski, C., (1988), "Preconscious processing effects: The independence of attitude formation and conscious thought". *Journal of Consumer Research*, 15, pp. 199–209.
17. Kapferer, J. I., (1997), "Strategic Brand Management". Great Britain: Kogan Page.
18. Kavaratzis, M. & Ashworth, G. J., (2005), "City Branding: An Effective Assertion of Identity or A Transitory Marketing Trick?". *Tijdschrift voor Economische en Sociale Geografie* – 2005, Vol. 96, No. 5, pp. 506–514, Blackwell Publishing Ltd..
19. Keller, K. L., (2003), "Strategic brand management (2d ed.)". Upper Saddle River, NJ: Pearson Education.
20. Kim, M. S. & Hunter, J. E., (1993a), "Attitude behavior relations: a meta-analysis of attitudinal relevance and topic". *Journal of Communications*, 43, pp. 101–142.
21. Kim, M. S. & Hunter, J. E. (1993b), "Relationships among attitudes, behavioral intentions, and behavior: a meta-analysis of past research, part 2". *Communication Research*, 20, pp. 331–364.

22. Krishnan, S. H. & Chakravarti, D., (1999), "Memory Measures for Pre-testing Advertising: A Conceptual Framework and a Diagnostic Template". *Journal of Consumer Psychology*, 8, pp 1-40.
23. Malhotra, N. K., (2004), "Marketing Research" (4th ed.). Pearson Education.
24. Norman, W., (1963), "Toward an adequate taxonomy of personality attribute: Replicated factor structure in peer nomination personality types". *Journal of Abnormal and Social Psychology*, 66, pp. 574-583.
25. Pashupati, K., (2003), "I know this brand, but did I like the ad?". An investigation of the familiarity-based sleeper effect, *Psychology & Marketing*, 20, pp. 1017-1043.
26. Pendergrast, M., (2000), "For God, Country and Coca-Cola". Basic Books, ISBN 978-0-465-05468-8.
27. Pervin, L. A., (2003), "The science of personality (2nd ed.)". New York: Oxford University Press.
28. Plummer, J. T., (1984), "How personality makes a difference". *Journal of Advertising Research*, 24, pp. 27-31.
29. Shapiro, S., MacInnis, D. J. & Heckler, S. E., (1997), "The effects of incidental ad exposure on the formation of consideration sets". *Journal of Consumer Research*, 24, pp. 94-104.
30. Shapiro, S., MacInnis, D. J., Heckler, S. E. & Perez, A. M., (1999), "An experimental method for studying unconscious perception in a marketing context". *Psychology & Marketing*, 16, pp. 459-477.
31. Sheppard, B. H., Hartwick J. & Warshaw, P. R., (1988), "The theory of reasoned action: a meta analysis of past research with recommendations for modifications and future research". *Journal of Consumer Research*, 15, pp.325-343.
32. Simoes, C. & Dibb, S., (2001), "Rethinking the Brand Concept: New Brand Orientation". *Corporate Communications: An International Journal* 6, pp. 217-224.
33. Wikipedia, (2011), "Brand". Retrieved 10 October 2011, from <http://en.wikipedia.org/wiki/Brand>
34. Wikipedia, (2011), "Classical Conditioning". Retrieved 10 October 2011, from http://wik.ed.uiuc.edu/index.php/Classical_conditioning

IMPACT OF EMPLOYEE SATISFACTION AND UNION – MANAGEMENT RELATION ON ENHANCED CUSTOMER SATISFACTION- REGRESSION ANALYSIS: A STUDY OF ANDHRA PRADESH STATE ROAD TRANSPORT CORPORATION (A.P.S.R.T.C)

A. R. VIJAYA CHANDRAN
ASST. PROFESSOR
CHRIST UNIVERSITY INSTITUTE OF MANAGEMENT
CHRIST UNIVERSITY
BANGALORE

DR. MOHAMMED ABBAS ALI
PROFESSOR OF MANAGEMENT & DIRECTOR, INTERNATIONAL RELATIONS
AL GHURAIR UNIVERSITY
DUBAI

DR. V. M. PRASAD
PROFESSOR
SCHOOL OF MANAGEMENT STUDIES
JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY
KUKATPALLY

ABSTRACT

For any organization Union and Management relations is very important for its effective functioning. Doing a job effectively can be done by employees only when they are satisfied. And when both Employee Satisfaction and Union –Management Relations are in good manner then it will have its good impact on Customer Satisfaction as they will be (that is Employer and Employee) will be in a position to do their jobs effectively in serving customers (passengers). This humble study makes an analysis on Employee Satisfaction and Union – Management relations and its impact on Customer Satisfaction.

KEYWORDS

union and management relations, customer satisfaction, APSRTC.

INTRODUCTION

APSRTC (Andhra Pradesh State Road Transport Corporation) the other name for this organization is common man's vehicle or poor man's vehicle. As per the estimates of the organization more than one crore passengers travel daily in the State from one place to another place. APSRTC which is used as an essential service by all the sections of society should get its pie of Importance from its benefactors. "To acquire resources organizations must inevitably interact with their social environments. No Organization is completely self contained—survival comes when the organization adjusts to and copes with its environment, not only when it makes efficient internal adjustments"¹

NEED FOR THE STUDY

APSRTC (Andhra Pradesh State Road Transport Corporation) is a corporation which is meant for providing service to the common man. According to the Corporations estimates only more than 1.32 crore passengers travel in APSRTC on a daily basis. This shows the enormous service this organization does for the sake of the public. It covers all the sections of the society and almost all the parts of the state in doing service. But it has its own problems created by number of factors. One of the problems has been taken and considered in this study that is the Impact of Employee Satisfaction and Union – Management relation on Customer Satisfaction (that is passenger satisfaction). "Employees who feel satisfied with their jobs provide higher levels of customer satisfaction"². Such an organization which is having lot of importance now a days is plagued by problems. This humble study is an attempt to provide a solution for increasing customer satisfaction which is being eroded systematically. After the analysis of the study we can clearly conclude that Employee Satisfaction and Union – Management relation show considerable impact on Customer Satisfaction. "Estimation of a path analytic model using the aggregated data shows that customer perceived service quality completely mediates the relationship between employee job satisfaction and customer satisfaction"³.

STATEMENT OF THE PROBLEM

APSRTC (Andhra Pradesh State Road Transport Corporation) which is one of the biggest Public Sector Corporations in Andhra Pradesh State is plagued by innumerable problems because of number of factors. One of the problems is losing confidence amongst the customers (i.e. passengers) and its decreasing occupancy ratio (ratio between number of passengers boarding and the number of seats available in a bus). This study tries to provide a solution for the problem of Customer satisfaction towards APSRTC.

OBJECTIVES OF THE STUDY

1. To contain eroding customer satisfaction towards the corporation.
2. Contribution of satisfied employees towards Customer satisfaction.
3. Union – Management relation and its impact on Customer Satisfaction.

METHODOLOGY

Random Sampling has been done. Out of 21 depots in twin cities (Hyderabad and Secunderabad) 5 depots has been selected from different parts that is Uppal, Mehidipatnam, Mushirabad, Dilshuknagar and Midhani depots. And out these 5 depots 1007 employees were taken as sample size and questionnaire was administered.

SCOPE OF THE STUDY

The scope of the study is limited to twin cities that are Hyderabad and Secunderabad that too the study is limited to City buses only (ie which run in city and its Surroundings only.)

BACK DROP

The origin of APSRTC (Andhra Pradesh State Road Transport Corporation) dates back to June 15th, 1932 when the passenger road transport was started in the Nizam's State Railways in Telangana Area with a modest fleet of 27 buses each having a seat capacity of 24 and 166 employees with a capital investment of 3, 93,000/- (Three lakh ninety three thousand rupees only). In 1936 a full – fledged department popularly known as Nizam State Railway road transport department was formed. After the integration of Nizam's State with Indian Union in 1950, the Nizam's State Railway was integrated with the Indian railways. The Road Transport department of Nizam's state railways was integrated with Indian Railways. The Road Transport Department of Nizam's state railway was therefore separated from 16.10.1950. The Indian Railways managed the Road Transport Department till October 31st, 1951 on an agency basis.

The constitution of APSRTC on 11th January, 1958 under the provisions of Road Transport Corporations act 1950 heralded rapid growth of nationalized transport in Andhra Pradesh. In pursuance of policy of nationalization the Corporation had taken over passenger transport of Krishna, Guntur and West Godavari districts between 1959 and after a period of consolidation launched the second phase of expansion from 1973 onwards. During the period 1973-78 the passenger Transport of Intra – state routes of Kurnool, Chittoor, East Godavari and Anantapur were nationalized in addition to important routes in Cuddapah, Nellore, Prakasham, Vishakapatnam and Vizianagaram districts. The Corporation was running a few services on long distance routes in Srikakulam district although services in district were not fully nationalized.

In 1999 the Corporation has entered Guinness Book of World Records for owning largest fleet of buses. At the end of February 2007 the Corporation was operating 19,548 buses including about 1500 hired buses, with a staff strength of 1, 15,513 carrying approximately 1.32 crore passengers everyday to their destinations. The Corporation is credited with many distinctions envisioned to other Corporations in areas of Vehicular Utilization, Kilometers per liter, Biggest Bus station complexes in Asia etc and has been recipient of many awards including for maintaining good Industrial Relations from State and Central Governments. Now after a gap of three successful years the corporation has added still some more buses to its existing fleet and number of employees to its existing number of employees. The present strength of employees is 1, 13,234, the number of buses which it is having is 20,637 and the strength is according to statistics available up to 31st January, 2009. "We propose that organizational size affects customer satisfaction directly and through the interesting variable of employee job satisfaction."

APSRTC to survive there should have cordial atmosphere between Union and Management. If it is lacking then the organization which is gigantic in nature and second to none in competition might lose its shine and might cave in for private competitors then the employees and customers (passengers) future might be put to jeopardy. This humble study is an attempt to know the importance of Employee Satisfaction and Union Management Relation on Enhanced Customer Satisfaction. That is this analysis finds out both the Employee satisfaction and Union Management relation and its effect on Enhanced Customer Satisfaction. And after the analysis we can clearly conclude that Employee Satisfaction and Union Management relation is essential for Customer satisfaction.

ANALYSIS OF THE STUDY

Model	Predictors	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.	Standardized Coefficients - Beta	t	Sig.
1	Employees Monetary Satisfaction	0.484	0.235	0.234	0.572	303.98	0.000	0.484	17.435	0.000
2	Employees Monetary Satisfaction	0.566	0.320	0.319	0.540	233.26	0.000	0.449	17.026	0.000
	Role Played							0.295	11.164	0.000
3	Employees Monetary Satisfaction	0.643	0.414	0.412	0.502	232.69	0.000	0.278	9.922	0.000
	Role Played							0.319	12.960	0.000
	Relationship							0.350	12.560	0.000
4	Employees Monetary Satisfaction	0.646	0.417	0.415	0.500	177.20	0.000	0.288	10.208	0.000
	Role Played							0.296	11.411	0.000
	Relationship							0.333	11.672	0.000
	Role deal with Govt.							-0.068	-2.591	0.010

DEPENDENT VARIABLE: ENHANCED CUSTOMER SATISFACTION

Regression analysis was used to find the effect of Employee Satisfaction (ES) and Union- Management Relation Index (UMR) on Enhanced Customer Satisfaction (ECS) of the APSRTC Employees. Employee Satisfaction (ES) comprises two dimensions such as Employee Monetary Satisfaction (EMS) and Employee Stress (ES). UMR comprises three dimensions such as Role Played (RP) Relationship (RE) and Role deal with Government (RDG). In Multiple Linear Regression Analysis, as method Step wise is used. Dependent Variables is ECS and independent variables are EMS, ES, RP, RE and RDG.

The regression models shown in above table contributed significantly and predicted 23.5 percent of impact of Employees Monetary Satisfaction (EMS) in mode-1, 32 percent variation by EMS & Role Played in model-2 and 41.4 percent variation by EMS, Role Played (RP) & Relationship (RE) in model-3, 41.7 per cent variation by EMS, Role Played (RP), Relationship (RE) and Role deal with Govt. (RDG) in model-4 towards Enhanced Customer Satisfaction among APSRTC employees. For all the four models F value is greater than 4 and Sig value is <.01 Hence all models are statistically significant at 1% level. The equations to predict the Dependent variable is given below: - The equation shows the constant and respective unstandardized beta value of independent variables.

$$Y = .849 + 0.870X_1 \text{ --- (1)}$$

$$Y = .428 + 0.807X_1 + 0.160X_2 \text{ --- (2)}$$

$$Y = .560 + 0.500X_1 + 0.173X_2 + 0.221X_3 \text{ --- (3)}$$

$$Y = .899 + 0.517X_1 + 0.161X_2 + 0.21X_3 + 0.116X_4 \text{ --- (4)}$$

Whereas, Y= Enhanced Customer Satisfaction (ECS); X₁= Employee Monetary Satisfaction (EMS); X₂= Role Played (RP), and X₃= Relationship (RE) X₄ = Role deal with Govt. (RDG);

FINDINGS AND SUGGESTIONS

The above findings suggest that Customer satisfaction is very important for an organization's survival. Especially for a service oriented organization it is still important to gain customer satisfaction.

SUGGESTION 1: Dependent variable and independent variables are significantly related to each other.

SUGGESTION 2: For Customer Satisfaction – Employee Satisfaction and Union Management Relations are very important. That is without Employee Satisfaction and Union Management relations customer satisfaction can't be achieved.

REFERENCES

1. Paul S. Good man, Mark Fichman, F. Javier Lerch Panda R. Snyder, Carnegie Mellon University, "Customer – Firm relationships, involvement and Customer Satisfaction", Academy of Management Journal 1995, Vol. 38, No.5, 1310-1324.
2. Robin L. Snipes, Sharon L. Oswald, Michael Latous Achilles, A. Armenakis, "The effect of job satisfaction facets on customer perceptions of service quality an employee level analysis" – Journal of Business Research, Volume 58, Issue 10, October 2005, Pages 1330 – 1339.
3. A meta analysis of relationships linking employee satisfaction to customer responses – Journal of Retailing, Volume 84, Issue 3, September 2008, PP 243 – 255.
4. Nadav Goldschmidt, Belts G. Cheng, "Size does matter: The effect of organizational size on customer satisfaction" Journal of quality of management, Volume No. 6 Issue 1, 4th quarter 2001, PP 47 – 60.

A STUDY OF THE ATTITUDE OF THE YOUTH TOWARDS ADOPTION OF INTERNET ENTREPRENEURSHIP IN NIGERIA

DR. I C NWAIZUGBO

READER

DEPARTMENT OF MARKETING

NNAMDI AZIKIWE UNIVERSITY

AWKA

V N O AGHARA

LECTURER

DEPARTMENT OF MARKETING

NNAMDI AZIKIWE UNIVERSITY

AWKA

ABSTRACT

This study aimed at assessing the attitude of the young people in Nigeria towards the adoption of internet entrepreneurship. It specifically looked at the depth of interest and usage level of internet as well as determined the activities that dominated their internet time. It further determined the factors that influence the rate of adoption of internet entrepreneurship. Both primary and secondary sources were used for the study. Relevant literature was reviewed while survey method was used to collect primary data from 595 respondents in 2010. Findings show that Nigerian youths are aware and are interested in the internet entrepreneurship but have been slow in adopting it as an employment opportunity. Presently, the activities of the youth in the internet are dominated by search for new information and social communications. Money making activities rank low. The factors that contribute to slow growth include personal characteristics of the user, system constraints like problem of payment, delivery and product evaluation and choice process, and environmental constraints like poor provision of infrastructure, legal and ethical issues. It is recommended that a deliberately designed developmental marketing strategy could be used to fast track the adoption rate of the internet entrepreneurship especially if it is sponsored by government agency. Workshops, conferences or trainings are recommended. If this is done, the adoption of internet entrepreneurship will increase thereby reducing unemployment as well as fraudulent activities that are performed in the internet.

KEYWORDS

adoption, employment, entrepreneurship, Internet entrepreneur, profitability.

INTRODUCTION

Among the attributes associated with Information Communication Technology (ICT) include its ability to create entrepreneurship opportunities that are not constrained by geographic boundaries, culture, socio-economic class and entry barriers. ICT and the entire digital technology are known to have created wealth opportunities for the whole world but the achievement of the internet in this regard is unprecedented. Internet is a process that allows several users of computer all over the world to interact through a virtual contact. This has permitted information sharing among the countries of the world on real time. Internet is considered as a major breakthrough and a backbone in this information age, because the growth in the uses and usage rate of internet has been rapid. In fact it has been predicted that a major divide the business world would experience is a divide among those who are in the internet and those who are not.

The character of ease of entry and accessibility make the internet market an attractive opportunity for entrepreneurship. Entrepreneurship is defined as the process of creating something different with value by devoting the necessary time and efforts, assuming the accompanying financial, psychological and social risks, receiving the resulting rewards on monetary and personal satisfactions (Udeh, 1999). An entrepreneur is someone who demonstrates such behavior in filling the gaps and bringing together resources in innovative ways. An entrepreneur is visionary. He sees a stepping stone where others see stumbling blocks and enjoys the risk of innovatively combining resources in a peculiar way that creates want satisfying product or improves its delivery process to the target market. The internet has turned the world into a market space for the entrepreneur by removing national borders such that with the right equipment one can reach any part of the world from a remote village (Agbonifoh et al, 2007).

Nigeria is a country with high unemployment profile (Obadan and Odisola, 2000) of which high school leavers and University graduates in the urban area are worst hit. With such record, one would expect that, given the orchestrated potentials of internet entrepreneurship, its adoption would have been overwhelming. This appears not to be the case with the rate at which the youth adopt internet entrepreneurship even though it had been reported that many Nigerian youths were now embracing the internet business (Mordi, 2007); and that the use of internet in Nigeria was increasing (Ozuru and Kalu, 2006). The objectives of this study therefore are to determine the depth of interest and usage rate of the youth in the internet, determine whether the dominant activities performed in the internet were entrepreneurial and to determine factors that influence the rate of adoption of the internet entrepreneurship.

LITERATURE REVIEW

Internet entrepreneur is the person who makes or delivers product or service for and over digital networks (Muroso, 2009). He is sometimes called the Netpreneur (Seah, 2010). Mordi (2008) reports that a book published in US writes that the internet entrepreneurs whom it described as "new professionals" form 90 per cent of new millionaires in that country. Internet has created riches not only for the founders of search engines like google and yahoo; or social media like facebook or twitters but for other creative users who could determine a need and provide satisfactory solution through the internet. Futurists have already predicted that in the nearest future, internet will dominate the business world. Reasons are:

- High rate of diffusion of the internet facilities/usage
- Increasing number of things one can do with the internet
- Attractive business/marketing opportunity
- Simplified entry requirement
 - Low capital
 - No conditionality (no registration)
 - No discrimination on the basis of gender, race status etc.
- Easy access to market: your website is your shop and you can design your front shop the way you like it.

Whereas anything could be sold in the internet it is generally suggested that information products take vantage position because it is easy to create and modify, it is cheap and delivery system is also efficient. Few of the internet products that have enriched many include publication of e-books/e-magazines, blogging,

articles and book chapters (Yu, 2006). Internet Affiliate Programs which is an online version of multi-level marketing has been used widely to sell information products and it is seen as a powerful wealth creator. Domain Name marketing and Web site design are also very viable. Google uses its Adword and Adsense to open the doors of its site to any person who can advertise and market any product in its page or take advantage of its sponsorship. Marketing Research, Product testing and Ghost Shopping are some of the marketing activities that create wealth in the internet. There are also opportunities for training and consultancy service in the internet.

One characteristic of the internet entrepreneur is that they find it easy to discuss how they made their money, perhaps as a selling point for marketing their own services even though Taylor (2010) suggested that the claim may not always be correct. Also the internet entrepreneurs most often use internet as medium for promoting their business. It is usually claimed that internet opportunity is opened equally to everybody but Boateng and Hinson (2007) opined that most of the e-marketing successes seem to occur more in developed countries than it is in developing countries. This corroborates Aguillo et al (2008) who also discovered that even information products in the internet mostly originate from the developed countries.

Profit is one factor that is known to motivate entrepreneurs to accept the challenge and risks associated with business. This suggests that entrepreneurs are likely to adopt ventures if they perceive reasonable returns from them, the risk level notwithstanding. Adoption has been defined as an individual's decision to become regular user of a product (Kotler and Keller, 2006: 658). The Theory of Innovation Diffusion explains the process of the spread of new idea or product from its source of invention or creation to the ultimate adopters (Rogers, 1983). According to the theory, innovations take time to spread through the social system, and usually adopters move through five stages of awareness, interest, evaluation, trial and adoption (Moreau et al, 2001). Rogers (1983) suggests that factors that can influence adoption rate include personal characteristics of the individual adopter, characteristics of the innovation and organization's readiness to adopt innovation.

Adoption and use of internet services has equally attracted the attention of scholars and accordingly, many contributions have been made even though none has directly addressed the issue of adoption rate of internet entrepreneurship in developing countries. Moon (2004) studied the factors that influenced consumers' adoption of the internet as an information search and product purchase channel and suggested that consumer characteristics, type of information, website characteristics among others are contributing factors that influence adoption. Longe et al (2006) studied the level of acceptance of internet marketing among Nigerian consumers and reported that there is high level of perceived acceptance because internet was seen as money saving, time saving, easy and enjoyable to use as well as creates access to information. Davis (1986) developed the Technology Acceptance Model (TAM) which he used to explain the internet adoption rate. He argued that perceived usefulness and perceived ease of use were important considerations. In another study, Kim and Park (1999) contended that the benefit of online purchase such as time saving and convenience enhance consumers' intention to purchase through the internet. Conversely, the risks of online purchase such as product reliability, delivery or refund related uncertainty reduce consumers' intention to purchase through the internet. Sung and Kang (2000) demonstrated that consumers are concerned with credit card or personal information abuse in the process of online purchase.

Unethical and fraudulent activities in the internet discourage involvement in internet business to a great extent. Internet scams and advanced fee fraud have been commonly reported in Nigeria such that the Federal Government empowered the Nigerian Communication Commission (NCC) to regulate internet activities. Ozuru and Kalu (2006: 49) reported that a study by Enonymous.com, a web privacy rating company shows that only 3.5 percent of the 30,000 websites investigated do not share personal information. 70% of the websites do not have privacy policy at all. Boateng and Hinson (2007) reported that poor state of facilities and infrastructure could affect the adoption of internet usage. For example, whereas only 6.8% of the people use internet in Africa, 74.2% use in North America compared to the world average of 25.6%. Table below shows details of statistical distribution of world internet usage and penetration rate.

WORLD INTERNET USAGE AND POPULATION STATISTICS						
World Regions	Population (2009 Est.)	Internet Users Dec. 31, 2000	Internet Users Latest Data	Penetration (% Population)	Growth 2000-2009	Users % of Table
Africa	991,002,342	4,514,400	67,371,700	6.8 %	1,392.4 %	3.9 %
Asia	3,808,070,503	114,304,000	738,257,230	19.4 %	545.9 %	42.6 %
Europe	803,850,858	105,096,093	418,029,796	52.0 %	297.8 %	24.1 %
Middle East	202,687,005	3,284,800	57,425,046	28.3 %	1,648.2 %	3.3 %
North America	340,831,831	108,096,800	252,908,000	74.2 %	134.0 %	14.6 %
Latin America/Caribbean	586,662,468	18,068,919	179,031,479	30.5 %	890.8 %	10.3 %
Oceania / Australia	34,700,201	7,620,480	20,970,490	60.4 %	175.2 %	1.2 %
WORLD TOTAL	6,767,805,208	360,985,492	1,733,993,741	25.6 %	380.3 %	100.0 %

NOTES: (1) Internet Usage and World Population Statistics are for September 30, 2009.

Source: www.internetworldstats.com/stats.htm

Further details of the table showing the usage distribution in Africa shows that Egypt, Nigeria and Morocco are highest users with 18, 16 and 15 percents respectively. Regular and stable power supply; as well as availability of Internet Service Provider (ISP) are also factors to consider in Nigeria.

METHODOLOGY

This study is essentially an exploratory study which investigates the actions of the youths with regards to internet entrepreneurship. The researchers used primary and secondary sources. Related literature was reviewed with a view to gaining more insight in to the current developments in internet usage and the entrepreneurship opportunities in the internet. To source the primary, survey was used to collected data from a conveniently selected sample of 595 respondents using a well structured questionnaire. The questionnaire sought the opinion of the respondents on their current uses of internet and their general knowledge and attitudes toward internet entrepreneurship. Results were analyzed and presented using frequency tables and percentages.

ANALYSIS OF QUESTIONNAIRE: BIODATA

The demographic characteristics of the respondents show a balanced gender distribution of 51% and 49% for male and female respectively. 86 percent of the respondents were 30years and below (25% are less than 20years while 61% are between 21 and 30years), and 82 percent were singles. The results show that the design to focus the study on the youth was maintained. Again, 68.1% of the respondents were students while 13.1% were unemployed school leavers implying that the survey was directed to the appropriate interest group. Finally, 74.7% of the data were sourced from 3 States from the Southeast zone of Nigeria namely Enugu (51.7%), Anambra (14.8%) and Abia (8.2%).

USES AND USAGE OF INTERNET

Data were collected on the frequency of the respondents' use of the internet and of course the activities that dominate their time in the internet. The results are presented in tables 2 and 3 below. The analysis shows that 99% of respondents browse the internet even though degree of usage varied. Table 2 presents the result of how often they browse the internet.

TABLE 2: HOW OFTEN DO YOU BROWSE?

Option	frequency	percentage
Once in a while	148	26.2
Always	146	25.8
Few times	77	13.6
Only when I have need	194	34.3

Source: Field survey

The result shows that majority (34.3%) of the internet users browse only when they have need while only 25.8% browse always. Those who browse a few times and once in a while and only when they have need totaled 74% indicating that the respondents are not strong users of the internet services.

The researchers sought to know the activities that dominate the interests of the respondents on the internet. It was discovered that the highest ranking activities were search for new knowledge; sending/receiving e-mails and internet research. Details of the survey are shown in table 3 below:

TABLE 3: RESPONDENTS' DOMINANT INTERNET ACTIVITIES

Activity	Frequency	Percentage	Rank
Sending/receiving e-mails	332	55.8	2 nd
Chatting and dating	209	35.13	5 th
Shopping for goods and services	40	6.72	10 th
Selling goods or services*	23	3.87	13 th
Searching for new knowledge	391	65.71	1 st
Running online program	77	12.94	9 th
Searching for country data/information	107	16.8	7 th
Accessing result/registration	183	30.76	6 th
Internet research*	265	44.54	3 rd
Blogging*	29	4.87	11 th
Reading current news/information	258	43.36	4 th
e-book/e-zine collection and marketing*	90	15.13	8 th
Internet marketing (adsense, adword, etc.)*	25	4.2	12 th

*Activities that are capable of creating wealth in the internet.

Source: Field survey

The table shows that the major things that engage the interest of the respondents in the internet in ranked order are search for new knowledge (65.71%), sending/ receiving mails (55.8%) and internet research (44.54%). If the activities are calibrated into moneymaking activities and money spending activities, then the evidence that performance of moneymaking activities in the internet rank low when compared with the performance of money spending internet activity. Entrepreneurship activities ranked low compared to social and intellectual activities. This means that the respondents see the internet more as source of new knowledge and as communication facility than as an entrepreneurship opportunity. This actually reflected on the internet sites they mostly visited which were mainly social communication sites namely yahoo and facebook. Less than one percent of the respondents visit e-bay which is popular as a marketing organization and particularly as a site for auctioning. Although about 40% have google as their favorite site, but google is popular as search engine (it controls 60% of internet search) even though it makes 80% of its income from marketing and advertising (Freedman, 2007). It is therefore likely that the respondents would used the site to search for knowledge rather than taking advantage of the wealth creating opportunities in the site like adsense and the adword.

The researcher sought to determine the extent the Nigerian youths know about the entrepreneurship opportunities and presented the pertinent questions to the respondents. The results disclosed that 90.1 percent of the respondents believe that money could be earned from the internet but more than 30 percent do not know how as they did not suggest anything in response to how money is made in the internet. 89.7 percent of the respondents confessed that they never earned any money from the internet.

TABLE 4: HAVE YOU YOURSELF EVER MADE ANY MONEY ON-LINE

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid yes	60	10.1	10.3	10.3
No	522	87.7	89.7	100.0
Total	582	97.8	100.0	
Missing System	13	2.2		
Total	595	100.0		

Source: Field survey

FACTORS MILITATING AGAINST E-BUSINESS IN NIGERIA

Some factors have been listed as militating against the development of internet business in Nigeria. These include level of development typified by literacy rate, underdeveloped infrastructure and low income. Among the unethical factors include advanced fee fraud and illegal deals as well as exposure to negative and immoral information and images. Table 5 shows the respondents opinion regarding the factors militating against the development of internet business in Nigeria. Buyer's security ranked highest among the major problems of e-business in Nigeria. Payment problems ranked next to highest is perhaps mitigated as a result of many commercial banks' involvement in credit card issuance. Other problems include delivery process, location constraints, and legal restrictions. Finally is the problem of general resistance to social change.

TABLE 5: WHAT ARE THE MAJOR DIFFICULTIES OF E-BUSINESS IN NIGERIA

Options	Frequency	Rank
Understanding the process of buying and selling	145	6 th
Payment process	232	2 nd
Process of product evaluation and choice	111	7 th
Delivery process	199	3 rd
Buyer's security	240	1 st
Legal restriction	173	5 th
Location constraints	183	4 th

Source: Field survey

DISCUSSION ON THE FINDINGS

It is clear from the results of this study that internet is well accepted by Nigerians and it is highly used to achieve various goals. However, the usage rate is constrained by the low level of internet facilities available hence penetration rate is low compared to those of other western countries. The youths are also fully aware that the internet presents a great opportunity for business in general and entrepreneurship in particular but have barely seen it as an opportunity for gainful employment. Although the usage rate of the internet is high but the activities performed is dominantly intellectual exercise and social communication. Entrepreneurial activities are low indicating that the adoption of internet entrepreneurship is at its early stage of diffusion. This means that with time, more youths will be adopting the internet entrepreneurship since awareness level is already high. Factors that have influenced slow adoption rate include personal characteristics of the individual like skill, innovativeness and other demographic factors; system related problems like payment, delivery and location constraints. Others are environmental factors like level of development, provision of infrastructure, legal and security problems.

CONCLUSIONS AND RECOMMENDATION

It is clear from the result of this study that there is basic interest and basic knowledge of the potentials of internet entrepreneurship but the motive to begin to use the method is still latent. As a result, adoption rate is slow. Developmental marketing is usually used to stimulate such needs in a latent state to achieve full growth. It therefore follows in this situation that there is a need for a deliberately organized marketing effort towards stimulating the interests of Nigerian entrepreneurs to begin to adopt and experiment on this new opportunity. So far, efforts in propagating this method is being undertaking by individuals and private institutions which may not readily merit the high credibility, quality of confidence and believability a high powered government organ or well known non-governmental organization will enjoy. Therefore to fast track the spread of this entrepreneurship opportunity, seminars, workshops and training programs that not only explains the process of internet business but also demonstrate its wealth creation ability should be organized.

It was also observed from the study that low provision of some basic internet related amenities in the country constrain internet usage and major difficulties encountered in the use process included Legal and security issues, payment procedures and delivery process alongside other personal constraints like low skill and lack of innovativeness. Whereas school system and other informal education institutions can support moderation of personal characteristics, system related problems have to be addressed by the policy makers and ICT institutions. Particularly, if security is enhanced, payment procedure demystified and delivery process facilitated, then usage of internet for entrepreneurship purposes would definitely improve.

Lastly, the provision of requisite facilities and deliberate efforts by the government and Non-governmental Organizations (NGO) will help to launder the image of internet entrepreneurs and position it as a legal and profitable source of employment for Nigerians. When this is done, the number of people who do legal internet businesses and make honest income from the internet will increase reasonably and this will certainly reduce the volume of fraudulent practices in the internet as well as unemployment among the youth of this country.

REFERENCES

1. Aguillo I F., Ortega J L and Fernandez M (2008) "Webometric Ranking of World Universities: Introduction, Methodology and Future Developments", *Higher Education in Europe*, vol. 33 No. 2/3. Pp. 233-244.
2. Boateng R, Hinson R, Heeks R and Molla A (2008) "E-Commerce in Least Developing Countries (LDCs): Summary Evidence and Implications", *Journal of African Business*. Vol. 9 no. 2. Pp 257-285.
3. Davis, F D (1989) "Perceived Usefulness, Perceived Ease of Use and User Acceptance of Information Technology", *MIS Quarterly*, vol. 13 no. 3. Pp. 319-339.
4. Hinson R (2006) "The Internet for Academics: Towards a holistic Adoption Models" *Online Information Review*, 30, 5.
5. Hoeffler Steve (2003) "Measuring Preferences for Really New Product" *Journal of Marketing Research*, 40 (November): 406-420.
6. Iyanda O and Ojo S O (2007) "Motivation and Influences on ICT adoption in Botswana Organizations". *2007 IAABD Conference Proceedings*. Pp. 8-16.
7. Kin, S-Y and Park, S Y (1999) "Influencing Factors of Purchase intention through e-commerce", *Journal of Consumer Studies*, vol. 10 no. 3 pp 45 – 66.
8. Kotler P and Keller K L (2006) *Marketing Management* 12ed. Upper Saddle River, NJ: Prentice Hall
9. Longe, O B, Chete, F O, Chete, F C and Adediji, B (2006) "An Evaluation of the level of Acceptance of Internet Marketing Among Nigerian Consumers", *Journal of Marketing* vol. 1 no. 3. Pp 24 – 32.
10. Moon, B-J (2004) "Consumer Adoption of the Internet as an Information Search and Product Purchase Channel: some research hypotheses", *International Journal of Internet Marketing and Advertising*, Vol. 1 no. 1(pp. 104-118)
11. Mordi, R (2007) "The New e-Business Professionals" *Broad Street Journal*, ed.43/Oct. pp. 7-9.
12. Moreau C P, Lehmann D R and Markman A (2001) "Entrenched Knowledge Structures and Consumer Response to New Products," *Journal of Marketing Research* 38 (February): 14-29
13. Murino Mario (2009) "Netpreneurs: A new Breed of Entrepreneur", The Kauffman Centre for Entrepreneurial Leadership, www.entreworld.org
14. Obadan, M I and Odisola A F (2000) "Productivity and Unemployment in Nigeria", [www.cenbank.org/out/publications/occasional papers](http://www.cenbank.org/out/publications/occasional%20papers). retrieved 27th Jan 2011.
15. Ojeagbese, S O (2007) "Online Profits: A step-by-step Guide", *Internet Income Success Series*. Lagos Nigeria: SADC Publications.
16. Ozuru, H N and Kalu, S E (2006) *An Introduction to Electronic Marketing*, (Owerri, Nigeria: Roik Divine Publishers)
17. Poku, K and Vlosky, R (2003) "A model of Marketing Oriented Corporate Culture Influence on Information Technology Adoption", *Louisiana Forest Products Development Centre*. Working Paper #63.
18. Rogers E M (1983) *Diffusion of Innovation* 3ed. New York, Free Press
19. Seah, Steve (2010) "Are You Netpreneur", www.mywealthcreationstrateggy.com, source: http://EzineArticles.com/?expert=Steve_Seah. Retrieved 20th January, 2011.
20. Sung, Y-S and Kang, J-S (2000) "Consumer Perception of Internet Shopping and Cyber Mall", *Korean Journal of Advertising*, vol. 11 no. 2, pp 7-34.
21. Taylor Trevor (2010) "10 Tips for the Beginning Internet Entrepreneur". *Internet Business Entrepreneur* (e-zine)
22. Udeh, J O (1999) *Entrepreneurship in the 21st Century*, Enugu Nigeria: CIDJAP publications.

THE IMPACT OF SMALL BUSINESS MANAGEMENT ON SOCIETAL MARKETING PRACTICES IN LAGOS MEGA CITY, NIGERIA

DR. HALIRU BALA

CHIEF LECTURER

DEPARTMENT OF BUSINESS ADMINISTRATION

FEDERAL POLYTECHNIC

BIRNIN KEBBI

KEBBI STATE

ABSTRACT

This paper examined the Impact of small business management on societal marketing practices in Lagos Mega City, Nigeria. The study was conducted in Badagry Division, Ikeja Division and Ikorodu Division of Lagos State, Nigeria. Multi-stage and random sampling techniques were used in selecting 3,000 respondents of the study using staff of small business organizations, traders and consumers. Information was gathered using primary and secondary data. Questionnaires were used to elicit information and were validated by experts. The data generated from the survey were subjected to both descriptive and inferential analyses using statistical package for social scientists SPSS version 11.0. The findings revealed that small business management had impact on societal marketing in Lagos Mega City, such as product quality, safety, package, labeling and after sales services $\chi^2 = 3481.00$; $p < 0.001$, advertising related issued; false advertising and misleading $\chi^2 = 1458.00$; $p < 0.001$, high prices $\chi^2 = 3481.00$; $p < 0.001$, sponsorship $\chi^2 = 3422.33$; $p < 0.001$, scholarship $\chi^2 = 1723.56$; $p < 0.001$, compensation for pollution $\chi^2 = 1642.56$; $p < 0.001$, environmental pollution $\chi^2 = 1530.89$; $p < 0.001$, health services $\chi^2 = 2653.00$; $p < 0.001$, educational services $\chi^2 = 1283.56$; $p < 0.001$ and lottery promo $\chi^2 = 3307.00$; $p < 0.001$. The study concluded that small business management had Impact of societal marketing in Lagos Mega City, Nigeria.

KEYWORDS

Small Business Management, Societal Marketing, Marketing Practices, Lagos, Mega City.

INTRODUCTION

The importance of small business management on societal marketing practices in Lagos Mega City can not be overemphasized. Small business dominates the overall business scene in Lagos Mega City. They can be established by individual groups. It is interesting to note that most big businesses in Lagos Mega City started as small ones but with proper management expanded and growth. On the same note, it is risky to assume that small business are exactly like big ones especially as size is a significant difference. The societal marketing practices is an activities that the small business organizations should determine the needs, wants and interests of target markets and deliver the desired satisfactions more effectively and efficiently than do competitors in a way that maintains or improves the consumer's and society's wellbeing. The societal marketing practices questions whether the pure marketing practices is adequate in an age of environmental problems, resource shortages, rapid population growth, worldwide economic problems, and neglected social services. It asks if small scale business organizations that senses, serves, and satisfies individual wants is always doing what is best for consumer and Lagos society in the long run. According to the societal marketing practices, the pure marketing practices overlook possible conflict between consumers' short-run wants and consumers' long run welfare. Bala (2008) observes that the societal marketing practices require marketers to consider not only their customers' wants but also the wants of other people whose welfare is affected by their operations. Marketers have to recognize that they exist within a larger social system that includes non-customers to whom they have obligations, they are the stakeholder.

Today in Lagos most people see fast-food claims as offering tasty and convenient food at reasonable prices. Yet many consumers and environmental groups have voiced concerns. Critics point out that foods sold by fast-food small business are high in fat and salt. The products are wrapped in convenient packaging, but this leads to waste and pollution. Thus, in satisfying consumer wants, these successful small businesses may be harming consumer health and causing environmental problem. Such concerns and conflicts lead to the societal practices. The societal marketing practices calls on marketers to balance society, consumers and business organizations consideration in setting their marketing and society's interest. Originally, most business organizations based their marketing decisions largely on short-run company profit. Eventually, they began to recognize the long-run importance of satisfying consumer wants, and the societal marketing concept emerged. Now many small business organizations think of society's interest when making their marketing decision.

THE STUDY AREA

The study was carried out in Lagos Mega City, Nigeria. Until December 12, 1991, Lagos was Nigeria's capital. It was moved to Abuja. However, Lagos still maintains its status as the commercial hub of Nigeria bringing together a variety of business. Though Lagos State is the smallest in the country in terms of size with only 3,475,1km sq. It's the second highest in population in the country; It has a population of 9,013,534 people. Ikeja serves as its capital. The state has 20 local government areas with five administrative divisions. Lagos State is predominantly Yoruba but other tribes are within their mix. The Aworis are found in Ikeja while the Oguns are in Badagry, which was famous for its share trade. At Ikorodu and Epe areas are mostly inhabited by the Ijebus with pockets of Eko-Aworis along the coast lines. Lagos State is divided into 5 administrative divisions, which are further divided into 20 local government areas, and 37 local development areas: Badagry Division – Ajeromi – Ifedun, Amuwo-Odofin, Badagry and Ojo. Epe Division – Epe and Ibeju – Lekki. Ikeja Division – Agege, Alimosho, Ifako – Ijaiye, Ikeja (Capital of Lagos State), Kosafe, Mushin, Oshodi – Isolo and Somolu. Ikorodu Division – Ikorodu only. Lagos Division – Apapa (home of the main port of Lagos), Eti-Osa (home of one of Lagos's largest business centers and of the upscale communities of Victoria Island and Ikoyi, formerly the residence of the Nigerian Federal Government), Lagos Island (The historical centre and commercial core of the Lagos agglomeration) and Lagos Mainland Surulere.

OBJECTIVE OF THE STUDY

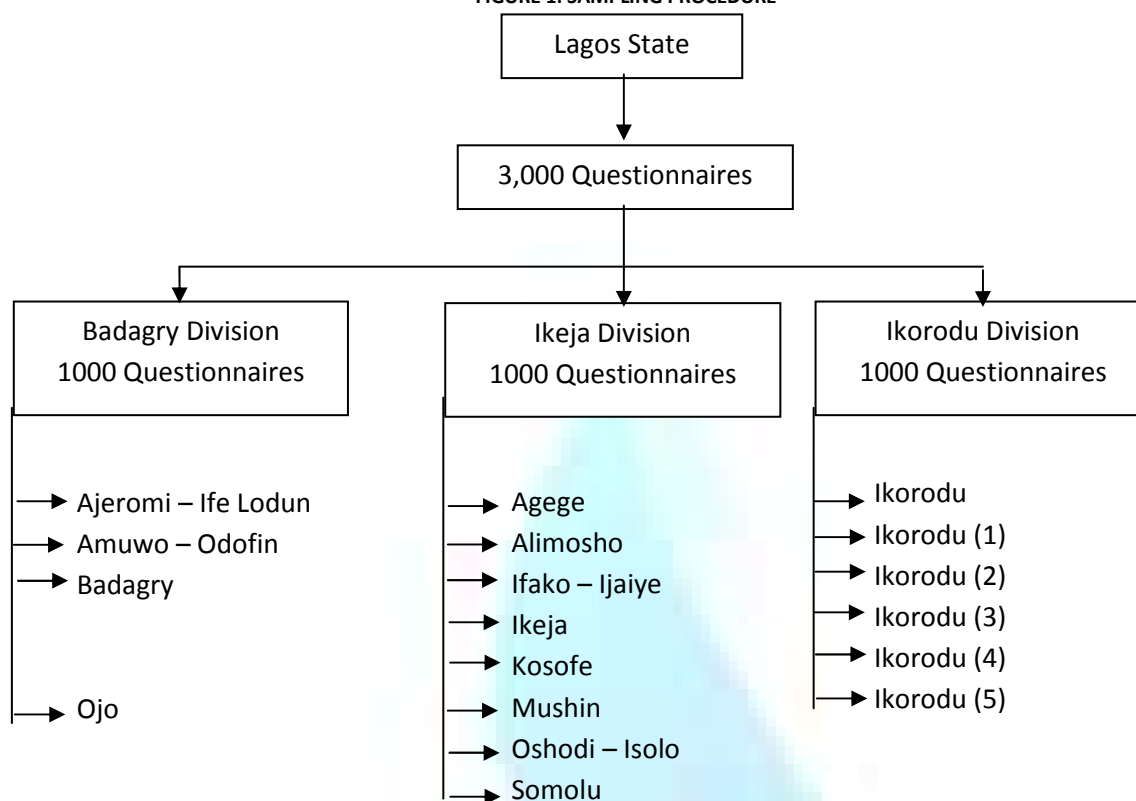
The study investigated the impact of small business management on societal marketing practices in Lagos Mega City, Nigeria.

METHODS

RESEARCH DESIGN

The goals of this study is to generate quantitative data that would allow a comprehensive description of the impact of small business management on societal marketing practices in Lagos Mega City, Nigeria. The study *ex post factor* is in nature, since none of the variable(s) was manipulated by the researcher. The data were collected through a survey conducted in Badagry Division, Ikeja Division, and Ikorodu Division. Survey research affords the opportunity of obtaining information from a representative sample of the population in an attempt to describe the prevailing situation about the variables under examination.

FIGURE 1: SAMPLING PROCEDURE



Source: Bala (2011)

SAMPLE SIZE AND SAMPLING TECHNIQUES

In determining the sample plan and sample size, the procedures involved the random selection of a subgroup or samples of 3,000 from the overall membership pool of a defined population so that the resulting data structures and information are generalisable and reliable. The researcher ensured that the sample is representative of the population. In achieving this objective, the researcher developed an explicit sampling plan as of the overall research design. This sampling plan served as the blue print for defining the appropriate target population for identifying the possible respondents for establishing the procedural steps in drawing the required sample and for determining the appropriate size of the sample. However, sample size affects data quality and generalizability. The researcher therefore, through carefully about how many people to include.

INSTRUMENT

The questionnaire used was subjected to validation process. Copies of the questionnaires were given to a panel of experts for validation. The comments and suggestions made were utilized in restructuring the research instrument; the validation exercise ensured not only the face validity of the questionnaire but also its content validity.

VALIDATION OF THE INSTRUMENT

The test-retest method was used to determine the reliability of the research instrument i.e. questionnaire. To this end, the instrument was used to collect data using a plot sample of 100 respondents in Lagos division; Apapa 25 respondents, Eti-Osa 25 respondents, Lagos Island 25 respondents and Lagos Mainland Surulere 25 respondents. These local governments were not included in the final data collection exercise of the study. The instrument was administered twice in the internal of two weeks. The second test was correlated with the first test scores for the entire variable(s) measured in the research instrument.

MEASUREMENT OF VARIABLES

Two groups of variables, independent and dependent variables, were measured through the application of Likert scale. The questionnaires comprised mostly structures closed-ended items and were comprised of five sections. Each section has ten questions.

INDEPENDENT VARIABLE(S) = SMALL BUSINESS MANAGEMENT

The independent variables are the variables of small business management which includes:

1. Small business planning variables such as: business forecasting, business objective, business policies, business programmes, business procedures, business decision making.
2. Small business organizing variables such as; dividing small business work, allocating small business work, business group responsibilities, business relations, business delegation.
3. Small business coordinating variables are; business groups, persons work efficiently and economically, harmony towards the common objective.
4. Small business command variables are; business centralized authority, business centralized leadership.
5. Small business direction variables are; business guided toward improved performance, motivated to work effectively towards business goals.
6. Small business control variables are: checking business plans, measured business performance, corrected business deviations.

DEPENDENT VARIABLES = SOCIETAL MARKETING PRACTICES

The dependent variables are societal marketing practices which includes: product quality, product safety, product package and labeling, product after sales services, product high prices, product false advertising, product misleading, sponsorship, scholarship, compensation for exploration, environmental pollution, public safety, lottery promo. Respondents from Badagry Division, Ikeja Division and Ikorodu Division were requested to indicate their levels of agreement through a 5 – point scale viz: strongly agree (5 points), agree (4 points), undecided (3 points), disagree (2 points) and strongly disagree (1 point).

DATA ANALYSIS TECHNIQUES

On data analysis techniques, the researcher followed a five step approach, beginning with data validation, then editing and coding of the data, followed by data entry, error detection, and data tabulation. The purpose of this data preparation process is to use data in its raw form and convert it so as to establish meaning and create value. In analyzing the data, both descriptive and inferential statistics were used. The descriptive statistics included frequency counts, percentages, mean and standard deviation. The variables highlighted using chi-square test.

RESULTS AND DISCUSSIONS

The data for study were collected from a sample of 3,000 respondents residing in Ajeromi- Ifelodun, Amuwo, Odofin, Badagry, Ojo, Agege, Alimosho, Ifako – Ijaiye, Ikeja, Kosofe, Mushin, Oshodi – Isolo, Somolu and Ikorodu areas of Lagos State which have small scale business organizations. The statistical package for the social sciences SPSS, was used to analyse the data and responses to each question were code as SD, D, U, A and SA representing strongly disagree, disagree, undecided, agree and strongly agree respectively. Table 1 shows the distribution of respondents on the small business management variables. The responses followed the same patterns for all the items. There is positive favourable affirmation to the issued as the level of agreement ranges from 89.8% to 98.1% for strongly agree category. This makes the response highly positive. In most cases, strongly disagree, disagree and undecided categories had less than 5% when pooled together. In essence, respondents are more familiar with the trends of events on the issues. Respondents strongly agree that small business planning includes the forecasting and selection of objectives with the business policies, business programmes and business procedures for achieving them. It involves making production and product choices, for example production and product decision making (89.8%).

However, there is overwhelming agreement that all possible market imperfections such as monopoly, hoarding and the like must be adequately dealt (95.2%). Respondents also believed that marketers in small business management should be entitled to a fair price to consumers (96.7%) and that in small business management system, some social security system need to be put in place to take care of the weak (96.9%). There is common agreement that small business organizing involves determining and noting activities needed to achieve objectives of the undertaking; grouping these and assigning such groups of activities to managers, ensuring effective delegation of authority to enable activities to be carried out and providing coordination of authority relationships (97%). The participants are also fully aware that marketers are forbidden to sell products that they fully know are defective or harmful to the consumers (99%). It is also well known that small business production must be well managed (98.1%). More than ninety seven percent of the respondents agree that small business coordinating involves seeing that all groups and persons work efficiently and economically, in harmony, towards the common business objective. There is also full agreement among the respondents that in small business system, command was the exercise of centralized authority and leadership (97.7%). Majority also agreed that small business emphasized that business control involves checking to see that plans have been carried out and attending to any deviations (95.2%).

TABLE 1: DISTRIBUTION OF RESPONDENTS ON SELECTED ITEMS ON SMALL BUSINESS MANAGEMENT VARIABLES

S/N	Variable(s)	SD %	D %	U %	A %	SA %	X ²	df	p-val
1	Small business planning	0.3	0.3	2.9	7	89.8	3529.65	4	0.001
2	Market imperfection	0.1	1	1.7	2.3	95.2	4075.19	4	0.001
3	Fair price to consumers	0.6	0.8	0.4	1.5	96.7	4236.19	4	0.001
4	Social security system	0.4	0.6	0.7	1	15.2	4265.19	4	0.001
5	Small business organizing	0.3	0.6	0.6	1.6	97	4265.19	4	0.001
6	Defective or harmful products	0.1	0.1	0.1	0.7	99	4498.84	4	0.001
7	Small business production	0.1	0.3	0.2	1.4	98.1	4391.27	4	0.001
8	Small business coordinating	0.1	0.2	0.3	1.5	97.9	4371.85	4	0.001
9	Small business command	0	0.2	0.3	1.5	97.7	3251.81	4	0.001
10	Small business control	0.1	0.6	1.1	3	95.2	4077.10	4	0.001

Source: Field Survey (2011)

SMALL BUSINESS MANAGEMENT IN BADAGRY, IKEJA AND IKORODU DIVISIONS OF LAGOS STATE, NIGERIA

There is no significant difference among the three division – Badagry Division, Ikeja Division and Ikorodu Division on the items on small business management variables except on the defective and harmful products. The major difference was observed in Ikeja Division where respondents had higher level on the issue. The result is presented in table 2.

TABLE 2: CROSS-TABULATION OF BADAGRY DIVISION, IKEJA DIVISION AND IKORODU DIVISION OF LAGOS STATE AND SMALL BUSINESS MANAGEMENT VARIABLES

S/N	Variables	X ²	df	p-val
1	Small business planning	65.15	8	0.001
2	Market imperfection	40.29	8	0.001
3	Fair price to consumers	44.40	8	0.001
4	Social security system	42.24	8	0.001
5	Small business organizing	61.03	8	0.001
6	Defective or harmful products	7.76	8	0.46
7	Small business production	17.27	8	0.027
8	Small business coordinating	29.66	8	0.001
9	Small business command	53.20	8	0.001
10	Small business control	38.24	8	0.001

Source: Field Survey (2011)

SMALL BUSINESS MANAGEMENT AND SOCIETAL MARKETING PRACTICES IN BADAGRY DIVISION, IKEJA DIVISION AND IKORODU DIVISION OF LAGOS STATE, NIGERIA

Table 3 presents the percentage and frequency distribution of respondents on societal marketing practices in Badagry Division, Ikeja Division and Ikorodu Division of Lagos State. Majority of the responses tend towards agreement with the items. The level of agreement ranges from 89.9% to 99.4%. It is a general opinion that small business management has impact on product quality, safety, packaging, labeling and after sale services 89.9%. Small business Management does not consider ownership rights to be absolute especially if they may lead to environmental pollution and threatened public safety 92.2%. Small business management also has impact on social programme organized by their activities 97.8%, educational development 90% and lottery promo 99.4%.

TABLE 3: DISTRIBUTION OF RESPONDENTS ON SELECTED ITEMS ON SMALL BUSINESS MANAGEMENT VARIABLES ON SOCIETAL MARKETING PRACTICES IN BADAGRY DIVISION, IKEJA DIVISION AND IKORODU DIVISION OF LAGOS STATE

S/N	Variable(s)	SD %	D %	U %	A %	SA %	X ²	df	p-val
1	Product quality, safety, package, labeling and after sales services	0.6	0.6	0	0	89.9	3481.00	2	0.001
2	Advertising related issues: some advertising false and misleading	0.6	1.1	0	0	98	1458.00	1	0.001
3	High prices	0	5	0	0	95	3481.00	2	0.001
4	Sponsorship	0	1.1	0	0	98.9	3422.33	2	0.001
5	Scholarship	0	2.2	0	0	97.8	1723.56	1	0.001
6	Compensation for pollution	0	3.9	0	0	96.1	1643.56	1	0.001
7	Environmental pollution	0	7.8	0	0	92.2	1530.89	1	0.001
8	Education services	0	5.6	0	3.9	90	1283.56	1	0.001
9	Health services	0.6	2.2	0	0	97.2	2653.00	2	0.001
10	Lottery promo	0	0.6	0	0	99.4	3307.00	2	0.001

Source: Field Survey (2011)

CONCLUSION

From the analysis of data collected and interpretation of the various descriptive analysis, this study concluded that the small business management variables such as small business planning, small business organizing, small business coordinating, small business command and small business control have impact on societal marketing variables such as product quality, product safety, product package, product labeling, after sales services, high prices, sponsorship, scholarship, compensation for pollution, environmental pollution, education services, health services and lottery promo in Lagos State, Nigeria.

RECOMMENDATIONS

In line with the findings of this study, small scale managers should note that there are dangers in simplifying and classifying the variables of small business management as there is a wide range of small business managerial tasks that do not lend themselves to simple classification. Another danger in attempting to be specific about variables is that each variable appears to have equal prominence and emphasis. At each level of small business management the emphasis changes on the various variables. In other small business organization, it can be quite different for example 90 per cent of time spent may be on planning, and in other small business organization only 10 per cent. The importance of the variables cannot be assessed by the time spent on them in order to develop a society.

REFERENCES

- Bala, H (2009), "Influence of *Shari'ah* Socio-economic on Development of Marketing Practices in Northwestern Nigeria" Kaduna State University, Faculty of Social and Management Science Second National Conference on Security and Nigeria's Development, Kaduna, Nigeria.
- Bala, H (2009), "Shariacracy, Seven Point Agenda and Green marketing Environment for Urban and Regional Planning in Kebbi State", Federal Polytechnic, Birnin Kebbi, Department of Urban and Regional Planning, College of Environmental Studies, First Annual Seminar, Birnin Kebbi, Nigeria.
- Bala, H (2009), "Socio-Economic influence of *Shari'ah* on Production in Northwestern Nigeria", Usmanu Danfodiyo University, Sokoto, Faculty of Management Sciences, Sokoto, Nigeria.
- Bala, H, (2009) "Entrepreneurship and Wealth Creation in the 21 Local Government Areas of Kebbi State", American University of Nigeria, Yola, School of Business and Entrepreneurship, Yola, Nigeria.
- Bala, H, (2009) "Development of Small and Medium Building Engineering Entrepreneurship in Kebbi State for the Actualization of Vision 20:2020", Federal Polytechnic, Birnin Kebbi, College of Engineering, Second National Engineering Technology Conference, Birnin Kebbi, Nigeria.
- Bala, H (2009), "Entrepreneurship and Wealth Creation in the 21 Local Government Areas of Kebbi State, Nigeria", Journal of Business and Entrepreneurial Development (JOBED), Department of Business Administration and Management, Kano State Polytechnic, Kano, Nigeria.
- Bala, H (2009), "Socio-economic Influence of *Shari'ah* on Marketing Promotional Strategies in Northwestern Nigeria", Department of Finance, University of Lagos, 2009 Annual Conference on Global Economic Downturn and the Nigerian Economy, Lagos, Nigeria.
- Bala, H (2010). "Impact of Islamic Business Ethics on Family Consumption Decision Making in Zamfara State, Nigeria", International Academy of African Business and Development IAABD 11th International Conference, theme, Moving Africa Toward Sustainable Growth and Technological Development, Peninsula Resort, Ajah, Lagos, May 18 – 22.
- Bala, H (2010), "Shari'acracy, Seven Point Agenda and Green Marketing Environment for Urban and Regional Planning in Kebbi State, Nigeria, International Academy of African Business and Development IAABD 11th International Conference, theme, Moving Africa Towards Sustainable Growth and Technological Development, Peninsula Resort, Ajah, Lagos, May 18 – 22.
- Bala, H (2010), "Influence of Islamic Business Ethics on Consumer's Opinion Leaders in Zamfara State, Nigeria", Journal of Business Studies (JOBAM), School of Business Studies, The Federal Polytechnic, Ede, Osun State, Nigeria.
- Bala, H (2010), "Socio-economic Influence of *Shari'ah* on Production in Northwestern Nigeria", Journal of Business Studies (JOBAM), School of Business Studies, The Federal Polytechnic, Ede, Osun State, Nigeria.
- Bala, H (2010), "Influence of Socio-economic Rules and Regulations of Shariacracy on Seven Point Agenda and Green Marketing Environment for Urban and Regional Planning in Kebbi State, Nigeria", 3rd Annual Conference, University Lagos, on Global Economic Downturn and the Nigerian Economy, Department of Finance, Faculty of Business Administration, University of Lagos, 5th & 6th May.
- Bala, H (2010), "Socio-Economic Influence of Small and Medium Building and Construction Engineering Entrepreneurship for the Actualization of Vision 20:2020 in Kebbi, Nigeria", 3rd Annual Conference, University of Lagos on Global Economic Downturn and the Nigerian Economy, Department of Finance, Faculty of Business Administration, University of Lagos, 5th & 6th May.
- Brech, H.F.L. (1963), *The Principles and Practice of Management*, London, Longman, Green & Co., 2nd Edition, pp, 1016 – 20
- Drucker, P.F. (1961), *The Practice of Management*, London, Heinemann, pp 65 – 70
- Fayol, H. (1949), *General and Industrial Management* London, Pitman, pp 95 – 9.
- Kempner, T. (1971), *An Handbook of Management*, London, Weidenfeld and Nicolson, p88.
- Lucy, T. (1976), *Management Information Systems*, London, D.P. Publications, p. 35
- Maintzberg, H. (1973), *The Nature of Managerial Work*, New York, Harper Row, pp 21 – 5.
- Stewart, R. (1963), *The Reality of Management*, London, Heinemann, P 51

IMPACT OF HUMAN ERROR IN MAINTENANCE MANAGEMENT AND MINIMIZING METHODOLOGY

N. K. K. PRASANNA
SR. VICE PRESIDENT
RELIANCE INDUSTRIES LTD.
HAZIRA

TUSHAR N. DESAI
ASSOCIATE PROFESSOR
DEPARTMENT OF MECHANICAL ENGINEERING
S. V. NATIONAL INSTITUTE OF TECHNOLOGY
SURAT

ABSTRACT

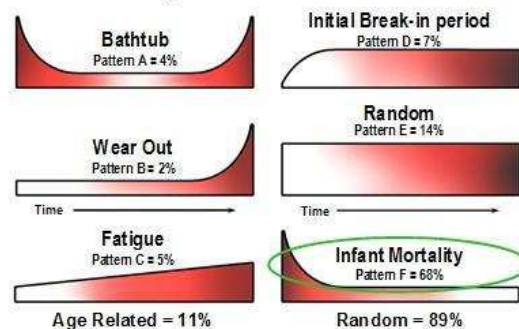
Numerous research studies have shown that over fifty percent of equipment fails prematurely after maintenance work has been performed on it. Poor maintenance performance can affect both the safety and commercial performance of an organization. As maintenance is heavily reliant on human activity, maintenance quality is largely dependent on the performance of maintenance staff. Although it is never possible to eliminate human error totally, it is possible through good maintenance management to move towards this goal. This paper overviews the work done in a petrochemical plant to reduce human errors in maintenance and discusses methodologies which were used to reduce errors and thereby improve safety, reliability and availability of the plant.

KEYWORDS

Reliability Centered Maintenance, Poka-Yoke, Failure Mode Effect Analysis, Preventive Maintenance, Performance Influencing Factors.

INTRODUCTION

In their ground-breaking work that led to the establishment of the technique that we now know as Reliability Centered Maintenance, Nowlan and Heap found, while analyzing the failures of hundreds of mechanical, structural and electrical components in aircraft, that these failures exhibited six distinct patterns which have been depicted in figure 1.

FIGURE 1: FAILURES EXHIBITING SIX DISTINCT PATTERNS

The interesting finding was that more than two-thirds of all components exhibited early-life failure. It was estimated that, between 1982 and 1991, maintenance errors ranked second only to 'controlled flight into terrain' accidents in causing onboard aircraft fatalities (despite the application of RCM techniques in the airline industry during that period)². Furthermore, a study of coal-fired power stations indicated that 56% of forced outages occurred less than a week after a planned or maintenance shutdown.

MAINTENANCE RISKS & HUMAN PERFORMANCE IN MAINTENANCE

The publication is focused on 18 human factors issues which can impact on safety and maintenance performance. These are based on the HSE HSG (65) (reference 7) model under 'policy', 'planning/implementing', and 'audit/review'. The issues are listed below:

POLICY & ORGANIZING

Policy
 Resource Allocation
 Roles, Responsibilities & Accountabilities
 Formal Communications
 Management of Change
 Organizational Learning

PLANNING & IMPLEMENTING

Procedures and Permits (Contents)
 Procedures (Presentation, Understanding, Usability)
 Work Design
 Crew/Shift Handover & Shift Work
 Individual Capabilities
 Competence (Technical and Interpersonal Skills)
 Teamwork
 Supervisory Effectiveness
 Environmental Factors
 Plant & Equipment Design

MEASURING PERFORMANCE

Routine Checking of Maintenance Performance

AUDIT & REVIEW**REVIEW OF MAINTENANCE PERFORMANCE**

The HSE publication "Reducing error and influencing behavior" suggests that three overall factors affect the performance of any work activity including maintenance. These human factor issues are described below.

- Individual factors: The attributes and capabilities of the person, this includes their personal attitudes, habits and personalities as well as their skills and competence.
- Job factors: How the requirements of the task match the capabilities of the person undertaking the task. This includes consideration of workplace and environmental factors.
- Organizational factors: The organization has a great impact on the performance of individuals, yet the importance of the health and safety culture of the organization is often overlooked.

To achieve error free performance from maintenance staff, all three factors were focused upon. Under these factors, following sub-factors were analyzed as follows:

INDIVIDUAL FACTORS

FORMAL COMMUNICATIONS: Maintenance involves activities that need coordination, formal communications. When maintenance errors are analyzed, poor communication, e.g. during shift changeover, is often identified as a contributory cause. Existence of formal communication system, such as permit-to-work, does not inevitably ensure that the right information is communicated to the right people at the right time or ensures that information is communicated unambiguously and that the recipient properly understands it.

To achieve reliable communication following issues were recognized:

- Staff need to hand over work or plant systems to other staff during maintenance
- Staff may forget the maintenance status of plant and equipment so information on this must be provided in a practical and appropriate manner
- Staff may not have a single place of work to which information can be directed, so it is important to check that messages have been received
- Staff must have information about the maintenance requirements and priorities in terms of general requirements and task-specific requirements
- Communication systems should be in place to allow staff to pass information and concerns back to management
- These systems must be structured to ensure that the message is not distorted

PROCEDURES (PRESENTATION, UNDERSTANDING AND USABILITY): Procedures and other documentation only assist in ensuring high standards of safety and maintenance performance if they are used and followed correctly. The level of detail provided must suit the needs of the user and can vary from full procedures to checklists or job aids.

- Use simple language and clearly highlight hazards, critical tasks and checks, eg with suitable warnings
- Clearly indicate part numbers and other reference information, particularly where part numbers are very similar
- Any special tools required should be stated at the start of the procedure.
- Highlight any changes in the procedure and use tick boxes to show stages in a sequence.
- Procedures should be located as close as practicable to the workplace. Ensure checklist/task-list and Standard Maintenance procedures (SMP) are not only loaded in portal, but also they are kept in hard copy in bound form in workshop.

WORK DESIGN: When scheduling maintenance tasks, the workload of individuals needs to be controlled to avoid excessive stress or tiredness which can lead to poor maintenance performance. Additional problems arise because maintenance tasks are often carried out during unsocial hours (eg nights and weekends). Equally, there is a need to avoid under-utilizing staff as this induces boredom and a loss of skills, again leading to poor maintenance performance. High-hazard industries often make use of back-up systems to ensure safety systems are always available in the event of breakdowns. There is a need to stagger the maintenance of these systems. This will reduce the potential of individuals to repeat errors when maintaining a series of similar equipment.

Poor work design can have an adverse effect on job performance and occupational health, from factors such as excessive mental or physical stress (e.g. unrealistic timescales), excessive boredom (e.g. poor job variety) and lack of motivation (e.g. poor job satisfaction).

INDIVIDUAL CAPABILITIES: Maintenance tasks are often carried out by individuals working with little supervision. They comprise two main activities: manual manipulation of components; and decisions required during fault-finding or following maintenance inspections. People vary greatly in these two aspects, and hence, these factors should be taken into account when devising and implementing maintenance programs.

- **Slips and memory lapses** Slips and memory lapses (e.g. accidentally pressing the wrong button or missing out a step or steps in a task) usually occur in tasks which are so frequently carried out that they become 'automatic'. *In general, it is not possible to eliminate these errors through instruction or training.* The best approach to controlling these errors is through design, by eliminating the opportunity for making them, e.g. through interlock guards, and ensuring that components can only be fitted in the correct manner.
- **Mistakes** : Mistakes are situations where, despite a genuine attempt to comply with procedures, an error of judgment leads to an inappropriate rule being applied or a step in a procedure being done out of sequence. It is possible to reduce such errors by *improving the training and the quality of procedural documentation.*
- **Violation (non-compliance):** Violation is a separate form of human failure that occurs when an individual or individuals deliberately contravene established and known rules. Retraining staff in the correct practices cannot be the answer, as they already know what they should do. Violations are addressed by ensuring that staff does not perceive the benefits of non-compliance to be greater than any adverse consequences.

TEAMWORK: Maintenance staff may need to work in teams, particularly when maintaining larger items of plant and equipment. Therefore, it is important that maintenance staff have the ability to work well with a range of other people, providing mutual support and advice, particularly for new staff.

Shutdown teams – one engineer from a plant where annual turnaround is planned and other Engineer from second plant to work in a team to lead a particular work package is the style in a petrochemical unit considered for study while compiling this paper. More importantly, multi-disciplinary teams are formed for root cause analysis, improvement studies in addition to Quality Circle, Small Group Activity teams. Today's trend is to follow the winning team concept rather than dependency on champions.

COMPETENCE (TECHNICAL AND INTERPERSONAL SKILLS): As maintenance tasks are often very varied, the experience and skills of maintenance staff are important factors in ensuring high standards of performance. Competency assessment is one of the tools used to implement "Quality Assured Maintenance Management". The Standard Maintenance Practice includes required competency to carryout the job as detailed in the procedure.

SUPERVISOR EFFECTIVENESS: Supervisors have an important role in correcting poor working practices while encouraging good ones. *The skills and abilities needed by supervisors are often underestimated by organizations, and supervisors may not be provided with the support and training necessary. For most maintenance staff, the supervisor is their immediate 'management' representative and as such maintenance standards are often governed by the lowest standards tolerated by the supervisor. In cost-conscious environments, there is strong pressure on supervisors to improve productivity. In such circumstances, supervisors may focus on meeting production targets on some cost of safety and maintenance standards. Where this occurs over a long period, staff and supervisors come to regard these lower standards acceptable.*

JOB FACTORS

RESOURCE ALLOCATION: Failure to provide sufficient resources is a contributory cause in many maintenance incidents. For maintenance, the resources required will include people, time, tools and equipment, and procedures.

PROCEDURES AND PERMITS (CONTENTS): Maintenance procedures provide important controls for ensuring high standards of performance and safety. The role of maintenance procedures is to provide sufficient information to allow the user to carry out tasks correctly. The reasons often quoted for staff not following maintenance procedures and permits are that they are perceived to be inaccurate, out-of-date, impractical, too time consuming, or that they do not describe the 'best' way of carrying out the work. To address the accuracy and practicality of procedures and permits, they are periodically reviewed to ensure their relevance, accuracy and practicality through job cycle check.

ORGANIZATIONAL FACTORS

ROLES, RESPONSIBILITIES AND ACCOUNTABILITIES: In many organizations, maintenance can become undervalued by being primarily considered as an overhead with no contribution to profit. This tendency must be vigorously opposed if maintenance activities are to be successfully implemented. In particular, it is important that the maintenance program has clearly specified roles, responsibilities and accountabilities.

CREW/SHIFT HANDOVER AND SHIFT WORK: Failures in communication at crew or shift handovers are a common contributory factor to accidents associated with maintenance tasks carried out by multiple teams. Indeed, many of the UK's major accidents involve failures in the communication of key aspects of ongoing planned maintenance during shift handover.

Although there is an increasing move away from shift-based maintenance in many industries, some will always remain, either because of the nature of the particular industry or because of the need to support 24-hour operations with breakdown maintenance.

To minimize the potential problems of shift/crew handovers, it is important to ensure that handovers receive a high priority with the necessary resources provided (e.g. Sufficient time) and handovers of higher-risk maintenance activities are identified in advance and are subject to greater control. More than one form of communication (face-to-face, written log sheets, electronic records, etc.) would be effective in this regard.

OTHER CONTRIBUTING FACTORS

PLANT AND EQUIPMENT DESIGN: It is important that plant and equipment are designed so that the required maintenance can be carried out reliably and safely. Many of the situations that can cause poor maintenance performance can be eliminated or alleviated by improved design. Common problems include components that are poorly labeled, not easily accessible and which can be fitted incorrectly (eg the wrong way round).

Designers should take account of ergonomic and human factors and design for maintainability, e.g. frequently visited areas will need safe, suitable and permanent access provided. In majority of process industries maintenance crew gets involved from the beginning of the project and review drawings, model and site conditions so that most of the design related issues are taken care of. Plants are commissioned after thorough pre-startup safety review correcting many such points discussed above.

ROUTINE CHECKING OF MAINTENANCE PERFORMANCE: By its nature, maintenance is made up of activities which are a mixture of routine and non-routine tasks. As such, maintenance errors can originate from various sources. Some errors can be identified and corrected during maintenance, while others may be identified subsequently during post-maintenance testing. However, some errors will remain undetected when the item returns to service. The performance of the maintenance department needs to be routinely checked to identify and correct poor maintenance practices and to identify areas for improvement

REVIEW MAINTENANCE PERFORMANCE

The overall performance of the maintenance function needs to be periodically reviewed to ensure that it is meeting the requirements of your organization and to identify opportunities for improvement in performance.

There are various approaches which can be used to review the performance of maintenance functions:

- Incident reviews to analyze the underlying causes of previous events
- Workplace audits using experienced personnel to look for error-causing factors
- Task analysis to provide a detailed understanding of tasks that appear to be error prone, thereby assisting the identification of preventive measures
- Hazard identification techniques such as failure modes and effect analysis (FMEA) to identify the effectiveness of controls over critical maintenance activities

If poor quality maintenance causes so many incidents in highly regulated and hazardous industries such as nuclear power generation and civil aviation, what proportion of failures is being caused by maintenance within your organization?

What are the outcomes of maintenance-induced failures? Clearly, depending on the industry in which you operate, there are potentially significant safety and environmental risks. There is a long list of catastrophic failures in which, the inadequate performance of a maintenance task played a significant role. But besides the obvious safety risks, perhaps the bigger consequences are economic. General Electric has estimated that each in-flight engine shutdown costs airlines in the region of US\$500,000. What could maintenance-induced failures be costing your organization?

Clearly, we need to do something to reduce the number of equipment failures that are being caused, not prevented, by maintenance. This paper suggests that the most appropriate approach is to:

- *admit that human error is inevitable (even in maintenance!) and design our systems and processes around this inevitability*
- *use appropriate tools to ensure that we are not unnecessarily over-maintaining plant and equipment (and therefore increasing the risk associated with the fact that this work may not be performed correctly)*
- *work to improve the quality with which maintenance activities are performed – including error-proofing where possible.*

The quality of maintenance is a major contributory factor affecting safety and operational costs. It affects the operating life of plant and also the risk of accidents during or following maintenance. For example, the tragic accident on the Piper Alpha oil platform involved a series of errors during maintenance. It resulted in the loss of 167 lives and is estimated to have cost over £2 billion, including £76 million in direct insurance payments. The extent and nature of the impact will, of course, depend upon the type of industry and the activities carried out. The focus on human error comes from the recognition that maintenance is largely a human activity. Although it is never possible to totally eliminate human error, it is possible, through good maintenance management and an understanding of the issues that affect error, to move towards this goal and to control the likelihood of error.

MINIMIZE HUMAN ERRORS IN MAINTENANCE

The methodology for minimizing human errors in maintenance focuses on the following aspects:

1. Safety Commitment of Team Leaders and Managers
2. Perceived Impracticality of Safety Rules, Communications and Job Design
3. Plant & Equipment Ergonomics
4. Knowledge and Skills
5. Rules: Application: Relevance and Accuracy
6. Organizational Support and Working Conditions
7. Safety Commitment of Workforce
8. Complacency
9. Supervision: Setting Standards, Monitoring & Detection

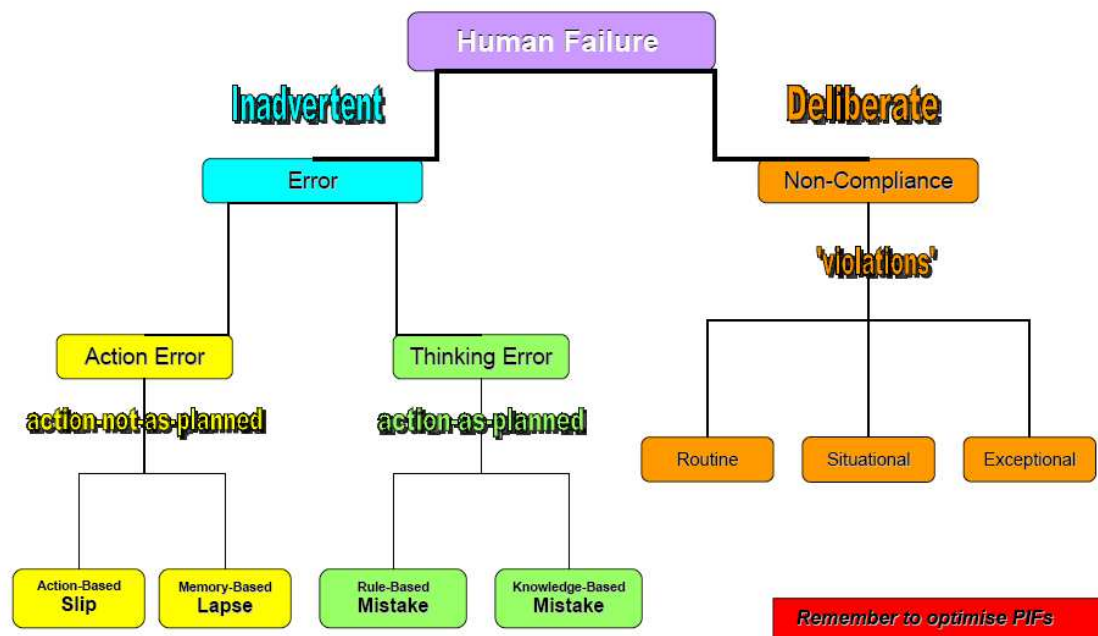
10. Organizational Learning and Committed Resources
11. Participation and Quality Training
12. Balance of Productivity and Safety
13. Management Style

SURVEY ON HUMAN FACTORS IN MAINTENANCE (HFIM)**Survey Feedback**

1. The main issue in my opinion is "complacency". A lot is due to repeated jobs over and over again, and not paying attention to little details.
2. Managers and Supervisors need to be more patient when shops get a lot of work. Most mistakes are made when technicians get interrupted during their tasks to do other jobs and feel pressure to always get done quickly.
3. To improve or reduce HFIM management/errors you need:
 - a. Effective implementation of supervisory training
 - b. Timely sharing of information (incidents/ accidents)
 - c. Motivation at all levels
 - d. Involvement of leaders and supervisors with the subordinates
4. Personnel should be trained and watched by supervisors to make sure they are gaining an understanding of correct processes and sticking to the procedures.
5. I think that work-pressure and fatigue are special human error producers. I think generally, the air forces have to consider a rest time for technicians just like the rest time valid for crew members.
6. Most common outcome is repeat/recure of present malfunction due to lack of efficient maintenance procedures related to HFIM.
7. The most important is psychological factors (i.e. wants, expectations, attitudes and motivation) then next comes human sensory factors and physiological factors.

AVOID UNNECESSARY MAINTENANCE: Using techniques such as Reliability Centered Maintenance and Preventive Maintenance optimization fully justify maintenance activities and accept the fact that human error is inevitable.

TYPES OF ERRORS AND SOLUTIONS: Performance Influencing Factors (PIFs) are characteristics of the job, the individual and the organization that influence human performance. Optimizing PIFs will reduce the likelihood of all types of human failures. Figure 2 exhibits types of errors.

FIGURE 2: TYPES OF ERRORS**JOB FACTORS**

- Clarity of signs, signals, instructions and other information
- System/equipment interface (labelling, alarms, error avoidance/ tolerance)
- Difficulty/complexity of task
- Routine or unusual
- Divided attention
- Procedures inadequate or inappropriate
- Preparation for task (e.g. permits, risk assessments, checking)
- Time available/required
- Tools appropriate for task
- Communication, with colleagues, supervision, contractor, other
- Working environment (noise, heat, space, lighting, ventilation)

PERSONAL FACTORS

- Physical capability and condition
- Fatigue (acute from temporary situation, or chronic)
- Stress/morale
- Work overload/under load
- Competence to deal with circumstances
- Motivation versus other priorities

ORGANIZATIONAL FACTORS

- Work pressures e.g. production vs. safety
- Level and nature of supervision / leadership
- Communication
- Manning levels
- Peer pressure
- Clarity of roles and responsibilities
- Consequences of failure to follow rules/procedures
- Effectiveness of organizational learning (learning from experiences)
- Organizational or safety culture, e.g. everyone breaks the rules

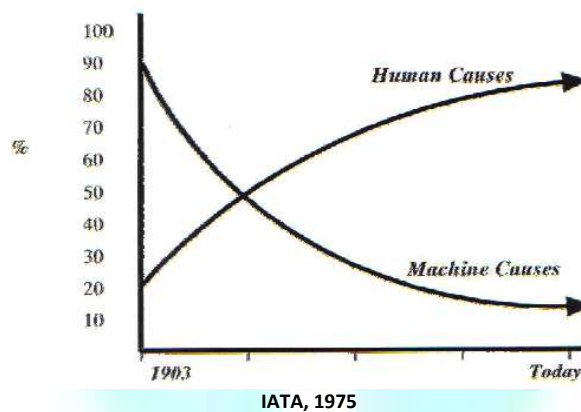
SOLUTIONS**1) Writing effective work instructions**

Omissions account for more than 50% of all maintenance errors, good work instructions can reduce it. Characteristics of good maintenance work instruction

- Written with the person who is going to read and use
- Avoid complex work instructions
- Simple consistent language
- Use figures and pictures wherever possible
- Use active not passive voice
- Incorporate adequate inspections at key points
- Highlight critical steps (Process Safety Management critical)

2) Training helps to avoid human error

- Qualified and skilled personnel
- Assign tasks appropriately
- Ensure good housekeeping standards
- Good spare part management

FIGURE 3: ROLE PLAYED BY HUMAN PERFORMANCE IN CIVIL AIRCRAFT ACCIDENTS**3) Poka-Yoke**

Poka-Yoke is fool-proofing, which is the basis of the Zero Quality Control (ZQC) approach, which is a technique for avoiding and eliminating mistakes. Generally this technique is used in manufacturing processes, but has much wider uses, such as; offices - order and invoice processing, hospitals - drug dispensing, aircraft maintenance - particularly with processes having the potential of inducing catastrophic in-service failures.

The term Poka-Yoke is Japanese and can roughly be translated as mistake or fool-proofing. This is especially important when considering the technique and approach requires the workers active participation in the error cause removal programme. Use of dowel pins in assembly to match two mating parts is one of the simple examples of mistake proofing in maintenance. Notably, error cause removal and zero defects are phases first used by Philip Crosby but the approach is very different and should not be confused.

CONCLUSION

Poor maintenance performance can affect both the safety and commercial performance of an organization. No organization can afford to accept loss of image, property or human lives because of human errors. In today's world of competitiveness, lot is expected from maintenance, and this service is considered as profit centre, and it is understood that maintenance drives manufacturing. The availability, reliability and integrity are assured by maintenance. Even though human errors are inevitable, error minimizing or eliminating techniques through procedures, checklist and training is part of maintenance organization in petrochemical plants. As a proactive move, lot of techniques, such as Positive Metal Identification, Last Chance Inspection, Quality Assurance Sheets, Welding Procedure System, Task List, Job Package Files, Things-to-Do List, Micro Planning, to name a few, are in place in most of the organizations.

ABBREVIATIONS

RCM	Reliability Centered Maintenance
PM	Preventive Maintenance
FEMA	Failure Mode and Effect Analysis
PIF	Performance Influencing Factors
HSE	Health Safety and Environment
HFIM	Human Factors In Maintenance
ZQC	Zero Quality Control
UK	United Kingdom

REFERENCES

1. Nowlan F S and Heap H, Reliability Centered Maintenance, National Technical Information Service, US Department of Commerce, Springfield, Virginia 1978.

2. Davis R A, Human factors in the global marketplace, Keynote address, Annual Meeting of the Human Factors and Ergonomics Society, Seattle, 2 October 1993.
3. Smith A, Reliability Centered Maintenance, McGraw Hill, Boston 1992.
4. Reason J, Managing the Risks of Organizational Accidents, Ashgate Publishing, 1997.
5. Boeing, Maintenance error decision aid, Boeing Commercial Airplane Group, Seattle 1994.
6. Reason J and Hobbs A, Managing Maintenance Error, Ashgate Publishing, 2003.
7. Orlick T, In Pursuit of Excellence, Zone of Excellence, Ottawa 2000.
8. Assuring High Performance in an Age of Complexity, Jossey-Bass, 2001.
9. Reducing error and influencing behaviour HSG48 HSE Books 1999 ISBN 0 7176 2452 8 How Mistake Proof Are Your Processes? –
10. Improving Maintenance by Reducing Human Error, Steve Mason BSc (Hons) MSc EurErg FErgS MIOOSH, Principal Human Factors Consultant, Health, Safety & Engineering Consultants Limited (HSEC), Managing Human Error in Maintenance by Sandy Dunn.
11. Improving maintenance a guide to reducing human error – health and safety executive.
12. Work Instructions for Mistake Proofing – By Kiran Walimbe.
13. <http://www.hse.gov.uk/humanfactors/topics/humanfail.htm>



INTERPERSONAL RELATIONSHIP-AN ATTEMPT AT QUANTIFYING IT

T K PARAMESWARAN NAIR

RETIRED SCIENTIST, DEFENCE R & D ORGN, MINISTRY OF DEFENCE, GOVT OF INDIA

RETIRED PROFESSOR & DEAN, ENGG STAFF COLLEGE OF INDIA, INSTN OF ENGRS (I)

ERNAKULAM


ABSTRACT

Interpersonal Relationship is proposed to be basically composed of two components, namely, Affinity & Kinship of which the former is the non-genetic part and the latter genetic. Affinity is analyzed and its constituent attributes identified. It is pointed out that the genetic part plays a comparatively secondary role in the intensity of a Relationship, contrary to what is generally perceived. It is proposed that the various attributes of Affinity are present in different proportions in different forms of Affinity/Relationship. These different forms are grouped into clusters based on broad similarities so that the proportions or weightages of these attributes could be reasonably generic within such clusters. A methodology is presented which enables representing Relationships numerically as a factor between 0 & 1. This facilitates comparison of the intensities of different relationships. Most importantly it enables monitoring of the need for correctional measures in familial, organizational & social relationships and also helps lay finger on which attribute needs correction and thus channelises such measures.

KEYWORDS

Affinity, kinship, interpersonal, relationship, quantifying.

INTRODUCTION

 Numerous papers have appeared in journals of social psychology, behavioural sciences, management studies and the like, delving deep into the various aspects of the subject of 'Interpersonal Relationship' per se. (The snapshot appearing at the end of this paper under References gives a flavour.) They have no doubt thrown a lot of light on the complex subject in diverse scenarios and helped us gain a veritable insight into the understanding of human interactions in different settings, which is so vital for effectively handling them in various familial, social and organizational contexts. But there has been hardly any work so far, to the extent this author has been able to track, that is directed towards the possibility of quantitatively expressing/measuring interpersonal relationship, which is the quintessential tenor of a scientific approach. The present effort is to seek a way of accomplishing this goal, which this author believes is important in making it possible to compare different relationships which may be apparently not comparable, to monitor their growth/degradation over time and to modulate them in an informed way in order to accomplish contextual goals.

METHODOLOGY

The methodology adopted is to search for the basic components/constituents that contribute towards a relationship, which by its very nature is complex and hence not directly amenable to handle, and then propose a way of combining these comparatively simpler components, with suitable weightages, to generate the particular relationship under study. The presence of the constituents and their weightages are determined by empirical considerations by experts in the field. The approach also tries to give due weightage to genetical predispositions in familial relationships. The particular relationship under study is given a quantitative maximum value of '1', its components a value of '0' or '1' depending on their absence or presence respectively in contributing to the relationship, their weightages a value between '0' and '1' as empirically assessed in the specific context. Below we develop the approach.

APPROACH

We start by taking a close look at 'Relationship'. 'Relationship' between two individuals is proposed to be made up of two components which we shall term as *Affinity* and *Kinship*. *Affinity* is simply the liking for the other person, just the same as its literal meaning. *Kinship* on the other hand is the genetic/ 'genetic-derived' (explained later) component of the relationship. The attempt here is to analyze these and quantify as a number between 0 & 1, in other words to express them as a factor in relation to a possible maximum of 1. This may evoke an opinion that such essentially emotional elements are not amenable to quantification and hence to quantitative analysis. But, pause for a moment and recall how readily we respond to a doctor's request to grade our pain or well-being in the scale of 0 to 10. Hence, though it can be admitted that the quantification we are talking about may be subjective, we must realize that the emotion in question is itself essentially subjective.

Continuing with the earlier string of thought, let us call the three elements as the R-factor (R), the A-factor (A) & the K-factor (K) respectively.

Out of the two components of 'R' proposed above, 'A' must be the dominant one. Otherwise how come some friendships are stronger than blood relationships such as brother-brother, brother-sister or parent-child? We all know that the relationship between a young man and a young woman may be so intense as to thwart brother-sister or parent-child relationships which might come in the way. We can express this as follows:

$$R = A \text{ augmented by } K \quad \dots(1)$$

The nature of the qualifier 'augmented by' we shall arrive at later.

AFFINITY

Affinity for a person presumably derives from 10 major attributes proposed below. Obviously they cannot have equal contribution in determining affinity. So an appropriate weightage is to be assigned to each one of them. The attributes are listed below along with the symbols we shall be using for representing them and for their weightages of contribution.

TABLE-1

Attributes	Symbol for Attribute	Symbol for Weightage
Dependability in distress	Ad	Wd
Commonality of interests	Ai	Wi
Temperamental compatibility	At	Wt
Character compatibility	Ach	Wch
Cultural compatibility	Ac	Wc
Sexual/aesthetic attraction	Asa	Wsa
Usefulness in realizing one's goals	Ag	Wg
Ability to arouse one's protective instinct	Ap	Wp
Admirable accomplishments	Aacc	Wacc
Admirable achievements	Aach	Wach

A-factor can now be expressed as follows:

$$A = Wd \times Ad + Wi \times Ai + Wt \times At + Wch \times Ach + Wc \times Ac + Wsa \times Asa + Wg \times Ag + Wp \times Ap + Wacc \times Aacc + Wach \times Aach \dots (2)$$

Here 'x' is multiplication sign and it has precedence over '+' as is customary in any algebraic expression. The weightages $Wd, \dots, Wach$ and the attributes $Ad, \dots, Aach$ will all have values between 0 & 1 so that A is also within the same range consistent with what we postulated in the beginning. 'Ach' refers broadly to one's major personality traits such as belief systems, integrity etc. 'Ac' refers broadly to social background. A-factor between individuals C & D may generally differ in either direction. That is to say, the affinity of C-to-D may differ from that of D-to-C.

Note that the emphasis here is on relative attributes as perceived by the initiator of the relationship, which fact is expressed by terms like 'compatibility', 'attraction', 'being useful' or 'being admirable', and not on the absolute attribute per se. This facilitates the applicability of the expression to all categories of people, regardless of their class or virtues, be it a person of noble descent or a heinous criminal.

The weightages 'W' can not be uniform for all kinds of relationships. For example 'Ws,a' will generally be high in affinity between youth of opposite sex compared with that between senior citizens and youth. Or 'Wp' will generally be prominent in an adult-child affinity as compared to adult-adult affinity. Hence they have to be chosen appropriately for different affinity groups. The first thing to do in this context is to identify the distinct affinity groups. The following is a proposed list.

TABLE-2

Affinity Groups	Symbol
Age/Gender-based Groups:	
-Child group (Upto 10 years)	$C \rightarrow C$
-Youth same-sex group (11 to 50 years)	$Y_{ss} \rightarrow Y_{ss}$
-Youth male-female group & its inverse (11 to 50 years)	$Y_m \rightarrow Y_f$ $Y_f \rightarrow Y_m$
-Senior group (51 years and above)	$S \rightarrow S$
-Senior/Youth-Child group & its inverse	$S/Y \rightarrow C$ $C \rightarrow S/Y$
-Senior/Youth & its inverse	$S \rightarrow Y$ $Y \rightarrow S$
Workplace-based Group:	
-Employer-Employee & its inverse	$E_r \rightarrow E_e$ $E_e \rightarrow E_r$

Employer-Employee affinity will of course be influenced by the Age/Gender-based affinity also. For simplicity we deliberately ignore it here, but shall talk about it when we analyze the relationship.

Now let us choose the weightages as realistically as possible for each of these groups. The weightages so selected will make possible to have a generic base-line expression over which one can assign the specific ratings of the attributes in any particular case in order to yield the measure of the corresponding affinity targeted.

TABLE-3

Values for various Affinity Groups											
Weightages	$C \rightarrow C$	$Y_{ss} \rightarrow Y_{ss}$	$Y_m \rightarrow Y_f$	$Y_f \rightarrow Y_m$	$S \rightarrow S$	$S \rightarrow C$ $Y \rightarrow C$	$C \rightarrow S$ $C \rightarrow Y$	$S \rightarrow Y$	$Y \rightarrow S$	$E_r \rightarrow E_e$	$E_e \rightarrow E_r$
Wd	0.1	0.2	0.05	0.2	0.2	0	0.3	0.2	0.1	0.05	0.1
Wi	0.3	0.1	0.05	0.05	0.2	0	0	0.1	0.1	0.1	0.1
Wt	0.2	0.1	0.2	0.2	0.1	0.2	0.3	0.2	0.2	0.1	0.1
Wch	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Wc	0.2	0.05	0.05	0.05	0.1	0.1	0.1	0.05	0.05	0.05	0.05
Ws,a	0	0.05	0.3	0.2	0.05	0.2	0	0.1	0.05	0.05	0.05
Wg	0	0.2	0.05	0.05	0.05	0	0.2	0.1	0.1	0.2	0.2
Wp	0.1	0.05	0.05	0	0.05	0.3	0	0	0.1	0.05	0
Wacc	0	0.1	0.1	0.1	0.1	0.1	0	0.1	0.15	0.15	0.15
Wach	0	0.05	0.05	0.05	0.05	0	0	0.05	0.15	0.15	0.2

It is of course to be admitted that there is some degree of arbitrariness in the choice of the above values for the weightages.

We shall come back to the topic for specific relationships a bit later, after taking a look at Knship.

KINSHIP

Kinship is genetic/'genetic-derived' as stated before. Let us derive the K-factor for the more prominent kinships. To begin this process, we need to take note of the chromosomal combinations that result in gender difference. These are, as is well-known, the following:

$$M = X_{mo} + Y_{fa} \dots (3)$$

$$W = X_{fa} + X_{mo} \dots (4)$$

These are of course not algebraic equations but genetic strings with the '+' representing the string symbol.

Here 'M' stands for man, 'W' for woman, 'X' stands for X-chromosome, 'Y' stands for Y-chromosome, suffix 'fa' for father, 'mo' for mother.

In man, considering the commonality of his gender with his father Y_{fa} can be assumed to be dominant. Similarly for woman. Emphasizing this fact, the above-mentioned combinations can be more effectively represented with visual emphasis as follows with bold Y_{fa} for man and bold X_{mo} for woman:

$$M = X_{mo} + \mathbf{Y_{fa}} \dots (3')$$

$$W = X_{fa} + \mathbf{X_{mo}} \dots (4')$$

The major kinships represented by 'K' can be reasonably hypothesized to be quantifiable as given below:

$$\text{Father-Son (F-S)} \quad K_{fs} = 0.52 \text{ due to dominant } Y_{fa}$$

$$\text{Father-Daughter (F-D)} \quad K_{fd} = 0.48 \text{ due to non-dominant } X_{fa}$$

Similarly

$$\text{Mother-Son (M-S)} \quad K_{ms} = 0.48$$

$$\text{Mother-Daughter (M-D)} \quad K_{md} = 0.52$$

Brother-Brother (B-B) $K_{bb} = 0.9$

Brother-Sister (B-S) $K_{bs} = 0.8$

Similarly

Sister-Sister (S-S) $K_{ss} = 0.9$

Axiom-1: *K-factors are multiplicative when deduced for a chain of kinships.*

Thus

Paternal Uncle-Nephew $K_{pune} = K_{bb} \times K_{fs} = 0.9 \times 0.52 = 0.47$

Paternal Uncle-Niece $K_{puni} = K_{bb} \times K_{fd} = 0.9 \times 0.48 = 0.43$

Similarly for parallel mother-routed kinships.

It may appear somewhat distorted to find that K_{ms} & K_{pune} are nearly equal. But remember that we are talking about *kinship* only at this stage and not about *relationship*. We shall resolve it later.

'Genetic-derived' kinship is that between parents as illustrated below:

Unrelated Husband-Wife $K_{hw} = 0$

With 1 progeny 'genetic derivation' of K-factor starts.

Thus $K_{hw} = K_{fs} \times K_{ms} = K_{fd} \times K_{md} = 0.52 \times 0.48 = 0.25$

Axiom-2: *K-factor contributed by each progeny in H-W relationship is additive.*

So, for 4 progenies $K_{hw} = 0.25 + 0.25 + 0.25 + 0.25 = 1$, the possible maximal value.

Note that this does not mean that the 2-children norm is detracting from a fuller husband-wife relationship, as we are presently talking about *kinship* only like earlier and not *relationship*.

RELATIONSHIP

Now we come back to the formula (1) viz.

$R = A$ augmented by K

What is the nature of this 'augmentation'?

When we have already postulated, based on general observation, that Affinity is the over-riding element in a Relationship, it is logical to propose that this augmentation should be in proportion to the extent to which A-factor falls short of attaining the maximal value of R-factor viz. 1. This is taken care of as follows:

$R = A + (1 - A)K$ (1')

Here '+' and '-' are the familiar arithmetic operational symbols

Now let us start deriving R for some major relationships.

First we must select the attribute values that make up A-factors.

FATHER-SON VS. FATHER-DAUGHTER

These relationships need to be analyzed recognizing the possibility of different age-groups the two individuals may belong to. Thus, in the light of our discussion of different affinity-groups above, we need to consider the following cases:

Father-Son (F-S):
 $S/Y \rightarrow C$
 $Y_{ss} \rightarrow Y_{ss}$
 $S \rightarrow Y$
 $S \rightarrow S$

Similarly

Father-Daughter (F-D):
 $S/Y \rightarrow C$
 $Y_m \rightarrow Y_f$
 $S \rightarrow Y$
 $S \rightarrow S$

Let us assign the attribute values in each case in the tabular form like we did earlier which has the advantage of facilitating a comparison among the different groups. Values of attributes selected are for typical relationships.

TABLE-4

Weightages & Attributes	Values for different Affinity Groups							
	F-S: $S/Y \rightarrow C$	$Y_{ss} \rightarrow Y_{ss}$	$S \rightarrow Y$	$S \rightarrow S$	F-D: $S/Y \rightarrow C$	$Y_m \rightarrow Y_f$	$S \rightarrow Y$	$S \rightarrow S$
Wd	0	0.2	0.2	0.2	0	0.05	0.2	0.2
Ad	0	0.9	0.9	0.9	0	0.8	0.9	0.9
Wi	0	0.1	0.1	0.2	0	0.05	0.1	0.2
Ai	0	0.7	0.7	0.7	0	0.7	0.7	0.7
Wt	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2
At	0.9	0.8	0.6	0.5	0.9	0.8	0.6	0.5
Wch	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Ach	0.9	0.7	0.7	0.7	0.9	0.8	0.7	0.7
Wc	0.1	0.05	0.05	0.1	0.1	0.05	0.05	0.1
Ac	1.0	1.0	1.0	1.0	0.9	1.0	1.0	1.0
Wsa	0.2	0.05	0.1	0.05	0.2	0.3	0.1	0.05
Asa	0.8	0.8	0.6	0.4	0.9	0.9	0.6	0.4
Wg	0	0.2	0.1	0.05	0	0.05	0.1	0.05
Ag	0	0.8	0.8	0.6	0	0.6	0.8	0.6
Wp	0.3	0.05	0	0.05	0.3	0.05	0	0.05
Ap	0.8	0.5	0.4	0.3	0.9	0.5	0.4	0.3
Wacc	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Aacc	0.8	0.9	0.9	0.9	0.8	0.9	0.9	0.9
Wach	0	0.05	0.05	0.05	0	0.05	0.05	0.05
Aach	0	0.8	0.9	0.9	0	0.7	0.9	0.9
A-factor	0.85	0.77	0.77	0.76	0.89	0.79	0.77	0.76
R-factor	0.93	0.89	0.89	0.88	0.94	0.89	0.89	0.88

Compare the first two columns of F-S and F-D. Observe that even though the R-factors are nearly identical the A-factors lean towards the daughters in their childhood and youth. That explains, in general, why fathers' darlings are daughters despite lower kinship.

Similar will be the result for mother-son relationship.

PATERNAL UNCLE-NEPHEW VS. MOTHER SON RELATIONSHIP

Axiom-3: While deriving a chain of relationships the A-factor to be taken into account will be that between the terminally linked individuals only.

In PU-Ne relationship the chain of relationships involved is B-B followed by F-S. According to the above axiom we won't consider A-factors for B-B and for F-S. We shall only consider A-factor between PU and Ne.

$$\text{So, } R_{\text{pune}} = A_{\text{pune}} + (1 - A_{\text{pune}}) K_{\text{pune}}$$

$$K_{\text{pune}} = K_{\text{bb}} \times K_{\text{fs}} = 0.9 \times 0.52 = 0.47$$

Treating it exhaustively will need us to consider the different age-groups. It should suffice here to consider a single age-group, say, $S/Y \rightarrow C$.

TABLE 5

Weightages & Attributes	Values for	
	PU→Ne	M→S
Wd	0	0
Ad	0	0
Wi	0	0
Ai	0	0
Wt	0.2	0.2
At	0.7	0.9
Wch	0.1	0.1
Ach	0.7	0.9
Wc	0.1	0.1
Ac	0.9	0.9
Wsa	0.2	0.2
As,a	0.7	0.9
Wg	0	0
Ag	0	0
Wp	0.3	0.3
Ap	0.7	1
Wacc	0.1	0.1
Aacc	0.7	0.7
Wach	0	0
Aach	0	0
A-factor	0.72	0.91
R-factor	0.85	0.95

Thus the R-factor is convincingly leaning towards the mother-son relationship unlike the K-factor.

HUSBAND-WIFE RELATIONSHIP

A_{hw} can be assumed to be at least 0.5. A lesser value obviously doesn't justify marriage.

Before producing a progeny $R\text{-factor} = A_{\text{hw}} + (1 - A_{\text{hw}}) \times K_{\text{hw}} = 0.5 + (1 - 0.5) \times 0 = 0.5$

After 1 progeny $K_{\text{hw}} = 0.25$ as shown earlier.
Corresponding $R_{\text{hw}} = 0.5 + (1 - 0.5) \times 0.25 = 0.63$

After 2 progeny $K_{\text{hw}} = 0.25 + 0.25 = 0.5$
Corresponding $R_{\text{hw}} = 0.5 + (1 - 0.5) \times 0.5 = 0.75$

After 3 progeny $K_{\text{hw}} = 0.25 + 0.25 + 0.25 = 0.75$
Corresponding $R_{\text{hw}} = 0.5 + (1 - 0.5) \times 0.75 = 0.88$

After 4 progeny $K_{\text{hw}} = 0.25 + 0.25 + 0.25 + 0.25 = 1$
Corresponding $R_{\text{hw}} = 0.5 + (1 - 0.5) \times 1 = 1$

However, R_{hw} can be 1 right at the time of marriage in an intensely romantic man-woman relationship where A_{hw} could equal 1.

EMPLOYER EMPLOYEE & INVERSE RELATIONSHIP

Typical attribute values for a good affinity are being considered below:

TABLE 6

Weightages & Attributes	Values	
	Er→Ee	Ee→Er
Wd	0.05	0.1
Ad	0.3	0.8
Wi	0.1	0.1
Ai	0.8	0.8
Wt	0.1	0.1
At	0.8	0.8
Wch	0.1	0.1
Ach	0.7	0.7
Ws,a	0.05	0.05
As,a	0.5	0.5
Wg	0.2	0.2
Ag	0.9	0.8
Wp	0.05	0
Ap	0.8	0
Wacc	0.15	0.15
Aacc	0.8	0.8
Wach	0.15	0.15
Aach	0.6	0.8
A-factor	0.7	0.62
R-factor	0.7	0.62

We haven't considered here the influence of age/gender-based affinities which is quite a possibility in real-life Employer-Employee and the inverse relations as long as the people involved are normal human beings. In order to derive such a realistic measure we need to augment this result with the affinity that derives from those aspects also. The group affinities that operate here are $S \rightarrow Y$, $Y \rightarrow S$, $Y_m \rightarrow Y_f$, $Y_f \rightarrow Y_m$ whichever is applicable in the specific instance. The weightages to be assigned for the two may reasonably be assumed as indicated below, for an uncorrupt relationship.

A-factor = 0.7x A-factor of pure Er-Ee/Ee-Er affinity + 0.3x A-factor of age/gender- based group applicable(5)

APPLICATIONS

The above discussion may appear to be at best a theoretical exposition of the subject albeit from an unconventional point of view. However, if one takes a serious look one will realize that the analysis attempted affords a better comprehension of the essentially instinctive process of developing a relationship and helps place one's finger on what aspect of the relationship needs to be improved for higher satisfaction. In an organization a confidential feedback form for eliciting the various attributes will help the Human Resources personnel to improve the Employer-Employee/inverse relationships. In the same way, in a family environment a counselor will be able to get valuable clues as to the shortcomings in internal family relationships from these parameters obtained through a feedback that would enable him to enhance such relationships. Of course to facilitate action in this direction a definition of what is the norm and what is the lower bound is needed with regard to such affinities/relationships. We have already accepted a prescription in the above discussion for husband-wife relationship viz. 0.5 for affinity to justify marriage. Let us look at this issue more comprehensively:

TABLE 7

Relationship	A-factor Lower Bound	A-factor Norm
H-W & inverse	0.5	0.7
F-S, F-D, M-S, M-D B-B, B-S & invers	0.7	0.8
Grand Parent-Grand Child & inverse	0.6	0.7
Uncle/Aunt-Nephew/Niece & inverse	0.5	0.6
Cousins	0.6	0.7
Employer-Employee & inverse	0.5	0.7

CONCLUSION

What has been attempted above is to broadly spell out a modality of approach if we wish to analyze human relationship with the intention of expressing it quantitatively which is of course a radical departure from the usual qualitative approach. Along the way, we have identified not only two fundamental constituents of relationship but have gone much deeper in search of the attributes of the affinity that two individuals might feel for each other. Ten such attributes have been proposed. Their impacts will be in different proportions. With that realization their weightages were proposed in order to evolve a mathematical expression for affinity. The values of these weightages will differ in different affinities/relationships. Several such affinity groups were identified based on age, gender & workplace and different sets of weightages were assigned to characterize them. The kinship factors for fundamental kinships were also assigned values. Certainly there is some degree of subjectivity in the enumeration of such affinity groups. It is also the case with the values of weightages, of kinship factors for basic kinships, of lower bounds & norms of affinities and of age-group bounds. Professionals from Social Psychology & Behavioural Sciences are definitely better-placed to come out with more realistic notions and estimates on these issues.

REFERENCES

1. Abbas Rakhshani, Satyapriya Maharana, Nagarathna Raghuram, Hongasandra R. Nagendra Padmalatha Venkatram (2010), "Effects of Integrated Yoga on Quality of Life and Interpersonal Relationship of Pregnant Women", *Quality Life Research* Vol. 19, pp 1447-1455
2. Christine E. Wade, Bruce A. Cameron, Kari Morgan and Karen C. Williams (2011), "Are Interpersonal Relationships Necessary for Developing Trust in Online Group Projects?", *Distance Education* Vol. 32, No. 3, pp 383-396
3. Graham R. Massey, Elias Kyriazis (2007), "Interpersonal Trust Between Marketing and R&D During New Product Development Projects", *European Journal of Marketing*, Vol. 41 No. 9/10, pp 1146-1172
4. Holloman, Charles R (1973), "Characteristics of Interpersonal Relations in Municipal Government", *Academy of Management Journal* Vol.16, No. 4, pp 691-695
5. Just, Karen (1999), "Sharp Interpersonal Skills: Your Key to Business Success", *Hospital Materiel Management Quarterly*, Vol. 20, No. 4, pp 84-87
6. Kirkpatrick, Forrest H (1944), "Interpersonal Relations", *Personnel Journal*, Vol. 23, pp73-76
7. Louise C, Hawkey, John T Cacioppo (2010), "How Can I Connect with Thee: Measuring and Comparing Satisfaction in Multiple Relationship Domains", *The Journal of Individual Psychology*, Vol. 66, No.1, pp 43-67
8. Luthans, Fred, Hodgetts, Richard M (1969), "Managerial Analysis of Doctoral Candidates and Professors: Research Attitudes and Interpersonal Relations", *Academy of Management Journal*, Vol.12, No. 2, pp213-221
9. Mary Bambacas, Margaret Patrickson (2008), "Interpersonal Communication Skills that Enhance Organizational Commitment", *Journal of Communication Management*, Vol. 12, No. 1, pp. 51-72
10. Paulo Guenzi, Ottavia Pelloni (2004), "The Impact of Interpersonal Relationships on Customer Satisfaction and Loyalty to the Service Provider", *Journal of Service Management*, Vol 15, No. 3, pp 365-384
11. Satoshi Moriizumi (2010), "The Relationships Between Japanese Interpersonal Conflict Styles and Their Language Expressions", *The Journal of Social Psychology*, Vol 50, No. 5, pp 520-539
12. Tinneke Timmermans, Iven van Mechelen, Peter Kuppens, "The Relationship Between Individual Differences in Intraindividual Variability in Core Affect and Interpersonal Behaviour", *European Journal of Personality*, Vol. 24, pp623-638
13. Willits, Robin D (1967), "Company Performance and Interpersonal Relations", *Industrial Management Review*, Vol 8, No. 2, pp 91-107

PERFORMANCE APPRAISAL SYSTEM IN TEXTILE INDUSTRY WITH SPECIAL REFERENCE TO TIRUPUR- AN EXPLORATORY STUDY

DR. S. KUPPUSAMY

DIRECTOR

M. KUMARASAMY COLLEGE OF ENGINEERING

THALAVAPALAYAM

E. DEEPA

ASST. PROFESSOR

VIVEKANANADHA COLLEGE OF ENGINEERING FOR WOMEN

ELAYAMPALAYAM

M. STELLA

LECTURER

VIVEKANANADHA COLLEGE OF ENGINEERING FOR WOMEN

ELAYAMPALAYAM

ABSTRACT

The present research analyzed the appraisal system used in the textile industry. The Sample of 250 respondents was selected for the study using simple random sampling method. The data collected was analyzed using Simple Percentage method, chi square analysis, spearman's rank correlation, t- test and f- test. The major findings of the study are the employees were satisfied with the training programs and the benefits provided to them as well they are satisfied with the existing system and need only a few changes accordingly. The Suggestion given to the company was the Employees performance must be appraised using the appropriate appraisal methods and the productivity can be maximized by providing incentives, training program and a quality of work life balance.

KEYWORDS

Appraisal, Training & development, Performance ratings, Grievance handling, Incentives & compensation.

INTRODUCTION TO THE STUDY



PERFORMANCE APPRAISAL

A performance appraisal, employee appraisal, performance review, or (career) development discussion is a method by which the job performance of an employee is evaluated (generally in terms of quality, quantity, cost, and time) typically by the corresponding manager or supervisor. Performance appraisal is an analysis of an employee's recent successes and failures, personal strengths and weaknesses, and suitability for promotion or further training. It is also the judgment of an employee's performance in a job based on considerations other than productivity alone.

AIMS

Generally, the aims of a performance appraisal are to:

- ❖ Give employees feedback on performance
- ❖ Identify employee training needs
- ❖ Document criteria used to allocate organizational rewards
- ❖ Provide the opportunity for organizational diagnosis and development
- ❖ Facilitate communication between employee and employer
- ❖ Validate selection techniques and human resource policies to meet federal Equal Employment Opportunity requirements.
- ❖ To improve performance through counseling, coaching and development.

METHODS

A common approach to assessing performance is to use a numerical or scalar rating system whereby managers are asked to score an individual against a number of objectives/attributes.

The most popular methods used in the performance appraisal process include the following:

- ❖ Management by objectives
- ❖ 360-degree appraisal
- ❖ Behavioral observation scale
- ❖ Behaviorally anchored rating scales

ABOUT THE INDUSTRY

The development of Tirupur, one has heard so much of knit wear boom in the press over the past few years. However, none of the explanations in the press have been able to explain why and how this little town in Tamil Nadu has come to be the centre of India's local banian and export cotton knitwear industry. The industry works through a web of small to mid-sized units, with fabrication here, processing elsewhere and stitching somewhere else. These networks of firms operate through job working, contracting and sourcing arrangements. The business families set up "sister concern" rather than large fully integrated factories. Despite of some of its difficulties, the business culture in Tirupur is appreciating.

TIRUPUR AS THE FASTEST GROWING INDUSTRIAL CITY

Although Tirupur is a small city compared to Coimbatore, it is the centre of TamilNadu's cotton knitwear industry and successfully markets its products in India and overseas. It is one of the fastest growing cities in India in terms of Industry. It is called the Knits Capital of India as it caters to famous brands and retailers from all over the world. Nearly every international knitwear brand in the world has a strong production share from Tirupur.

Tirupur is the "knitwear capital" of India. It has spurred up the textile industry in India for the past three decades. Its economic boom boosts the morale of Indian industrialists. It contributes to a huge amount of foreign exchange in India. Tirupur has the largest and fastest growing urban agglomerations in Tamil Nadu.

Tirupur stands as the life for millions of people in Tamil Nadu. The knitwear industry which is the soul of Tirupur has created millions of jobs for all class of people. There are nearly about 3000 sewing units, 450 knitting units, hundreds of dyeing units and other ancillary units which are un-countable. The annual for-ex business for the year 2008 stands at Rs. 8,000 crore and 12,000 in 2009. Due to the climate and availability of raw material and work force Tiruppur has had made a large contribution to the export of knitwear garments. Tirupur is the largest exporter of garment in India. There are 2,500 firms but most of the firms have a turnover less than 10 cores. After decades in the business, there are more companies like KPR Mills (No.1 with 847Cr turnover), S.P.Apparels, Eastman Global Clothing (No.2 with 800Cr turnover), PGC Textile Corporation (No.3 with 720Cr turnover) followed by Poppy, Centiwn, Dollar, etc., many in above 100 Cr mark.

INTERNATIONAL BRANDS

It is called the Knit Capital of India as it caters to famous brands retailers from all over the world. Nearly every international knitwear brand in the world has a strong production share from Tirupur.

It has a wide range of factories which export all types of Knits fabrics and supply garments for Kids, Ladies, Men's garments - innerwear exclusive. The city is known for its hosiery exports and provides employment for about 300,000 people. [citation needed]

Some of the world's largest retailers including C&A, Switcher SA, Walmart, Primark, Ovisse, Switcher, Polo Ralph Lauren, Diesel, ARMY, Tommy Hilfiger, M&S, FILA, Respect, H&M, HTHP, Whale, Reebok import many textiles items and clothing from Tirupur city. A large market for export reject pieces also exists centred in the Khaderpet locality close to the railway station. Another Large market for export surplus Fabrics exists in S.V.Colony, Doomlight, Lakshmi Nagar localities.

Notable PGC Textile Corporation acquired 51% stake in the Swiss retail group Switcher Holdings SA (www.switcher.com) in June 2010 which demonstrates a significant growth strategy of Tirupur where it will be moving forward. It's likely that many Tirupur companies are moving forward with international presence too.

REVIEW OF LITERATURE

- ❖ **Armstrong, (2000)** described the role of performance appraisal as a tool for looking forward to what need a to be done by people in the organization in order to achieve the purpose of the job, to meet new challenges, better use of technology skills and attributes.
- ❖ **Szilagyi & Wallace, (1990)** described the both organizational and individual capabilities and reach agreement on areas where performance needs to be improved. It is also a method in which to organization obtain feedback on the effectiveness of its employee's generating information which influences many of the organization decisions.
- ❖ **Edmonton, (1996)** suggested the following

PURPOSE OF THE PROCESS

1. Improvement in the communication between boss and subordinate through use of feedback
2. Identification of the scope of performance improvement and the means to achieve this.
3. Identification of individual training needs.
4. Identification of individual for future promotion.
5. As a power means of management control through the setting of objectives and the review of the performance against these objectives.

This is by no means a definitive list, but demonstrates the direction in which the performance appraisal system should move towards. The appraisal interview is the key interface between management and the employee and should allow the employee to have honest two communications with their direct line manager. This is seen as one of the key objectives of the performance appraisal process within LDL bit also similar to the study by Edmonton (1996) above the identification of training needs and objective setting is an essential element in the process.

- ❖ **Wiese & Buckley, (1998)** examined the performance appraisal assist on an individual basis the helping employee understanding and commitment but also in decision making about career choice and how they spend their time.
- ❖ **Michlitsch, (2000)** examined the Strategy implementation and delivery of organizational strategic targets is best accomplished through high performing people and it is not only identified purpose for performance appraisal.
- ❖ **CIPT survey (2005)** the ideal of the performance appraisal approach in that the described outcomes effectively enable the employee to meet their own performance targets through motivated self learning, but also that they understand that this help the organization meet and indeed exceed their strategic targets by linking individual performance targets to the overall strategic targets of the organizations. Performance appraisal is often the center pillar of the performance management process as highlighted in which it was discovered that 65% of organization surveyed used individual annual performance appraisal and 27% twice yearly.
- ❖ **Armstrong & Baron, (2005)** described the performance appraisal is one element of the performance management process which involves different measurement throughout the organization are to take advantage of their most important asset, employees, and gain human capital advantage of their important asset employees, and gain human capital advantage. There are other process within the organization such as technology and design but it is the human factor which is most difficult to replicate and therefore the most valuable.

OBJECTIVES OF THE STUDY

- ❖ To analyze the existing performance appraisal system followed by the company.
- ❖ To find out the factors that influences the employees towards as performance appraisal system.
- ❖ To find out the workers opinion towards the Pit Falls in the existing performance appraisal system.
- ❖ To find out the workers perception towards the feedback given about performance appraisal.
- ❖ To find out the key parameters of appraisal.

SCOPE OF THE STUDY

Findings of the study Provide a record of performance, an opportunity for a manager to meet & discuss performance, the employee with feedback about their performance, an employee to discuss issues and to clarify expectations and can be motivated with the reward and compensation.

LIMITATIONS OF THE STUDY

- The time period was limited.
- The study is limited only to the information collected from the employees and superiors.

RESEARCH METHODOLOGY

RESEARCH DESIGN

In this study, a Descriptive Research was initiated.

The major purpose of Descriptive Research as the term implies is to describe characteristics of a population or phenomenon. Descriptive research seeks to determine the answers to who, what, when, where, and how questions. Descriptive analysis refers to the transformation of raw data into a form that will make them easy to understand and interpret.

DATA COLLECTION- PRIMARY AND SECONDARY DATA**PRIMARY DATA**

Primary data relates to data which has been collected first hand and which has been collected for the purpose of analysis. It is undertaken, when data needed by the researcher does not exist, or are dated inaccurate, incomplete or unreliable, the researcher has to collect primary data. The primary data was collected through questionnaires from 250 respondents.

SOURCES OF PRIMARY DATA

Primary data was collected through structured questionnaires from Middle level employees, Low level workers, Staffs and Superiors

SECONDARY DATA

Secondary research invariably precedes primary research. Secondary data are data that were collected for another purpose and already exists somewhere.

SOURCES OF SECONDARY DATA

Secondary data was collected from Employee's individual records, Business Journals., and Newspapers.

SAMPLE TECHNIQUE

The simple random sampling is used in this study. Data were collected from 250 respondents.

TOOLS USED

- Percentage Analysis
- Chi – Square Test
- Spearman's rank correlation coefficient.
- F-Test
- T-Test

DATA ANALYSIS AND INTERPRETATION**TABLE NO. 1: SOCIAL – DEMOGRAPHIC FACTORS OF THE EMPLOYEES**

RESPONDENTS SOCIAL – DEMOGRAPHIC FACTORS					
GENDER OF THE RESPONDENTS			MARITAL STATUS		
SEX	RESPONDENTS	Percentage	MARITAL STATUS	RESPONDENTS	Percentage
MALE	158	63.2	MARRIED	153	61.2
FEMALE	92	36.8	UNMARRIED	97	38.8
TOTAL	250	100	TOTAL	250	100
EDUCATIONAL QUALIFICATION			MONTHLY INCOME OF EMPLOYEES		
EDUCATIONAL QUALIFICATION	RESPONDENTS	Percentage	MONTHLY INCOME(IN Rs)	RESPONDENTS	Percentage
SSLC	55	22	BELOW 10000	96	38.4
HSC	65	26	10000-15000	76	30.4
DIPLOMA	35	14	15000-20000	62	24.8
UG	60	24	20000-30000	8	3.2
PG	35	14	ABOVE 30000	8	3.2
TOTAL	250	100	TOTAL	250	100
AGE OF THE RESPONDENTS			YEARS OF SERVICE		
AGE	RESPONDENTS	Percentage	YEARS OF SERVICE	RESPONDENTS	Percentage
UPTO 20 YEARS	48	19.2	UPTO 2 YEARS	93	37.2
20-30 YEARS	97	38.8	2-6 YEARS	89	35.6
30-40YEARS	72	28.8	6-10 YEARS	36	14.4
>40 YEARS	33	13.2	ABOVE 10 YEARS	22	8.8
TOTAL	250	100	TOTAL	250	100

INFERENCE

The above table reveals the demographic factors in the study. The major respondents are male [63.2%], the maximum respondents belong to the age group of 20-30 years [38.8%], and maximum respondents are married [61.2%]. The educational qualification of the respondents stood at under graduation at the maximum [26%], the service stood at the majority of 37.2% and the income earned by majority of them [38.4%] are Rs. 10000.

CHI SQUARE

TABLE NO. 2: RELATIONSHIP BETWEEN INCREMENT AND TRANSFER, DEMOTION, SUSPENSION & DISMISSAL

DISMISSAL \ INCREMENT	Strongly agree	Agree	Either agree or disagree	Disagree	Strongly disagree	Total
Strongly agree	35 27.8	20 25.2	10 13.6	12 8.3	6 7.9	83
Agree	18 24.8	30 22.4	3 12.1	3 7.4	10 7.1	74
Either agree or disagree	12 11.7	10 10.6	7 5.7	3 3.5	3 3.3	35
Disagree	10 10.7	9 9.7	6 5.2	4 3.2	3 3.0	32
Strongly disagree	9 8.7	7 7.9	5 4.2	3 2.6	2 2.4	26
Total	84	76	41	25	24	250

Source: Primary Data

CALCULATION OF CHI-SQUARE ANALYSIS

Null Hypothesis (H₀) - There is a significant relationship between increment and transfer, demotion & dismissal.**Alternative Hypothesis (H₁)** - There is no significant relationship between increment and transfer, demotion & dismissal.**Degree of freedom****At the 5 percent level**

(r - 1) (c - 1)

Table value = 7.962

(5 - 1) (5 - 1)

Calculated value = 6.074

4 * 4 = 16

CHI - SQUARE TEST TABLE

Factor	Level of significance	Degree of freedom	Table value	Calculated value	Result
Relationship between educational qualification and level of satisfaction with training	0.05	16	7.962	6.074	Accepted

The calculated value of chi-square (6.074) is less than the table value (7.962), the null hypothesis is accepted. There is a significant relationship between educational qualification and level of satisfaction with training.

SPEARMAN'S RANK CORRELATION COEFFICIENT

TABLE NO. 3: RANK CORRELATION COEFFICIENT OF PERFORMANCE RATINGS AND TRAINING PROGRAMMES

PERFORMANCE RATINGS	TRAINING PROGRAMMES	Rank 1	Rank 2	d _i	d _i ²
83	82	1	5	4	16
78	73	5	4	1	1
46	49	4	3	1	1
25	31	3	2	1	1
18	15	2	1	1	1

$$\sum d_i^2 = 16 + 1 + 1 + 1 + 1$$

$$= 20$$

As we have no ties in data use the following formula:

$$\rho = 1 - \frac{6 \sum d_i^2}{n(n^2 - 1)}$$

Substitute the sum of d_i² information from Step 2 and the number of scores in each variable (n) into the formula:

$$\rho = 1 - \frac{6 \times 20}{5[(5)^2 - 1]}$$

$$\rho = 1 - 1.000$$

$$\rho = 0.000$$

Therefore, the Spearman coefficient is **0.000**. The result reveals that there is significant relationship between performance ratings and training programme provided to employees.

t – TEST

TABLE NO. 4: COMPARISON OF PERFORMANCE APPRAISAL SYSTEM NEEDED AND EXISTING PERFORMANCE APPRAISAL SYSTEM

PAS IS NEEDED & EXISTING SYSTEM	FREQUENCY	FREQUENCY
STRONGLY AGREE	132	71
AGREE	74	83
EITHER AGREE OR DISAGREE	14	68
DISAGREE	14	15
STRONGLY DISAGREE	16	13
TOTAL	250	250
Mean	50.00	50.00
STANDARD DEVIATION	52.55	33.35
STANDARD ERROR	23.50	14.91

PAIRED t TEST RESULTS

P value and statistical significance:

The two-tailed P value equals 1.0000

By conventional criteria; this difference is considered to be not statistically significant.

Confidence interval:

95% confidence interval of this difference: From -50.92 to 50.92

Intermediate values used in calculations:

t = 0.0000

df = 4

standard error of difference = 18.341

The comparison between the existing performance appraisal system and the performance appraisal system needed in the future as suggested reveals that the result of the t test is not significant to each other. Hence existing system is effective.

TABLE NO. 5: PAS IS HELPFUL TO REDUCING GRIEVANCE AMONG THE EMPLOYEE AND IMPROVING PERSONNEL SKILL

PAS REDUCING GRIEVANCE & PERSONNEL SKILLS	FREQUENCY	FREQUENCY
STRONGLY AGREE	115	77
AGREE	49	61
EITHER AGREE OR DISAGREE	55	44
DISAGREE	14	39
STRONGLY DISAGREE	17	29
TOTAL	250	250
MEAN	50.00	50.00
STANDARD DEVIATION	40.73	19.03
STANDARD ERROR	18.22	8.51

Paired t test results

P value and statistical significance:

The two-tailed P value equals 1.0000

By conventional criteria this difference is considered to be not statistically significant.

Confidence interval:

95% confidence interval of this difference: From -30.90 to 30.90

Intermediate values used in calculations:

t = 0.0000

df = 4

standard error of difference = 11.131

The relationship between reducing employee grievances and its impact on improving personnel skill and productivity is proves to be statistically insignificant. Hence the grievance handling mechanism has a greater impact on personnel skill.

F – TEST

TABLE NO. 6: PERFORMANCE ASSESSMENT BY SELF, SUPERIOR OR CONSULTANT AND IT HELPS TO WIN CO-OPERATION & TEAM WORK

ORG'S PERFORMANCE ASSESSMENT - COOPERATION & TEAMWORK	FREQUENCY	FREQUENCY
STRONGLY AGREE	80	93
AGREE	79	66
EITHER AGREE OR DISAGREE	62	44
DISAGREE	21	43
STRONGLY DISAGREE	8	4
TOTAL	250	250

RESULT

F statistic	1.0427
Degrees of freedom	4 4
two-tailed p-value	0.9686
95% confidence intervals	
upper	10.0149
lower	0.1086

The two samples are equal in variation.

The relationship between the performance assessment by self, superior or consultants and its importance in gaining cooperation and teamwork among employees analysed using *f test* reveals that both has an equal variation.

TABLE NO. 7: PERIODICAL PERFORMANCE RATINGS AND EMPLOYEES COUNSELLING

PERIODICAL RATINGS & EMPLOYEE COUNSELLING	FREQUENCY	FREQUENCY
STRONGLY AGREE	83	96
AGREE	78	61
EITHER AGREE OR DISAGREE	46	53
DISAGREE	25	21
STRONGLY DISAGREE	18	19
TOTAL	250	250

RESULT

F statistic	0.874
Degrees of freedom	4 4
two-tailed p-value	0.8993
95% confidence intervals	
upper	8.3945
lower	0.091

The two samples are equal in variation.

The relationship between the periodical performance rating system for employees and the employee counselling regarding their strengths and weaknesses are analyzed using *f-test* which shows that both the relevant fields have equal variation.

FINDINGS

1. The demographic factors in the study reveals that the major respondents are male [63.2%], the maximum respondents belong to the age group of 20-30 years [38.8%], and maximum respondents are married [61.2%]. The educational qualification of the respondents stood at under graduation at the maximum [26%], the service stood at the majority of 37.2% and the income earned by majority of them [38.4%] are Rs. 10000.
2. Majority of the respondents are needed performance appraisal system in the organization.
3. Chi square reveals that there is a significant relationship between educational qualification and level of satisfaction with training.
4. Spearman's rank correlation result reveals that there is significant relationship between performance ratings and training programme provided to employees.
5. The comparison between the existing performance appraisal system and the performance appraisal system needed in the future as suggested reveals that the result of the *t test* is not significant to each other.
6. The relationship between reducing employee grievances and its impact on improving personnel skill and productivity is proves to be statistically insignificant. Hence the grievance handling mechanism has a greater impact on personnel skill.
7. The relationship between the performance assessment by self, superior or consultants and its importance in gaining cooperation and teamwork among employees analysed using *f test* reveals that both has an equal variation.
8. The relationship between the periodical performance rating system for employees and the employee counselling regarding their strengths and weaknesses are analyzed using *f-test* which shows that both the relevant fields have equal variation.

SUGGESTIONS

1. The organization has to pay attention to increase the satisfaction level of the employees.
2. The employees need the separate performance appraisal team in the organization.
3. The training and development program can be improvised in order to increase the employees' personal as well as organization development.
4. Grievance handling team can be formed separately to solve major issues then and there
5. Performance Appraisal System presently followed can be maintained in order to spring fruitful results out of the work carried out by all the concerned parties of the organization.

CONCLUSION

The present research has been helpful to know the performance of the employees as well as organization.

As we all know the textile industry in India is a booming sector among all other industrial sector with the high economical contribution. It is essential for any company to know the level of performance appraisal its employees show towards their job, as higher appraisal will ensure there is lower employee turnover. There is a general saying that HAPPY WORKERS ARE PRODUCTIVE WORKERS.

This project helped to understand the way to appraise the employees and hopes to improve the relevant fields accordingly based on the requirement. The Employees are highly satisfied with the appraisal of the organization, working environment and the fringe benefits provided by the Organization. Hence the Textile Industries in Tirupur are a very promising and also challenging business future, and the performance of the employees play a vital role as a driving force of the industry towards success.

REFERENCES

BOOKS REFERRED

1. Agarwal R.D., Economic Aspect of Welfare State in India- Allahabad, Chaitanya Publishing House 1967
2. Kothari, C.R., Research Methodology, New Delhi, New Age International (P) Ltd., (2nd Ed) 2003.
3. P. Subbha Rao, Personnel and Human Resource Management Text & cases, Himalaya Publishing house. Moorthy MV, Principles of Labor Welfare. Vishakhapatnam Gupta Brothers 1968
4. Sally Marper, Personnel Management Handbook, Gower Publishing Company Limited 1987, England
5. Williams G. Zikmund, Business Research Methods, Indian edition.

WEBSITES REFERRED

6. www.ezinearticles.com
7. www.abcarticledirectory.com
8. www.textileworld.com
9. www.tmgvision.com [Textile machine gallery]
10. www.tea-india.org [Tirupur exporters association]
11. www.performance-appraisals.org

MANAGERIAL PERCEPTION TOWARDS INDUSTRIAL SUBSIDY AND ITS IMPACT ON INDUSTRIALIZATION IN UTTRAKHAND: AN EMPIRICAL STUDY

DR. D S CHAUBEY

DIRECTOR

UTTRANCHAL INSTITUTE OF BUSINESS STUDIES

DEHRADUN

SIDHESWAR PATRA

ASST. PROFESSOR

TRINITY COLLEGE

DHOOLKOT

PRAVEEN KUKRETI

ASSOCIATE PROFESSOR

SHRI GURU RAM RAI INSTITUTE OF TECHNOLOGY & SCIENCE

DEHRADUN

ABSTRACT

In the process of Industrialization a non industrial economy becomes an industrialized one and a means of strengthening the nation by raising the productivity, employment, income and living standard. In spite of several measures through all our five year plans for industrialization and regional balances, the uneven growth of industries is prevalent across the country. Since the formation of state of Uttarakhand in 2000, the state and central government has come up with various industrial packages to promote the industrialization in the state. As the policy developments in terms of industrial packages and subsidies seem like not keeping pace with the real need of the state development, it is worthwhile to understand the causes of its failure and to come up with effective measures to obtain maximum from it. The present study is an attempt to highlight the impact of industrial package on industrialization of Uttarakhand from the perspective of existing industrial units. This also focuses on the perceptions of different entrepreneurs and management in accordance to different industrial packages they are exposed to in the state. It is found in the study that majority of the personnel of different professional categories working in different organizational categories are in the opinion that industrial package has attracted the greater investment in the state and promoted large number of entrepreneurship. The study also indicates that there is significant difference in the mean of different factor across the different professionals, except in the case of factor like "Economic Mobilization and Development Issues" and "Climatic Condition And Inter State Competitiveness". The study may be helpful to understand different motives of their establishment and their long run approach even if the benefits are expired. Also this may help us understand the relationship between their operational motive and contribution towards state development.

KEYWORDS

Industrial Climate, Industrial Package, Industrial Subsidy, Economic Mobilization, Industrial Competitiveness, Investment Climate etc.

INTRODUCTION

With liberalization and opening up of the economy since early nineties, India is witnessing rapid expansion of industrial activities. In the present day of globalization and changing economic conditions, the role of industries has become very important in strengthening the economy of the state. In order to boost the industrialization and to integrate the different economic activities the State Governments have tried to give some relief to the industries of the State on the pattern of the package. Some of the facilities provided are enumerated as Conversion of the payable Trade Tax and Central Sales Tax accepted on the sale into interest free loan for 15 years, no other fee to be charged than the real value of the land for acquisition of land, Transport subsidy for 15 years on the purchase of Raw Material unavailable in the State (leaving coal and natural gas) to the tune of the amount paid transportation, Refund of the actual amount spent on infrastructural facility maximum 10% of the fixed capital, Capital subsidy @ 10% & 20% in respect of the units with the investment of Rs. 100 crore and Rs. 200 crore respectively and Interest free loan for a period of 17 years instead of 15 years to the units with investment of more than Rs. 200 cores. As a result of different scheme and shield provided by state government, Small sector industry in Uttarakhand has seen significant growth of 44.96% from 2000-2001 to 2005-2006 as compared to Himanchal Pradesh by 21.29281% and Jammu & Kashmir by 35.58%. The experience of the development process in Uttarakhand holds many lessons, most of which unfortunately remain unheeded today. Indeed, the separate state movement had its genesis in the very failure of the process to bring any substantive improvement in the lives of the Uttarakhand rural poor. In truth, development has only impoverished the hills and visited ever more onerous ecological burdens on the people. The state has adapted the new industrial for maximizing growth of GNP, increased industrial production, improved technology, and aggregate consumption. In spite of several structural changes, the overall industrial development of the state could not be achieved. The regional imbalances can be seen as benefits of industrial policy and incentives are visible in only three districts namely Haridwar, Dehradun and Pantnagar. Remaining district of the state could not avail benefits of such scheme and incentive of industrial package provided by the state as well as central government. The study of industrial package and its impact on the industrial development in the state is one of the important fields of the study and to be given a professional look in order to make it beneficial for the people of state.

RATIONALE BEHIND THE STUDY

The regional imbalance in the economic development has been recognized as a serious problem worldwide and at macro level it is often known as dualism or north south problem. It has been the experience of all developed countries in the early stage of their development so much so the prevalence of this regional imbalance at all level of national development is common in developing countries also. Many people believe that the place or region or area they live in or work is economically backward. It is so because they compare themselves with other region or place which are grown in many aspect.

Uttarakhand, after bifurcation of Uttar Pradesh, was formed as the 27th state of India on 9th November 2000. It is divided into two broad regions - Garhwal and Kumaon. The state has 13 districts, 49 sub-divisions, 95 development blocks, 15,638 villages and 86 urban settlements. Uttarakhand is primarily a mountainous state, as the plains constitute only about 10% of its total geographical area. Out of thirteen districts, only Haridwar, Udham Singh Nagar and some parts of Dehradun and Nainital districts are in the plains. In spite of high literacy rate, potential for hydropower generation, potential for adventure, rural and religious tourism, rich cultural heritage, rich source of biodiversity, presence of Centres of excellence like IIT Roorkee, GBPUAT, FRI etc. and excellent network of schools in Dehradun and Nainital; enabling policies for industrial development and attracting investment and harmonious and peaceful social and industrial

environment, the industrialization of the state is heterogeneous. Even after providing shield and so many concessions and subsidy; only three district of the state is industrialized and other district of the state remained untouched. Within Uttarakhand, there is marked inequality between the hills and the plains. The hill districts palpably lag behind. Therefore, a well thought development strategy is needed to reduce this gap between the two regions. A development vision for the state should include both human and economic aspects along with environmental conservation. As the policy developments in terms of industrial packages and subsidies seem like not keeping pace with the real need of state development it is worthwhile to understand the causes of its failure and to come up with effective measures to obtain maximum from it. The present study is an attempt to highlight the impact of industrial package on industrialization of Uttarakhand from the perspective of existing industrial units. This also focuses on the perceptions of different entrepreneurs and management in accordance to different industrial packages they are exposed to in the state.

REVIEW OF RELATED LITERATURE

In recent years, literature has identified the increasing complexity of small and medium-sized enterprises (SMEs) and highlighted their sensitivity to differences in managerial culture and management systems. Research has shown that performance measurement systems (PMSs) could play an important role in supporting managerial development in these companies. Ni Putu S H Mimba, G Jan Van Helden, Sandra Tillema in his work on Public sector performance measurement in developing countries: A literature review and research agenda" highlighted the literature on performance measurement in manufacturing SMEs is reviewed and the diffusion, characteristics and determinants of performance measurement in SMEs are analyzed. Shortcomings in the performance measurement systems are highlighted and the many factors that seem to constrain PMSs in manufacturing SMEs are defined, e.g. lack of financial and human resources, wrong perception of the benefits of PMS implementation, short-term strategic planning. Moreover, using dimensions defined according to the information found in the literature, two PMS models specifically developed for SMEs are compared with generic PMS models. The comparison points out an evolution in PMS models over time; in particular, the models developed in the last 20 years are more horizontal, process-oriented and focus on stakeholder needs. However, it is not clear whether these changes are due to the evolution of the generic models or an attempt to introduce models suited to the needs of SMEs. To clarify this matter and better to understand PMSs in SMEs, further theoretical and empirical studies are necessary.

There are a not many research papers and books that have tried to identify growth and development in Uttarakhand in the 10 years since the creation of the state. Bisht (2006) argues that the state has to sustain forestry and agriculture for the survival of the people who largely live in rural and hilly areas. The degree of industrialization attained by an economy is often considered as an important indicator of development. Industrialization is vital to the development process in several ways. Rise in standard of living is also associated with industrialization that allows more intensive use of available resources. Industrialization is crucial to agricultural development by way of mechanization of agricultural and reducing pressure on agricultural land resources through a gradual shift of population from agriculture to industry. The emergence of the "new growth" theories in the late 1980s provided a rigorous analytical framework within which trade liberalization can be linked with economic growth. In particular, Grossman and Helpman (1992) argue that technological change can be influenced by a country's openness to trade. Openness to trade provides access to imported inputs, which embody new technology and increases the size of the markets facing producers which in turn raises returns to innovation and affects a country's specialization in research intensive production. Thus a country's openness leads to improvements in domestic technology; helps the production process become more efficient and culminates in productivity improvements. In case of Uttarakhand, industries provide employment to 6.5 per cent of working population in that the share of small-scale industries is more than 75 per cent. As a whole, the number of small-scale industries is 41,216 with an investment of Rs. 305.58 crore providing employment to 1, 53,229 persons. The number of medium and heavy industries is 191 with an investment of Rs. 2,694.66 crore employing 50,882 persons. Most of the medium and large industries are located in the districts of Dehradun and Nainital and therefore these two districts contribute 85% of total income of the sector. The major industrial activities are in the field of Forest based industries (paper & Paper products, matchwood, plywood, herbs and medicinal plants), food products and beverages, electrical machinery apparatus, rubber and plastic products. The small-scale industries have a well spread presence in all the districts but due to economic of scale, backward technology and poor market infrastructure, these have not been able to make significant progress. Sati, Sati and Kuksal in his work on "Present Status and Future Prospect of Industrial Development in Uttarakhand" focus on the potential of developing industry in Uttarakhand. According to his study the rich availability of raw material particularly Juice factory, Harbal Medicines, Plant based small scale industries, lime industry, stone based industry, sculpture, jewelers, paper mills, liquor factory, fodder, electronics industry leather, wool, Ringal industry, tea, handloom, milk industry micro hydel, mineral water and most importantly the tourism industry.

Despite the voluminous empirical literature, the relationship between openness and economic growth remains highly contentious. This particular study by Ramaswamy identified both technology and labour regulation as factors behind the higher subcontracting activity of factories that used more labour per unit of output. Thus, technological changes that are oriented towards higher labour productivity obviously reduce the requirement of many kinds of unskilled labour in particular, but they also allow a break-up or physical disintegration of the production process which greatly facilitates outsourcing. Kabra Kamal Narayan in his study on Rural Small Industry in India focuses on factor limiting the effectiveness of various plans and programmes for rural industrialization. In his study, he found that the absence of state level planning, micro level planning and lack of integration of rural industrialization in the rural development strategy are some of the reason of regional imbalance of the state of Uttarakhand.

The review of the wide range of openness measures shows that given the complex nature of trade policy, and given that trade is being affected by tariffs, quotas, licenses, and exchange controls, it is very difficult to construct a single, satisfactory indicator of trade liberalization. Further, the fact that the various trade policy indicators are weakly correlated with each other suggests that different dimensions of trade policy may have different effects on growth. A study by Kar (2007) highlights the importance of equitable growth focusing on GDP growth and distribution of growth to all sections of the population and geographical regions of the country. The study shows that the higher growth rate of the state in the initial years has helped the state to transform itself, but most of the growth has been restricted to the plains, while the hill areas have grown slowly due to structural problems. The development has been mainly in the plain districts of the state and not the hills, which have remained cut off from the rest of the country. Thus, there is a need to modify or reschedule the current schemes according to the hill districts of the state.

Beal (2000) provides a similar model. He emphasizes that both external and internal alignment influence a firm's performance. The external alignment means the alignment between the competitive strategy and the industry life cycle stages, and its effect on the performance. The internal alignment means the competitive strategy and the small business manager's functional experience and its effect on the performance. According to Jennings and Beaver (1997), a popular belief is that superior performance and competitive advantage in the smaller firm is invariably equated with successful business development culminating in exceptional return on the investment, sales growth, volume, profit and employment. They continue that contrary to popular belief the owner-managers pursuit of personal financial fortune is not as significant as the desire for personal involvement, responsibility and independent style of life. The attainment of these objectives becomes one of the principal criteria for success.

A literature review on "Performance Measurement Systems (PMS) in Small- and Medium-sized Enterprises (SMEs)" shows that the main contributions focus on the development of theoretical models, but not on guidelines for practical implementation. In this context, an important neglected aspect is the general fitness or readiness of a SME to implement a PMS. Therefore, the aim of this paper is to determine critical prerequisites for a successful PMS implementation in SMEs. For this purpose, a case study in a German SME was conducted. The findings indicate that the existence of specific contingency factors - Corporate Strategy, software-based Enterprise Resource Planning (ERP) and Activity Based Costing (ABC) - strongly supports the successful implementation of a PMS and its later use. Hence, further research shall include these prerequisites as new variables determining the PMS process. Based on that, researchers and managers of SMEs can develop individual indicators to identify their own PMS readiness.

OBJECTIVES OF THE STUDY

The state of Uttarakhand has been on the move ever since its creation. It has been marching ahead in terms of industrialization, resulting in growth rates higher than the national figures. Several measures have been taken up to promote the industrialization of the state. Due to adverse geographic condition, state and

central governments have given several industrial packages and incentives to promote the industry and to make it competitive. The main objective of the present study is to examine and to evaluate the industrial package and its impact on industrialization of Uttarakhand. The study proposes to examine the following aspect of industrial package and incentive given to various industries of Uttarakhand State:-

1. To explore the rationality of the impact of state Industrial Policy (With specific reference to Industrial subsidy) on the performance of SMEs in Uttarakhand state.
2. To assess the impact of concessional packages on the state of investment in Uttarakhand region.
3. To study the managerial perception regarding different factors influencing the performance of enterprises in the state.

Hypothesis 1: Concessional packages have increased the level of investment in Uttarakhand.

Hypothesis 2: Different factors influencing performance of enterprises do not differ significantly across the personnel of different professional categories.

RESEARCH METHODOLOGY

The nature of this research is descriptive one and the study is conducted using Questionnaire & using Opinion survey method. These questionnaires has been dispatched to more than 100 respondents selected randomly from the managers, owners and entrepreneurs working in various SMEs located in different SIDCs and SIDCUL of Uttarakhand State. Some personnel engaged in various units at SIDCUL, Dehradun were contacted personally. After editing 67 responses are found fit and are taken for the analysis under the study.

TABLE 1: DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

	Categories	Count	Percentage
Age	Upto 25 Years	8	11.9
	25 to 40 Years	28	41.8
	40to 50 Years	17	25.4
	50 to 60 Years	8	11.9
	Above 60Years	6	9.0
Gender	Male	51	76.1
	Female	16	23.9
Education Level	Graduate	23	34.3
	Post Graduate	28	41.8
	Professional and others	16	23.9

Demographic information of the respondents presented in the above table states that sample is dominated by middle aged person ranging from 25 to 40 years belonging to male category. In this sample 45% are in the age of 25 to 50 years. It is seen that majority of respondents are well educated as 76.1% respondent are either Post graduates or professionally qualified. The information so obtained is contributed by only 23.9% female respondents.

TABLE 2: NUMBER OF EMPLOYEES WORKING

Sl. No	Description	No of respondents	Percentage
A	Up to 25 Worker	34	50.7
B	25-50 Workers	19	28.4
C	50-100 Workers	13	19.4
D	250-500Workers	1	1.5
	Total	67	100.0

This representation indicates that operation of the surveyed units is not labour intensive. Although these are the small and medium scale enterprises, the data from a respondent representing an organization having more than 250 manpower has been included.

TABLE 3: NATURE OF ORGANIZATION

Sl. No	Description	No of respondents	Percentage
A	Manufacturing unit	33	49.3
B	Service	34	50.7
C	Total	67	100.0

The study stands almost equally distant from both manufacturing and service industries as it covers almost same numbers of respondents from either of the sectors. As the services have been the primary industrial in Uttarakhand and mostly involved directly or indirectly with tourism it is worthwhile to obtain compared information with respect to manufacturing sector development in the purview of industrial packages.

TABLE 4: ENGAGED IN THE DIFFERENT CAPACITIES

Sl. No	Description	No of respondents	Percentage
A	Manager	31	46.3
B	Entrepreneur	11	16.4
C	Government Officials	18	26.9
D	Consultants	4	6.0
E	Others	3	4.5
	Total	67	100.0

Different industrial packages including subsidy provide opportunities for the entrepreneurs to expand their investment avenues to satisfy their profit motive needs. This simultaneously brings challenges for the management and pushes them to optimize the resource utilization. Thus the importance of their understanding, perception and experience regarding the packages play vital in the study. The data under the study covers 46.3% managers' information and covers 16.4% of entrepreneurs'. At the same time 27% (approx.) govt. officials involved have been asked to furnish some vital study related information.

TABLE 5: NATURE OF UNIT

Sl. No	Description	No of respondents	Percentage
A	Holding unit	11	16.4
B	Subsidiary unit	48	71.6
C	Ancillary Units	1	1.5
D	Others	7	10.4
	Total	67	100.0

The data indicates that the majority of the data is pertaining to the subsidiary units under the study and is covering 71.6% of the data so obtained. The parent holding units so covered are 16.4% of the total data.

TABLE 6: MAIN OBJECTIVE OF ESTABLISHING THIS UNIT

Sl. No	Description	No of respondents	Percentage
A	To capture the market opportunity	34	50.7
B	As a part of SBU	2	3.0
C	As a part of Expansion program	2	3.0
D	Better Infrastructure facility offered by the state	12	17.9
E	Better Industrial incentive provided by the state government	16	23.9
F	other objectives	1	1.5
	Total	67	100.0

Before separation from Uttar Pradesh Uttarakhand had always been a politically neglected part. Thus a lot of potential and opportunities were untapped. But it is significant to note that the preliminary data in the table above indicates that it is not merely the government incentives for the industrialization in the state has attracted the entrepreneurs to bring their units to Uttarakhand. Rather it is the potential untapped market as indicated by more than 50% of the respondents. In some cases (17.6%) it's the better infrastructure and to avail this facility industrial units have established themselves in the state. The data also suggests that the incentive packages are comparatively less attractive as a main objective to bring industrial setups.

TABLE 7: FACTOR INFLUENCED YOU TO SETUP INDUSTRY IN UTTARAKHAND

Sl. No	Description	No of respondents	Percentage
A	Low Cost	14	20.9
B	Closeness to a source of raw materials	1	1.5
C	Closeness to a market	21	31.3
D	Closeness to a method of transport	5	7.5
E	Government Intervention	26	38.8
	Total	67	100.0

Here (Table 7) the data indicates that the industrial setups are more influenced by the state Government's intervention, as covers 38.8% of the data. And this is emerging as one of the affecting factors followed by market closeness (31.3%) and low cost (20.9%) for the business setups. This again provides the confirmation about the unexplored market potentials in the state.

TABLE 8: SIGNIFICANT ADVANTAGE AS PERCEIVED

Sl. No	Description	NO of respondents	Percentage
A	Yes	52	77.6
B	No	15	22.4
	Total	67	100.0

It's evident from the table (Table 8) that the respondents are mostly convinced that their business setup is obtaining substantial advantage being established in Uttarakhand. A 22.4% denial against 77.6% acceptance of the apparent advantage is being reflected in the data so collected.

TABLE 9: IMPACT OF INDUSTRIAL SHIELD ON THE PROCESS OF INDUSTRIALIZATION OF THE STATE

Sl. No	Description	NO of respondents	Percentage
A	It has accelerated the industrialization of the state	26	38.8
B	It has insignificant impact on the acceleration of industrialization in the state	26	38.8
C	It has no effect on the process of acceleration	15	22.4
	Total	67	100.0

In addition to the above table (Table 8) it is worthwhile to note that, although 77.6% (see Table 9) of the respondents believe that their businesses are drawing significant advantage being in Uttarakhand; there is prominent disagreement (61.2%) against the idea that the Industrial shield/package has accelerated the Industrialization of the state.

TABLE 10: PRINCIPAL COMPONENT ANALYSIS WITH ROTATED COMPONENT

	Community					
	Economic And Operational Issues	Geographical And Labour Productivity Issues	Economic Mobilization And Development Issues	Climatic Condition And Inter State Competitiveness	Social Issues	
Adverse geographical condition does not favour the industrialists to set up industries in hilly region.	.869					.810
Subsidies have an economic impact by distorting prices and therefore affecting production and	.793					.757
Subsidies affect the competitiveness of goods from certain sectors	.771					.845
Special industrial package has made a positive impact on the industrial growth of the state.	-.664					.721
Transportation subsidy offered by government has helped in developing industrialization in the	.663					.743
Industrial subsidy is needed to have balance economic growth and achieve competitiveness	.620					.723
Initial inequality of human capital is the main reason of regional imbalances in terms of		.853				.803
To redress geographical imbalances thrust should be on removing location disadvantages through the		.840				.854
Industrial subsidies generally do not make sense as they lead to misallocation of resources		.795				.895
Industrial package provided by state has helped Rural industrialization			.876			.946
Industrial subsidy in terms of fiscal incentives has Invariably led to the creation of inefficient and			.830			.868
Industrial subsidy will boost economic mobilization of the state			-.758			.848
Withdrawal of the industrial package will adversely impact the process of economic development of			.668			.861
Extension of the incentives for industry available to state of had adversely affected the industrial				.895		.957
Industry selected for the subsidy does not match with the climatic condition of the state.				.828		.806
Direct subsidies instead of exemption from direct or indirect taxes and "corrective steps" to control					.914	.935
Subsidies would necessarily have positive economic, environmental and social effects across					.589	.788
Eigen Values	4.910	3.607	2.609	1.794	1.238	
% of Variation	28.883	21.218	15.347	10.553	7.284	
Cumulative % of Variation	28.883	50.102	65.449	76.001	83.285	

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

A Rotation converged in 8 iterations.

Understanding the factors promoting industrialization as perceived by the respondents of different professional categories in Uttarakhand is of a major interest for academia, researchers and many more. The empirical study indicates that there are many sources of their perception like, Economic and Operational issues, Geographical and Labour Productivity issues, Economic mobilization and Development issues, Climatic Condition and Inter State Competitiveness and Social Issues. For this respondent were asked to rate their views on the following statement i.e., "Adverse geographical condition does not favour the industrialists to set up industries in hilly region", "Subsidies have an economic impact by distorting prices and therefore affecting production and consumption decisions", "Subsidies affect the competitiveness of goods from certain sectors", "Special industrial package has made a positive impact on the industrial growth of the state", "Transportation subsidy offered by government has helped in developing industrialization in the remote, hilly and inaccessible areas of the state and made firm able to compete with other similar industries", Industrial subsidy is needed to have balance economic growth and achieve competitiveness with developed region", "Initial inequality of human capital is the main reason of regional imbalances in terms of industrialization of state", "To redress geographical imbalances thrust should be on removing location disadvantages through the development of infrastructure rather than through subsidies", "Industrial subsidies generally do not make sense as they lead to misallocation of resources", "Industrial package provided by state has helped Rural industrialization", "Industrial subsidy in terms of fiscal incentives has Invariably led to the creation of inefficient and uncompetitive industry, which may not be able to sustain itself in the long run", "Industrial subsidy will boost economic mobilization of the state", "Withdrawal of the industrial package will adversely impact the process of economic development of the state", "Extension of the incentives for industry available to state of had adversely affected the industrial climate of more advanced adjoining states", "Industry selected for the subsidy does not match with the climatic condition of the state", "Direct subsidies instead of exemption from direct or indirect taxes and "corrective steps" to control adverse effect on the advanced neighboring states", "Subsidies would necessarily have positive economic, environmental and social effects across the various industry". And the respondents were asked to rate the above statements on a scale of 1 to 5 as per their preference. The exploratory factor analysis is used to identify the factors. Principal Component analysis is employed for extracting factors and orthogonal rotation with Varimax is applied. As latent root criterion is used for extraction of factors, only the factors having latent roots or Eigen values greater than one were considered significant; all other factors with latent roots less than one were considered insignificant and disregarded. The extracted factors along with their Eigen values are shown in table 10. The factors are given suitable names on the basis of representation in each case. Thus five factors, each having Eigen value exceeding one are considered. Eigen values for the five factors are 4.910, 3.607, 2.609, 1.794, and 1.238 respectively. The index for the present solution accounts for 83.285% of the total variations for the factors for managerial perception Industrial subsidy. This may be considered as substantially a good extraction because we are able to economise on the number of choices of factors (from 17 to 5 underlying factors), we lost 16.715 % of information content. The percentages of variance explained by factors one to five are 28.883, 21.218, 15.347, 10.553 and 7.284 respectively. Large communalities indicate that a large number of variances have been accounted for by the factor solutions. Varimax rotated factor analysis results for the factors are shown in table 10 which

indicates that after 5 factors are extracted and retained, the communalities are, 0.810 for variable 1, 0.757 for variable 2, 0.845 for variable 3 and so on. The proportion of the variance in any one of the original variable which is being captured by the extracted factors is known as communality (Nargundkar, 2002).

TABLE 11: MEAN OF DIFFERENT FACTORS ACROSS DIFFERENT PROFESSIONALS

Engaged in the capacity of	Economic And Operational Issues	Geographical And Labour Productivity Issues	Economic Mobilization And Development Issues	Climatic Condition And Inter State Competitiveness	Social Issues
Manager	4.0833	3.5000	3.9083	3.0833	3.6667
Entrepreneur	4.0303	2.7576	3.7045	2.7273	3.7273
Government Officials	4.3056	3.7222	3.7361	3.1667	4.2036
Consultants	4.0000	3.8333	3.7500	2.7500	3.0000
Others	4.5000	3.5556	3.9167	3.6667	4.1667
Total	4.1490	3.4596	3.8182	3.0530	3.8333

After reducing the factors' combined mean of the different factors regarding the perception of different professionals towards impact of subsidy on industrialization in the state of Uttarakhand reveals that "Economic and Operational Issues" has scored highest among all. It is significant to note that climatic condition and interstate competitiveness have been rated lowest by the consultants as it has scored 2.75.

TABLE 12: ANOVA WITH TYPE OF PROFESSION

		Sum of Squares	df	Mean Square	F	Sig.
Economic And Operational Issues	Between Groups	1.184	4	0.296	3.192	0.019
	Within Groups	5.657	61	0.093		
	Total	6.840	65			
Geographical And Labour Productivity Issues	Between Groups	7.298	4	1.824	2.556	0.048
	Within Groups	43.539	61	0.714		
	Total	50.837	65			
Economic Mobilization And Development Issues	Between Groups	0.555	4	0.139	0.994	0.418
	Within Groups	8.513	61	0.140		
	Total	9.068	65			
Climatic Condition And Inter State Competitiveness	Between Groups	2.924	4	0.731	0.872	0.486
	Within Groups	51.140	61	0.838		
	Total	54.064	65			
Social Issues	Between Groups	8.082	4	2.021	4.725	0.002
	Within Groups	26.085	61	0.428		
	Total	34.167	65			

One way ANOVA is calculated to check the hypothesis, "different factors influencing performance of enterprise does not differ significantly across the personnel of different professional categories". From the table it is clear that calculated value of F is greater than the tabulated value of F (2.37) at ($p < 0.05$) level of significance in the case of factors like, "Economic and Operational Issues", "Geographical and Labour Productivity Issues and Social Issues". Hence null hypothesis is rejected indicating that there is significant difference in the mean of different factor across the different professionals, except in the case of factor like "Economic Mobilization and Development Issues" and "Climatic Condition and Inter State Competitiveness".

TABLE 13: ANOVA WITH NATURE OF ORGANIZATION

		Sum of Squares	df	Mean Square	F	Sig.
Economic And Operational Issues	Between Groups	0.787	1	0.787	8.316	0.005
	Within Groups	6.054	64	0.095		
	Total	6.840	65			
Geographical And Labour Productivity Issues	Between Groups	28.371	1	28.371	80.824	0.000
	Within Groups	22.465	64	0.351		
	Total	50.837	65			
Economic Mobilisation And Developmental Issues	Between Groups	0.668	1	0.668	5.089	0.028
	Within Groups	8.400	64	0.131		
	Total	9.068	65			
Climatic Condition And Inter State Competitiveness	Between Groups	0.322	1	0.322	0.383	0.538
	Within Groups	53.743	64	0.840		
	Total	54.064	65			
Social Issues	Between Groups	5.097	1	5.097	11.222	0.001
	Within Groups	29.069	64	0.454		
	Total	34.167	65			

One way ANOVA is calculated to check the hypothesis, "different factors influencing the performance of enterprise does not differ significantly across the personnel of different organizational categories". From the table it is clear that calculated value of F is greater than the tabulated value of F (2.37) at ($p < 0.05$) level of significance except in the case of factor like "Climatic Condition and Inter State Competitiveness". Hence null hypothesis is rejected indicating that there is significant difference in the mean of different factor across the different professionals of different organizational categories.

CONCLUSION

In conclusion it can be said that subsidy offered by state and central government has motivated entrepreneurs to setup the business ventures in Uttarakhand. It is found in the study that majority of the personnel of different professional categories working in different organizational categories are in the opinion that industrial package has attracted the greater investment in the state and promoted large number of entrepreneurship. The study also indicates that there is significant difference in the mean of different factor across the different professionals, except in the case of factor like "Economic Mobilization and Development Issues" and "Climatic Condition and Inter State Competitiveness". The study may be helpful to understand different motives of their establishment and their long run approach even if the benefits are expired. Also this may help us understand the relationship between their operational motive and contribution towards state development.

REFERENCES

1. Beal, R. M. (2000) competing effectively: Environmental scanning, competitive strategy, and organisational performance in small manufacturing firms. *Journal of Small Business Management*, Vol. 38, No. 1, pp. 27-47.
2. Bisht, D.S. (2006). Poverty, Planning and Development - A Case Study of Uttarakhand State (submitted to the Planning Commission). Central Himalayan Institute. Dehradun. Trishul Publications, Dehradun.
3. Bisht, Sonali (2005). Concerns and challenges. In M.L. Dewan and Jagdish Bahadur (Eds.), Uttarakhand: Vision and Action Programme. Concept Publishing Company, New Delhi, pp. 82-87.
4. Deshpande R. and Webster F. "Organisational Culture and Marketing: Defining the Research Agenda" *Journal of Marketing* 53(1).
5. Grossman, G. and E. Helpman (1992), *Innovation and Growth: Technological Competition in the Global Economy*, MIT Press, Boston MA.
6. *International Journal of Globalisation and Small Business* (2008) , Volume: 2, Issue: 4, Publisher: Inderscience, Pages: 411 ISSN: 14793059
7. *International Journal of Management Reviews* (2005) Volume: 7, Issue: 1, Pages: 25-47
8. *International Journal of Productivity and Quality Management* (2007) Volume: 2, Issue: 4, Publisher: Inderscience, Pages: 475-509
9. Jennings, D.E. and J.R. Lumpkin (1992). "Insights between Environmental Scanning Activities and Porter's Generic Strategies: An Empirical Analysis," *Journal of Management* 18,791-803.
10. Kar, Sabyasachi (2007). Inclusive Growth in Hilly Regions: Priorities for the Uttarakhand Economy. E/281/2007. IEG Working Paper, New-Delhi.



EMPLOYEE'S DISSONANCE TOWARDS SAFETY, HEALTH AND ENVIRONMENT (SHE) IN CONFECTIONERY INDUSTRY

DR.MU.SUBRAHMANIAN
PROFESSOR & HEAD
DEPARTMENT OF MANAGEMENT STUDIES
JAYA ENGINEERING COLLEGE
THIRUNINRAVUR

P. RENGANATHAN
PG STUDENT
JAYA ENGINEERING COLLEGE
THIRUNINRAVUR

ABSTRACT

The Indian confectionery market which is ranked 25th globally in value terms in 2009 is expected to grow at a rapid pace and jump up to 14th position by 2014, said a report. The report further added that over 30% of the Indian population is in the 0–14 age group, which is the primary target segment for confectionery manufacturers. These will be the prime movers for growth in the confectionery market in India. Safety, Health and Environment (SHE) have been a concern for the industries for a very long time from now. It is necessary for the confectionery industry to know the effectiveness of the present safety practices among their employees so that they can enhance and further improve the quality of their safety, health and work environment and ensure a congenial working atmosphere hence their arises a need to study the employees dissonance towards existing Safety, Health and Environmental (SHE) aspects. The descriptive research method was adopted in the study. A sample size of 114 employees was taken from employees at operative level comprising of three major departments namely Production, Maintenance, and Packing. This study would also help in bringing about the possible expectations of the employees and their level of awareness on SHE aspects. This study allows to find out the mindset of the employees in an working Environment and bringing about desirable changes in their behaviour towards SHE aspect in future which is very vital for smooth functioning and conduct of an organization and establish a congenial working environment for its employees. The confectionery manufacturers can conduct periodical meeting with their employees for enabling them to understand their expectation and implement them for a conducive and congenial work environment and imbibe sincere safety practices among its employees.

KEYWORDS

Employee's Dissonance, Confectionery Industry.

INTRODUCTION

Confectionery Industry, a manufacturing sector made up of companies primarily involved in processing candies, chocolate and cocoa products and chewing gum. Confectionery manufacturing started to emerge as an important industry in the late 1800s. One of the earliest commercial operations, McCormick's Ltd, was established in London, Ont, in 1857. Robertson Brothers Ltd was in the candy business in Toronto by 1864, and Ganong Brothers opened in St Stephen, NB, in 1873

India grew at a compound annual growth rate (CAGR) of 10.5% during 2004–09, placing it among the fastest growing confectionery markets globally. The Indian confectionery market which is ranked 25th globally in value terms in 2009 is expected to grow at a rapid pace and jump up to 14th position by 2014, said a report. The report further added that over 30% of the Indian population is in the 0–14 age group, which is the primary target segment for confectionery manufacturers. These will be the prime movers for growth in the confectionery market in India.

Safety, Health and Environment (SHE) have been a concern for the industries for a very long time from now. Since the beginning of the present century, this issue has been drawing the attention the psychologist, sociologist and industrial engineers. The experts are concerned with the theoretical considerations of accidents causation and the research into accident control through proper selection, training and education of the employee. SHE experts are of the view that while accidents can happen anywhere but the starting point for these accidents is considered to be lack of awareness on safety and the seriousness of the issue among the employees and the industries. According to SHE experts, Safety, Health and Environment (SHE) are an interrelated phenomenon where ignorance in one part can affect the decision in other part of the operation. Hence much focus has been emphasized today on SHE aspects rather than safety aspects alone.

PROBLEM STATEMENT

The life of an industrial worker is full of risks and hazards. Every year lakhs of employees are injured in factories leading to acute ailments or permanent handicaps. This may be caused as a result of unsafe activity on the part of the employee or on the part of the management.

Employee safety leads to success of any organization and it is important to see that all the safety measures are implemented and followed by the employees in the organization.

It is essential in Confectionery industry to know the effectiveness of the present safety practices among their employees so that they can enhance and further improve the quality of their safety, health and work environment and ensure a congenial working atmosphere hence their arises a need to study the employees dissonance towards existing Safety, Health and Environmental (SHE) aspects.

OBJECTIVES OF THE STUDY

1. To study the employee's determinants towards Safety, Health and Environmental (SHE) factors.
2. To understand the safety practices of the Confectionery industry.
3. To identify the determinants of employees towards health measures implemented in the Confectionery industry.
4. Based on the study results, to provide suitable measures to enhance the quality of SHE (Safety, Health and Environment) practices in Confectionery industry.

RESEARCH REVIEW

Peer Hull Kristensen (2011) "Managing OHS: A route to a new negotiating order in high-performance work organizations?", contrary to a widely held view, rather than seeing the certification of Occupational Health and Safety (OHS) as a barrier to increasing employee participation, this article views new ways of structuring participation as a necessary step towards making improvements in OHS management systems. The article first considers how work organization has changed and then in a similar way traces how bargaining has shifted from being distributive to become integrative to create a fundamental change in the negotiation

regime. Finally, by analyzing an OHS-certified firm in greater depth, the article shows how solutions for improvements in OHS management and notable bottom-up formulations of OHS benchmarks may help us discover how the organizational form of firms with high-performance work organization can be developed through new participatory structures.

Nor Azimah Chew Abdullah, Jeffery T. Spickett (2009) "Managing Safety: The Role of Safety Perceptions Approach to Improve Safety in Organizations", the findings suggested that there was a significant positive correlation between safety satisfaction and seven elements of OHS management namely safety reporting, errors and incidents, management commitment, work pressure, role of supervisors, safety rules, and leadership style. The results highlighted an important finding: the employee's perceived that there was a need to improve the workplace by perceived that there was a need to improve the workplace by emphasizing all the OHS management practices as significant in relation to safety.

F.E. Mirer and J.M. Stellman (2008) "Occupational Safety and Health Protections", preventing occupational disease and injury, eliminating hazards, and improving the quality of the working environment is an essential component of public health and preventive medicine. This article reviews statistical measures of occupational safety and health performance, and links these to specific prevention programs. For each industry, a job-outcome matrix should be constructed, so that preventive measures can be targeted on mechanism of injury for each outcome, and results can be tracked among the job categories with specific risks.

Vredenburg (2002) "Organizational safety: Which management practices are most effective in reducing employee injury rates?", this study examined the degree to which six management practices frequently included in safety programs (management commitment, rewards, communication and feedback, selection, training, and participation) contributed to a safe work environment for hospital employees. The most effective step that hospitals can take is in the front-end hiring and training of new personnel. They should also ensure that the risk management position has a management-level classification. This study also demonstrated that training in itself is not adequate.

Alan Waring (1996) "Corporate health and safety strategy", policy, objectives and strategy comprise the "front-end" components of a successful health and safety management system (SMS) which every employer should set up. The particular strategy represents the focus of attention over a defined period of time, typically 1-5 years, and determines much of the practical SMS requirements. Seeks to outline the requirements for successful health and safety management and how these may be addressed systematically through strategy and SMS.

RESEARCH DESIGN

The descriptive research method was adopted in the study. As the descriptive studies are undertaken to understand the characteristics of the organization that follow certain common practices.

DATA SOURCE

For the purpose of this research, the researcher has relied on both the primary and the secondary sources of data.

SCALE USED IN QUESTIONNAIRE

In this study, the researcher has restored to Likerts five point rating scale. For instance ranging from SA stands for Strongly Agree, A stands for Agree, N stands for Neutral, DA stands for Disagree and SDA stands for Strongly Disagree.

SAMPLING DESIGN

Sampling is a process of selecting a few from a larger group to become the basis for estimating or predicting a fact, a situation or outcome regarding the larger group. 114 employees were selected for the study at operative level comprising of three major departments namely Production, Maintenance, and Packing of confectionary industry. The study is undertaken in Chennai which is a capital city of Tamil Nadu.

PILOT STUDY

The researcher conducted a pilot study to check the effectiveness of the questionnaire among the respondents. After the pre-test, one question was modified and two questions were added after which the interview schedule was finalized by the research guide. A questionnaire was planned and administered to 10 employees in three major departments: Production Department, Maintenance Department, and Packing Department respectively. After the content validity, the reliability of the tool was measured using Test and Retest method. The tool was found to have reliability score of 0.89 (positive correlation).

MEASUREMENT OF VARIABLES

- First-Aid facilities
- Overcrowding
- Disinfectants
- Personal Protective Equipments (PPE)

HYPOTHESIS

1. There is no significant relationship between qualification and illustration of pictures and diagrams for the correct way of handling equipments in the company.
2. There is no significant relationship between adequate training on usage of first-aid facilities and zero accident philosophy.
3. There is no significant relationship between adequate protection to workers and ensure that employees wear their personal protective equipments by the company.
4. There is no significant relationship between overcrowding and zero accident philosophy.
5. There is no significant relationship between safety programme and ensure that employees wear their personal protective equipments by the company.

RESULTS & DISCUSSIONS

- 68% of the respondents strongly agree that the company conducts periodic awareness on safety program. 46% of the respondents agree that the company develops and distributes labour safety policies & regulations to the employees. 56% of the respondents agree that the company provides adequate personal protective equipments. 59% of the respondents agree that the company ensures that they wear their personal protective equipments before they start their production.
- 53% of the respondents strongly agree that the company ensures sufficient ventilation & lighting systems in the factory. 46% of the respondents agree that the company conducts regular safety audit to ensure that all the departments in the factory implement safety regulations. 94% of the respondents strongly agree that the company ensures emergency exits are clear for obstacles. 43% of the respondents have stated neutral towards adequate training on usage of first-aid facilities.
- 54% of the respondents agree that the company is kept clean and free from effluvia and dirt. 53% of the respondents agree that the company takes adequate measures for prevention on inhalation/accumulation of dust and fumes. 42% of the respondents agree that the company avoids overcrowding in the factory which is injurious to the health of workers. 67% of the respondents strongly agree that the dangerous machines and equipments are properly guarded by the company. 66% of the respondents agree that the company provides adequate protection to workers in hazardous procedure in and around the machines.

- From the chi-square analysis, it is inferred that there is significant relationship between qualification and illustration of pictures and diagrams for the correct way of handling equipments in the company.
- From the chi-square analysis, it is inferred that there is no significant relationship between adequate training on usage of first-aid facilities and zero accident philosophy.
- From the chi-square analysis, it is inferred that there is significant relationship between adequate protection to workers and ensure that employees wear their personal protective equipments by the company.
- From the chi-square analysis, it is inferred that there is no significant relationship between overcrowding and zero accident philosophy.
- From the chi-square analysis, it is concluded that there is significant relationship between safety program and ensure that employees wear their personal protective equipments by the company.

SUGGESTIONS AND RECOMMENDATIONS

Based on the findings of the study the researcher would like to put forth few suggestions for consideration of the management.

- From the findings it is observed that the management is keen in improving the safety and health of its employees. But the employees feel that they need to be given training on usage of first-aid facilities and they don't have much access to the first-aid kit. Hence management may provide them with adequate training on first-aid facilities which would helpful at the time of emergencies if any.
- It was observed that though the organization physical layout is designed properly there is overcrowding in the work environment during the process of work. This can be sometimes hazardous to the employees, which needs to be taken care of at the earliest to avoid untoward incident in future.
- The use of disinfectants should be scheduled properly to ensure that they are used in all the places of regular intervals, to ensure hygienic and congenial working conditions for its employees.
- Enough measures have been taken by the management to provide personal protective equipments (PPE) to all its employees but it is observed that some of the employees are reluctant in wearing them at workplace and they go unchecked. Hence management can insist them to wear personal protective equipments (PPE) at workplace and stress the importance of wearing them to avoid bodily injury at work place.

CONCLUSION

Safety Health and environment are three indispensable factors of today's modern business organization. A sound organization is a long term proposition and is a pivotal factor to enhance employee's satisfaction, motivation and improved performance. The research findings are however applicable only to the present situation and further improvement is possible by considering the suggestions. In view of this the management can conduct periodical meeting with their employees for enabling them to understand their expectation and implement them for a conducive and congenial work environment and imbibe sincere safety practices among its employees.

REFERENCES

1. Peer Hull Kristensen (2011) "Managing OHS: A route to a new negotiating order in high-performance work organizations?", *Safety Science*, Volume 49, Issue 7, Pages 964-973.
2. Nor Azimah Chew Abdullah, Jeffery T. Spickett (2009) "Managing Safety: The Role Of Safety Perceptions Approach To Improve Safety In Organizations", *IBESJ* Vol.2 Issue No.1, 01-18.
3. F.E. Mirer and J.M. Stellman (2008) "Occupational Safety and Health Protections", *International Encyclopedia of Public Health*, Pages 658-668.
4. Vredenburg (2002) "Organizational safety: Which management practices are most effective in reducing employee injury rates?", *Journal of Safety Research*, Volume 33, Issue 2, Pages 259-276.
5. Alan Waring (1996) "Corporate health and safety strategy", *Facilities*, Vol. 14 Iss: 3/4, pp.52 – 55.
6. Everly, G. S., Jr. (1986) "An introduction to occupational health psychology". P. A. Keller & L. G. Ritt (Eds.), *Innovations in clinical practice: A source book*, Vol. 5 (pp. 331-338). Sarasota, FL: Professional Resource Exchange.

ACCEPTANCE AND USAGE OF MANAGEMENT INFORMATION SYSTEM (MIS) IN SMALL SCALE INDUSTRIES

C.G. RAMACHANDRA
DEPARTMENT OF MECHANICAL ENGINEERING
SRINIVAS INSTITUTE OF TECHNOLOGY
MANGALORE

T.R. SRINIVAS
DEPARTMENT OF INDUSTRIAL & PRODUCTION
S.J COLLEGE OF ENGINEERING
MYSORE

ABSTRACT

In this information age, data has become one of the most important resources to organizations. MIS plays a crucial role in the management of any contemporary enterprise such as small, medium or large organizations. An effective Management Information System supplies accurate, relevant and timely information to the manager of an organization. The information support for functional areas of management such as Production, Marketing, Finance, Personnel and services is an absolute necessity. This paper discusses the acceptance and usage of Management Information System in 40 small scale industries. The study is exclusively based on the primary data collected through a sample survey. Main emphasis was laid to understand MIS usage and problems which hinder its use. To achieve the objective of the study, the data was collected through a structured and pre-tested questionnaire. The analysis reveals that only 8 out of 40 small scale industries are found making use of MIS for supporting decision making process. To find out the possible reasons for inadequate MIS usage in organization, the respondents were requested to provide a feedback on various factors which could be possible causes for non-use of MIS in their respective organizations. In order to increase the usage of MIS in small scale organizations, there is a need to build up computer culture by properly disseminating information about potential computer applications and the benefits. Such information dissemination is required to be made through various seminars/conferences/training programs etc. This in turn, increases the acceptance and usage of MIS in small scale industries.

KEYWORDS

Acceptance, Management, Information, System, Usage.

INTRODUCTION

A management information system (MIS) is a system or process that provides information needed to manage organizations effectively. An 'MIS' is a planned system of the collection, processing, storage and dissemination of data in the form of information needed to carry out the management functions. Management information systems are regarded to be a subset of the overall internal controls procedures in a business, which cover the application of people, documents, technologies, and procedures used by management accountants to solve business problems such as costing a product, service or a business-wide strategy. Management information systems are distinct from regular information systems in that they are used to analyze other information systems applied in operational activities in the organization.^[2] Academically, the term is commonly used to refer to the group of information management methods tied to the automation or support of human decision making, e.g. Decision Support Systems, Expert systems, and Executive information systems. The initial concept of MIS was to process data from the organization and presents it in the form of reports at regular intervals. The system was largely capable of handling the data from collection to processing. So Management Information Systems are of vital importance for all kinds of organizations. In any organization, small or big a major portion of the time goes in data collection, processing, documenting and communicating it to the people. Hence a major portion of overheads goes into this kind of unproductive work in the organization. Every individual in an organization is continuously looking for some information which is needed to perform his/her task. Hence, the information is people oriented and it varies with the nature of the people in the organization. It goes without saying that all managerial functions are performed through decision making for taking rational decisions, Management Information is essential and is procured through the Management Information System setup by the organizations. Success of an organization in achieving its predetermined goals and objectives lies in timeliness and quality, that is to say effectiveness of its MIS. In today's world of ever increasing complexities of business as well as management, every organization to survive and grow must have an efficient and effective MIS. An effective Management Information System supplies accurate, relevant and timely information to the manager of an organization.

MANAGEMENT

It is the process of getting things done through and with people. A manager in an organization gets the thing done by performing five basic functions such as planning, organizing, staffing, directing and controlling. To perform above functions, a manager has to take a variety of decisions. Thus, decision making is a fundamental pre-requisite for each of the foregoing process. Whatever a manager does, he does it through decision making. In brief decision making is the essence of management.

The three levels of business activities carried out in operating an organization are

1. Operational Control (Operating Management).
2. Management Control (Middle Management).
3. Strategic Planning (Top Management).

FIG. 1: MANAGEMENT HIERARCHY



The first level strategic planning processes determines what markets or businesses the company should be in at present or plant to be in the near future.

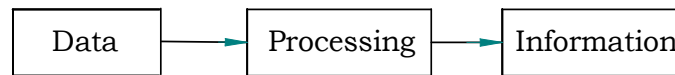
The next level, management control includes processes or functions that facilitate the management of those processes delegated to the operational control level.

The bottom level, operational control indicates processes performed to control the basic product or services produced by the company. It is concerned with individual tasks or transactions, such as procurement or raw material as per prescribed quantity and quality, selling of products to specific customers.

INFORMATION

It is the data that is processed in a form which helps the management to take decisions i.e. it is the data that have been put into a meaningful and useful context and communicated to a recipient who uses it to make decisions. The relation of data to information is that of raw material to finished product. The word information is a processed data, useful or relevant data, data with surprise value, data which is useful in the decision making process. Information is a concept unique with reference to its receiver, i.e. the same data may convey different meaning (information) to different people.

FIG. 2: RELATIONSHIP OF DATA AND INFORMATION



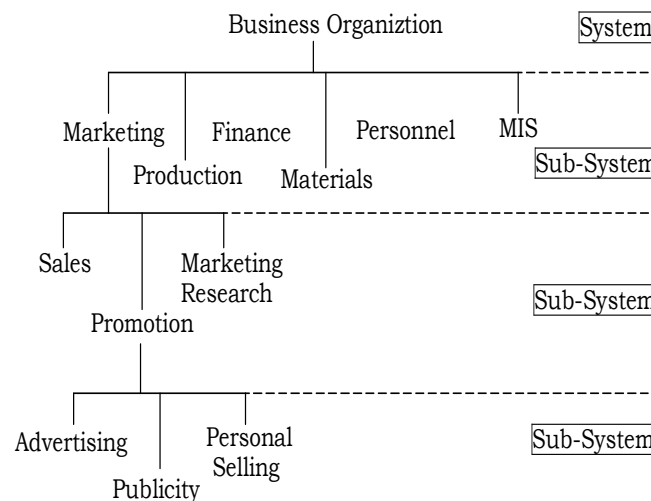
Different levels of management utilize different types of information as the three levels of management perform different functions in an organization.

SYSTEMS

A system is set of elements joined together to achieve common objectives i.e. group of elements organized with a purpose. The systems often have multiple goals. The system utilizes computer hardware and software, manual procedures, management and decision models and database. A system is made up of sub-system, which may be composed to further sub-system. Sub-systems send and receive data from each other.

The systems can be either probabilistic or deterministic in nature. The Physical systems can be classified as Natural (Human Body) and Artificial (Information system). The systems may be open or closed. Closed systems can be standalone with no connection with other systems. Open systems interface and interact with other systems.

FIG. 3: BUSINESS ORGANIZATION AS A SYSTEM

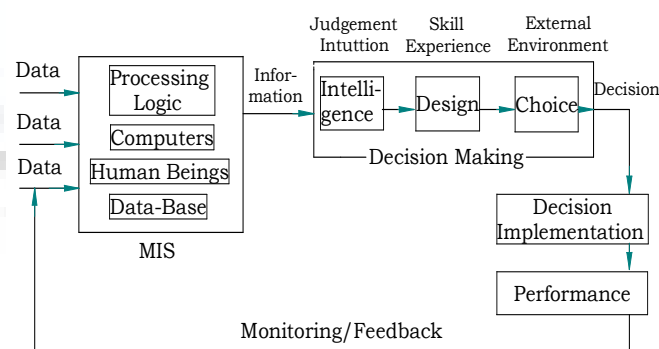


MANAGEMENT INFORMATION SYSTEM

The MIS is an integrated user-machine system for providing information to support operations, management and decision making functions in an organization. The system utilizes computer hardware and software, manual procedures, models of analysis, planning, control and decision making and a data base.

It is a system having a combination of persons, machines, procedures and data base as its elements, which gather data from the intra and extra sources of an organization and after processing these data supply management information to the managers in an organization to support the decision making process of the management. The diagrammatic representation of the concept of MIS has been shown in figure (3).

FIG. 4: THE CONCEPT OF MIS



Management Information Systems are of vital importance for all kinds of organizations. These come handy to management's by providing management information at various stages of decision making and thus greatly help the organizations to achieve their predetermined goals and objectives.

RESEARCH METHODOLOGY**OBJECTIVE OF THE STUDY**

The objective of the study is to understand MIS acceptance and usage in small scale industries.

SCOPE OF THE STUDY

40 small scale industries were covered for the purpose of this study. The study is exclusively based on the primary data collected through a sample survey. Main emphasis was laid to understand MIS usage and problems which hinder its use.

SAMPLING TECHNIQUE AND SAMPLE SIZE

The population of the study comprised of General Managers, Chief Executive and Industrialists of Various organizations. Around 40 Industries of small scale were selected on the basis of judgmental sampling.

DATA COLLECTION

To achieve the objective of the study, the data was collected through a structured and pre-tested questionnaire. The questionnaire was prepared on the basis of review of literature and many discussions with professionals, consultants and experienced academicians. All the selected respondents were personally contacted to get the questionnaire filled. The responses were collected on five point liker type scale ranging from strongly agree to strongly disagree.

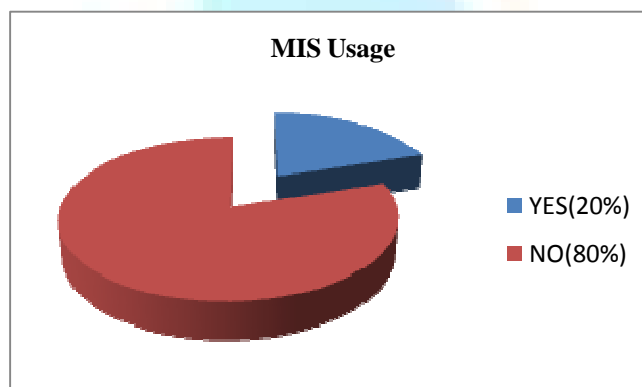
SCORING OF DATA

After the data collection was over, the scoring was done by assigning a numerical value of 5 to the most favorable (strongly agree) position on the scale, 4 to the next most favorable and so on. Thus all the responses obtained were converted in quantitative data, which were further subjected to tabulation, analysis and interpretations.

TABLE-1: MIS USAGE IN SMALL SCALE INDUSTRIES

	Small Scale Industries		
	Yes (%)	No (%)	Total (%)
MIS Usage	8 (20)	32 (80)	40

The percentage use of MIS in 40 small scale industries is shown in graph-1.

GRAPH – 1: MIS USAGE IN SMALL SCALE INDUSTRIES**RESULTS AND DISCUSSION**

An analysis of Table-1 reveals that only 8 industries out of 40 industries (20%) in small scale sector is using Management Information System for supporting decision making process. The remaining 32 industries out of 40 industries (80%) yet accept and use Management Information System for supporting decision making process.

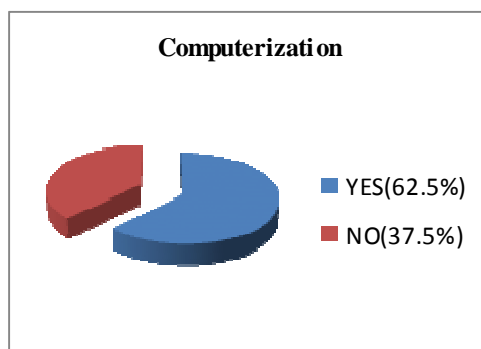
To find out the possible reasons for inadequate MIS usage in industries, the respondents were requested to provide a feedback on various factors which could be possible causes for non-use of MIS in their respective industries. As per the Table-1, 32 organizations out of 40 industries are not making use of MIS. So we have collected feedback from 5 respondents of these industries to find out the possible reason for non-usage of MIS in these industries. After collecting the feedback, the average and standard deviation is calculated for each reason for non-use of MIS. The responses thus obtained are analyzed and the results are tabulated in Table-2 for small scale industries.

TABLE – 2: REASONS FOR MIS NON-USE IN SMALL SCALE ORGANIZATIONS

Reason	Small Scale		
	Yes	No	Total
1. There is no computerization in my organization.	12	20	32
	Average		S.D
2. We do not know much about potential usages of Computers.	3.40		0.63
3. Financial Constraints is a reason for non-use of Computer/MIS.	3.87		0.73
4. Trained Computer Personnel are not available.	2.96		0.53
5. MIS is too expensive to use.	3.31		0.58
6. Benefits from MIS are low.	3.87		0.60
7. I have not heard of MIS.	3.03		0.59
8. Decisions I make are mostly too simple to need a computer.	4.18		0.65
9. I usually do not have time pressure when making decisions.	4.00		0.50
10. I usually do not face "what if" questions when making a decision.	2.90		0.52

The percentage use of computers in the small scale industries which are not making use of MIS (32 industries) is shown in graph-2.

GRAPH – 2: COMPUTERIZATION IN SMALL SCALE INDUSTRIES



An analysis of Table-2 indicates that the various reason for non-use of MIS in small scale industries. The main reason for non-use of MIS in small Scale organizations is non-use of computers and limited use of computers has been attributed to unawareness of potential activities which a computer can handle and incomplete or no information about MIS and its benefits. As per the calculated values of standard deviation for each reason it lies very close to the calculated values of average. So the deviation is not much to the average i.e. the reason from the respondents are appropriate for the non-use of MIS in these industries.

CONCLUSION

The study reveals that MIS is not being used much by small scale industries. Strategic level managers of small scale industries are still to appreciate the potential of this powerful application of Management Information System. In order to increase the usage of MIS in small scale industries, there is a need to build up computer culture by properly disseminating information about potential computer applications and their benefits. Such information dissemination is required to be made through various conferences/ seminars/training programs etc. This in turn, increases the usage of MIS in small scale industries, which helps the concern people to get the right information at right time and also to take day to day decision as and when required by the different levels of management to perform different functions in an organization.

ACKNOWLEDGMENT

We are thankful to the Management, Principal, HOD of Mechanical Department and Staff of Srinivas Institute of Technology, Mangalore for their support and encouragement.

REFERENCES

- [1] Dr. A. Ramachandra and K.P. Ramachandran "Computerised Preventive Maintenance for Industries", Maintenance Journal, Vol-4, Jan-Mar 1993.
- [2] A Muralidharan "Mangement Information Systems", A.I.C.T.E Continuing Education Program, Jan 1996.
- [3] Goyal D.P, "MIS Concept and Application", Ist Edition Deep and Publications, 1994.
- [4] O'Brien, James A. "Management Information System: A Managerial End User Perspective", Galgotia Publications (P) Ltd., Delhi 1991.
- [5] Davis, Gordan.B, "Management Information Systems", Mc.Graw Hill (International Editions) Book Company Singapore, 1985.
- [6] Kapur, Jagadish C "Management Information Systems: A conceptual Frame Work", Part-I, Indian Management, 1982.
- [7] K Venkateshwara Alias Blaji "Management Information System in Maintenance", ISTE Summer School on Maintenance Engineering. 1991.
- [8] Kapur, Jagadish C "Management Information Systems: A conceptual Frame Work", Part-II, Indian Management, 1982.

DEVELOPING RIGHT HUMAN EQUATION BY SELF KNOWLEDGE FOR CHANGE MANAGEMENT: LEARNING FROM INDIAN MYTHOLOGY

DR. K. V. ALIAS. BALAJI
PROFESSOR

SRI JAYCHAMRAJENDRA COLLEGE OF ENGINEERING
MYSORE

DR. M.SIVAGNANASUNDARAM
ASST. PROFESSOR

KIRLOSKAR INSTITUTE OF ADVANCED MANAGEMENT STUDIES
HARIHAR

BIDYANAND JHA
SR. LECTURER

KIRLOSKAR INSTITUTE OF ADVANCED MANAGEMENT STUDIES
HARIHAR

ABSTRACT

Creativity and innovation are the tools to counter insecurity and uncertainty at the organizational level. The creativity and innovation comes from human mind & brain working in the organization. It is believed that if individuals understand self, with the leadership traits at the individual level, throughout the organization, then it will be an effective tool to overcome the challenges of the organization which the organization faces in the advent of change. In the process of driving its people to achieve the objectives of profit maximization, organizations should think little differently and manage its resources differently than many of their competitors. At the end when we think about making the connection between people and profit entails how we think about work, organization and the people involved in them. The turbulent situation that organization faces from time to time, the epic like The Bhagavad Gita helps in extracting wisdom and intelligent introspection to apply efficiently in the modern times and overcome the turbulence. This Paper Deals with the Context of self knowledge from the Bhagavad Gita and its significance in developing human equation for overall human capital development. The results of this paper not only fill the gap but also provide an integrated synergy between ancient Indian mythology the Bhagavad Gita and Human Capital Development. The paper advocates optimizing the performance efficiency and longevity through an insight on development of individual personality and leadership. Organizations by doing this will be able to develop not only individual personality but also individual responsibility and individual leadership in performing job at all levels.

KEYWORDS

Wisdom, Self Knowledge, Leadership, individual responsibility, individual leadership.

INTRODUCTION

The act of ostrich is to close their eyes and hide them beneath the sand and feel secured from the threat, unfortunately they can hide them but not get away of the threat which they had. It is a temporary mental satisfaction for ostrich and nothing else. The threat still exists and with the same intensity and finally ostrich has to face it and find out ways to solve it. But in this process ostrich land up doing crisis management rather than preventive management to overcome the threat. Similarly in the business environment change is inevitable and organizations have to be proactive in order to visualize probable threats and strategies to overcome the same. Furthermore the change which we are experiencing today is unpredictable, often surprising and gives a shorter period to act upon.

Under these circumstances how we can strive for organizational longevity and progress. Creativity and innovation are the tools to counter insecurity and uncertainty at the organizational level. It is believed that if individuals take responsibility and understand self with the leadership traits at the individual level throughout the organization, than this will be an effective tool to overcome the challenges of the organization which it takes in the advent of change. If the people of the organization practices leadership irrespective of their level, the immune system of organization will be strong enough to fight with the changes and overcome with flying colors.

Change is only permanent in the environment is the commonly used and discussed among the industry and social experts. They must be trying to understand and tell that if we change ourselves, we can add new flavor to our personality or industrial operation. The Industry people focus more upon the changing business dimensions and sustainability in the business. This is in priority because of the changing consumer demography and taste. Hence the industry focuses upon the operational excellence of the organization and excellence in drivers of operation i.e. Human capital. Many a time organization in order to fight with the change overlooks the individual efficiency and focuses on the group or team efficiency for accomplishing the task. The social engineers have a different view. Their view connects development of mankind to social development. They believe that self knowledge of individual build a true society and the society as a whole works for mankind development. If we closely look both the views, it is almost same and talking in the same sense. Because team in the organization is also made up of self knowledge.

The Human resource is no more a liability on the company; it has become asset for the company. The human resource department has got a lot of responsibility for developing these human resources and converting it into Human Capital. While creativity and innovation becomes the tool to counter insecurity and uncertainty, it becomes essential to develop creative and innovative human capital. This seems to be the only way to achieve sustainable competitive advantage compared to other business house. The only way which seems to be feasible is development of team work and collective intelligence with discipline and methodology for continual improvement.

LITERATURE REVIEW

(Namasivayam, 2006) focuses upon the three dimensions education, competencies at work place and psychometric assessments of the employee to define human capital. (Teece 2000) instead of defining the dimensions claims the overall competencies in the organizations of the human capital and (Bontis 1998) defines the genetic inheritance, education, experience and attitudes about life and business. The connect between human mind and organizational capacity becomes the base of think tank to develop human development. The order of human capital or the efficiency of the human capital development model can be represented by the organizational efficiency to counter change. It does not mean the individual performance but also the ability to work in a team and still deliver the best in the project assigned. This is the way in which organizational results can be achieved.

(Knowledge infusion 2006) talks about the knowledge economy and competitive advantage. It advocates people as the last weapon to gain competitive advantage in this knowledge driven economy. In the competitive world the "copy and paste" has become a strategy to counter competition. Some time it is evident that "reverse engineering", "gap analysis" and "product development" has become the strategy to counter competition in real market. But this approach is narrow and limits itself to the duplication of product or service. Corporate still differentiate themselves to a larger extent in terms of continuous innovation, creative execution and efficient knowledge Management. This still today remains the foray of the competitive advantage in the market.

The basic objective of the corporate is profit generation. Shifting the focus from profit to the examination of approach for the service does not dilute the importance of developing strategy for human capital development & management. Many a times it is being noticed and observed that even though corporate has the best product and service to serve to the consumer, they are not able to make profit. If we diagnose further we will find that the process of the delivery of product or service depends upon intangible components as well. The intangible components talks about the soft skills used by the employee involved in delivery process. Hence the development of the differentiation & competitiveness of the organization depends mostly in the hand of human resource.

If we give a thought further we will find that tangibles are created by the intangibles. The human are involved in development of design of product or service and also in the process of delivery. Hence employee becomes the asset for an organization and many corporate proudly claim it as greatest asset. Looking closer the mind of the employee, which cannot be seen creates the tangible asset. They take their own decision for the percentage of usage of intangible mind to create its master piece. Every day the minds come and walk out after working hours. Therefore, before concentrating on individual human capital development, we need to understand the amount of knowledge the individual will take while leaving the organization.

(Levinson 2006) talks about the mechanism to optimize the performance of the employee and organization to develop overall business performance. This mechanism is discussed as structural capital, which focuses upon the learning and retaining capacity of the organization. Tacit knowledge is the knowledge hidden in the intangible minds of the employee. The documented form of the intangible mind is explicit knowledge. The time when the knowledge is documented for representation it becomes tangible and explicit, available for all minds to learn. The structural capital model deals in conversion of tacit knowledge to explicit knowledge.

There is a third dimension to the capital in the organization. It is named as stakeholder capital. The stake holders look at the overall value generated by the organization. This value can be generated by efficiently managing the organizational knowledge for the performance of the organization.

When the human capital, structural capital, and stakeholder capital is clubbed together it becomes intellectual capital. (Dzinkowski 2000) explained intellectual capital as the total stock of capital or knowledge based on equity that a organization possesses. This can be understood as the combination of skills, competencies and knowledge which are with the employees, process, knowledge database and stake holders that empower the organization to maximize the profit and retain the profit for shareholders.

The efficient process of the organization improves the efficiency of the individual employee. The usage of knowledge and database depends upon the skills of the human capital in executing the process. If we consider the human capital stand alone in the corporate, it would not do justice for the discussion. Human capital also has their personal life or social life outside of the corporate.

The knowledge captured is not only form the source of industry knowledge or database management; there are many ways of explicit knowledge which comes to an individual from the social networks and relationships. The individual develops his/her belief not only by the industrial relationship but also from the social relationship outside the industry.

The belief/ un-belief on the capability as to achieve / accomplish a task or not is the food for human mind to determine his/her potential. The human mind has immense power to accomplish any task/activity desired. Science has explored a lot to know the power of human mind. It is found that not only scientific laws but spiritual principles also play a major role in the ability of doing the task/activity. The extreme happiness comes when a person understands his capability and achieves a life of purpose. The efforts which otherwise would have been a tedious task becomes easy and effortlessly an individual can create a life of happiness. This not only reduces the struggle but also gives a purpose to the life and individual starts giving the best with less strain and improved efficiency.

The simple spiritual principles which are tested, develops the mind condition, strength and functions. Once the individual minds are enhanced it automatically attracts success and permits it to flow in. There have been many studies made in the field of human mind power. Spiritual community thoroughly discusses about the locus of control of individual. One good incidence and repeated occurrence of it for others develops a belief in individual that these things happen to only lucky individuals. Similarly one bad incidence with him develops the belief that it happens with me only and hence I am very unlucky. For any good things happens to individual develops the belief that it is his effort which lead this success but for any bad things which happens with individual develops a belief that it is god who is playing with him or the blame is given to outside environment.

The human skull is having two major players, one is mind and other is brain. Many people get confused between these words; they claim that both are same. Spiritually it is defined as "Mind is a thought generator and processor" whereas "brain is a executor". According to the study made on usage of the brain by individual, it is found that an individual uses only 10% of the brains capability. The million dollar question lies here that what happens to the other 90%?

The search for the answer of this question itself is a path to self knowledge. Individual after exploring this answer will come to know the limitless or unlimited power of brain and could make their dream come true. The exploration of this area gives awareness to the individual about the capability he possess and enhances the quality of mankind.

Individual awareness is the understanding of the capability which gives a blue print of one's life purpose. The individual awareness leads to creation of desire and the creation of desire leads to belief of achieving it and the belief leads to execution of the activity required. Once awareness, desire, belief and action match together it gives an unlimited capability of doing the activity and finishing it with excellence. The individual is surrounded by the materialistic world and because of that they are far away from the self realization. Hence the simple process of life has become so complicated for an individual.

OVERVIEW OF THE BHAGAVAD GITA

The pathway shown by Lord Krishna in Bhagavad Gita to achieve self realization and ultimate truth provides many lessons to learn. In many discussions the spiritual laws supports the fact that the average human does have the ability to create ultimate mind power. The fundamental of making it operational is connecting individual's awareness, desire, belief and action. This is the time to explore self knowledge lessons from Bhagavad Gita.

The extraction of learning for self knowledge and human capital development can only happen when we get introduced to Bhagavad Gita. According to (Dharmaratnam, 1987) this is a conversation of lord Krishna to Arjuna regarding the correct technique of life. This is a universally accepted teaching note for the best practices in business and in personal life. The holy Gita has given many lessons for the modern world business and life practices. It has been introspected and diagnosed by many scholars across the world to extract the best in their area of interest. The quality of holy Gita lies in indifferention and un-sectoral acceptance for the best practices. The holy Gita is not only talks about spirituality but also talks about the human capital development and transformational leadership. It is applicable to anybody and everybody. The original script of Bhagavad Gita is in Sanskrit language which is considered to be the oldest language in the world. Charles Wilkins translated the first English language version of the Bhagavad Gita in 1785 according to (Muniapan, 2005). There are more than a thousand of English language versions addressed by many scholars in the world. The Bhagavad Gita is also been translated in 500 other languages other than English across the world.

According to (Mahadevan, 2001) Mahatma Gandhi who preached the Bhagavad Gita ,said : "I find a verse here and a verse there and I immediately begin to smile in the midst of overwhelming external tragedies and if they have left no visible, no indelible scar on me, I owe it to all to the teachings of the Bhagavad Gita. The epic Mahabharata is the back ground of the Bhagavad Gita. Mahabharata is the encyclopedia of life and themed on occupational duty (Dharma). Artha also becomes a part of discussion as it is synonym to wealth, Kama which is synonym to Pleasure and Moksha which is synonym to liberation.

The Mahabharata was composed by Sri Vyasa Muni, son of Parasuram Muni and was written by Sri Ganesha more than 5000 years ago and it has 110,000 verses (Rosen, 2002). The Mahabharata is the story of the war between two cousins; the 5 Pandavas and 100 Kauravas for the possession of the kingdom Hastinapur. Pandavas request Sri Krishna, the champion of dharma offered to go on a Peace making mission to Kauravas. But Duryodhana refuses the offer and hence the war becomes certain between the two groups of warriors. Both Pandavas and Kauravas wanted Sri Krishna to be in their respective group.

Duyordhana and Pandavas went to Sri Krishna, when Sri Krishna was sleeping, when he opened his eye; he saw Duyordhana first and then Arjuna. Sri Krishna asked Duyordhana about his wish and Duyordhana replied I want you to be a part of my troop and fight against Pandavas. Sri Krishna refuses to be a part of the battle but he was ready to give all his troops to Kauravas. Duyordhana agreed with this condition and left the place. Sri Krishna ask Arjuna: what is your wish? He replies show me the path and Sri Krishna agrees to become the charioteer ("Sarthi") of Arjuna in the war. Duyordhana felt that an unarmed Krishna without army will not be of any help for Pandavas. (Subramaniam, 2001). The entire army from both the side was assembled at the battle field of Kurukshetra. Thus the stage was set for the Bhagavad Gita; the sermon was given on the battle field before the commencement of the war. Spiritually the battle is described as the battle between higher self and the lower self, the war between man's spiritual calling and the dictates of the body, mind and senses for materialistic pleasures.

SELF KNOWLEDGE: LEARNING FROM THE BHAGAVAD GITA

The Bhagavad Gita provides us many learning on self-knowledge and the world. Normally we learn through the observations and experience. The connection between the dots created by us during observation through our senses and correlating, understanding & collecting information gained, gives us a proper understanding of the world. Individual understanding of the world depends upon his understanding of self. If the individual is positive about himself, he collects all positive waves from the environment and connects it with positive views in seeing the world and vice versa. Hence there exist the correlation between self knowledge and the world. Self knowledge begins with self –observation, self-examination and self assessment. After doing so the divine qualities develops in individual enlisted by Lord Krishna in Bhagavad Gita chapter 16 verses 1, 2 and 3.

(Abhayam sattva-samsuddhir, jnana-yoga-vyavasthithi; danam damas ca yajnas ca, svadhyaya tapa arjavam ahimsa satyam akrodhas: tyagah santir apaisunam, daya bhutesv aloluptvam; mardavam hrir acapalam, tejah ksama dhrtih saucam; adroho nati-manita, bhavanti sampadam daivim, abhijatasya bharata (16.01-03))

Fearlessness, purity of heart, perseverance in the yoga of knowledge, charity, sense restraint, sacrifice, study of the scriptures, austerity, honesty; (16.01)

Nonviolence, truthfulness, absence of anger, renunciation, equanimity, abstaining from malicious talk, compassion for all creatures, freedom from greed, gentleness, modesty, absence of fickleness; (16.02)

Splendor, forgiveness, fortitude, cleanliness, absence of malice, and absence of pride; these are the qualities of those endowed with divine virtues, O Arjuna. (16.03)

The Individual who wants to know about the self must remain open to the truth about him and must be unbiased and remain unbiased. The retrospection process should be completed with spiritual practices and the calming of the entire personality and one's inert nature. In chapter 17, Sri Krishna talks about removing the cover between self and outer world. He advocates to practice austerity of body, mind and speech (vani) to unfold the layer of self glamour and illusion. Such that the truth is revealed for what they are, and the deeper knowledge about the self and its relationship with every other life are uncovered.

Deva –dviji-guru-parjnapujanam, saucam arjavam; brahmacaryam ahimsa ca, sariram tapa ucyate anudvega- karam; vakyam, satyam, priya-hitam ca yat; svadhyayabhyasanam caiva, van-mayam tapa: uchyatemanah – prasadah saumyatvam, maunam atma-vinigraha: bhava- samasuddhir ity etat, tapo manasam ucyate: sraddhaya paraya taptam, tapas tat tri-vidham naraih; aphilakanksibhir yuktiah, sattvikam paricaksate. (17.14-17).

The worship of devas, brahmana, guru, and the wise; purity, honesty, celibacy and non violence; these said to be the austerity of body. (17.14).

Speech that is not offensive, truthful, pleasant, beneficial, and is used for the regular reading of scriptures is called the austerity of word. (17.15)

The serenity of mind, gentleness, silence, self-restraint, and the purity of mind are called the austerity of thought and mind. (17.16)

The three austerities of thought, word and deed practiced by yogis with supreme faith, without a desire for the fruit is said to be Sattvika austruty. (17.17)

Nadatte kasyacit papam, na caiva sukratam vibhuh; ajnanenavratam jnanam, tena muhyanti jantavah (5.15)

The Lord is not responsible for the deeds of anybody whether good or evil. This is covered by the ignorance that is why people are deluded. (5.15)

Hence the actions, activity, feeling, thought, and tendency should be examined carefully. The activity and thoughts are motivated by the intention and motives. People can find out the activity and understand but understanding the motive or intentions is very difficult. The motive and intentions of self should be evaluated because it leads to action. An individual motive depends upon both external and internal factors. Each sources of influence should be inspected carefully. There should be honesty in taking responsibility for an individual's own behavior and the response to any situation.

The better understanding of self knowledge gives an individual an understanding of the forces influences him. By understanding the forces he will be able to do necessary changes in order to rectify the motive/ intention. This knowledge of self empowers in understanding the purpose of all activity and appearance in the manifested world.

Man-mana bhava mad-bhatko, mad-yaji mam namaskuru; mam evaisyasi yuktvaivam, atmanam mat-parayanah (9.34)

May eva mana adhatsava, mayi buddhim nivesaya; nivasisyasi may eva, ata urdhvam na samsayah (12.08)

Stick your mind on me, be devoted to me, worship me, and bow down to me. Unite yourself to me and set me as supreme goal and sole refuge, you shall certainly realize me. (9.34).

Sri Krishna advocates focusing on him and connecting with him. He says to put the intellect dwelling upon me through meditation and contemplation. Thereafter you shall always dwell with me. (12.08).

When individual completely focuses on mind in truth, he can always find the significance of outer knowledge by comparing it with the inner knowledge. This is the point of self realization. Once the truth for oneself is known to him, they get the ability to discern truth from information or knowledge obtained externally and vice versa.

The alignment of soul, personality, and values becomes the key for testing the significance of the truth. The personality centered individual accept the significance of any impression which is matching with his personality centered values & interests. This is a sign of continuing self glamour. On the contrary an individual who is honest in himself will accept as significant only those impressions which have the basis in truth or reality instead of appearance. Hence the Lord has advised to surrender your mind on him so that the truth stays near you always. This is the theme of the verses of the Bhagavad Gita (9.34 & 12.08).

Sraddhaval labhate jnanam, tat-parah samyatendriyah; jnanam labdhava param santim, acirenadhigacchati. (4.39)

Lord Krishna says that one who have the sincere devotion in lord and complete control on the senses, gains the true knowledge. Having gained this, individual can attain supreme peace. Therefore the self knowledge leads to self realization and the true self knowledge.

Ahankaram balam darpam, kamam, krodham parigraham; vimuchya nirmamah santo, brahma- bhuyaya kalpate: brahma bhutah prasannatma, nasocati na kanksati, sarnah, sarvesu bhutesu mad bhaktim labhate param bhaktya mam abhijayanti yavan yas casmi tattvatah; tato mam tattvato jnatva, visate, tad-anantram: sarva karmay api sada, kurvano mad-vyapasrayah; mat-prasadad avapnoti, sasvatam padam avyayam. (18.53-56)

The Lord says "leaving ego, violence, pride, lust, anger and desire of possession" one becomes fit for attaining oneness with Brahman. (18.53)

After doing so the grievance and desire goes off and one becomes impartial to all beings, one obtains my supreme devotion. (18.54)

By devotion one truly understands what and who I am in essence. Having known me one immediately merges into me. (18.55)

One attains the eternal imperishable abode by my grace, even while doing all duties, just by taking refuge in me. (18.56)

Uddhared atmanatmanam, natmanam avasadayet; atmaive hy atmano bandhur, atmaiva ripur atmanah: bandhur atmatmanas tasya, yanatmaivatmana jitah anantmanas tu satrutve varjetatmaiva satru-vat (6.5-6).

One must elevate, not degrade, oneself by one's own mind. The mind alone is one's friend as well as enemy. (6.05)

The mind is the friend of those who have control over it, and the mind acts like an enemy for those who do not have control on it. (6.06)

The theme says the individual who have a control on mind is the person who know himself and the world around him. This type of individual is aware of his actions, reactions, and interactions with the inner and outer world.

INTER LINKAGE WITH CHANGE MANAGEMENT

The insight for oneself gives him a boundary to judge the truth and match it with the outer world. This also allows the managers working in corporate to have an insight and experience of their employee. As we know that the employees are the individuals working in group to accomplish a common goal which is then called as "Organization". To make the organization successful and to carve a competitive advantage, it becomes essential to develop a productive human equation. It is being told that whenever change is proposed by senior management in the organization, middle managers resist. I have a contradiction with this statement. I feel it is the middle management who is ready to welcome change and practice it but they do not get enough resources to implement change and practice. Hence management of people becomes the crucial task.

To excel in managing others, one must bring the insight on his actions and interactions as discussed in Bhagavad Gita about the self knowledge. The great management practices are about release not transformation. There should be a continuous interaction with the environment to bring out unique self, unique contribution, unique needs and the unique style of the employee. The success of the manager depends upon the efficiency in doing this.

Lord Krishna in Bhagavad Gita gives enough guidelines for oneself to understand himself and interact with the environment around him. The self aware person will be more efficient at work place and pass on positive waves in the environment through the aura he develops by devoting himself to Lord Krishna.

CONCLUSION

The world is changing and the dynamics of business environment is unpredictable. Every now and then the scope of competition and sustainability in the market is changing. This change which is happening has an adverse effect on the regular or habitual practices of the corporate. From idea generation to the idea implementation is done by the human resource available in the organization. It becomes compulsory for the corporate to design and develop a decent human equation. As discussed in the paper in the earlier part innovation and creativity is the only tool to fight with insecurity and uncertainty. This is the only way through which organization can have a competitive advantage.

This is the human being who has a continuous interaction with himself and environment; these are the people who convert an idea into a product and services. Hence it becomes the task of each individual in the organization to convert thought into business intelligence.

In this paper lessons are drawn from the Bhagavad Gita for self knowledge in the context of human capital development, which will positively impact the moral efficiency to the managers. The lack of self knowledge and the factors behind that manager will not be efficient in management of people. They will adopt an authoritarian approach which may strain the interpersonal relationship in the organization and restrict the human capital development. This paper may give some insight to the managers to deal with the human in a human way.

We have been able to conceptualize little from the theme of Bhagavad Gita in human capital development. This paper discussion will provide the insight for more research in the relevance of Bhagavad Gita and human capital development.

REFERENCES

- Bontis, N. (1998). Intellectual Capital: An exploration study that develops measures and models Management Decision v36 n 2.
- Chaudhuri. A. (2003). *Theory "I" Management Leadership Success Multiplier Model*, Available at <http://www.arindamchaudhuri.com/theory.htm>
- Chuck Danes (Unknown), Available at <http://www.abundance-and-happiness.com/chuck-danes.html>
- Cunningham, I. (2002). Developing human and social capital in organisations. Industrial and Commercial Training v34n3
- Dharmaratnam, K. (1987). *Bhagavad-Gita in Action*, Nathan Publishing, Klang, Malaysia
- Dzinkowski R. (2000). The measurement and management of intellectual capital: An introduction Management Accounting v78 n3
- Fraser- Moleketi G. (2003). Investing in Human Capital in the Public Service: Recent Innovations in HRM Frameworks, Presented at the Fifth Global Forum, Mexico, 05/11/2003
- Fraser-Moleketi G. (2004). Public Service and Administration Department Budget Vote, 2004/2005, 21/06/2004
- Goddard, H. (2000). *A History of Christian-Muslim Relations*, Edinburgh University Press, p. 100, ISBN 074861009X
- Holbeche I. (1998). High flyers and succession planning in changing organisations.
- <http://www.systems-thinking.org/kmgmt/kmgmt.htm> Accessed 20 November 2006
- Knowledge Infusion. (2006). Trends in human capital management: the emerging talent management imperative.
- Knowledge Infusion. (2006). Trends in human capital management: the emerging talent management imperative. A knowledge Infusion white paper.
- Larsson, S. Seven Aspects of Democracy as Related to Study Circles. *International Journal of Lifelong Education* v20 n3 p199-217 May-Jun 2001.
- Levin, R.. (2005). The 2005 SMS Conference - Building Implementation Capacity for Sustainable Growth and Development.
- Levinson, M. (2006). ABCs of knowledge management. CIO.com accessed 18 January 2007
- Mahadevan, C.S. (2001). *The Glories of the Gita: Stories from the Padma Purana*, Sterling Publishers, New Delhi, India, p. 1
- Muniapan, B.. (2005). "The Philosophy of Bhagavad Gita and its Relevance to Human Resource Development in the 21st Century", International Conference on Cultural and Religious Mosaic of South and Southeast Asia: Conflict and Consensus through the Ages, 1st South and Southeast Asian Association of Study of Religion (SSEASR) Conference under UNESCO, New Delhi, India, 27-30 January.
- Muniapan, B. (2006). "Can the Bhagavad-Gita be used as a Manual for Management Development of Indian Managers Worldwide?", 5th Asia Academy of Management Conference, "Asian Management: Convergence and Divergence", Tokyo, Japan, December 19-21, 2006.
- Namasivayam, K. Denizci, B. (2006). Human capital in service organisations: identifying value drivers. *Journal of Intellectual Capital* v 7 n 3
- Prickett R. (1998). Firms complain of quality shortfall among students. People management 9 July cited in Graven T, Morley M, Gunnigle P, Collins E. (2001). Human capital accumulation: the role of human resource development. *Journal of European industrial training* v25 p 48-68
- Roffey Park Management Institute cited in Graven T, Morley M, Gunnigle P, Collins E. (2001). Human capital accumulation: the role of human resource development. *Journal of European industrial training* v25 p 48-68
- Rosen, J.S. (2002). *The Hidden Glory of India*, Bhaktivedanta Book Trust, Los Angeles
- Rostron SS. (2002). Accelerating Performance: Powerful techniques to develop people. Kogan Page Study Circles Resource Center.
- Teece DJ. (2000). Managing Intellectual Capital Oxford University Press. Oxford cited in Namasivayam K, Denizci B. (2006). Human capital in service organisations: identifying value drivers. *Journal of Intellectual Capital* v 7 n 3
- Subramaniam, K. (2001). *Mahabharata* (11th Eds), Bharatiya Vidya Bhavan, Mumbai
- Van Deventer, M. (2002). Introducing intellectual capital management in an information support services environment Doctoral Thesis. University of Pretoria.
- Bishwajeet, balkrishnan (2008). "The knowledge of self from Bhagavad Gita and its relevance in human capital development".
- Ardelt M. Wisdom as expert knowledge system: a critical review of a contemporary operationalization of an ancient concept. *Human Development*. 2004;47:257-285.
- Ashram Atmajyoti. 2007. http://www.atmajyoti.org/pdfs/gita_full.pdf.
- Assmann A. *Life-span development and behavior*. Lawrence Erlbaum; Hillsdale, NJ: 1994. Wholesome knowledge: Concepts of wisdom in a historical and cross-cultural perspective.
- Avary B. *India: The Ancient Past*. Routledge; London: 2007.
- Baltes PB. The intermarriage of wisdom and selective optimization with compensation: Two meta-heuristics guiding the conduct of life. In: Keyes C, Haidt J, editors. *Flourishing positive psychology and the life well lived*. APA; Washington, DC: 2003.

A STUDY ON WORK- LIFE BALANCE AMONG WOMEN TEACHERS WORKING IN SELF-FINANCING ENGINEERING INSTITUTIONS

S.PATTU MEENAKSHI

RESEARCH SCHOLAR

DEPARTMENT OF MANAGEMENT STUDIES

MADURAI KAMARAJ UNIVERSITY

MADURAI

DR. K. RAVICHANDRAN

PROFESSOR

DEPARTMENT OF MANAGEMENT STUDIES

SCHOOL OF BUSINESS

MADURAI KAMARAJ UNIVERSITY

MADURAI

ABSTRACT

The expression work-life balance (WLB) was first used in the middle of 1970s to describe the balance between an individual's work and personal life. Over 30 years ago, Kanter (1977) opined about the myth of spate worlds and called attention to the reality that work and home are inescapably linked. In the past 15 years, there has been increasing interest in WLB in the popular press and in scholarly journals as well as government, management and employee representatives (Russell and Bowman, 2000). The importance of WLB was now focused by many organizations and hence this topic was chosen for the study. According to Heery and Noon (2008), "WLB is the principle that paid employment should be integrated with domestic life and community involvement in the interests of personal and social well-being." Teacher's role in student's development is an essential part which assists in creating a prosperous future. In this study the women teachers working in self-financing engineering institutions are taken as samples. Their role in work and family, factors hindering them to achieve WLB, impact of poor WLB etc., were considered as objectives of this study. Primary data was the main source of data collected to undergo depth knowledge about the topic and to fulfill the objectives. The study have thrown light on the problems faced by women teachers in achieving WLB and accordingly suitable suggestion were provided by the researcher which would benefit both individual and the organization.

KEYWORDS

Work-life balance, women, teachers, organization, fulfillment, development.

INTRODUCTION

Life is like riding a bicycle. To keep your balance you must keep moving"

- Albert Einstein

The expression work-life balance (WLB) was first used in the middle of 1970s to describe the balance between an individual's work and personal life. Over 30 years ago, Kanter (1977) opined about the myth of spate worlds and called attention to the reality that work and home are inescapably linked. In the past 15 years, there has been increasing interest in WLB in the popular press and in scholarly journals as well as government, management and employee representatives (Russell and Bowman, 2000). This increase in interest is in part driven by concerns that unbalanced outcomes for relationships can result in reduced health and low performance outcomes for individuals, families and organizations.

Dealing about women and WLB, there is a general saying that the rate of attaining WLB is lower in case of women than men. This may be said because of the role played by women in family is higher than men. Especially while considering the women entrepreneurs they are accountable for both family and business. Their role expands in accordance with their business advancement. Women's participation in children growth is higher than men. How come women manage their work and family life? According to Heery and Noon (2008), "WLB is the principle that paid employment should be integrated with domestic life and community involvement in the interests of personal and social well-being." In the words of Morgenstern (2008),

When employees work on achieving WLB it may ultimately result in organizational betterment. Hence every organization all over the world is focusing on assisting their employees in attaining work-life balance. Many organizations have begun to formulate WLB policies in their concern such as flexi-time, ease of taking casual leave, crèche in offices etc.. When a person achieves higher in his/her professional life and scores less in personal life, it may be due to poor WLB.

THE INDIAN PICTURE

The career-minded youngsters and India's booming economy once had people terming work-life balance as a 'Western' problem. But these same youngsters are now struggling with the inevitable effects of all work and no play. On the one hand, the drive is to keep up with the workload, to climb that corporate ladder and prove them. On the other, fatigue, milestones missed and lack of time with friends and family. For the 'We want it all' generation, this delicate see-saw to reduce stress and maintain harmony is an ongoing challenge.

However it is not easy to find many references to Work-Life Balance policies and issues in India. This is not to discount their existence in the country, but it does indicate its relative unimportance as a strategic business issue in the country. It is indeed hurting to see a majority of Indian companies still wedded to the old style presenters philosophy instead of offering managers opportunities to strike a healthy Work-Life Balance.

Thus, In India the IT Industry is probably the first mover in terms of introducing Work-Life Balance policies. There have been pioneers in the country like NIIT, a premier IT Training organization, which several years ago introduced innovative allowances for employees who were dating, got engaged and so on. It made the news time and again because of what these policies did to recruit promising talent and ensure a motivated workforce. Work-Life Balance policies seem to be targeted at potential recruits rather than a tool to further the entry and progress of women into the workplace as elsewhere in the world. (For example, Indian talented young women have often ended up quitting their job after marriage and children because of social constraints.)

In India, there is a starting point in that organizations have recognized the need for and value of Work-Life Balance policies. But the debate has to now move into implementation and the Government could play a critical role in being a catalyst of change. An advantage that Indian industry will however have is learning's from the experiences of other countries in what has worked and what has not. There's no 'one size that fits all' and Indian companies will have to adapt policies to fit in with not just the nature of industry, profile of workforce and other such factors but also with the local culture and environment.

Initiatives to promote work/ life balance for employees include free membership to children of all IBMers to the Genie Kids Resource center throughout the year. The Resource Center houses a library, activity based games, pottery classes, computer classes etc. IBM employees can also attend Parenting Workshops at

the Resource Center, covering topics like "Developing Child's Intelligence", "Communicating towards better parenting", "Developing parent child relationships", at discounted rates throughout the year.

Accenture has also incorporated family events into its employee calendars, with social gatherings or outings where the whole family comes together. Mandatory number of holidays, discounted gym and saloon memberships and even in-house work-life effectiveness managers and career counselors are all attempts by Accenture to counter stress and maintain the work life balance. Accenture currently has 30,000 employees in India as of May 2007.

WORK-LIFE BALANCE OF TEACHERS

Teaching is a profession that one could spend virtually hours upon hours working at every day, all day long – 365 days a year and still never be truly finished off. New teachers soon realize that there is always something that needs to be done: Students need enrichment, others need remedial assistance, the bulletin board needs to be changed, math sheets need to be copied, the yearbook pages need to be proofed...and this is just the beginning. For new teachers especially this seemingly endless list is daunting and doesn't even address the workload at home. It can be very stressful and intimidating, particularly at the beginning of the year.

But it's generally understood that the experienced teachers are better in managing time than the new teachers. College teachers have different kind of job description than the school teachers. The work under taken by the college teachers are different from the school teachers. The teachers who work in the same field of profession gains more experience in managing time, solving problems, finishing the syllabus in easier way etc., but the new teachers find the problem in these things.

Teacher's role in student's development is an essential part which assists in creating a prosperous future. In this study the women teachers working in self-financing engineering institutions are taken as samples. Their role in work and family, factors hindering them to achieve WLB, impact of work on WLB etc., were examined and accordingly suggestions are provided.

REVIEWS

It is of great to note that although the term 'work-family balance' has been widely adopted, yet a formal definition of this term has remained elusive. It is also acknowledged that there is a recent shift in terminology used to refer to this phenomenon, with many organizations using the term 'WLB' so as to include employees who are not parents, but who desire balance for non-work activities such as sports, study, and travel (Kalliath and Brough, 2008). "Work-family balance' reflects an individual's orientation across different life roles, an inter role phenomenon' (Greenhaus et al., 2003).

To sum it all, Kalliath and Brough (2008) have put forward their own definition of WLB and defined it: "WLB is the individual perception that work and non-work activities are compatible and promote growth in accordance with an individual's current life priorities."

We all play many roles: employee, boss, subordinate, spouse, parent, child, sibling, friend and community member. Each of these roles imposes demands on us that require time, energy and commitment to fulfill. Work-family or work-life conflict occurs when the cumulative demands of these many work and non-work life roles are incompatible in some respect so that participation in one role is made more difficult by participation in the other role. (Duxbury & Higgins, Oct 2001)

Jo Edwards, Tate's Managing Director says, "Where, in most cases, salaries have remained steady throughout the year, we have seen an increase in businesses reviewing benefits schemes to retain their staff and paying particular attention to the importance of family friendly practices." Whilst there is often a cost attached for businesses that endorse a work-life balance, there are many more beneficial advantages such as increased productivity and reduced absences.

Ronald Burke (2010) had done a study to examine the relationship of managerial and professional men's perception of organizational values supporting work-personal life balance in their workplace and their work experiences, indicators of work and life satisfaction and psychological wellbeing. His findings shows that the managerial men reporting organizational values more supportive of work-personal life balance also report working fewer hours and extra hours, less job stress, greater joy in work, lower intentions to quit, greater job career and life satisfaction, fewer psychosomatic symptoms and more positive emotional and physical wellbeing.

The part-time managers in this sample held varied careers while working full-time but careers stalled once a transition to part-time work was made. The majority were career focused, worked intensively and felt frustrated with their lack of mobility and career progression while working part-time. The majority worked in excess of their contracted hours and did not experience an appropriate reallocation of work when they reduced hours. (Jennifer Tomlinson & Susan Durbin, 2010)

A study was conducted by Wendy C. Marcinkus, Karen S. Whelan-Berry, Judith R. Gordon (2007) to examine the relationship of a network of social support for midlife women with their attitudes toward work-family balance and work outcomes, including job satisfaction, organizational commitment, and career accomplishment. Results indicate that the women generally received more personal social support than work-based social support and more instrumental than expressive support from all sources. Work-based social support was positively associated with job satisfaction, organizational commitment, and career accomplishment; personal social support was also associated with job satisfaction and organizational commitment. Work-family balance may partially mediate the relationship between social support and work outcomes.

Elizabeth A. Smith (2008) in his article about importance of work-life balance says that the flexible working helps to keep the staff motivated. The policy has also enhanced the company's reputation with both clients and employees. The author contends that workplace flexibility has helped to improve overall employee flexibility and empowerment. The review of literature reveals that there are only limited reviews on wlb of teachers. Hence this study focuses on giving new ideas on work-life balance which would act as a guide for further studies.

STATEMENT OF THE PROBLEM

Today's career women are continually challenged by the demands of full-time work and when the day is done at the office, they carry more of the responsibilities and commitments to home. The majority of women are working 40-45 hours per week and 53% are struggling to achieve work/life balance. Women reported that their lives were a juggling act that included multiple responsibilities at work, heavy meeting schedules, business trips, on top of managing the daily routine responsibilities of life and home. Balancing both the personal and professional life is considered to be a serious problem of today's busy people especially women. Hence to analyze this problem and to find better solution, this particular study was undertaken.

OBJECTIVES FRAMED FOR THE STUDY ARE

1. To identify the factors affecting work-life balance among women teachers working in Self-financing Engineering Institutions in Madurai District.
2. To analyze the effects of poor work-life balance among women.
3. To provide various ways and means to assist women in achieving better work-life balance this would benefit both the individual and the organization.

RESEARCH METHODOLOGY

Descriptive research design is adopted in this study as the problem is well known and the study focuses on procurement of in depth knowledge. Sampling method used in this study is Convenience sampling which belongs under Non-Probability sampling method as the samples are chosen in accordance with the convenience of the researcher. Samples chosen for the study were the women teachers working in Self-Financing Engineering Institutions in Madurai District, Tamilnadu, India. Seven engineering colleges were covered in this study. The sample size selected for this study is 150. The primary data was collected through a structured questionnaire containing around 30 questions. The data collected were tabulated and analyzed using Percentage analysis, Weighted Average analysis and Chi-Square analysis.

HYPOTHESIS

The following hypotheses were determined in this study which is then tested using Chi – Square analysis.

- i. There is no significant relationship between age and work – life balance.
- ii. There is no significant relationship between marital status and work – life balance.
- iii. There is no significant relationship between experience and work – life balance.

ANALYSIS

The above determined hypotheses were analyzed using chi-square analysis which was described below:

COMPARISON OF AGE AND WORK – LIFE BALANCE**HYPOTHESIS**

H_0 = There is no significant relationship between age and work – life balance.

H_1 = There is a significant relationship between age and work – life balance.

TABLE 1

		Age			
		Less than 30 yrs	31 to 40 yrs	Above 40 yrs	Total
Work – life	Yes	45	32	37	114
	No	19	13	4	36
	Total	64	45	41	150

Source: primary data

O	E	O-E	(O-E) ²	(O-E) ² / E
45	48.64	-3.64	13.2496	0.272
32	34.2	-2.2	4.84	0.142
37	31.16	5.84	34.1056	1.095
19	15.36	3.64	13.2496	0.863
13	10.8	2.2	4.84	0.448
4	9.84	-5.84	34.1056	3.466
Total		0		6.286

The table value of χ^2 for 2 degree of freedom at 5 per cent level of significance is 5.99. In the above table the calculated value is 6.286 which is greater than the table value. Thus the null hypothesis H_0 is rejected in this case and the alternative hypothesis H_1 is accepted which states that there is a significant relationship between age and work – life balance.

COMPARISON OF MARITAL STATUS AND WORK – LIFE BALANCE**HYPOTHESIS**

H_0 = There is no significant relationship between marital status and work – life balance.

H_1 = There is a significant relationship between marital status and work – life balance.

TABLE 2

		Marital status		
		Married	Unmarried	Total
Work – life balance	Yes	55	49	114
	No	35	11	36
	Total	90	60	150

Source: primary data

O	E	O-E	(O-E) ²	(O-E) ² / E
55	68.4	-13.4	179.56	2.63
49	45.6	3.4	11.56	0.25
35	21.6	13.4	179.56	8.31
11	14.4	-3.4	11.56	0.80
Total		0		11.99

The table value of χ^2 for 1 degree of freedom at 5 per cent level of significance is 3.84. In the above table the calculated value is 11.99 which is greater than the table value and thus the null hypothesis H_0 is rejected in this case and the alternative hypothesis H_1 is accepted which states that there is a significant relationship between marital status and work – life balance.

COMPARISON OF EXPERIENCE AND WORK – LIFE BALANCE**HYPOTHESIS**

H_0 = There is no significant relationship between experience and work – life balance.

H_1 = There is a significant relationship between experience and work – life balance.

TABLE 3

Experience

Work – life balance	Attributes	0-2 yrs	3-5 yrs	6-10 yrs	11-20 yrs	Above 20 yrs	Total
	Yes	30	19	24	28	13	114
	No	17	8	9	2	0	36
	Total	47	27	33	30	13	150

Source: primary data

O	E	O-E	(O-E) ²	(O-E) ² / E
30	35.72	-5.72	32.7184	0.916
19	20.52	-1.52	2.3104	0.113
24	25.08	-1.08	1.1664	0.047
28	22.8	5.2	27.04	1.186
12	9.88	2.12	4.4944	0.455
17	11.28	5.72	32.7184	2.901
8	6.48	1.52	2.3104	0.357
9	7.92	1.08	1.1664	0.147
2	7.2	-5.2	27.04	3.76
1	3.12	-2.12	4.4944	1.440
Total		0		11.322

The table value of χ^2 for 4 degree of freedom at 5 per cent level of significance is 9.49. In the above table the calculated value is 11.322 which is greater than the table value and so the null hypothesis H_0 is rejected in this case and the alternative hypothesis H_1 is accepted which states that there is a significant relationship between experience and work – life balance.

IMPACT OF WORK ON WORK – LIFE BALANCE**TABLE 4**

Factors	Spending time with friends		Get home on time		Do any study or training		Take care of personal business		Keep healthy and other leisure activities		Take part in community activities		Take care of family and spend time with them	
	Nr	Tv	Nr	Tv	Nr	Tv	Nr	Tv	Nr	Tv	Nr	Tv	Nr	Tv
Often	0	0	11	55	0	0	0	0	10	50	0	0	13	65
Rarely	82	328	52	208	8	32	0	0	39	156	24	96	51	204
Don't know	0	0	18	54	9	27	0	0	11	33	0	0	0	0
Sometimes	48	96	37	74	61	122	36	72	54	108	76	152	69	138
Never	20	20	32	32	72	72	114	114	26	26	50	50	7	7
Weighted average = $\sum wx / \sum w$	29.6		28.2		16.9		12.4		24.9		19.9		27.6	

Source: primary data

It is found from the above table that spending time with friends is the major impact of work on work – life balance and taking care of personal business is the minor impact of work on work – life balance.

FACTORS MAKING WORK – LIFE BALANCE HARDER**TABLE 5**

Factors	Lot harder		A little harder		No difference		Doesn't apply		Weighted average = $\sum WX / \sum W$
	Nr	Tv	Nr	Tv	Nr	Tv	Nr	Tv	
Deadlines and schedules	73	292	47	141	21	42	9	9	48.4
Type of work you do	32	128	38	114	64	128	16	16	38.6
No. of hours you need to work	40	160	35	105	65	130	10	10	40.5
Expectations/attitude of supervisor or manager	54	216	26	78	70	40	0	0	43.4
Expectations/attitude of male colleagues	69	276	13	39	68	136	0	0	45.1
How easy/difficult it is to leave	20	80	22	66	68	136	20	20	30.2
Amount of notice you get about the hours/overtime you need to work	13	42	7	21	112	224	18	18	30.5
Having to take additional work at home	68	272	50	150	32	64	10	10	49.6
Amount of travel required	14	56	12	36	61	122	63	63	27.7
Times meeting/training are scheduled	33	132	47	141	70	140	0	0	41.3
Starting and finishing time of work	60	240	30	90	37	74	23	23	42.7

Source: primary data

It is found from the above table that having to take additional work at home is the major factor which makes work – life balance harder and amount of travel required is the minor factor which makes work – life balance harder.

FINDINGS

The main findings of the study are:

1. It's found that the respondents have no problem with the working time but they are seemed to worry about work while they are out of their office.

2. While questioned about their ability on work-life balance they opined that they are able to balance it. Even though they face many stress related problems raised out of work. It was founded that they sometimes missed out quality time with their family or friend because of the work pressure and they sometimes feel tired or depressed because of work. Entertainment is the major remedy used by many of the respondents to overcome work pressure. One thing which noted mainly was they do not suffer from any serious health problems due to stress.
3. Flexi-time is highly recommended by the respondents. But in India it may be a little difficult to adopt this policy in educational organizations in spite of it the pros and cons of it can be analyzed.
4. Regarding the working atmosphere, the negative attitude of peers and colleagues at work place was found to hinder work – life balance.

SUGGESTIONS

RECOMMENDATIONS TO THE EMPLOYER

The following framework can be used for successful Work-Life Balance in organizations.

1. Identify the key need or reason for introducing Work-Life Balance policies.
2. Build the commitment to Work-Life Balance Policies into the organization's vision or value statement.
3. Set up a Work-Life Balance Task Force and Examine current practices in the organization.
4. Hold joint discussions with employees to evolve policies, while also identifying possible barriers.
5. Communicate policies through handbooks, newsletters, Intranet and other forms of communication.
6. Motivation, Appreciation of work, Authority and Responsibility etc., can be used to assist in enhancing better work-life balance.

RECOMMENDATIONS TO THE EMPLOYEE

The following framework can be used by the employee for successful Work-Life Balance.

1. It is important for everyone to have a hobby or some activity that he/she can pursue, as a stress buster or just for fun. It can act as a major stress reliever and can go a long way in improving the Work life balance of employees.
2. Effective Time and Stress Management
3. Individual's incapability of managing his time that results in an unhealthy work-life balance. If the employees can work on their time management skills, they would definitely be able to improve their work-life balance.
4. Budgeting time both in and out of the office – schedule time for both you and your family.
5. Control interruptions and distractions - Stay focused and budget your time effectively. Try to schedule a block of time during the day without meetings when you can focus on your tasks with minimal interruptions.
6. Explore the availability of flexi-time - Research flexi-time options within your organization. If available, it may be a helpful solution.
7. Seize the weekend - Plan your time off as you plan your work week.
8. Schedule activities with family and friends, a weekend trip, or just something related to fun. Make your time away from work count.

CONCLUSION

This study reveals that the women teachers know the importance of WLB and they try to reach it. Women teachers have now started to work on scheduling their daily activities thereby have better time management. The organizations may avoid bombarding heavy work load to the employees. Caring the work tension to home and vice versa leads to chaos. That's why it's said that while you reach home leave your thoughts about work at home door steps. Working women needs to be concentrated on WLB, which facilitates their improvements and achievements. This study doest meant to say that women teachers of today have attained work-life balance but it reveals the truth that women teachers are trying hard to attain that balance. They are in process of finding ways and means to have a feeling of satisfaction that both work and family commitments are being attained equally. In our increasingly hectic world, the work-life strategy seeks to find a balance between work and play. A sentence that brings the idea of work life balance to the point is: **"Work to live. Don't live to work."**

REFERENCES

PERIODICALS

1. Elizabeth A. Smith., (2008), "Happy employees have a good work-life balance: Staff trusted to balance personal needs with employment responsibilities" Human Resource Management International Digest, Vol. 16, No. 6, pp. 27-28.
2. Jennifer Tomlinson, Susan Durbin, (2010), "Female part-time managers: Work-life balance, aspirations and career mobility" Equality, Diversity and Inclusion: An International Journal, Vol. 29, No. 3, pp. 255-270.
3. Ronald J. Burke., (2001), "Organizational values, work experiences and satisfactions among managerial and professional women" Journal of Management Development, Vol. 20, No. 4, pp. 346-354.
4. Wendy C. Marcinkus, Karen S. Whelan-Berry and Judith R. Gordon. (2007), "The relationship of social support to the work-family balance and work outcomes of midlife women", Women in Management Review, Vol. 22, No. 2, pp. 86-111.
5. Linda Duxbury and Chris Higgins., (2001), "Where Are We? Where Do We Need to Go?" CPRN Discussion Paper No. W|12.

WEBSITES

6. http://www.e-pao.net/epSubPageExtractor.asp?src=leisure.Essays.Work_Life_Balance
7. http://www.esrcsocietytoday.ac.uk/ESRCInfoCentre/PO/releases/2006/january/worklife_balance.aspx

THE EFFECT OF TEAM PROCESS AND KEY COMPENSATION FACTORS WHILE MOTIVATING HIGH PERFORMANCE IN PHARMACEUTICAL SALES TEAMS

DR. SURENDRA KUMAR
ASSOCIATE PROFESSOR

BABU BANARASI DAS NATIONAL INSTITUTE OF TECHNOLOGY & MANAGEMENT
BBD UNIVERSITY
LUCKNOW

ABSTRACT

Motivating high performance in pharmaceutical sales teams is a growing issue in the pharmaceutical industry. The challenges facing the pharmaceutical industry in motivating sales teams are compounded by a variety of factors that many other industries do not face including: government regulation of sales practices, non-direct tracking of sales results, and the impact of managed care on sales performance. By impacting a few key team process and compensation elements pharmaceutical companies can have a significant impact on team performance. This paper explores the background of sales teams in the pharmaceutical industry, research on team motivation and compensation factors, findings from four pharmaceutical representative interviews and details a few of key team performance factors and how they can impact team performance.

KEYWORDS

Performance, Pharmaceutical Industry, Motivation, Compensation, Team.

INTRODUCTION

Motivating sales force representatives to perform at a high level of performance is a challenge that all companies in all industries have. The pharmaceutical industry is no different in this aspect. In fact, the challenges facing the pharmaceutical industry are compounded by a variety of factors that many other industries do not face including: government regulation of sales practices, non-direct tracking of sales results, and the impact of managed care on sales performance. In addition, over the last five years many of the leading pharmaceutical companies have moved towards a team based sales structure (Best Practices, 2002). This creates a new motivational situation for pharmaceutical companies: how does an organization design systems and processes to motivate a pharmaceutical sales force team to achieve its peak potential?

PHARMACEUTICAL INDUSTRY OVERVIEW

The pharmaceutical industry is changing fast. Research done by Indian Marketing Research Bureau (2010) shows that since 1997 the pharmaceutical industry in India has grown from a sales force of just over 52,000 sales representatives to a sales force of over 74,000 sales representatives. This represents a total growth of 51%. IMRB (2010) also found that while the overall number of sales representatives has increased, the calls per representative have decreased, from an average of 808 calls per representative a year in 1996 to 529 calls per representative a year in 2002. Of those 529 calls, only 20 percent result in face to face interaction with the physician and this face to face interaction lasts on average only 2 minutes (Indian Marketing Research Bureau, 2010). Much of this has to do with the 1996 Employee State Insurance Act's (ESIC) rules and regulations as they pertain to safeguarding patient information which limits sales representative's access to doctors (Centers for Medicare and Medicaid Services, 2002). Additionally a majority of pharmaceutical sales representatives have moved from a single product portfolio to a multi-product portfolio with the average portfolio size growing to 3 products in 2002 (Best Practices, 2002).

In response to these facts, many pharmaceutical organizations have moved to a team sales approach selling model. This team concept is referred to as a "mirrored sales" force approach and has been partially adopted in at least 10 of the top 12 pharmaceutical companies in the U.S. and is growing in acceptance and implementation worldwide (Best practices, 2002). A "mirrored sales" force offers pharmaceutical companies the opportunity to increase the call frequency and differentiate product messaging that physicians receive by pharmaceutical representatives.

Sales processes and compensation aimed at improving sales performance have been seen as the key to increased productivity and performance throughout the industry. However, the reality is that most pharmaceutical companies have not refined their compensation strategies nor have they developed team processes to accommodate this new team structure (Best Practices, 2002). This has led to many of the "mirrored sales" forces not achieving the desired performance results that had been expected of them by management. Indeed, one mirrored force sales representative put it this way, "They thought that by teaming us up we'd produce more, but they just threw us together in this team with no training and no incentive to work together - and we were expected to work out all the kinks ourselves" (personal communication, rep 1, December 9, 2010). To maintain competitiveness, pharmaceutical companies will need to adapt their processes and motivational techniques in response to this changed work environment.

TEAM MOTIVATION AND PERFORMANCE THEORIES

Research on workplace performance and motivation has been going on since the early work of Elton Mayo at the Western Electric Hawthorne Plant in the late 1920's and early 1930's (Franken, 2002). This research jump started research into worker's motivation and performance that has continued throughout the last 70 plus years. In the 1930's and 1940's Skinner's (cited in Stajkovic & Luthans, 2010) operant conditioning looked at motivation and performance from a behavioral perspective while in the 1940's and 1950's Maslow presented and expanded on his "hierarchy of needs" outlining human motivation as a stepped process that began with the motivation for safety, shelter and food and worked up through self-actualization (the desire to reach one's full potential) (Shermerhorn, Hunt and Osborn, 2010). Both performance and motivation theory has progressed and grown from all of these histories. Recent work has focused on intrinsic versus extrinsic goals, goal congruency, situational motivation, expectancy-value, goal setting, and self-efficacy (Cameron & Pierce, 1994; Bandura, 1991; Stajovic & Luthans, 2001; Franken, 2002; Schermerhorn, Hunt & Osborn, 2010).

Literature surrounding motivational theory for teams is less prevalent since most of the research has focused on individual motivational factors. While these individual factors can, to a degree, be generalized to a team, they do not represent the entire spectrum of influence that impacts a team's motivation.

Research suggests that team performance and motivation are influenced by team dynamics that include but are not limited to: team-efficacy beliefs, role ambiguity, social loafing, team cohesion, and goal congruency (Karau & Hart, 1998; Franken, 2002). Group-efficacy is defined as "a group's shared belief in its conjoint capabilities to organize and execute the course of action required to produce given levels of attainments" (Bandura cited in Seijts, Latham, & Rotman, 2000). Seijts et al. (2000) research indicates that the performance of the group is positively correlated to its group-efficacy beliefs. Thus a group that believes it will do well, usually does.

Role-ambiguity works in a similar manner in that individual team member motivation is decreased when role-ambiguity is high, and increases when role-clarity is present (Franken, 2002). Thus a team that has clearly defined and understood roles will outperform a team with ambiguous roles or misunderstood roles.

Research done by Latane, Williams and Harkins (cited in Messe, Hertel, Kerr, Lount, & Park, 2002) has shown that individuals frequently reduce their effort in a group setting as compared to when they work alone. This effect has been labeled "social loafing" and has been replicated in other studies. This is in contrast to research by Messe et al. (2002) that demonstrates the "Kohler effect" in which people tend to exert more energy and effort when in a team or group setting.

than when alone. Messe et al. (2002) attribute these contradictory findings to the type of tasks that the team had to perform as to either being conjunctive-tasks or additive-tasks.

Conjunctive-tasks are tasks in which the group can do no better than the poorest performing member of the team. Additive-tasks, in contrast, are tasks where the team's performance is the combination of each individual's input into a single output. The Kohler effect is more likely to occur in teams that are working on conjunctive-tasks (Messe et al., 2002). Social loafing occurs more often in teams that are performing additive-tasks where the individual's performance is part of the overall sum of the team performance. Social loafing has been found across most populations and tasks. In addition, social loafing occurs at higher levels when more people are added to a team where the extent of any one person's input cannot be as easily identified (Karau & Hart, 1998).

Research done by Karau and Hart (1998) indicates that group cohesiveness is a moderator on social loafing. Thus members of a high-cohesive group or team are less likely to engage in social loafing as opposed to members in low-cohesive groups when the individual's efforts are viewed as important to the overall group's performance. They also found that internal group competition decreased the cohesiveness of a group and thus had a positive correlation to social loafing.

Goal congruency is thought to be beneficial to performance with a slight correlation to team motivation. Differences in team member's goals often lead to conflicts within the team which has a negative effect on performance and on motivation (Dixon, Gassenheimer, & Barr, 2002). Team trust is a factor in motivation since it impacts how well teams work in conjunction with each other and to what degree they feel comfortable in delegating tasks that moderate team cohesion. Trust is defined in two elements of task trust and interpersonal trust. To be effective, teams need to build trust in both areas with task being the more important of the two for creating high-performance (Dixon et al., 2002).

COMPENSATION RESEARCH

There is a wide scope of research into compensation practices and subsequent performance. Much of this research has focused on incentive or performance based types of compensation. A study done by Mistretta and Muciscko (2010), for Deloitte and Touche, LLP, indicated that 56% of 130 companies surveyed felt that their sales compensation could be improved and that 79% of these companies had made six or more changes to their compensation plans in the last two years.

Compensation for sales representatives inside of the pharmaceutical industry typically is composed of three elements: base pay, incentive pay, and benefits (Best Practices, 2002). While the combination of all three is vital to successful motivation, all things being equal, incentive pay has the most variable impact on performance (Churchill, Ford, Hartley, & Walker, 1985). Typically inside of the pharmaceutical industry the percentage of incentive compensation is around 30% of base pay with high end achievers being able to achieve 100% plus of base pay as incentive compensation (i.e. more than double their salary) (Best Practices, 2002).

According to behavioral management theory, contingent rewards drive performance. In a meta-analysis of a variety of organizational studies, contingency (or incentive) pay has been shown to have a positive impact on performance on average of 23% (Stajkovic & Luthans, 2010). Behavioral management theory postulates that the unique motivational effect of this contingent pay is based on its (a) outcome utility, (b) informative content, and (c) regulatory mechanism.

Money's outcome utility is based on its exchange value for goods, services and privileges (Stajkovic & Luthans, 2001). While money itself has little or no outcome utility, it is its ability to be exchanged for something that someone wants that motivates. People are attracted to well paying jobs and perform extra activities that bring them more pay (Stajkovic & Luthans, 2001).

Deci, Ryan and Koestner (1999) point out that rewards (i.e. money) may have both positive and negative effects on motivation, with some aspects of rewards being perceived as controlling thus decreasing intrinsic motivation and some aspects being seen as providing evidence of competence and thus increasing intrinsic motivation. Money's informative content is dependent upon how it is received. If money is received in varying amounts that reflect performance then it is seen as more informative than if a set amount of money is given for completion of a task. Money can have an ordinal ranking of how one is performing that can give information regarding performance standards (Stajkovic & Luthans, 2001).

The theories imply that behavior can be positively influenced by external influencers and extrinsic rewards, however if the reward is seen as controlling, the long term effect on intrinsic motivation (thus, long term behavior change if the external stimuli is removed) can be negatively impacted to the detriment of long term performance sustainability and growth.

The regulatory mechanism of money is both instrumental and symbolic in form. Instrumentally money motivates because it can "provide outcomes that satisfy physiological or psychological needs" and symbolically money "generates social comparison information, which can indicate a person's standing regarding psychological aspirations" (Stajkovic & Luthans, 2001, p. 581). In other words, the regulatory aspect of money can give direction as to appropriate behavior, comparisons and ideals.

Stajkovic and Luthans (2010) suggest that rewards (i.e. incentive compensation) that account for all three aspects of outcome utility, informative content and regulatory mechanism will lead to higher overall performance.

Team compensation research has suggested that while all of the individual factors are relevant, team compensation has more intricacies that impact its overall effectiveness as compared to individual compensation (Zobal, 1999). Compensation goals need to be aligned so that individuals are rewarded for cooperation and joint achievement. Research by Hom and Berger (1994) contends that cooperative rewards aid in building intrinsic motivation in individuals. Work done by Locke, Durham, and Knight (2001) indicate that team incentives influence how people work together to choose and implement tactics. This suggests that team compensation goals need to be carefully chosen since they affect how teams work together and not just how individuals work.

Many studies that have demonstrated the efficacy of group compensation goals (e.g. Locke, Durham, & Knight, 2001; Campion, Medsker and Higgs, 1993). In one example, the cycle times of departments using group rewards were an average of 2.7 times faster than departments using individual rewards (Majchrzak and Wang, 1996). According to the researchers, employees that were rewarded for reducing process times at their individual workstations were not as motivated to examine ways to reduce overall cycle time as those motivated through group rewards.

Disadvantages of focusing on the individual compensation in a team environment include the fostering of competition and a reduction in information sharing between team members. It can also prove extremely challenging to divide out an individual's contribution within a team environment (Zobal, 1999). This could lead to difficulty in gaining accurate measurement of individual effort and might result in inaccurate assessments that could de-motivate team members.

SALES REPRESENTATIVE INTERVIEW FINDINGS

Interviews conducted with four pharmaceutical sales representatives offer a unique view at how they perceive their team environment and the contributing factors of its successes and challenges. These four representatives were from a major pharmaceutical organization that had implemented a mirrored sales force structure in the past year. The individual's represented four distinct teams and did not have interaction with each other. The size of each of these teams were three reps each. These particular representatives were chosen because of their inclusion in another research program where these questions could be added into the already scheduled interview. All of the interviews were conducted in November and December of 2010. The protocol consisted of six main questions with a series of probes (see appendix) that focused on how effective they felt their team was, what factors went into being effective, how they felt about the team process and team members, what could be improved on their team, how the optimal team should be set up and how the team should be measured and rewarded.

Particularly interesting insights from these interviews was the perceived need for the team to be able to effectively communicate and share information, desire to have each team member be able to perform their role effectively (team-efficacy), the understanding of the importance of team training, team goals and procedures and the need for a team-based incentive system. One interesting finding was that role-ambiguity did not seem to be an issue with these representatives. They all felt very comfortable with understanding their own role and the role of their teammates. This probably has to do with the nature of their position and the clarity of the job requirements.

Communication between team members was deemed to be vital to the team's success. One rep stated, "I can't move the ball unless I know what they [other team members] did on the last call..." (personal communication, rep 1, December 9, 2010). Another rep stated that "I need to work with my partners on an

ongoing basis so that we are constantly in the know as to what we have done, what the physicians said, and any information that might be relevant to the next call – regardless of who does it" (personal communication, rep 2, November 24, 2010). The importance of this ongoing communication involved three specific activities: (a) updating call notes in the companies computer system (i.e. this is an electronic database that each rep can access and gives information regarding physician interaction, prescription patterns, and a variety of other sales tools), (b) updating each other via phone mail or cell phone on a daily basis, and (c) weekly or bi-weekly face-to-face meetings typically held over breakfast. While the first two are standard operating procedures at this company, the third element, face-to-face meetings, is new and three of the four representatives were doing it. This simple procedure they claim has been an effective tool in creating a sense of one team and developing team objectives and goals, sampling strategies, sales routing, and physician messaging.

Another key component that was highlighted was the need to feel like the other team members were contributing and could effectively do their job. This aligns with the team-efficacy theory of Bandura (cited in Seijts et al., 2000). As rep 2 (personal communication, November 24, 2010) put it, "It's good to know that my partners are good at what they do and that we all get the job done." Rep 3 (personal communication, December 8, 2010) put it this way, "I need to know that my teammates are pulling their weight. If I thought I was the one doing all the work it would seem unfair. I'd probably be looking for a new job right away." This feeling was expressed by all four reps that were interviewed. The interesting element was they all felt that their team members were effective and that as a team they were effective. A quote from Rep 4 (personal communication, December 9, 2010) sums it up nicely, "Just like on a sports team, everyone has to be good at their job or the team suffers. One person can bring down everybody."

In regards to team-training the four interviewees felt that more should have been done up front in order to ease the transition. For instance they mentioned that there was no training as to how they should operate together particularly in regards to routing and sampling. Rep 2 (personal communication, November 24, 2010) said this about training, "We are all type A players and it's hard to get anything done. We've been able to work through that but it would have been nice to have some help with it up front." Elements of team training that the representatives indicated were important included: team building skills and processes, specific team processes and procedures (i.e. team charter or protocol), and personality training.

Team goals and processes were thought to be an important contributor to overall team effectiveness. The reps that held face-to-face meetings felt that these were great opportunities to determine team goals and processes. One rep stated, "We put together a 'process agreement' that we all signed that outlined how we work together, what our routing strategy was, how we communicate, and how we want to handle difficulties" (personal communication, rep 3, December 8, 2010). Group goals that the reps thought were important focused around sales growth, physician messaging strategies, call routing, and sampling practices.

Finally in regards to compensation the key element was to ensure that the team was compensated fairly and as a team. The structure currently has a base salary with benefits and an incentive portion. The incentive portion is comprised of two main areas: quantitative and qualitative. The overriding opinion of the interviewees was that the qualitative aspect did not help the team, even though it was supposedly geared toward compensating qualities such as teamwork, quality, and customer focus. Since the qualitative portion of the incentive compensation was determined by the manager, these representatives felt that it was subjective and did not correlate to actual performance. The quantitative portion of the incentive compensation plan was seen as more fair and one that promoted teamwork. In essence, the quantitative portion paid the individuals on how well their teams territory performed (the measure was share growth of products). Rep 4 (personal communication, December 9, 2010) stated, "I think our IC (incentive compensation) helps us work as a team. We all know that we have to grow share and that's what we focus on." Rep 1 (personal communication, December 9, 2010) stated "The comp plan makes it so we have to work as a team, we don't get paid on what we do individually."

Two of the interviewees stated that they felt their incentive compensation was a way to "gauge" their performance and used it as a way of motivating themselves to improve their efforts. All four of them stated that the reward aspect (typically a trip) for the top achievers was very motivational. Rep 2 (personal communication, November 24, 2010) stated, "My wife asks me every year after we get our plan where we are going [on the compensation trip]. I feel like I have to win it or else..."

Some reps brought up the fact that the pay plan could allow for "social loafing" or the fact that a team member could "ride coattails" and still be rewarded the same as the members who worked hard. They saw the potential for this, but didn't feel that it would be an issue on their team because as rep 1 (personal communication, December 9, 2010) said, "I'd never allow that to happen. That's what the face-to-face meetings are for – to make sure everyone is on board and working."

KEY ELEMENTS OF TEAM PROCESS AND COMPENSATION

The research and interviews suggest that there are specific key team process elements that pharmaceutical companies can implement to help create a highly effective sale's team. These elements are focused on: (a) communication processes, (b) team-training, (c) team-goal setting, and (d) a team compensation structure.

Communication processes should be built into any pharmaceutical team sales structure. Communication is essential to a pharmaceutical sales team. While their work is additive in nature it also has elements of conjoint processes with one rep building off of another reps sales call (e.g. a physician needs clinical data before supporting a drug therapy that the next rep needs to bring on his or her next call) (Messe et al., 2002). This dependency requires a high level of coordination and sharing of information that can only be accomplished through an effective communication process. At minimum a pharmaceutical company should have the following team systems and procedures in place in order to maximize team efficiency: (a) call notes sharing software and database where reps can instantly update call notes on a doctor that can be viewed by anyone on the team instantly, (b) call protocol for team (i.e. daily voice mail messages for routine updates, cell phone call for urgent matters, group call for sharing pertinent information and (c) mandatory face-to-face meetings with scheduled topics and agenda's.

Team training should be conducted with all mirror teams. Best done at the formation of the new team, this training would be useful throughout the life of the team. This training should be facilitated and designed to achieve the following: (a) understanding team decision making processes and setting up standard operating procedures (i.e. routing schedule, sampling procedures, etc...), (b) discovering team member's personality styles that can be beneficial in working together as a team, and (c) increasing team efficacy beliefs. This team training can help the team overcome communication, decision making, goal planning and other challenges in the long run.

Team goals are another component that can help create a high performing sales team. These goals should have a stretch element to them that is perceived to be attainable by the team members. The attainability aspect helps not only in increasing motivation, but also in helping build belief in the team's efficacy. Team goals can be management mandated or self-selected by the team as long as they are stretch goals and the reps "buy-in" to them.

Compensation plans should be reflective of the team nature of the sales process. While qualitative measures are often designed to foster teamwork from a motivational standpoint, the representatives from this survey felt that qualitative was too arbitrary and dependent upon a manager's whim. Therefore, it is recommended that most of the incentive compensation for a sales team be structured around the quantitative aspect of sales revenue that is team or territory based. Any incentive compensation structure should take into account the motivational aspect of the plan's outcome utility, informative content, and regulatory mechanism (Stajkovic & Luthans, 2001).

The outcome utility for a sales team will be determined by how well the team performs, but the possible income generated by achieving the quotas should be equivalent with similar pay plans in the industry. Additionally, the pay period for the incentive portion of the compensation plan should be as short as possible. While sales data issues in the pharmaceutical industry make weekly and even monthly payouts difficult, the shorter the timeframe the more utility the compensation has.

The informative content of the pay system should have teams understanding where they fall in relationship to other teams as well as against their quotas or targets. This informational aspect of their pay should help them stay motivated throughout the year.

Finally the regulatory mechanism of the sales plan suggests that the incentive compensation plan should include symbolic awards and recognition aspects (Stajovic & Luthans, 2001). Part of this is motivational and part of it is social comparison for those teams that do not achieve this award.

While there are many things that can be included in the compensation plan, there are definite elements that should be excluded. The compensation plan should not have an individual component to it. This impacts how the qualitative parameters should be designed and implemented. By introducing an individual element

pharmaceutical companies could potentially disrupt teamwork, reduce overall communication and limit team's goal planning effectiveness. Additionally, while capped incentive programs (i.e. no matter how much you sell, the top amount you can make is X) offer a company a safeguard in how much they pay out, it also limits the utility value and motivational effectiveness of the sales plan.

CONCLUSION

Mirrored sales forces are growing in numbers and importance in the pharmaceutical industry. This growth requires that pharmaceutical companies take steps to increase the effectiveness of these teams. The impact that these teams can have is vital given the downward trend in face time with physicians and the increasing complexity of laws regulating sales practices. By creating systems that enhance team motivation, pharmaceutical companies can positively impact team performance and their own bottom line. Some of main factors that pharmaceutical companies can impact include improving communication processes, developing and implementing team training, creating group or team goals, and developing a team based incentive compensation plan.

The findings in this paper have many limitations. The most glaring is that the representative interviews are so few in number that their insights cannot be considered reliable when generalized to the larger pharmaceutical sales population. The pharmaceutical industries unique qualities may moderate some of the research findings (i.e. the lack of role-ambiguity in the sales force). There are a number of other aspects that were not covered in this paper that would have an impact on mirrored sales force teams including training, corporate culture, sales force automation, sales reporting and non-financial rewards. Non-financial rewards are an interesting topic that could be impact many of the intrinsic and extrinsic elements, the utility outcome of the reward, and the social recognition aspect of motivation that were explored in this paper. More research needs to be done in exploring how these factors play into the larger picture of sales force motivation. Much more research needs to be done on this subject in the future particularly around the areas of team training effectiveness and compensation structure.

REFERENCES

- Bandura, A. (1991). Social cognitive theory of self regulation. *Organizational Behavior and Human Decision Processes*, 50, 248-287. Retrieved July 28, 2010, from <http://www.capella.edu/library>
- Beal, D. J., Cohen, R. R., Burke, M. J., & McLendon, C. L. (2010). Cohesion and performance in groups: a meta-analytic clarification of construct relations. *Journal of Applied Psychology*, 88, 989-1007. Retrieved December 12, 2010, from <http://www.capella.edu/library>
- Best Practices, LLC (2002). Building a mirrored sales force and managing sales force expansion: benchmarking research.
- Cameron, J., & Pierce, W. D. (1994). Reinforcement, reward and intrinsic motivation: a meta-analysis. *Review of Educational Research*, 64, 363-423. Retrieved September 3, 2010, from <http://www.capella.edu/library>
- Campion, M. A., Medsker, G. J., & Higgs, A. C. (1993). Relations between work group characteristics and effectiveness: implications for designing effective work groups. *Personnel Psychology*, 46, 823-850. Retrieved October 5, 2010, from <http://www.capella.edu/library>
- Centers for Medicare and Medicaid Services. (2002, October 16). *The Employee State Insurance Act of 1996*. Retrieved December 10, 2010, from <http://www.cms.hhs.gov/esia/>
- Churchill, C. A., Ford, N. M., Hartley, S. W., & Walker Jr., O. C. (1985). The determinants of a salesperson performance: a meta-analysis. *Journal of marketing research*, 22, 103-118. Retrieved September 3, 2010, from <http://www.capella.edu/library>
- Deci, E. L., Ryan, R. M., & Koestner, R. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin*, 125, 627-688. Retrieved September 11, 2010, from <http://www.capella.edu/library>
- Dixon, A. L., Gassenheimer, J. B., & Barr, T. F. (2002). Bridging the distance between us: how initial responses to sales team conflict help shape core selling team outcomes. *Journal of Personal Selling & Sales Management*, 22, 247-258. Retrieved December 10, 2010, from <http://www.capella.edu/library>
- Franken, R. E. (2002). *Human motivation* (5th ed.). Belmont, CA: Wadsworth.
- Hom, H. L., & Berger, M. (1994). The effects of cooperative and individualistic reward on intrinsic motivation. *Journal of Genetic Psychology*, 155, 87-98. Retrieved November 25, 2010, from <http://www.capella.edu/library>
- Indian Marketing Research Bureau (2002). SBP Analysis. Working Document. Fairfield, CT.
- Karau, S. J., & Hart, J. W. (1998). Group cohesion and social loafing: effects of a social interaction manipulation on individual motivation within groups. *Group Dynamics*, 2, 185-191. Retrieved September 10, 2010, from <http://www.capella.edu/library>
- Locke, E. A., Durham, C. C., & Knight, D. (2001). The relationship of team goals, incentives, and efficacy to strategic risk, tactical implementation, and performance. *Academy of Management Journal*, 44, 326-339. Retrieved September 15, 2010, from <http://www.capella.edu/library>
- Majchrzak, A., & Wang, Q. (1996). Breaking the fundamental mindset in process organizations. *Harvard Business Review*, 93-99.
- Messe, L. A., Hertel, G., Kerr, N. L., Lount Jr., R. B., & Park, E. S. (2002). Knowledge of partner's ability as a moderator of group motivation gains: an exploration of the Kohler discrepancy effect. *Journal of Personality and Social Psychology*, 82, 934-946. Retrieved December 12, 2010, from <http://www.capella.edu/library>
- Mistretta, L., & Mucisko, D. (2010). Pay for performance sales compensation goal eludes many companies: productivity suffers as a result. *Deloitte and Touche e-survey*. Retrieved October 6, 2010, from <http://www.deloitte.com/dtt>
- Morgan, Ben B., & Salas, Eduardo (1993). An analysis of Team Evolution and Maturation. *Journal of General Psychology*, 120, 277-292. Retrieved December 10, 2010, from <http://www.capella.edu/library>
- Schermerhorn Jr., J. R., Hunt, J. G., & Osborn, R. N. (2010). *Organizational behavior* (8th ed.). New York: John Wiley & Sons, Inc.
- Seijts, C. H., Latham, C. P., & Rotman, J. L. (2000). Effect of self-and group efficacy on group performance in a mixed motive situation. *Human Performance*, 13, 279-299. Retrieved October 1, 2010, from <http://www.capella.edu>
- Stajovic, A. D., & Luthans, F. (2001). Differential effects of incentive motivators on work performance. *Academy of Management Journal*, 11, 580-591. Retrieved September 5, 2010, from <http://www.capella.edu/library>
- Stajovic, A. D., & Luthans, F. (2010). Behavioral management and task performance in organizations: conceptual background, meta-analysis, and test of alternative models. *Personnel Psychology*, 56, 155-195. Retrieved September 1, 2010, from <http://www.capella.edu/library>
- Tuckman, B. W. (1965). Developmental sequence in small groups. *Psychological Bulletin*, 63, 384-399.
- Tuckman, B. W., & Jensen, M. C. (1977). Stages of small-group development revisited. *Group and Organization Studies*, 2, 419-427.
- Zastrow, C. (2001). *Social work with groups: using the class as a group leadership laboratory* (5th ed.). Pacific Grove, CA: Brooks/Cole.
- Zobal, C. (1999). The "ideal" team compensation system - an overview, part II. *Team Performance Management*, 5, 23 - 36. Retrieved December 12, 2010, from <http://www.capella.edu/library>

APPENDIX

INTERVIEW PROTOCOL

Question 1: How effective do you think your current team is?

Probe: What makes it effective?

Probe: What has the company done to help your team be effective?

Question 2: What are the specific elements or factors that make your team effective or not effective?

Probe: How does [insert element] impact your teams performance?

Question 3: How do you feel about how well your team is working together? How do you feel about the other members of your team?

Probe: What specifically makes you feel that way?

Question 4: What are things that could be improved on your team?

Probe: How would these help make your team more effective?

Question 5: What is the optimal way that a team should be set up and operate?

Question 6: How should the mirror teams be measured and compensated?

Probe: How is measurement and compensation done now?

Probe: What effect does [insert element] have on your ability to work together as a team?

Probe: What compensation elements could detract you (or one of your teammates) from being a team player?



SUPPLY CHAIN MANAGEMENT IN TWO WHEELER INDUSTRY - A STUDY ON HERO HONDA AND BAJAJ AUTO SUPPLY CHAIN PRACTICES

R.VENKATESHWAR RAO.
ASSOCIATE PROFESSOR
DEPARTMENT OF BUSINESS MANAGEMENT
SREE CHAITANYA P.G COLLEGE
KARIMNAGAR


ABSTRACT

The present article examines the practices of Hero Honda (Hero Moto Corp) and Bajaj Auto limited supply chain practices. The two wheeler supply chain is typical in nature when to compare with other automobile segments. This article examines the practices of vendor selection, manufacturing locations and capacities of various locations, manufacturing process and technologies, distribution management and other supply chain related aspects of above companies.

KEYWORDS

Bajaj Auto Limited, Distribution Channels, Hero Honda, Supply Chain and Vendors Management.

INTRODUCTION

 Supply Chain Management practices may be defined as a set of activities undertaken to promote effective and efficient management of supply chains. These include supplier partnership, physical movement of goods, meeting customer demands and information sharing throughout the supply chain. Some of the key logistics and SCM practices that impact performance are related to estimation of customer needs, efficient and effective delivery, integration and collaboration throughout the supply chain, sharing of information and vision using Information Technology as well as informal methods and use of specialists for performing specific jobs across the supply chain. All of these practices impact logistics and supply chain performance of companies. The supply chain management in automobile sector plays pivotal role in managing cost and efficiency. The two wheelers sector supply chain is much more critical in nature, as customers are spread across the nation and managing the reach of supply chain into rural and semi-urban locations is challenging for two wheelers manufacturer. The present article examines Hero Honda and Bajaj Auto two wheelers companies supply chains.

HERO HONDA MOTORS LIMITED

In 1984, Hero Honda Motors Limited was formed as a joint venture between Honda Japan and the Hero Group promoters Brij Mohan Lal Munjal along his sons (Late) Raman Kant, Pawan Kant, Suman Kant and Sunil Kant Munjal. The first plant was established at Daruhera Haryana, on the outskirts of New Delhi. In the years to follow, large industrial areas were created for additional manufacturing facilities for Hero Honda Motors Limited along with their Ancillaries in Gurgaon, New Delhi and Sidcul, Haridwar.

HERO HONDA MOTORS LIMITED-SUPPLY CHAIN MANAGEMENT PRACTICES

VENDORS MANAGEMENT IN HERO HONDA

Vendor management is critical to Hero Honda, as nearly 73 per cent of the production is currently made up of material cost. During the year 2010, the company managed an average cost reduction of Rs. 343 per vehicle despite volatility in metal prices. A national network of 256 vendors - including 36 ancillaries - forms the backbone of its plant operations. To improve plant efficiencies and inventory turns, Hero Honda has extended "Just in Time" (JIT) beyond the shop floor. Vendors are also making critical investments in quality and capacity in collaboration with the Company. For example, the online vendor connectivity program has made rapid progress.

Three years ago, the Company had only 46 vendors connected online to the company's factories. By the end of 2009-10, it is estimated that 72 per cent of the vendors and their supplies would be connected online. Around 100 ancillaries will be setting up their manufacturing base in Haridwar over the next two years to ensure a fully integrated supply chain. To begin with, 40 ancillaries will set up their facility in the Industrial Parks that are being specially developed for Hero Honda ancillaries.

During 2009-10, Hero Honda plans to work with vendors to develop new vendor production facilities. 3PL service providers have also been identified for the Haridwar plant— a first for any two-wheeler company as part of an ongoing exercise aimed at quality control, members of senior management visited vendor premises for top quality audits. This has resulted in the reduction of rejection parts per million (PPM) by 20 per cent.

During the year 2009-10, the company launched a collaborative cost improvement program with vendors. In this program the processes and methods are continuously toned so that the material cost can be managed better. Hero Honda is also evaluating horizontal deployment of third party logistic services providers (3PL) to manage costs along the supply chain better. In 2009-10, the Company plans to further study and tactfully optimize its supply chain. As part of this plan, raw materials will be optimized so that the best possible cost advantages accrue, to the company.

PROCUREMENT OF RAW MATERIAL

Raw material is procured from various vendors which are 117 in number. These vendors provide them all the necessary components starting from a nut or bolt to large parts as well. The companies which provide them with the various parts are:

LUCAS Industries
TVS Fasteners Ltd
MRF Tyres
LUMAX,
A .G. Industries Private Limited
Munjal Showa Limited
Sunbeam Auto Limited
Rockman Industries Limited
Satyam Auto Components Limited
Highway Industries Limited

TIME LEAD AND LAG

Hero Honda being the Assembling unit, thus everything needs to be fitted on time i.e. there is not time lag between two processes. Say there is very less time lag between fitting engine onto the chassis and the headlamps which are to be installed over the chassis.

Lead time is also not there because all the processes are assembly based and needs to be done one after another. It can only be said that by the time engine gets assembled in separate division the fuel tanks and mud guards are painted in the paint shop. Thus Lead time, also, is very little or negligible.

PRODUCTION AND OPERATION MANAGEMENT

About the Production Process, Hero Honda does not manufacture the all parts of the bike on its own. It has a complete list of 117 vendors from which it gathers the parts. It only manufactures Fuel Tanks and some critical parts for its bikes, Do the Paint job, Prepare the Chassis according to the technical specifications and finally it assembles all the parts to the chassis which leads to production of a new bike.

Firstly, the metal sheet is taken from which the fuel tank is casted in two parts, these two parts after casting are joined together and then properly sealed. Then, these Fuel Tanks are sent to the checking zone where the test such as leakage checking and all are done so as to check problem, if any. These fuels tanks are then sent to the painting zone, where they get spray painted in 10-step process and then the fuel tanks are cured through heating so that its paint gets permanent and finally the graphics are put over it.

Now on the other side, the engines were being assembled, i.e. all the parts, like carburetor, air filter, spark plugs, etc. are fitted into the engine and then the finished engines are sent to the assembly line.

The Assembly line consists of a basket of parts which contains all the parts of the bike, and this basket continuously moves along with the main conveyor belt. This main conveyor belt holds the chassis of the motorcycle into which all parts are fitted into. The Engine, Tires, Fuel tanks, etc. all are placed into that basket containing all the parts.

This Basket directly comes from the inventory house, from where all the parts are loaded into the basket. Now, when all the parts are fitted into the chassis, the final motorcycle is prepared and is sent for further testing and analysis.

DISTRIBUTION NETWORK

Hero Honda has established 4 zonal offices in India at 4 different regions i.e. in North – Delhi, South – Bangalore, East – Kolkata, and West – Pune.

These Zonal offices act as intermediary between the Authorized Centers and the Hero Honda Company, they gather demands from various centers and send them to Hero Honda to which it acts and supplies the bikes. Every Zonal Office is in networking with every authorized centre in its area.

Hero Honda, in total has 771 Dealers, 693 Spare Suppliers, 1440 Authorized Service Centers and 28 Stockiest in India.

The company has a conscious strategy of penetrating new markets and unrepresented territories through its distribution network which is made up of dealers, authorized representatives, stockiest and SSPs (Sales and Service Points). In March 2001, the company had 826 such customers' points in India. By March 2009, this number went up to over 3500. On an all India basis, 50 dealers, 150 SSPs, 267 dealer's representatives and 45 city work agents were added. All the four marketing zones of the Company showed a uniform increase in new customer's points during the year in 2009-10.

RURAL NETWORK

Hero Honda's ambitious rural connect program "Har Gaon, Har Aangan" Also got underway. A total of 18,000 villages were covered out of the targeted 23360 villages with a population of 5,000 people. In all, more than 100,000 opinion leaders in these villages were approached. The rural initiative was carried out by 500 specially trained rural sales executives at the dealership level.

The company has made significant progress in its rural marketing initiative called Har Gaon, Har Aangan (HGHA). This national level program has made strides into thousands of Indian villages with a population of 5,000 and above. In all, more than 125,000 opinion leaders in these villages were met by specially trained 523 rural sales executives. The program itself has added sales of 25,000 vehicles from these villages in just one year. The program focuses on many activities to align with the objectives that go beyond commercial transactions, in order to build enduring relationship with the customers in these villages. The program generally covers sales promotions, loan and exchange offers, free service and check up camps, along with host value adds like consultation for obtaining driving license, safe riding educational programs and other services like health check up and awareness camps. These services are offered free of charges in the interest of society at large.

Under the HGHA program the company makes all the efforts to be a part of the villages by conducting such programs either directly or by partnering or sponsoring the events organized by the local administration on regular basis. The company believes that the rural mobility is a major contributor to GDP growth in an agrarian economy like ours. 'Sikhao Baliye' is company's unique initiative in the rural market that aims at driving the mobility of rural women. The program aims at promoting company's light and zippy gearless scooter Pleasure by creating awareness amongst its TG which primarily are all rural men, particularly opinion leaders and those who wish to impart riding training to their wives, daughters, daughter-in-laws, sisters etc., and prospects in general. The program covered 40 villages, 266 female riders received basic riding training, and 35 of them could ride the scooter immediately after the training.

OPERATIONS

Hero Honda has two key priorities: first, to expand and grow aggressively, and second, to develop capabilities and innovate constantly. Keeping these priorities in mind, Hero Honda undertook the following activities during the year:

COMMISSIONING OF NEW PLANT AT HARIDWAR

The commissioning of its third plant gives Hero Honda a total installed capacity of 4.2 million two wheelers. A capacity of this magnitude has enabled Hero Honda to retain its position as the world's largest two-wheeler manufacturer for eight successive years.

The full commissioning of the Haridwar plant allowed the company to plan its production better. Depending on volumes, production was rationalized across the three plants. This reduced changeover time helped the company increase its overall efficiency level. In turn, this helped Hero Honda bringdown overall manufacturing cost per vehicle during the year. New Models: During the year, seven new models were introduced across segments. Out of these four models were launched in the space of a month. The variability of the product mix could have posed a challenge; but, flexible systems at the three plants allowed production to proceed smoothly. Distribution Network: The company has a conscious strategy of penetrating new markets and unrepresented territories through its distribution network of dealers, authorized representatives, stockiest and SSPs. In March 2008, the company had 826 such sales and service points in India. By March 2009, this number had grown to more than 3500. All the four marketing zones of the company demonstrated a uniform increase in new dealerships and SSPs during the year in review.

LOGISTIC SYSTEMS

During the year 2008-09, the inbound logistic system at the Haridwar plant was revamped; Hero Honda switched from the individual logistic model to a specialized third party logistic service provider for all Haridwar-based suppliers. This switch helped the company reduce logistics cost and improve the operational efficiency of the value chain. During the year, the company also paid considerable attention to developing a multi-modal transport system, in order to derive cost economies.

Also at the Haridwar plant, Hero Honda switched from individual purchase of basic materials by supply chain Partners to consolidated settlements by the company itself. The resulting economies of scale have resulted in greater leverage with suppliers and have helped bring down material costs. The online vendor connectivity program has made rapid progress. Three years ago, the company had only 46 vendors connected online to the company's factories. By the end of 2009-10, it is estimated 72 per cent of the vendors and their supplies were connected online. During the same year, Hero Honda also worked with vendors to develop and produce alloy wheels within Haridwar. This considerably reduced dependence on costly imports.

INFORMATION SYSTEMS

A number of key technology initiatives were either initiated or completed in 2009-10. The application infrastructure of the organization was extended to support business processes at the new production facility at Haridwar. This is expected to be operational in 2010-11.

The organization's entire network was revamped and redundancies were built to support business users. The IT team also deployed applications for sending real time business alerts related to production, sales, service notifications automatically from the system using SMS technology. This helped business users immensely. This real time system was also used by business partners to manage their dispatches and outstanding. To improve productivity, a number of applications with work flow capabilities were developed or enhanced. Also during the year, the entire information security policies of the organization were revamped in order to mitigate risks.

A new eco-friendly state-of-the-art data centre was set up and Hero Honda migrated to a new technology architecture that included blade servers and virtualization. This would help consolidate servers and storage as well as reduce complexity. To help Hero Honda prepare for the future, two major strategic

initiatives are being planned for 2009-10. The first is Product Lifecycle Management software. This will help the company in managing the increase of complexity of a diverse product portfolio and help reduce cost and time for developing new models.

PRICING IN SUPPLY CHAIN

Pricing of the bike is done through all the costs associated, i.e. operational costs, selling and distribution costs, etc. Then the profit margin is also added to the price of the bikes, and then the transportation costs are added so that it becomes what we get as the ex – showroom price. This price differs from place to place because there is different transportation costs directly associated with it.

When rising input costs put a squeeze on margins, Hero Honda pioneered an online vendor connectivity programme called Direct on Line (DoL) five years ago. It has allowed the two-wheeler maker to manage its operations with lower inventories, and better margins. And the results are showing.

By its very design, DoL is a win-win for both parties. With real-time availability of production and inventory figures, Hero Honda and its vendors are able to work on a just-in-time (JIT) basis. Launched with an initial enrollment of 10 vendors in 2002, the programme has swelled to 133 DoL Certified Suppliers by the end of 2006-07.

The benefits have started to accrue already. Vendors gain from a significantly lower credit period 15 days, down from 45 days earlier. And Hero Honda gets a higher cash discount 9%, up from 6.5% earlier. The programme has helped the company generate savings of Rs 30 Crore in 2008-09 year.

THE GREEN SUPPLY CHAIN

Rapid industrialization and advanced technological changes have put Indian economy on fast growth. But such developments pose unprecedented challenges to human society in term of climatic and environmental degradation. Therefore the people and governments have come forward to deal with environmental threats and also to explore many opportunities so as to address the environmental issues and also to create a sustainable environmental future for all.

The Hero Honda is continuously striving for synergy between technology, system and human resources, to provide products and services, to meet the aspiration of its valued customers that too, demonstrating its "WE CARE" philosophy. While doing so, Hero Honda maintain the highest standards of ethics and societal responsibility, constantly innovate the products and process and work in partnership with its supply vendors to take the organization to new excellences. We believe that our vendors and dealers are key stakeholders and partners to work towards the goal of sustainable development.

Green Vendor Development Programme refers to the way in which organizational innovations in industrial supply chain management may be considered in the context of the environment. Organizations which act proactively not only to identified but also to implement actions in process / operation so as to address environmental issues.

Green Vendor Development Programme (GVDP) encourages a collaborative effort between Hero Honda and its suppliers to achieve Hero Honda's overall corporate environmental goal. GVDP calls for partner companies to demonstrate their commitment towards improved environmental performance and striving for continual improvement.

Six pillars have been assigned to GVDP model which are Energy management, Water management, Waste minimization, Prevention of Pollution, Substitution of hazardous chemical and Environmental compliance management. Partner vendors are given specific training on all six pillars of GVDP and mapping of processes/equipments is carried out based on logical analysis so as to identify the gaps or significant environmental aspect and accordingly improvements projects are undertaken for implementation. The programme works on PDCA approach.

HHML also endeavors to provide a platform on which the vendors can share their environment achievements and problems encountered during implementation of the green vendor program. The objective of this meet is to share success stories on environmental improvements that can be replicated at other vendor facilities. This platform lays the foundation for a mutually beneficial eco-future.

Hero Honda believes the process of sustainable development is incomplete without involving the company's supply chain. With this in mind, the company has put together a "Green Vendor Development Program" for the front end and a "Green Dealer Development Program" for the back end of the supply chain. In each of these programs, the partners' are expected to manage their environment involving material resources, industrial wastes, energy resource, pollution and other effluents based on a number of pre-determined parameters.

Hero Honda plans to support all its partners in the Green Supply Chain venture by developing required competencies, sharing knowledge, and by providing technical support. 31 vendors enrolled under this program in 06/2009 underwent requisite training and were certified as green vendors during 06/2009. A fresh lot of 40 vendors were inducted during the year for the program.

BAJAJ AUTO LIMITED

The Bajaj Auto Group was founded in 1926 by Jamnalal Bajaj and now consists of 27 companies. In 1945, Jamnalal Bajaj had formed M/s Bachraj Trading Corporation Private Limited, the flagship company, to sell imported two-wheelers and three-wheelers. The company acquired a license from the government in 1959 to manufacture these vehicles and went public the next year. By 1977, the company saw its plant rolling out 100,000 vehicles in a single year. In another nine years, Bajaj Auto could produce 500,000 vehicles in a year. The present Chairman of the Bajaj Auto group, Rahul Bajaj, took charge of the business in 1965. He was the first licensee of the Indian make of the Italian Vespa scooter.

The Bajaj Company has a network of 498 dealers and over 1,500 authorized service centers and 162 exclusive three-wheeler dealers spread across the country. Around 1,400 rural outlets have been created in towns with populations of 25,000 and below. The current dealer network of Baja is servicing all these outlets. Bajaj Auto is convinced that the real impetus of future two-wheeler growth will come from upcountry rural India. Bajaj Auto has defined specialist dealerships for rural markets, called 'Rural Dealerships'. During the year 2008-09, twenty new rural dealers became operational

BAJAJ AUTO LIMITED SUPPLY CHAIN MANAGEMENT- PROCESS OF VENDOR SELECTION IN BAJAJ AUTO

Bajaj Auto Limited does not manufacture all the parts required for its all models of motorcycles. Major portion of the parts are outsourced from various suppliers depending on which supplier produces the best of the component in the industry. Bajaj Auto's decision whether to Make or Buy is based on the Fine and Whitney Framework for Make or Buy Decision.

Bajaj auto practices a systematic process in selecting suppliers and deal with them. Production manager of the company study the application received by the suppliers and select proper suppliers as per their requirement. The selected suppliers invited for general meeting with the production manager and purchase manager of the company. In this meeting they decided conditions and time period of supplying raw materials to the company.

Once the contract signed by both the routine work continue. Whenever the company required raw material they send e-mail or call the suppliers just before three days. And within two days company gets raw materials. If the suppliers are unable to provide raw materials than Bajaj immediately informs and search for alternative vendors.

KEY SUPPLIERS

Bajaj auto has approximately 198 vendors for their raw materials and parts. Some of the key vendors are:-

- JBM – Frames. Company located at Faridabad, Noida and Nashik.
- MRF–Tyres. Company located at Goa, Medak, Arakonam, Tiruvottiyur, Pondicherry, Kottayam.
- Minda – Handle Bar Assembly & ignition system. Company located at Haryana, Pune, Mumbai, Bangalore, Hyderabad, and Pantnagar.
- Endurance – Brakes and Suspension. Company located at Pantnagar, Pune, and Chennai.
- Varroc – Plastic parts & Digital Meter. Company located at Aurangabad.
 - Max auto components –ignition system and switches
 - Silco cable –wires and cables
 - Makino industry –Brake shoes. Brake lining, clutch center.

Bajaj Auto Limited manufacturing plants are situated in the states of Maharashtra, Aurangabad and Uttarakhand. The vendor locations (mentioned above) also come in and around these states and so procurement of parts and raw materials is not a time taking process and also the cost of logistics is reduced thus providing an efficient supply chain. Bajaj auto maintains seven (7) days inventory. All the Mediators are connected with each other through IT linkage to know exact status of delivery of goods.

INTEGRATION OF SUPPLIERS WITH COMPANY BY USING INFORMATION TECHNOLOGY

Bajaj Auto restructured its products, channels, vendor management system and the performance management system. Bajaj Auto successfully implemented SAP's my SAP Enterprise Portal simultaneously with the current SAP R/3 ERP implementation.

Bajaj has linked 165 out of a total of 200 suppliers through this system. The supplier gets up-to-date information on purchase orders and contracts, material schedules, and payment details. Bajaj Auto, in turn, gets invoicing information from suppliers for its automated material receipt system. This helps in streamlining the supply chain, optimising inventories and reducing non-value-adding activities at both ends.

The my SAP ERP system enabled Bajaj auto to track the competence of its suppliers who must comply with various performance standards on quality, delivery and cost for different categories of the business. The company can track service levels from order right through to delivery for both the domestic and export markets. The company can also check inventory to ensure that it have the right stocking levels to support orders and production. Bajaj Auto use analytics to create a composite index around the figures and track it through the vendor portal.

With this information Bajaj Auto can incentivise vendors to reach higher levels of competency by offering them more business and it can also encourage price reductions through innovations, rewarding vendors with profit sharing.

In addition to operating information, provides access to unstructured information like news items, new product releases, new product introduction, dealer discussion groups and internal marketplace.

MANUFACTURING AND OPERATIONS

LOCATION OF PLANTS

The Bajaj Auto have three state of the art Manufacturing Plants, These are

1. Waluj
2. Chakan
3. Pantnagar

During the first half of 2009-10, a number of improvement activities were initiated at the shop floor level across all plants of the Company. Bajaj Auto could produce 32% higher volume of output without any significant investments. Below Table gives the plant-wise capacities and product (Models) produced in respective plants in the last two years.

TABLE 1: PLANT-WISE CAPACITIES (in numbers)

Plant Products Plant	Products	Plant capacity(units)	
		2008-09	2009-10
Waluj	Boxer, Platina, Discover and three-wheelers	1,860,000	1,860,000
Chakan	Pulsar, Avenger and Discover	1,200,000	1,200,000
Pantnagar	Platina, Platina 125, Discover and Pulsar 135	900,000	1,200,000
Total	--	3,960,00	4,260,000

PANTNAGAR

Bajaj Auto's production at its Pantnagar plant, Uttarakhand, has been on the rise. In 2009-10, it produced 577,947 vehicles, up by 82% compared to 2008-09. Average production at Pantnagar for January-March 2010 was 60,000 per month versus 30,000 per month a year earlier. The plant is now geared to produce 80,000 units per month in April-June 2010, and then ramp up to 120,000 vehicles per month by September-December 2010. Keeping this in mind, the supply chain activities are also getting geared up. To maximize tax benefits available at Uttarakhand, the Company has shifted products like Discover and Pulsar 135 to Pantnagar.

WALUJ

Waluj celebrated its 25th birthday in 2009-10. It also started production of the Discover and successfully ramped up the output. Waluj is now the export hub of Bajaj Auto. Of the 891,002 units of two- and three-wheelers exported in 2009-10, about 80% was produced at Waluj. The plant is now ready to meet even higher exports - up to 1 million units of two-wheelers and three-wheelers. Waluj won an award: 'Plant Best in Class Manufacturing Leadership Award for Two-Wheelers' by the Stars of Industry Group.

CHAKAN

Given its core competence in high-end products, Chakan produced various upgrade versions of Pulsar. It is now ready to deliver the new KTM bikes. Chakan was awarded the 'Super Platinum Award for Manufacturing Excellence' by Economic Times-Frost & Sullivan.

MANUFACTURING/ASSEMBLING FACILITIES

Bajaj Auto Ltd. has well designed manufacturing and assembling facilities at plants. They highly care of clarity and arrangement. The whole plant has divisional area like, offices, operation house, ware houses, and packing department. Bajaj Auto Ltd. have modern and technologically advance machines and state of the art assembly lines. These machineries are arranged in operation department systematically. The production process is step by step, the raw material move from one line to another line systematically. the below flow chart explain manufacturing process at plants.

INBOUND LOGISTICS

The raw materials and required components and spares are sourced from selected suppliers/vendors. The inbound logistics are managed by third party logistic (3PL) operators as suppliers of Bajaj Auto spread across different states. Bajaj Auto maintains seven days (7) inventories; this sourced raw material will be stored in raw material ware houses in concerned plant.

In manufacturing process, the final assembly unit will get all the assembled components from different assembly lines and assembles these components to body chassis of the the motor cycle.

The assembled motor cycle has to pass through two levels of quality inspection to maintain Zero Defects in final product. After inspection process these motor cycles will sent to Factory warehouse for distribution.

OUTBOUND LOGISTICS

The outbound logistic operations depend upon Bajaj Auto market segments. Bajaj Auto market is segmented by geographical wise. The geographical segmentation of Bajaj can be divided into two broad categories.

1. National Level Markets
2. Global Level Markets

The national and Global level segments are further divided into sub-segments for smooth logistic and physical distribution operations.

NATIONAL LEVEL OUTBOUND LOGISTICS

Transport & Logistics This function of distribution is not owned by the company in any form. This function is outsourced completely to the third party vendors (3PL Operators). The third party here is Transport Corporation of India (TCI) and a few other private vendors. The fleet to be transported is custom-designed for Bajaj Auto by the vendor. A Transit Insurance Compliance Letter (TICL) is signed between the two parties.

There are twenty vendors (3PL Operators) across India to cater the logistic requirements in vast geographical segments of Bajaj. Logistics of the vendor is decided by the Bajaj Company. The major 3PL operators of Bajaj Auto are:

- Transport Corporation of India (TCI)

- OSL
- Jamuna Transport
- Sumit Transport

Last mile logistics is decided most of the time by sub-dealers. Bikes are driven from the dealer's warehouse to the showroom by employees of sub-dealer or have it transported to him. Freight charge is built-in in the product price.

BAJAJ AUTO DISTRIBUTION MANAGEMENT

The physical flow of goods takes place from the factory warehouse to either the depot or to the carrying and forwarding agent, depending upon the geographic distance and the location of the Depot. The transport & logistics for this is outsourced to third party vendors which are under Transport Corporation of India (TCI).

Depending upon the demand these goods have, they flow from Depot or the C&F agent to the dealer and their network. In case of high profile dealers, the dealer can himself take the physical delivery of goods directly from the manufacturing plant. The dealer, at the last juncture, caters Authorized Service Center (ASO), Rural Service Outlet (RSO), Sub Dealer & its own branch.

Distribution Channel Design is dependent on the segmentation that Bajaj have done in the geographic and product category segments. Various players involved in the distribution channel network are:

- Depots
- Carrying & Forward Agent
- Dealers
- Sub Dealers.

DEPOT

For distribution Bajaj auto uses mix of depots and C&F agents. This is completely dependent on the distance of manufacturing location from dealer point. Due to extensive distance from manufacturing plant from west Bengal to north-east India, there exists a depot in Kharagpur with capacity of housing 800 vehicles. There are similar depots in Punjab, Rajasthan and southern India.

Setting up depots is a geographical strategy adopted by Bajaj Auto. But this does not mean that the company has gone all out to open a large number of depots. It has chosen strategic locations. The key role played by depots is that they are meant to cater to any sudden rise in demand of vehicles, and to cover the existing geographic span of India.

The reasons behind having a depot in different regions in India are as follows:

- Catering to a sudden shooting up of demand
- Reaching the states of the North-East and other remote and poor transport facility areas.

CARRYING & FORWARDING (C&F) AGENTS

Though the agent has a separate set of roles and responsibilities, it is just a semantic difference in the case of Bajaj Auto. In most cases, it is the "Giant dealer" of a particular region who acts as a carrying and forwarding agent for Bajaj Auto. A giant dealer is one who secures an A+ rating from the company, or has strong financial muscle in the region in comparison to the other dealers. Their key deliverables will be dealt in detail when we talk about dealers. This generally happens in states or regions which are near to the manufacturing unit. This is almost always the case for most Indian States.

DEALERS

The Bajaj Auto Limited has an extensive network of 498 dealers and over 1,500 authorised service centers and 162 exclusive three-wheeler dealers spread across the country. Around 1,400 rural outlets have been created in towns with population of 25,000 and below. The current dealer network is servicing these outlets. Dealers can be classified under 3 heads. They are as follows:

- 1. COCO-**These are Company Owned & Company Operated showrooms. These concepts exist only for Pro-Biking showrooms. Here Bajaj Auto has tried showcasing their muscle power in high end biking segment. The concept has evolved very fast and now there are 52 Pro-Biking showrooms in the country. The company itself does not take any order from the customer in these showrooms. The giant dealer of the region who is acting as a logistics partner for the pro-biking concept takes the order on behalf of the company and fulfils the customer requirement.
- 2. CODO-**These are Company Owned & Dealer Operated showrooms. In case of this concept, showrooms are owned by the company but the operations in the showroom are managed by the dealer. This is generally the case where Bajaj wants to provide the dealer financial benefits considering the high working capital requirement of the company.
- 3. DODO-**These are Dealer Owned & Dealer Operated. These dealers are fewer in number because they are generally the giant dealers who are the financial muscle for the company.

SUB DEALERS, AUTHORISED SERVICE CENTER (ASC) & RURAL SALES OUTLETS (RSO)

SUB DEALERS

Generally this are the small players in the market who helps breaking the bulk at the dealers end and providing the dealer necessary rotation of working capital. In turn they get flexible terms from the dealer and trade on smaller volumes. These channel members exist in the design because of the company's objective of increasing the reach to the end consumer.

AUTHORISED SERVICE CENTER

These are the authorised outlets of the company which can be dealer operated or independently run by a new entity. The distribution for these components is completely independent from the distribution channel of the product itself. Today, the channel has 73 distributors, who cater directly to over 15,000 retail shops across the country. This channel now accounts for over 70% of total spare parts sales of Bajaj Auto Ltd.

RURAL SALES OUTLETS

Around 1,400 rural outlets have been created in towns with population of 25,000 and below. The current dealer network is servicing these outlets. Bajaj is convinced that the real impetus of future two-wheeler growth will come from up-country rural India. Bajaj Auto has defined specialist dealerships for rural markets, called 'Rural Dealerships'. During the year 2008-09, twenty new rural dealers became operational.

SUPPLY CHAIN MANAGEMENT OF SPARE PARTS

Automobiles need periodic replacement of parts. Not surprisingly therefore, spare parts comprise a profitable business for major automobile manufacturers. The objectives of the spare parts business of Bajaj Auto are to perform an effective role in supporting new vehicle sales, maintain 'vehicle goodwill' across different geographies, makes and consumer groups, and contribute to the bottom-line.

To make the company's spare parts available in not only at authorised service centers but also the private garages and spare part retail outlets in every corner of the country. This is a high volume, credit intensive business that requires mastery over the supply of heterogeneous products.

In 2004-05, Bajaj Auto created a separate channel exclusively for distribution of spare parts. Today, the channel has 73 distributors, who cater directly to over 15,000 retail shops across the country. This channel now accounts for sales of over 70% of total spare parts of Bajaj Auto Ltd. Other 30% is distributed via the distribution channel of the bike itself.

CONCLUSION

Conclusion: the supply chain management in automobile industry is always challenging in vast country like India, the two wheelers companies not exception to this. Both Hero Honda and Bajaj Auto companies are making innovative ways to reach rural India with their supply chains. Both the companies are practicing Lean manufacturing, vendor's management, JIT system and out sourcing of logistic operations, which are prominent supply chain practices in the world. Still these companies can innovate their supply chains to reach all segments of Indian customers.

REFERENCES

1. Economic Times, 'Two Wheeler Industry- Facing a crisis?' <http://economictimes.indiatimes.com/articleshow/msid-2461907,prtpage-1.cms>. viewed on March 20, 20011.
2. International Business Times, 'Bajaj Auto Renault - Nissan team up to rival Tata small car Nano', http://in.ibtimes.com/articles/20080512/bajaj-auto-renault-nissan-tata-small-car-nano_all.htm. Viwed on March 20, 20011.
3. www.heromotocorp.com
4. www.herogroup.com
5. www.bajajauto.com
6. www.scribd.com
7. <http://www.channelbajaj.com>
8. http://www.bajajauto.com/bajaj_dealer_locator.asp
9. http://www.bajajauto.com/services_troubleshooting.asp



OPTIMUM PERFORMANCE OF TURMERIC EXTRACTION FIRMS: AN INPUT-OUTPUT ANALYSIS**V.ABIRAMI****RESEARCH SCHOLAR****DEPARTMENT OF MANAGEMENT STUDIES****ANNA UNIVERSITY****CHENNAI****DR. HANSA LYSANDER MANOHAR****ASST. PROFESSOR****DEPARTMENT OF MANAGEMENT STUDIES****ANNA UNIVERSITY****CHENNAI****ABSTRACT**

This paper analyses Technical Efficiency of 14 Turmeric Oleoresin extraction firms located across South-India using DEA. The results suggests that out of 14 firms the operations of one firm is inefficient (efficiency < 60%) and three firms are moderate and four firms have very good efficiency. technical efficiency is 100% for another four firms. The optimum targeted input and output values have been predicted for an efficient production. It is observed that, DEA is an appropriate technique to analyze chemical manufacturing firms with multiple input/output variables.

KEYWORDS

Data Envelopment Analysis, Technical Efficiency, Turmeric Oleoresin Extraction Industry.

INTRODUCTION

Decision making in current competitive economy is the foremost requirement of any manufacturing industry or Decision Making Units (DMUs), for improving performance and efficiency. In this work, the performance of Turmeric Oleoresin Extraction Units belonging to the SME sector with similar process of manufacturing were chosen and compared for their technical efficiency (TE). Extraction firms manufacture turmeric oleoresin extract which is an anti-cancer drug and has many of medicinal values. This product is used in food industry as a natural coloring agent. This turmeric raw material is cultivated many states across south-India. Major contributors are Erode, Coimbatore districts in Tamil Nadu, Alapalay in Kerala, Mysore district in Karnataka and some parts of Andhra Pradesh. Technical efficiency provides the information on how the firms perform and can compare their optimum performance. This enhance the decision making process as it depends on the performance and efficiency of the manufacturing DMUs.

LITERATURE REVIEW

Literature shows studies were done for various manufacturing like garment, cement, pharmaceutical industries and Agro based industries like horticulture and poultry and also in banking, etc. Simanti Banerjee (2007) studied the impact of environment regulation on TE of Indian Cement Industry and found TE score is higher for firms with effective regulation scenario. Putu Mahardika Adi Saptura (2011) examined TE level of Indonesian Manufacturing industries during the period from 1990 to 2011. Results obtained from DEA technique proved that basic industry performs better than other high technology firms. Mainak Mazumdar (2009) examines the competitiveness of Indian Pharmaceutical firms by computing their TE using non-parametric approach of DEA, results shows that R&D, Export Expenditure and imported technology does not contribute to improve TE. Dlamini (2010) studied small scale sugarcane farmers in Swaziland, investigated using stochastic frontier function of the Cobb-Douglas model of DEA, results revealed that TE decrease with increase in farm size. Niringiye Aggrey (2010) studied the relationship between the firm size and TE using DEA technique, found that there is a negative association between TE and Firm size. Belen Iraizo (2003) studied the Horticultural production to estimate TE using both Non-parametric and Parametric approach to a frontier production function. Studies show that TE was positively related with the Partial Productivity Indices. Sunil Kumar (2008) using DEA measures the extent of technical, pure technical and scale efficiency of 27 public sector banks. Vincent Mok (2010) studied 287 cloth manufacturing firms to estimate relation between TE and export orientation, studies show that high level of TE for the firms concentrating on either local market or overseas market and TE is Low for firms trying to conquer both the local and overseas market.

Based on the literature review, DEA technique has not been used in Turmeric Extraction firms of to find the technical efficiency. This paper is designed to measure and compare the technical efficiency of Turmeric Oleoresin extraction firms in south India. The paper is structured as follows. Research Methodology is explained in section III, Analysis - Variable selection is explained in Section IV, concepts of DEA models are explained in Section V, Results and Discussion in Section VI. Summary of Findings are explained in Section VII followed by conclusion in Section VIII.

RESEARCH METHODOLOGY**RESEARCH OBJECTIVE**

This study aims at estimating the technical efficiency of 14 DMUs of Turmeric Oleoresin Extraction industry located across south India. The DMUs will be ranked according to their Technical Efficiency. This study also provides a optimum inputs and output for the not so efficient DMUs to achieve an efficiency similar to the top ranking DMUs.

RESEARCH DESIGN

Experimental Research design has been used. This paper takes the manufacturing firms namely Turmeric Oleoresin extraction firms. These firms are located across the south – Indian peninsula where the raw material Turmeric mother rhizome is available in nearby areas. Primary Data is collected for a month. Several input information for the manufacture of TOE was obtained. The firms are SMEs, whose output product is the Turmeric oleoresin produced which is used mainly for medicinal purposes.

DATA TYPE

We use primary data for the study collected from the Turmeric Oleoresin extraction firms. The data is collected from the firms willing to share their data. Data is collected through observation at the production plant and interviews conducted with production managers of the firms, which was used in the analysis.

RESEARCH METHODS

In this paper we are using non-parametric DEA technique, Constant Returns to Scale Model (CRS) for calculating the Technical Efficiency of the firms studied. For this study, the performance Analysis is done by analyzing kilograms of turmeric oleoresin produced per batch per day. Performance analysis in practice uses one or more inputs to produce one or more outputs. Inputs for this turmeric extraction process are raw material, electricity, number of extractors, number of

operators and numbers of batches are used. Data Envelopment Analysis (DEA) is used in this work to measure efficiency and productivity as it takes into account many inputs and outputs.

DEA TECHNIQUE

MEASURES OF PERFORMANCE

In any DMU, measures of performance help in evaluating the productivity and efficiency of the firm. Productivity refers to total factor productivity (involving all factors of production). Assume that a DMU uses a single input X to produce a single Output Q , Productivity is the Ratio of output (s) to input(s).

$$\text{Productivity} = \frac{Q}{X}$$

Technical Efficiency (TE) reflects the ability of a firm to obtain maximum possible output from a given set of inputs and technology.

Actual output

$$TE = \frac{\text{Actual output}}{\text{Potential output (or) maximum possible output}}$$

Potential output (or) maximum possible output

MEASURING TECHNICAL EFFICIENCY

The two principal methods of measuring technical efficiency:

1. Mathematical Programming based on non-parametric DEA
2. Econometric methods i.e., Stochastic frontiers.

Data Envelopment Analysis (DEA) is a linear programming methodology to measure the efficiency of multiple decision making units (DMUs) when the production process presents a structure of multiple inputs and outputs.

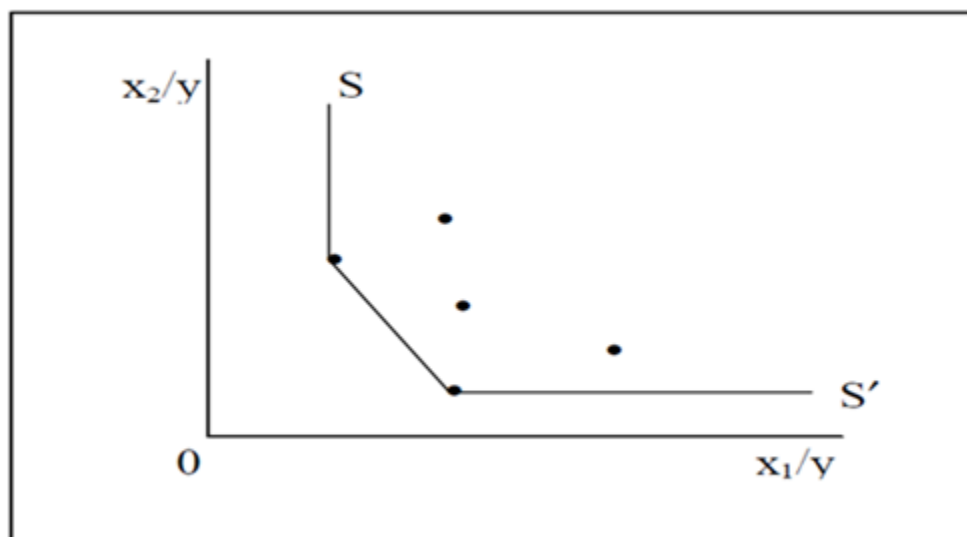
DEA EFFICIENCY MEASUREMENT CONCEPTS

DEA technique was first formulated by Charnes, Cooper and Rhodes (1978), who proposed a model which had an input orientation and assumed constant returns to scale (CRS). Banker, Charnes and Cooper (1984) who proposed a variable returns to scale (VRS) model.

THE CONSTANT RETURNS TO SCALE MODEL (CRS)

Assume there are data on K inputs and M outputs on each of the firms or DMUs. For the i -th DMU these are represented by the vectors X_i and Y_i respectively. The $K \times N$ input matrix, X , and the $M \times N$ output matrix, Y , represent the data of all N DMUs. The purpose of DEA technique is to construct a non-parametric envelopment frontier over the data points such that all observed points lie on or below the production frontier. For the simple example of an industry where one output is produced using two inputs, it can be visualized as a number of intersecting planes forming a tight fitting cover over a scatter of plots in three dimensional spaces.

FIGURE 1- PIECEWISE LINEAR CONVEX ISOQUANT



Given the CRS assumption, this can also be represented by a unit isoquant in input/input space (refer Figure-1).

The best way to introduce DEA is via the ratio form. For each DMU we would like to obtain a measure of the ratio of all the outputs over all inputs. Such as $u'y_i / v'x_i$ where u is an $M \times 1$ vector of output weights and v is an $K \times 1$ vector of output weights. To select optimal weights we specify the mathematical programming problem

$$\begin{aligned} &\text{Max}_{u,v} (u'y_i / v'x_i), \\ &\text{st } u'y_j / v'x_j \leq 1, j=1, 2, \dots, N, \\ &u, v \geq 0. \end{aligned}$$

This involves finding values for U and V , such that the efficiency measure of the i -th DMU is maximized, subject to the constraint that all efficiency measures must be less than or equal to one. One problem with this particular ratio formulation is that it has an infinite number of solutions. To avoid this one can impose the constraint $r'x_i = 1$, which provides,

$$\begin{aligned} &\text{Max}_{\mu,r} (\mu'y_i), \\ &\text{st } r'x_i = 1, \\ &\mu'y_j - r'x_j \leq 0, j=1, 2, \dots, N, \\ &\mu, r \geq 0 \end{aligned}$$

Where the notation changes from U and V to μ and r reflects the transformation. This form of the linear programming problem using the duality in linear programming, one can derive an equivalent envelopment form of this problem:

$$\begin{aligned} &\min_{\theta, \lambda} \theta, \\ &\text{st } -y_i + Y\lambda \geq 0, \\ &\theta x_i - X\lambda \geq 0, \\ &\lambda \geq 0, \end{aligned}$$

Where θ is a scalar and λ is a $N \times 1$ vector of constants. This envelopment form involves fewer constraints than the multiplier form ($K+M < N+1$), and hence is generally the preferred form to solve. The value of θ obtained will be the efficiency score for the i -th DMU. It will satisfy $\theta < 1$, with a value of 1 indicating a point on the frontier and hence a technically efficient DMU, according to the Farrell (1957) definition. Note that the linear programming problem must be solved N times, once for each DMU in the sample. A value of θ is then obtained for each DMU.

ANALYSIS**VARIABLE SELECTION**

Data is collected from extraction firms spread across South-India on monthly basics for the current year. The analysis was conducted using DEA technique. For the analysis input variables taken into consideration are number of operators, number of extractors used, consumption of electricity, number of batches and raw material. Number of operators is measured by total number of operators, consumption of electricity is measured in units, and number of extractors used is measured in numbers and number of batches in numbers. Raw material (mother rhizome turmeric) is measured in kilograms. Output is the Turmeric Oleoresin produced measured in kilograms.

DESCRIPTION OF DATA

Primary data collected at 14 various DMUs, consists of five inputs and an output. Table-1 shows the data collected for all the firms. The technical efficiency of the turmeric oleoresin extraction firms can be measured in terms of input and output variables. The technical efficiency means efficiency of turmeric extraction firms in utilizing input to generate output. The strength of the firms can be judged in terms of oleoresin produced by the firms. Therefore production got is taken as output variable. The production is achieved using raw material, extractors to process it, needed power, batches and employees the input variables taken for the study are number of operators, number of extractors, electricity consumption, raw materials (mother rhizome turmeric) and number of batches. The technical efficiency is measured by taking in to account of all firms in total.

TABLE-1: DATA FOR 14 TURMERIC OLEORESIN EXTRACTION FIRMS OF SOUTH-INDIA

Firm	Output production kg	Input 1 No. of operators	Input 2 No. of Extractors	Input 3 Electricity Consumption	Input 4 Raw Material(Kg)	Input 5 No. of Batches
1	3612.6	900	90	50000	90	60
2	1500	450	30	20000	30	15
3	1128.6	450	60	50000	45	30
4	5100	750	120	75000	120	75
5	2840.4	750	120	65000	90	75
6	2145	510	90	60000	75	60
7	3690	600	90	60000	90	60
8	5737.5	1500	150	100000	135	90
9	4050	900	120	65000	90	75
10	7308	1800	270	120000	210	180
11	3600	540	90	50000	90	60
12	10800	1350	240	175000	240	180
13	988.2	540	30	50000	30	15
14	4050	900	90	125000	90	60

RESULTS AND DISCUSSION**TECHNICAL EFFICIENCY SUMMARY****TABLE 2: TECHNICAL EFFICIENCY SUMMARY**

Firm	Technical Efficiency	Rank
1	0.978	5
2	1	1
3	0.53	14
4	1	1
5	0.68	11
6	0.627	13
7	0.932	8
8	0.887	9
9	0.951	6
10	0.833	10
11	1	1
12	1	1
13	0.659	12
14	0.951	6
Average 0.859		

Around 14 firms are taken for study. The technical efficiency is measured by using DEA method. Table 2 contains technical efficiency score for turmeric extraction firms. The rank for the firms is derived based on efficiency score. Four firms, firm 2, 3 and 4 shows 100% efficiency. Another four firms shows maximum efficiency above 90%, two firms i.e firm 8 and 10 has efficiency greater than 80%. Three firms i.e firm 5,6,13 are moderately efficient i.e., less than 75%. The lowest efficiency is less than 60% for the firm 3.

OPTIMUM SETTING FOR INEFFICIENT FIRMS**TABLE 3: OPTIMUM VALUE OF INPUTS AND OUTPUTS**

Firm	output	Input 1	Input 2	Input 3	Input 4	Input 5
1	3692.308	900	80.769	50000	80.769	46.154
2	1500	450	30	20000	30	15
3	2130	450	45	31500	45	28.5
4	5100	750	120	75000	120	75
5	4180	750	90	64000	90	61
6	3422	510	75	54100	75	53.9
7	3958.333	600	90	60000	90	59.583
8	6470	1500	135	93500	135	81.5
9	4260	900	90	63000	90	57
10	8769.231	1800	203.077	120000	203.077	124.615
11	3600	540	90	50000	90	60
12	10800	1350	240	175000	240	180
13	1500	450	30	20000	30	15
14	4260	900	90	63000	90	57

The inefficient firms can become relatively efficient by achieving the target set by DEA. The results of DEA show that the inefficient firms can become efficient firms by achieving the target input and maximizing the output. Table 3 provide the input and output values for the turmeric oleoresin extraction firms to achieve efficiency.

SUMMARY OF FINDINGS

This paper analyses Technical Efficiency of 14 Turmeric Oleoresin extraction firms located across South-India using DEA. The results suggests that out of 14 firms Four firms, firm 2, 3 and 4 show 100% efficiency. Another four firms show maximum efficiency above 90%. Two firms, firm 8 and 10 has efficiency greater than 80%. Three firms, firm 5,6,13 are moderately efficient i.e., less than 75%. The lowest efficiency is less than 60% for the firm 3. Also by using this DEA technique, the targeted input and output values were predicted for an efficient production. So it can be concluded that, DEA is an appropriate technique to analyses chemical manufacturing firms with multiple input/output variables.

CONCLUSION

The purpose of the paper is to find the technical efficiency of Turmeric Oleoresin extraction firms located across South-India. Analyses started by identifying the firms. As these firms measure their performance based on the output production, the technique chosen is non-parametric DEA with output oriented methodology. We have about five inputs, which is used to maximize the output. After selection of input and output variables, data is collected for these 14 DMUs and technical efficiency of these firms were calculated. The results show the most efficient firms and the least efficient firms. Some firms are operating under moderate conditions.

Based on the output and input, we also find the targeted output and input parameters so that all the inefficient firms can improve on their performance and become efficient if they achieve the targeted output and input quantities. So in conclusion similar manufacturing firms can use this non-parametric DEA technique to study the efficiency of the output production with optimum performance.

REFERENCES

1. Belen Iraizo, Manuel Rapun and Idoia Zabaleta, (2003), "Assessing the Technical Efficiency of horticultural production in Navarra, Spain", Elsevier - Agricultural Systems, Vol. 78, pp. 387-403.
2. Bhandari, Anup Kumar and Ray, Subhash C, (2007), "Technical Efficiency in the Indian Textiles Industry: A Nonparametric Analysis of Firm-Level Data", University of Connecticut, Department of Economics Working paper Series, Paper 200749.
3. Dlamini.S, Rugambisa.J.I, Masuku.M.B. and Belete.A, (2010), "Technical Efficiency of the Small scale sugarcane farmers in Swaziland: A case study of Vuvulane and Bigbend farmers", African Journal of Agricultural Research, Vol. 5, No. 9, pp. 935-940.
4. García Sánchez.M, (2009), "Technical and Scale Efficiency in Spanish Urban Transport: Estimating with Data Envelopment Analysis", Advances in Operations Research, Volume 2009, Article ID 721279, 15 pages.
5. Hasan A.Faruq and David T. Yi, (2010), "The Determinants of Technical Efficiency Manufacturing Firms in Ghana", Global Economy Journal, Vol. 10, No. 3, Article 7.
6. IzahMohdTahir and Ku Naraini Ku Yusof, (2011), "Estimating Technical and Scale Efficiency of Malaysian Public Listed Companies: A Non Parametric Approach", Interdisciplinary Journal of Research in Business, Vol. 1, No.7, pp. 1-7.
7. Joshi. R.N. and Singh S.P., (2010), "Estimation of total factor productivity in the Indian garment industry", Emerald Group Publishing Limited, Journal of Fashion Marketing and Management, Vol. 14, Iss: 1, pp.145 – 160.
8. Ku Naraini Che Ku Yusof, Ahmad Rizal Razali and Izah Mohd Tahir, (2010), "An Evaluation of Company Operation Performance Using Data Envelopment Analysis (DEA) Approach: A Study on Malaysian Public Listed Companies", International Business Management, Vol. 4, No. 2, pp. 47-52.
9. Mainak Mazumdar, Meenakshi Rajeev and Subhash C Ray, (2009), "Output and Input efficiency of manufacturing firms in India: A Case of Indian Pharmaceutical Sector", Institute for social and Economic Change, Working paper 219.
10. Minwir Al-Shammari, (1999), "A multi-criteria Data Envelopment Analysis model for measuring the productive efficiency of hospitals", International Journal of Operations & Production Management, Vol. 19, No. 9, pp. 879-890.
11. Mohammad Jaforullah and Erandi Premachandra, (2003), "Sensitivity of Technical Efficiency estimates to estimation approaches: An Investigation using New Zealand dairy industry data", University of Otago, Economics Discussion Papers, Working paper 0306.
12. Mohamed Saad Mohamed Abokareh and Badrul Hisham Kamaruddin, (2011), "Performance Rating of Privatized and Non-Privatized Firms Using Data Envelopment Analysis Technique", Journal of Information Engineering and Applications, Vol. 1, No. 4, pp. 1-8.
13. Niringiye Aggrey, Luvanda Eliab and Shitundu Joseph, (2010), "Firm Size and Technical Efficiency in East African Manufacturing Firms", Current Research Journal of Economic Theory, Vol. 2, No. 2, pp. 69-75.
14. Putu Mahardika Adi Saptura, (2011), "Analysis of Technical Efficiency of Indonesian manufacturing Industries: An Application of DEA", International Research Journal of Finance and Economics, Issue 66, pp. 107-116.
15. Rohita Kumar Mishra and Gokulananda Patel, (2010), "Supplier Development Strategies: A Data Envelopment Analysis Approach", Business Intelligence Journal, Vol. 3, No.1, pp. 99-110.
16. Sunil Kumar and Rachita Gulati, (2008), "An Examination of Technical, Pure Technical and Scale Efficiencies in Indian Public Sector Banks using Data Envelopment Analysis", Eurasian Journal of Business and Economics, Vol. 1, No. 2, pp. 33-69.
17. Vincent Mok, Godfrey, Zhaozhou Han and Zongzhang Li, (2010), "Export Orientation and Technical Efficiency: Clothing Firms in China", Managerial and Decision Economics, Vol. 31, No. 7, pp. 453-463.
18. Yusuf. S.A. and Malomo. O., (2007), "Technical Efficiency of Poultry Egg Production in Ogun State: A Data Envelopment Analysis(DEA) Approach", International Journal of poultry science, Vol. 6, No. 9, pp. 622-629.

ANALYSIS OF PERSISTENCY IN THE MONTHLY COIMBATORE RAINFALL

TAMIL SELVI .S
ASST. PROFESSOR
S.M.K. FOMRA INSTITUTE OF TECHNOLOGY
CHENNAI

SAMUEL SELVARAJ. R
READER
PRESIDENCY COLLEGE
CHENNAI

ABSTRACT

India is basically an agricultural country and the success or failure of the harvest and water scarcity in any year is always considered with the greatest concern. So, we predict that rainfall in the certain period. The Pearson correlation coefficient is computed to check the significance of persistency of Coimbatore monthly rainfall data from the year (1961 -1990). The Pearson correlation shows insignificant results so, a specific method chi-square (χ^2) test statistics is used in this paper for finding the persistency of Coimbatore rainfall.

KEYWORDS

chi-square, pearson correlation coefficient, persistency, rainfall, significance.

INTRODUCTION

Rainfall is most essential for our life. Rainfall is important for food production plan, water resource management and all activity plans in the nature. The occurrence of prolonged dry period or heavy rain at the critical stages of the crop growth and development may lead to significant reduce crop yield. India is an agricultural country and its economy is largely based upon crop productivity. Thus rainfall prediction becomes a significant factor in agricultural countries like India (Kannan et. al, 2010). When an area is subject to the influences of large-scale climatic phenomena, the local weather patterns show features of persistence- at times for several weeks. The persistence may influence consecutive months of weather patterns and rainfall yields recorded in those months. In such cases, statistical independence between monthly yields would not exist.

PEARSON CORRELATION COEFFICIENT

Correlation is a measure of the strength of relationship between random variables. The Pearson correlation coefficient is used for this analysis and is defined as

$$r = \frac{\sum_{i=1}^n (X_i - \bar{X})(Y_i - \bar{Y})}{\sqrt{\sum_{i=1}^n (X_i - \bar{X})^2} \sqrt{\sum_{i=1}^n (Y_i - \bar{Y})^2}} \quad (1)$$

Where X and Y are the observations of two variables and n is the number of observations.

Pearson correlation coefficient is a measure of the strength of the association between two variables. It ranges from -1 to +1. The other way of defining the correlation between two variables X and Y is:

$$r(X, Y) = \text{Covariance}(X, Y) / \{\text{Variance}(X) * \text{Variance}(Y)\}^{1/2} \quad (2)$$

r is called the Product Moment Correlation Coefficient or simply the Correlation Coefficient. It is a number that summarizes the direction and closeness of linear relations between two variables. The sign (+ or -) of the correlation defines the direction of the relationship. When the correlation is positive ($r > 0$), it means that as the value of one variable increases, so does the other.

If a correlation is negative ($r < 0$), it indicates that when one variable **increases**, the other variable **decreases**. This means there is an inverse relationship between the two variables. This coefficient, r, is a relative measure of the degree of persistence. However, this test implies that persistence, if it exists, is equally active throughout the recorded monthly rainfall sequence. In other words, it does not give pattern of persistence effects, but only evidence of its existence (Hoel, P.G; 1962). The Product Moment Correlation Coefficient computed for the monthly Coimbatore rainfall data gives no evidence of significant persistent effects. Since, the Product Moment Correlation Coefficient results insignificant, a more specific test is required to determine the persistence of Coimbatore rainfall.

CHI SQUARE TEST

A method to test for persistence of this type would be to check whether the sign of the deviation of the monthly rainfall yield from its monthly mean is consistently followed by a similar deviation in the following month. This can be achieved by using a standard statistical test for independence in a 2 x 2 contingency table (Wetherill, 1967).

TABLE 1: DEVIATION OF MONTHLY RAINFALLS FROM THE MEAN

		Month (m + 1)		
		Below mean	Above mean	Total
Month (m)	Below mean	A	B	A+B
	Above mean	C	D	C+D
	Total	A+C	B+D	A+B+C+D

Table 1 represents the frequency of occurrence of monthly rainfall yields above and below the respective means of two consecutive months. A χ^2 test statistic $\chi^2 = (AD-BC)^2 / (A+B+C+D) / (A+B)(A+C)(B+D)(C+D)$

is used as the criterion of acceptance or rejection of the null hypothesis of independence. The null hypothesis is rejected if

$$\chi^2 > \chi^2_{\alpha, d}$$

where $\chi^2_{\alpha,d}$ is obtained from χ^2 tables corresponding to α , the level of significance and d, the number of degrees of freedom. For a 2 x 2 contingency table the number of degrees of freedom d, is one.

RESULTS

The 30 years of complete monthly rainfall records for Coimbatore were tested for persistence. The χ^2 test was applied to the consecutive pairs of months throughout the year. Calculations were performed using equation 3. The null hypothesis is rejected if $\chi^2 > \chi^2_{\alpha,d} = 3.84$ for $\alpha = 5\%$ and $d=1$. Results of the test statistic χ^2 are listed in table 2.

Table 2. Results of applying the test statistic χ^2 to Coimbatore rainfall records. Persistence is assumed if $\chi^2 > \chi^2_{\alpha,d} = 3.84$. The level of significance for $\alpha = 5\%$ is given below.

Months	χ^2
January – February	0.0680
February – March	0.7187
March – April	0.625
April – May	0.7408
May – June	0.0893
June – July	1.5311
July – August	0.0487
August – September	0.2715
September – October	0.6206
October – November	0.9184
November – December	1.1552
December – January	0.6394

CONCLUSION

Thus, by Pearson correlation coefficient the persistence effect is found to be insignificant. The χ^2 test also shows insignificant persistence of rainfall between the pairs of months throughout the year. This test does not show satisfactory results at the level of significance for $\alpha = 5\%$. This persistence pattern is important in some hydrological studies, so some other method can be used to find the persistent effect.

REFERENCES

1. Hoel, P.G; (1962); "Introduction to Mathematical statistics", 3rd edition, New York, Wiley.
2. Kannan.M, Prabhakaran S., Ramachandran P; (2010) , " Rainfall Forecasting Using Data Mining Technique"; International Journal of Engineering and Technology Vol.2 , No.6 , pp. 397-401.
3. Wetherill, G.G; (1967); "Elementary Statistical methods", London, Methuen.

PROS AND CONS OF IMPLEMENTING EMPLOYEE EMPOWERMENT IN SERVICE SECTOR- A META ANALYSIS OF RESEARCH LITERATURE

ELIZABETH GEORGE

RESEARCH SCHOLAR, DEPARTMENT OF APPLIED ECONOMICS, COCHIN UNIVERSITY OF SCIENCE & TECH., KOCHI

ASST. PROFESSOR

DEPARTMENT OF MANAGEMENT STUDIES

ADI SHANKARA INSTITUTE OF ENGINEERING AND TECHNOLOGY

KALADY

DR. ZAKKARIYA K.A.

READER

SCHOOL OF MANAGEMENT STUDIES

COCHIN UNIVERSITY OF SCIENCE & TECHNOLOGY

KOCHI

ABSTRACT

In this competitive and turbulent milieu, an organization's only true sustainable competitive advantage is its employees. The success of any organization especially organizations in tertiary sector largely depends on its empowered workforce. Empowerment is the ability to take decision regarding one's own job and have authority over the resources of the organization. Though the idea of empowerment has been there since 1950s following the work of social scientists like Likert and Herzberg, the term got currency in business organizations only from 1970s. Today majority of the organizations have adopted some kind of employee empowerment initiatives to enhance employees' commitment, to increase the organizational effectiveness and to increase the quality of their products and services. In service sector, employees who have contact with customers play a crucial role in attaining the goals of the organization. They are the link between the customers and the organization. Hence the chances of enhancing their effectiveness through empowerment need to be thoroughly explored. While a lot of researches have been done on the subject of empowerment of employees in the manufacturing industries, no much research has been done in the area of services. This paper is an attempt to explore the implications of implementing employee empowerment in service sector by analyzing the available research literature. Authors give an overview of the empowerment concept in the context of service sector organisations, highlighting the hurdles, an implementation process, and achievable benefits with the support of research literature. It also covers various empowerment initiatives in various service sector organisations.

KEYWORDS

Employee Empowerment, Employees, Implementation, Service Sector.

INTRODUCTION

The increasingly competitive global economy and changing technology requires organizations to learn and adapt to changes quickly in order to increase the organizational effectiveness. And here the major role is played by the 'employees' who are the organization's only true sustainable competitive advantage. This is particularly true in service organizations where the employees have direct contact with customers. Empowerment has been accepted as an important organisational factor in satisfying the psychological needs of the employees in work place and improving organisational and personal effectiveness and thereby achieving organisational goals. Kotter (1995) avowed that a major step in transforming an organization is to empower its employees to act on the organizational vision. Empowered employees can deal successfully with market turbulence and unforeseen demands of the future (Lorsch, 1995). Employee empowerment is a management technique which can be applied universally across all organizations as a means of dealing with the needs of modern global business in all industrial sectors (Barry, 1993; Johnson, 1993; Foy, 1994). In recent years, empowerment has been recognized as an important feature of successful management (e.g., Batten, 1995). According to Byham (1992), empowerment is a feeling of job ownership and commitment brought about through the ability to make decisions, be responsible, be measured by results, and be recognized as a thoughtful, contributing human being rather than a pair of hands doing what others say. In the service industry, empowerment is particularly important as only the empowered employees can respond quickly to customer service requirements. An empowered and proactive workforce is essential for an organization to be faster in innovation and change, to be more efficient and profitable and to provide better service (Bowen & Lawler, 1992; Fulford & Enz, 1995). Pfeffer (1994) notes that achieving competitive success through people means working with them, not limiting the scope of their activities.

DIMENSIONS OF EMPOWERMENT

The concept of empowerment is derived from theories of participative management and employee involvement (Spreitzer et al, 1997). The literature on employee empowerment reveals two different perspectives. One is macro in orientation and the other is micro in orientation. The former is called the relational approach or social structural approach to empowerment and the latter the motivational or psychological approach to empowerment (Conger & Kanungo, 1988). The relational approach emphasizes the idea of sharing power between managers and subordinates with the aim of pouring relevant decision-making power to lower levels of the organizational hierarchy (Liden & Arad, 1996) whereas psychological approach focuses on how the individual perceives about their role in the organization. Some researchers have viewed empowerment from a multidimensional perspective also.

SOCIAL STRUCTURAL PERSPECTIVE OF EMPOWERMENT

In the structural view, the underlying principle is that employees will behave in an empowered way by making necessary changes at structural level. Here the relationship between the manager and subordinate is examined in terms of the distribution of power. Kanter's (1977) Men and Women Corporation was a classic study in the development of social-structural theory of empowerment. In this perspective empowerment is defined as having power in the organization (Burke, 1986). Power means ability to take decision regarding one's own job and to have authority over the resources of the organization. (Lawler, 1986) It is about sharing of power through delegation of responsibility (Conger and Kanungo, 1988). Thus, relational approach gives the employees more freedom for performing their job.

Bowen and Lawler (1995) have framed a well-known social-structural model of empowerment. They defined empowerment as sharing various organizational factors like information, power, reward and knowledge, with employees in the lower level of the organizational hierarchy. This can be implemented in three levels---first level relates allowing the employees to suggest, second level relates to job involvement by reducing intensive supervision and the third level relates to high involvement which include direct participation of employees.

The social-structural perspective emphasizes the importance of changing organizational policies, practices and structures (Bowen et al., 1995). This perspective focuses on how organizational and other forces can eradicate the conditions that foster powerlessness in workplace by sharing of power between superiors and subordinates (Liden and Arad, 1996). But this perspective does not view empowerment from the employee's point of view.

PSYCHOLOGICAL PERSPECTIVE OF EMPOWERMENT

The psychological perspective focuses on perceptual or psychological dimensions of empowerment (Liden et al, 2000). It lays emphasis on employee's perception and experience on empowerment. The work of Conger & Kanungo (1988), Thomas and Velthouse (1990) have contributed towards clarification of the psychological approach to empowerment. Psychological empowerment is a reflection of the employee's perceptions and attitudes about their work environment. In this approach, the emphasis is upon perceptions and beliefs of power, competence, control and self-efficacy (Psoinos and Smithson, 2002). Conger and Kanungo (1988) defined empowerment as 'a process of enhancing the feelings of self-efficacy among organizational members through the identification of conditions that foster powerlessness and through their removal by both formal organizational practices and informal techniques of providing efficacy information'. They identified five stages while explaining the process of empowerment: a) Conditions leading to a psychological state of powerlessness which include organizational factors, reward system, supervision and nature of job, b) The use of managerial strategies and techniques like participative management, job enrichment, feedback system, goal setting, competence based reward, modeling, c) To provide self-efficacy information to subordinates using four sources like enactive attainment, vicarious persuasion, vicarious experience and emotional arousal till they overcome the state of powerlessness, d) Results of empowering experience of subordinates where the sub-ordinates are empowered, e) Leading to behavioural effects which result in accomplishment of task. Thomas and Velthouse (1990) argued that the concept of empowerment is much more complex and could not be fully explained in a one dimensional construct such as self-efficacy. They defined empowerment as a set of cognitions that helps to create an active-orientation to one's job. The four psychological cognitions of Thomas and Velthouse's (1990) model are impact, competence, meaningfulness and choice. Thomas and Velthouse (1990) considered that six key variables influence these cognitions. They included environmental events, task assessments, global assessments, interpretative styles, behaviours and interventions. Using the Thomas and Velthouse model as foundation, Spreitzer (1995) operationalised it by developing a scale to measure the four components of empowerment. Spreitzer renamed "meaningfulness" cognition to 'meaning' which meant, a fit between the needs of a person's work role and his or her beliefs, attitudes, and "choice" cognition was renamed as 'self-determination' which meant, autonomy in performing one's job. Spreitzer (1997) distilled the interdisciplinary literature on empowerment, drawing various aspects from psychology, sociology, social work and education. Menon (1999) has also put forward an entirely new set of dimensions. He defined the psychologically empowered state as a cognitive state characterized by a sense of perceived control, perception of competence and internalization of goals.

EMPLOYEE EMPOWERMENT IN SERVICE SECTOR

World Bank (2003) data indicated that more than half of the working population in both the high income nations and low income nations has been engaged in the service sector at the beginning of the 21st century. Today's economy is getting more service oriented and we live in a service society. The service sector has experienced not only a great development but also greater competition. The customers have a wider range of services to choose. Employees in a service organisation, who have frequent contacts with the customers, are the representatives of both the organization and their products or services. The organization is evaluated on the quality of the service and the satisfaction the customer may derive. These employees can portray a positive or negative picture to the customers. Due to the role played by employees in service organization, empowerment of employees is particularly important in service organizations.

Bowen and Schneider (1985) argue that in service industry the employer-employee relationship should be altered to reflect the impact of the relationship between service workers and customers. The underlying theme in this suggestion is that an empowered workforce can provide high quality customer service which can be a competitive advantage enabling the organisation to differentiate itself from other organisations (Corsun and Enz, 1999).

According to Thomas and Velthouse (1990), service employees will experience psychological empowerment with respect to meaning, choice, competence and impact. From the perspective of service quality, meaning refers to employee's perception of their job as meaningful and the belief that the job they do is important to their customers. Choice implies that the employees are free to take action independently to improve the quality and converse when they have a different view or thought and that they are involved in decisions affecting the way they deliver service. Competence is a belief that a person is capable of performing something. In the context of service quality, impact is the quality of service provided to customers.

Hierarchical and centralized structure is followed in most of the service sector organizations, which should be changed and some of the decision making power should be capitulated to subordinates (Brymer 1991). The success of service organization depends on the initiative, dedication, social skills and hard work of its employees (Anastassova & Purcell, 1995). Fulford and Enz (1995) state that employees who have more contact with customers will have greater feeling of empowerment than employees in manufacturing organizations. They studied empowerment with respect to service sector organizations and proposed that service employees' perception of empowerment will affect their performance and delivery of service. Lashley (1995) also concentrated on studies of empowerment at organizational level in service sector. He states that empowerment enhances employees' sense of personal power and allows them to delight their customers. Service Organizations today recognize that they can differentiate themselves from their rivals with respect to service quality and improved customer satisfaction (Zeithaml et al, 1996).

The empowerment can result in employee commitment, quality, responsiveness, synergy, products and services, efficiency, management leverage, and increased competitiveness in the global market. Attaining competitive edge by improving service quality is linked with employee empowerment (Lashley, 1999). Chen (1998) opines that service operations are characterized by intensive interactions between customers and service providers; customer satisfaction is thus closely associated with service performance and various service encounters throughout the system. According to Looy et al (2003), empowered employees in service sector can easily handle complaints and other unpredictable situations. There are basically two approaches that a company can choose to adopt, the production line approach with little discretion given to the employees or the empowerment approach with more freedom and autonomy given to employee.

Several scholars also reported that empowered teams have higher levels of customer service and job satisfaction (Spreitzer, Kizilos, & Nason, 1997). Literature also reveals that empowered employees in service sector can provide better customer services and put in innovative ideas as they know customers and are physically close to them.

EMPOWERMENT INITIATIVES BY ORGANISATIONS

Empowerment means different things to different managers. Therefore each initiative is being designed to meet a set of organizational needs as perceived by managers. For example: In Accor group of hotels, empowerment has been used to describe the use of quality circles; in McDonald's Restaurants, suggestion schemes; "Whatever it Takes" employee training programmes in Scott's Hotels; employee involvement in devising departmental service standards in Hilton International Hotels; autonomous work groups and removal of levels of management in Harvester Restaurants; and the delegation of greater authority to service managers in British Telecom (as cited by Lashley, 1999).

Länsförsäkringar Bank practices employee empowerment through the actions and practices of human resource management and top management. The organizational structure is also such that it empowers the employees in services delivery. There is also free flow of information all around the bank which empowers the employees in providing services to customers.

In Swedish bank, flexible working practices were introduced with increase in communications and employee involvement initiatives like team briefing. Suggestion schemes, team working scheme and job enrichment schemes were also introduced. Line managers were encouraged to involve their teams in problem solving. British bank also implemented team briefing, a large scale TQM programme and a works council, known as the "Staff Council". The bank also introduced direct communication with staff, profit sharing and suggestion schemes (Holden, 1999).

In Toyota employees are empowered to give different ideas and suggestions to improve the production. The organisation accepts all the suggestions and makes necessary improvements and incremental innovations to each of the Toyota car models. Empowerment is being introduced in different ways in different service organisations depending on the variations in perception of empowerment by the management.

IMPLICATION OF EMPLOYEE EMPOWERMENT IN SERVICE ORGANISATIONS

Various service management literatures reveal that the benefits of empowerment are not only for the customers but also for employees in the form of employee satisfaction. Empowerment policy provides the frontline staff more autonomy thus reducing stress of the employees and enabling them to be more innovative (Bowen & Lawler, 1992). It also enables frontline employees to provide tailored services to meet special requirement of the customers. Empowerment not only provides customer satisfaction through better quality service but also increase job satisfaction, educates morale and role ambiguity.

Empowered employees will be willing to take responsibility for the service encounter and will respond more quickly to customer needs, complaints and changes in customer tastes and preferences (Barbee and Bott, 1991). Cook (1994) reported that empowerment leads to satisfaction and lower labour turnover. Employees will be more proactive and self-sufficient in assisting an organization to achieve its goals when they are empowered (Herrenkohl et al, 1999). According to Lashley, empowerment benefits includes: More responsive service, Complaints dealt with quickly, Greater customer satisfaction, More repeat business, Well-motivated staff, Increased productivity, High quality and profit, Improved labour stability and Lower labour costs.

Grönroos (2001) states that empowerment leads to following the benefits in service sector: quicker and more direct response to customer needs, increase customer retention, employees become more satisfied and enthusiastic with their jobs and provide new ideas. When the employees are empowered they have more freedom in performing their task and they can serve customers in a better way, leading to customer satisfaction. They will be motivated, more creative, have a positive attitude and willing to take up more responsibility. Empowerment is a means of providing service employees with enough autonomy to allow them handle unforeseen situations such as complaints (Looy et al, 2003).

It may be clear from the studies cited above that the following implications are resulted when empowerment is implemented in service sector organizations.

- Complaints can be dealt with quickly: Employees are able to help the customers even at unusual circumstances without the superior's intervention.
- Greater customer satisfaction: Employees will treat customers more enthusiastically and promptly which will lead to customer satisfaction.
- Empowered employees enable to retain customers: As a result of serving customers in a quick, skillful and service-oriented manner, they tend to stay with the same service provider.
- Employees are more satisfied with their jobs: The employees feel motivated and feeling of job ownership leads to less job absenteeism and reduced employee turnover.
- Empowered employees can generate new ideas: As a result of direct customer contacts they have insights into customer problems which they can share with management to facilitate improvements.
- Empowered employees are committed: Employees' level of organizational commitment increase and they become more committed towards their work.
- Display better work performance: Employees when empowered display better performance than those employees with lower level of empowerment.
- Improved labour stability and morale: Empowerment imparts trust and confidence which leads to reduced labour turnover.

IMPLEMENTATION OF EMPOWERMENT IN SERVICE SECTOR

A comprehensive understanding of the essence of empowerment is crucial to facilitate its effective implementation. There are several factors that facilitate empowerment of employees in organizations. Researchers like Conger and Kanungo (1980) and Lawler (1995) identified different set of conditions that can facilitate empowerment in organizations. They include good reward system, clarity in job design, training to employees, good supervisory style, access to information, proper communication, autonomy, access to resources, opportunity for self-development and so on.

Service organizations, unlike the manufacturing organisations have different approaches and techniques which is more personal in nature. Hence a deeper look into the implementation of empowerment of service sector employees, who should be capable of handling the customers, is essential. Bowen and Lawler (1992) have put forward a contingency framework for empowering employees in service organizations. According to them there are five contingencies of empowerment, namely types of employees, business strategy, tie to the customer, business environment and technology. They state that it is essential to make necessary changes in the policies, practices and structure to implement empowerment in the organization.

Lashley (1999) insisted that the implementation of empowerment practices will be more difficult in service organization because of the intangibility of services. He states that empowerment can be done through participation, involvement, commitment and layering. The organisation must reward the employees for their contribution (Lawler 1986). Organizational culture provides an environment and framework to determine when, where, and how to implement employee empowerment (Foster-Fishman and Keys, 1997). So, the organisation should provide a favourable organizational culture before implementation of employee empowerment.

As explained by Grönroos (2001), for an effective implementation of empowerment, the employees need the support of management, systems, technology, and information. Employees should be informed about customer needs, service concept and the process of delivery. Teaming can also be a vehicle for empowerment. Teams can be looked upon as focusing employees' attention beyond narrow duties to the broader role of meeting external needs such as needs of the customer (Amason, Thompson, Hochwarter & Harrison, 1995). Lin (2002) put forward a comprehensive approach to implement empowerment in organisation. According to him, empowerment should be an ongoing process determined by factors such as organizational culture and management practices that can enhance employees' self-efficacy. Empowerment should be a continuous and combined interaction of leaders, employees, organizational culture and management practices.

From various studies we can understand that empowerment can be built only on plausible and reliable management. The need of empowerment is to be communicated to the employees, as the need differs from organization to organization. The structure of the organization should be made more flexible for an easier implementation of empowerment. The organizational culture should be more adaptable and the employees should be included in the implementation process which makes them more responsible. Training is an essential tool to equip the employees to handle the sudden requirement of customers. Eventually the rewarding of employees should also be inculcated to the empowerment process. There is no a standardized empowerment program that can be used for a particular type of organization and the requirement for each organization varies from each other. So a detailed analysis of the organization and its requirement is to be done before implementing the managerial tool, empowerment.

ISSUES IN IMPLEMENTATION

Argyris (1998) maintains that empowerment is superficial and that the control of activities is always with the management. Many of the critics argue that empowerment is a trick used by the management to make employees work hard without much hike in their pay.

One of the reasons for the failure of empowerment efforts may be because of lack of, supportive work environment. Many organization have downsized middle managers and have given the responsibilities to the existing front line employees. But these redesigned jobs have failed to produce feeling of being empowered which resulted in creating job stress, burnout and helplessness (Corsun and Enz, 1999).

There can be mistakes in the way empowerment is implemented. As the exact meaning of empowerment is not clear, the managers may not know how to implement empowerment. Empowerment represents a kind of moral hazard for managers (Pfeffer, 1994). Managers fail to establish boundaries for employee empowerment. Empowerment depends on the capability of the manager to adjust with the potential loss of control inherent in sharing power so that the employees can be empowered for higher levels of motivation and productivity (Mills and Ungson, 2003).

From various studies across different disciplines, Bartunek and Spreitzer (2006) found that, empowerment in organizations has focused more attention on issues of fostering productivity and less on enabling human or societal welfare. Some organisations even consider empowerment, just as delegation. Some

organizations implement empowerment with out providing adequate information and training to the employees. A common reason for the failure of many empowerment initiatives is that they address how people should perform or behave differently, but fail to address the attitudes, values and ideals that support the present behaviour. As a result, changes in performance and behaviours become difficult to persist..

CONCLUSION

A Meta analysis of the literature on empowerment reveals a positive effect of employee empowerment on organizational effectiveness. Empowerment also motivates the employees to greater services and creates a greater sense of accomplishment or satisfaction in their jobs, if implemented properly. It is an effective tool to attain the goals of the organization. Hart and Schlesinger (1991) said that successful empowerment calls for a cultural shift within an organization in terms of a change in values, in the way people work together, and in the way people feel about participation and involvement. Different organizations take different empowerment initiatives. Eventually the success of the empowerment initiative which claims to empower the employees will be evaluated by the extent to which it enables the empowered to feel personally effective and what is the outcome of such initiatives.

REFERENCES

1. Amason,A. C., Thompson,K.R.,Hochwarter,W.A., & Harison,A.W. (1995)," An important dimension in successful management teams", Organisational Dynamics, Vol.24, No. 2,pp-20-35
2. Anastassova,L.,& Purcell,K.(1995),"Human resource management in Bulgarian hotel industry," International Journal of Hospitality Management 14(2),171-185
3. Argyris (1998),"Empowerment: The emperor's new clothes," Harvard Business Review, May-June, 8-105.
4. Barbee, C. and Bott, V. (1991), "Customer treatment as a mirror of employee treatment", Advanced Management Journal, Vol. 5, pp. 27.
5. Barry, T. (1993), "Empowerment: the US experience", Empowerment in Organizations, Vol. 1 No. 1.
6. Bartunek, J.M. & Spreitzer, G.M. (2006), " The interdisciplinary career of a popular construct used in management: Empowerment in the late 20th century", Journal of Management Inquiry, Vol. 15,No.3, 255-273
7. Batten, J. (1995), "Viewpoints: What's hot in management?" SAM Advanced Management Journal, Vol.60, No.1, pp. 46-47.
8. Bowen, D.E. and Lawler, E.E. (1992), "The empowerment of service workers: why, how and when?", Sloan Management Review, Vol. 31, Spring.
9. Bowen, D. E& Lawler, E.E (1995),"Empowering service employees", Sloan Management Review, 36, 73–84
10. Bowen, D.E. & Schneider,B. (1985), " Boundary-spanning-role employees and the service encounter: Some guidelines for management and research, The service encounter: Managing employee/customer interaction in service businesses, pp.127-147.
11. Burke, W. (1986), "Leadership as empowering others", In S. Srivastva (Ed.), Executive power, San Francisco: Jossey- Bass,pp: 51-77
12. Brymer, R. A.(1991),"Employee Empowerment: A guest driven leadership strategy", Cornell Hotel and Restaurant Administration Quarterly, Vol. 32,No.1,pp. 58-68
13. Byham W. C. (1992), "Would you recognize an empowered organization if you saw one?",Tapping the Network Journal, Vol. 3, No. 2, pp. 10-13
14. Chen, W. H. (1998)," Benchmarking quality goals in service systems", The Journal of Service Marketing, Vol. 12, No. 2,pp. 113–128
15. Conger, J. A. & Kanungo, R. N. (1988), "The empowerment process: Integrating theory and practice", Academy of Management Review, Vol. 13, pp. 471–482.
16. Cook, S. (1994), "The cultural implications of empowerment", Empowerment in Organizations, Vol. 2 No. 1, pp. 9-13.
17. Corsun, D. and C. Enz (1999),"Predicting Psychological Empowerment Among Service Workers: The Effect of Support-Based relationship," Human Relations, Vol. 52, No. 2, pp. 205-24
18. Foster-Fishman, P. G., & Keys, C. B. (1995)," The inserted pyramid: How a well meaning attempt to initiate employee empowerment ran afoul of the culture of a public bureaucracy", Academy of Management Journal Best Paper Proceeding, pp. 364—368.
19. Foy, N. (1994)," Empowering People at Work." Gower Publishing, London
20. Fulford, M.D. and Enz, C.A. (1995), "The impact of empowerment on service employee," Journal of Managerial Issues, Vol. 7 No. 2, pp. 161-75.
21. Grönroos, C. (2001)," Service management and marketing: a customer relationship management approach." John Wiley and sons limited, 2nd edition, England.
22. Herrenkohl, R. C., Judson, G. T. and Heffner J.A. (1999)," Defining and Measuring Employee Empowerment," Journal of Applied Behavioral Science, Vol.35, pp. 373.
23. Holden L.(1999), "The perception gap in employee empowerment: a comparative study of banks in Sweden and Britain," Personnel Review, Vol. 28 No. 3, pp. 222-241.
24. Johnson, P.R. (1993), "Empowerment in the global economy", Empowerment in Organizations, Vol. 1, No. 1
25. Kanter, Rosabeth Moss. (1977),"Men and Women of the Corporation." Basic Books, New York, NY.
26. Kotter, J. P. (1995), "Leading change: Why transformation efforts fail", Harvard Business Review, pp. 59—67.
27. Lashley, C. (1995)," Towards an understanding of employee empowerment in hospitality services", International Journal of Contemporary Hospitality Management, Vol. 7, No.1, pp. 27-32.
28. Lashley, C. (1999),"Employee empowerment in Services", Personnel Review, Vol. 28, No.3, pp.169-191.
29. Lawler, E.E. (1986), " High involvement management.", San Francisco: Jossey-Bass
30. Liden, R.C., & Arad, S. (1996),"A power perspective of empowerment and work groups: Implication for HRM Research", Research in personnel and HRM, Vol. 14, pp. 205-252.
31. Liden, R.C., Wayne, S.J. and Sparrowe, R.T. (2000),"An examination of the mediating role of psychological empowerment on the relations between the job, interpersonal relationships and work outcomes", Journal of Applied Psychology, Vol. 85 No. 3, pp. 407-16.
32. Lin. Y. Y.(2002), " Empowerment in the Service Industry: An Empirical Study in Taiwan", The Journal of Psychology, Vol. 136,No. 5, pp. 555-560
33. Lockwood, A. (1996): "Empowerment: the key to service quality ± an operations perspective" Conference Papers from Fifth Annual Hospitality Research Conference, Nottingham Trent, University, Nottingham.
34. Looy, B.V., Gemmel, P. and Dierdonck, R.V. (2003)," Services management; an integrated approach." Pearson education limited. 2nd edition, Great Britain.
35. Lorsch, J. W. (1995), "Empowering the board", Harvard Business Review, pp. 107-117.
36. Menon, S.T. (1999), "Psychological Empowerment: Definition, Measurement and Validation", Canadian Journal of Behavioral Sciences, Vol. 31,No. 3, pp. 161-164.
37. Mills, P.K. and Ungson, G.R. (2003),"Reassessing the limits of structural empowerment: Organizational constitution and trust as controls", Academy of Management Review, Vol. 28, No. 1, pp. 143–153.
38. Pfeffer, J.(1994)," Competitive advantage through people: Unleashing the power of the work force." Harvard Business School Press,Boston
39. Psinos, A. and Smithson, S. (2002), "Employee empowerment in manufacturing: a study of organizations in the UK", New Technology, Work and Employment, Vol. 17 No. 2, pp. 132-48.
40. Spreitzer, G. M. (1995)," Psychological empowerment in the workplace: Dimensions, measurement and validation", Academy of Management Journal, Vol. 38, pp. 1442–1465
41. Spreitzer, G. M. (1997)," Toward a common ground in defining empowerment", Research in Organizational Change and Development, Vol. 10, pp. 31–62.
42. Spreitzer, G. M., Kizilos, M. A., & Nason, S. W. (1997)," A dimensional analysis of the relationship between psychological empowerment and effectiveness, satisfaction and strain", Journal of Management, Vol. 23, No. 5, pp. 679–704.
43. Thomas, K. W. & Velthouse, B. A. (1990)," Cognitive elements of empowerment: An interpretive model of intrinsic task motivation", Academy of Management Review, Vol. 15, pp. 666–681.
44. World Bank (2003),"World Development Indicators 2002, Washington DC: The World Bank Group control", Journal of Personality and Social Psychology, Vo1.43, pp. 802-810
45. Zeithaml, Valerie A. and Mary J Bitner (1996),"Service Marketing." McGraw-Hill Inc, NY

STUDY OF CONSUMER AWARENESS ABOUT E-BANKING SERVICES AND ITS APPLICATION IN SELECT AREA OF PUNE CITY

KRISHNA MOHAN SHARMA
ASST. PROFESSOR
DR. D. Y PATIL INSTITUTE OF MANAGEMENT
AMBI

VINEETA DEOLIA
TRAINER-SOFT SKILLS
BARLOTA NAGAR

ABSTRACT

The study find that the E-banking is growing but as far as online banking is concerned there are few users (27%) who use online banking due to possibility of online fraud while ATM banking and Mobile banking are preferred options in e-banking.

KEYWORDS

E-banking, Customer satisfaction, PCMC.

INTRODUCTION

E - Banking is a new banking system in banking industry and getting popularity in Indian scenario. The E -banking channel is both an informative and a transactional medium. However, E -banking has not been well understood by Indian customers in India. The growth of technology has changed the payment systems world over during the past two decades. More and more innovations are being introduced in both cash payment systems and non-cash payment systems. With the introduction and implementation of recent technology in banking, electronic devices are making the job of cash payment as well as non-cash payments easy and efficient. The introduction of Automatic Teller machines (ATMs) and the plastic Cards (Credit Cards) has given the banking customers the facility of round the clock (24 hours) banking. (Nath, 2005), Malhotra and Singh (2007) carried out a study to know the E -banking adoption by the banks in India. The study reveals that larger banks or banks with younger age, private ownership and lower branch intensity possess high probability of adoption of this new technology. E - Banking provides an opportunity for those customers who are familiar with internet facility while majority of customers are not having internet facility at their home or nearby their residence which creates the limitations for the development of e-banking in Indian perspective. Researcher observed that even educated people do not prefer to use E-banking. There are various electronic payment systems such as ATMS, Credit Cards, Debit Card. E-banking can provide speedier, faster and reliable services to the customers for which they are relatively happy. E-banking services not only can create new competitive advantages, it can improve its relationships with customers (Nupur, 2010). The purpose of this research is to understand the impact of variables. This research paper is an attempt to know the awareness level and confidence level of users in E-banking Services in select area of Pune City.

LITERATURE REVIEW

Growth of Electronic banking in a country depends on many factors, such as success of internet access, new online banking features, household growth of internet usage, legal and regulatory framework. E-banking can offer speedier, quicker and dependable services to the customers for which they may be relatively satisfied than that of manual system of banking. (Nupur, 2010). Pikkarainen, Karjaluoto, and Pahlila, (2004) defines internet banking as an „internet portal, through which customers can use different kinds of banking services ranging from bill payment to making investments“. With the exception of cash withdrawals, internet banking gives customers access to almost any type of banking transaction at the click of a mouse (De Young, 2001). Banks use online banking as it is one of the cheapest delivery channels for banking products (Pikkarainen et al., 2004) . Such service also saves the time and money of the bank with an added benefit of minimizing the likelihood of committing errors by bank tellers (Jayawardhena, 2000). E-banking is defined as the automated delivery of new and traditional banking products and services directly to customers through electronic, interactive communication channels. E-banking includes the systems that enable financial institution customers, individuals or businesses, to access accounts, transact business, or obtain information on financial products and services through a public or private network, including the Internet. (Vasanthakumari, H, 2010). In the extant literature, the most cited attributes that influences the use of e-banking are: convenience of usage (Venkatesh and Davis, 1996), Perceived ease of use and credibility, cost reduction are key factors.

OBJECTIVES OF THE STUDY

- To know the awareness level of E-banking in PCMC area of Pune City
- To analyze the customer satisfaction level in PCMC.
- To know the problems in e-banking operation faced by customers.
- To know the customers suggestions about new required features.

RESEARCH METHODOLOGY

The study is mainly based on the primary data source and the secondary also. For general concept development about the short survey in primary sources and questionnaire used for collecting data about the customer satisfaction in e-banking in PCMC area.

SAMPLING METHODOLOGY

Researcher was intended to know the satisfaction and awareness level towards e-banking at PCMC area. Data is collected by adopting survey method and by visiting various banks like HDFC/ICICI Bank/Central Bank/ Axis Bank where customers were visiting for banking. Researcher collected the data from 243 respondents. The customers were selected by adopting convenience sampling method. A total of 243 useful questionnaires were entered in the data analysis. Cross tabulations, Multiple Regression and discriminate analyses were the main statistical tools employed.

REFERENCE PERIOD

1st Aug 2011-15th Oct. 2011

QUESTIONNAIRE DESIGN AND SCALE

The respondents responded to questions under each variable on five point Likert Scale with “Strongly agree” dictating the highest level of satisfaction, “Strongly disagree” as the highest level of dissatisfaction

HYPOTHESIS

H1: The quality of e-banking services offered by banks has significant influence on its customer.

H2: overall satisfaction with online banking services are positively related to online systems attributes.

H3: Satisfied customers use more online banking features than less satisfied customers.

EMPIRICAL RESULTS

The sample comprises more male (66%) than female. The majority of the respondents (66%) are in the 22 - 38 years old category. Access to the Internet is mainly at work (33%) or home. Researchers observed that normally even educated respondents feel fear to use online banking due to possibility of fraud. Only 27% have been using the Internet for banking purposes for more than two years and almost half of the respondents use Internet banking daily or at least three times per week. 36.5% customers use phone banking while majority of users prefer to use ATM as safe mode of transition. Finally, overall 74.4 percent declared to be strongly satisfied but reported the low frequency of ATM points in their area as well as 25.6 % customers' findings revealed that they received short money during transition and their problems were solved after lot of trouble.

Our results show that despite the level of satisfaction with internet banking, customers prefer to use multiple banking options like Mobile banking & ATM banking. Researcher observed that In PCMC area percentage of internet banking users are only 27%, Mobile users were only 31.5 % and majority of users (41.5%) prefer to use ATM banking facility and feel it safe rather than other options.

Researchers were intended to know the purpose of online banking and it is observed that normally customer prefer (100%) to use this facility for checking balance of their account, 41.6% to transfer the funds from their own account to another account but still they do not want to take the risk for transferring the fund in the account of another person due to fear of online fraud and percentage of online users were also recorded very low (27%). To pay various bills like telephone and electric bill 39.4% prefer to use online banking while only 19% customers prefer to use for shopping purpose.

Researchers further observed and recorded that majority of customers 41.5% prefer to use ATM mode for requesting cheque book, card payment and other purpose.

HYPOTHESIS TESTING

HYPOTHESIS 1

The three banks selected for the study are: HDFC, ICICI and AXIS Bank. The survey as shown in Table 1 revealed that 68.67% customers were satisfied with HDFC, 63.75% from AXIS while 61.25 were satisfied with ICICI Bank during e-banking.

The Chi-Square analysis was employed to test the hypothesis at 95%, 3 degree of freedom. The result of the analysis as shown in Table 1 revealed that the quality of e-banking services offered by banks have significant influence on their customers. The calculated Chi-Square = 72.3 is greater than the tabulated Chi-Square at 95% confidence level and 3 degree of freedom = 7.815.

Therefore, we accept our Null hypothesis that there is significant difference and reject the alternative hypothesis that there is no significant difference. The quality of e-banking services in terms of effective delivery, reliability, easy access and low fee charges significantly influence customers' choice of banks and patronage.

HYPOTHESIS 2 & 3

To test the hypotheses, Researchers applied multiple regressions with the overall satisfaction measure as dependent variable and customer service and online systems attributes as independent variables. The main effects of customer service and online systems attributes are predicted by hypotheses 1 and 2. Both customer services (H1) and online systems (H2) attributes have statistically significant effect on overall satisfaction. More specifically, courtesy, timeliness and product and services offered are all statistically significant ($p < .05$).

Findings reveal that not all customer service and online systems features motivate and enhance the satisfaction it differs from customers to customers as per their needs.

For analyzing H3 Researcher had applied discriminant analysis and findings reveals no significant differences at $p =$ or $< .05$. This leads to conclude that H3 is rejected. For testing this hypothesis collected data were divided between satisfied and dissatisfied customers. Researchers analyzed that 189 customers were satisfied while 54 respondents were dissatisfied.

Researchers conclude that customers are having multiple banking options and they are still not mentally prepared for frequent uses of online banking facility. Researchers further observed that customers were dissatisfied with time consumed by banks for resolving their complaint.

CONCLUSION

Researchers conclude that E-banking is growing but as far as online banking is concerned there are very few users (27%) who use online banking due to possibility of online fraud while ATM banking and Mobile banking are preferred options in e-banking.

REFERENCES

- DeYoung, J. 2001 „The Internet's place in the banking industry“, Chicago Fed Letter, No.163, pp.1-4
- Hernan E. Riquelme, Hernan , Khalid A. Mekkaoui and Rosa E. Rios, Internet Banking Customer Satisfaction and Online Service Attributes, Journal of Internet Banking and Commerce, August 2009, vol. 14, no.2.
- Jayawardhena, C., & Foley, P. 2000. Changes in the Internet banking sector – The case of internet banking in UK, Internet Research. Electronic Networking Applications and Policy, 10(1), 19-30.
- Malhotra, P. and Singh, B. (2007) 'Determinants of internet banking adoption by banks in India', Internet Research, Vol. 17, No. 3, pp.323–339.
- Nath Onkar(2005), Principle of Banking, Macmillan India Ltd, P. No.320
- Nupur Jannatul Mawa (2010), "E-Banking and Customers' Satisfaction in Bangladesh: An Analysis International Review of Business Research Papers Volume 6. Number 4. September 2010. Pp. 145 – 156
- Pikkarainen, T., Pikkarainen, K., Karjalainen, H., & Pahnla, S. 2004. Consumer acceptance of online banking: An extension of the technology acceptance model. Internet Research, 14(3), 224–235.
- Vasanthakumari H & Rani Sheela S(2010), Role of E – Banking Services in the banking sector, SRM Digest, 2010, p.no. 43
- Venkatesh V and Davis F D (1996), "A Model of the Antecedents of Perceived Ease of Use: Development and Test", Decision Sciences, Vol. 27, No. 3, pp. 451-81.
- Gbadayan R. A., Customers Preference for E-Banking Services: A Case Study of selected Banks in Sierra Leone, Australian Journal of Business and Management Research Vol.1 No.4 [108-116] | July-2011.

APPENDIX

TABLE NO. 1: CHI –SQUARE TEST FOR HYPOTHESIS-1

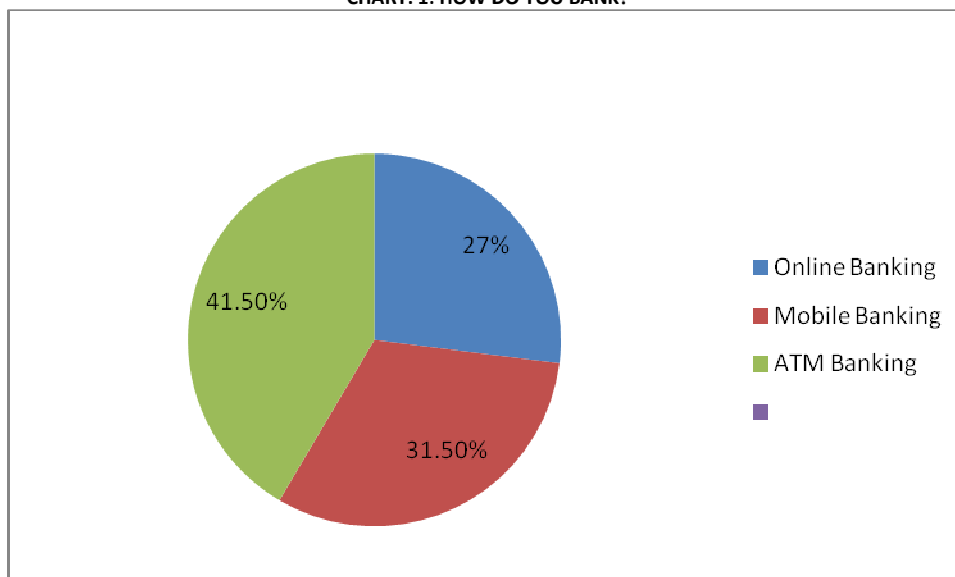
	Value	Df	Asymp.sig.(2-sided)
Pearson Chi-Square	76.241	3	.000
Likelihood Ratio	75.321	3	.000
Linear by Linear Association	14.293	1	.000

The result of the analysis as shown in Table 1 revealed that the quality of e-banking services offered by banks have significant influence on their customers. The calculated Chi-Square = 76.241 is greater than the tabulated Chi-Square at 95% confidence level and 3 degree of freedom = 7.815. Therefore, we accept our Null hypothesis that there is significant difference and reject the alternative hypothesis that there is no significant difference.

TABLE 2: ANALYSIS OF SATISFACTION LEVEL OF E-BANKING CUSTOMERS IN VARIOUS BANKS

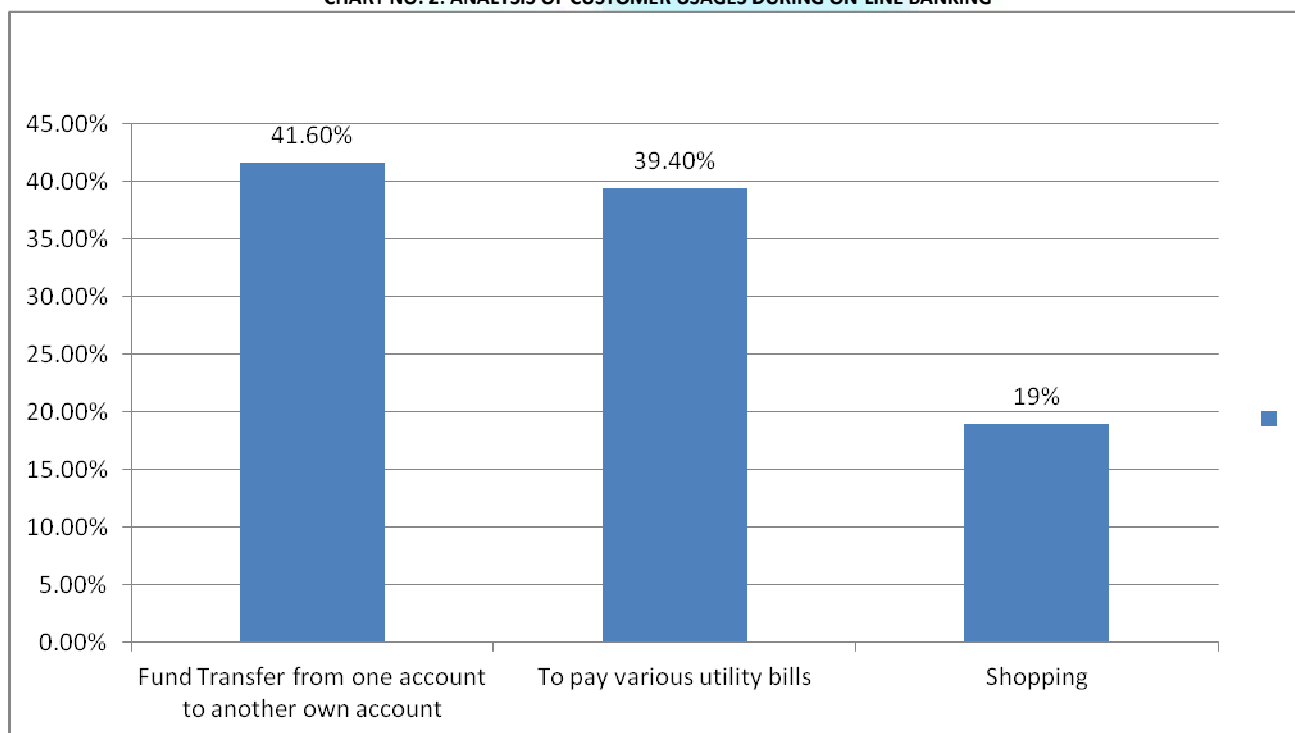
Banks	Are You Satisfied?				Total
	Yes	%	No	%	
HDFC Bank	57	68.67%	26	31.33	83
ICICI Bank	49	61.25%	31	38.75	80
AXIS Bank	51	63.75%	39	36.25	80
Total	157		96		243

CHART: 1: HOW DO YOU BANK?



Researcher were interested to know the preferred banking mode of customers and it was observed that majority of customers prefer to bank through ATM mode and only 27% customers use online banking facilities.

CHART NO. 2: ANALYSIS OF CUSTOMER USAGES DURING ON-LINE BANKING



Researchers observed that during online banking services customers prefer to transfer funds from their own account to their own account rather than third person account due to possibility of online fraud. 39.40% use for paying various utility bills and only 19% prefer to use for shopping purpose.

CSR – A NEW ROLE ENTRUSTED TO EDUCATIONAL INSTITUTIONS**PRAGATI CHAUHAN****ASST. PROFESSOR****MANAV RACHNA COLLEGE OF ENGINEERING****FADIDABAD****YOGITA SHARMA****ASST. PROFESSOR****MANAV RACHNA COLLEGE OF ENGINEERING****FADIDABAD****ABSTRACT**

Today social responsibility goes far beyond the "philanthropy" of the past; it is about the contribution to sustainable development and about proactive solutions to societal and environmental challenges. Considering that the educational institutions that stand as an important pillar of our society, it needs to develop a sense of civil citizenship by encouraging the students, the academic staff to provide social services to their local community or to promote ecological, environmental commitment for local and global sustainable development. It can be said that solution of virtually all problems depends on creating new knowledge. Hence the health of educational institutions depends upon recognizing their moral responsibility towards society at large apart from imparting education and to have revitalized, expanded, and far broader involvement of with society. Thus, this paper focuses on developing a model for educational institutions which primarily restricts them only by disseminating education. This paper also highlights role of educational institutions not only to train for various vocations in order to have social relevance than simply issuing diplomas, but to help students find their sense of direction and think beyond individual interest to societal interest

KEYWORDS

Corporate Social responsibility, higher education, social construction, knowledge and holistic education.

INTRODUCTION

It would be interesting to derive a meaning of the concept with the dissection of each of the words. CSR is not a difficult concept and therefore can be explained as:

- Corporate – means organised business;
- Social – means everything dealing with people, the society at large;
- Responsibility – means accountability between the two.

Thus, CSR could be defined as the progression of business operations carried out while ensuring compliance with legal requirements. 'CSR means open and transparent business practices that are based on ethical values and respect for employees, communities and the environment. It is designed to deliver sustainable value to the society at large as well as to the shareholders'.

There is no single, commonly accepted definition of CSR, even across global corporate bodies. It refers to business decision making linked to ethical values, compliance with legal requirements, and respect for people, communities and their environments. CSR is seen as more than a collection of discrete practices and occasional gestures or initiatives motivated by marketing, public relations or other business benefits. Rather, it is viewed as a comprehensive set of policies, practices and programmes that are integrated throughout business operations and decision-making processes. The concept of CSR is based on the idea that besides public authorities, companies also should take on responsibilities of social issues. According to more recent approaches, CSR is seen as a concept whereby on a voluntary basis social and environmental concerns are integrated in the companies' business operations and in the interaction with their stakeholders. The idea of being a socially responsible company means to go beyond legal compliance and to invest in human resources and the environment.

LITERATURE REVIEW

Mitchell R. Ness (1992) - Corporate social responsibility is a strategic decision whereby an organization undertakes an obligation to society, for example in the form of sponsorship, commitment to local communities, attention to environmental issues and responsible advertising.

Duane Windsor (2001) - Corporate social responsibility is one of the earliest and key conceptions in the academic study of business and society relations. This article examines the future of corporate social responsibility. Bowen's (1953) key question concerned whether the interests of business and society merge in the long run. That question is assessed in the present and future contexts. There seem to be distinctly anti-responsibility trends in recent academic literature and managerial views concerning best practices. These trends raise significant doubts about the future status of corporate social responsibility theory and practice. The vital change is that a leitmotif of wealth creation progressively dominates the managerial conception of responsibility.

Aruna Das Gupta (2005) - This paper attempts at charting out a road-map for signifying the importance of Corporate Social Responsibility (CSR) as a whole

Mary Ipe (2005) - This Case examines the Bhopal Gas Tragedy and explains what happened and why: The economic, legal and environmental aspects and addresses the wider issues facing the stakeholders and the players.

John Meehan, Karon Meehan, Adam Richards(2006)- To develop a model that bridges the gap between CSR definitions and strategy and offers guidance to managers on how to connect socially committed organisations with the growing numbers of ethically aware consumers to simultaneously achieve economic and social objectives.

Prashant Roy, Mohsin Alam (2007) - identified the responsibility of the growing private sector in India towards society and how it can contribute to the providing social justice in the Indian society.

Simeon Scott (2007) - examined five themes arising from definitions of corporate social responsibility (CSR): responsibility to the community and society; promoting democracy and citizenship; reducing poverty and the inequality between rich and poor; employee rights and working conditions; ethical behaviour.

Duygu Turker (2008) - Corporate social responsibility (CSR) is one of the most prominent concepts in the literature and, in short, indicates the positive impacts of businesses on their stakeholders. The purpose of this study is to provide an original, valid, and reliable measure of CSR reflecting the responsibilities of a business to various stakeholders.

Mahdi Salehi (2009) - According to this survey there is an expectation gap between actual level of CSR and expected level from the viewpoint of stakeholders.

Ruxandra Vasilescu, Cristina Barna, Manuela Epure and Claudia Baicu (2010) - This paper aims to explain the shifting from Corporate Social University to University Social Responsibility, by presenting the conceptual framework of Social Responsibility and the university as a special type of organization which needs to adopt a social responsibility strategy just like the other organizations, in order to meet the expectations of the stakeholders (present students, future

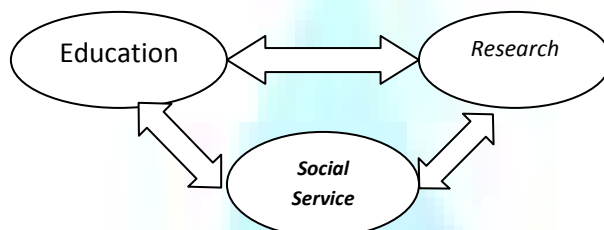
students, supporters etc). The paper presents, on the other hand, a general University Social Responsibility model in the context of globalization and develops a University Social Responsibility model considering the realities and challenges of the Romanian higher education system.

CSR DEFINED IN TERMS OF UNIVERSITY EDUCATION

There is substantial body of international opinion among major academic institutions around the world regarding the mission of Higher education in the present day context (Anandakrishnan, 2008). "The mission of higher education is to contribute to the sustainable development and improvement of society as a whole by: educating highly qualified graduates able to meet the needs of all sectors of human activity; advancing, creating and disseminating knowledge through research; interpreting, preserving, and promoting cultures in the context of cultural pluralism and diversity; providing opportunities for higher learning throughout life; contributing to the development and improvement of education at all levels; and protecting and enhancing civil society by training young people in the values which form the basis of democratic citizenship and by providing critical detached perspectives in the discussion of strategic choices facing societies." (AUCC, 2001).

University generally plays three traditional roles of education, research, and social service, but the society of today has attempted to alter the third role, that is social service, more to the framework of community partnership. Since ideal institution seeks complete commitment to and responsibility for society, it is their role and accountability to advance community leaders and contribute to community development thereafter.

FIGURE I: THREE ROLES OF UNIVERSITY EDUCATION



The efforts of universities to fulfill their missions through teaching, researching, and social service are integrated into students who will be part of the civil society. From the sense, most of people believe that universities lie under the obligation to prepare students to be responsible citizens (Fish, 2003; Thomas, 2000). This obligation especially corresponding to the roles of universities under the third mission, social service, regards universities as academic citizens who are actively and enthusiastically engaged in overlapping communities (Macfarlane, 2007). Universities have recently tended to add collaboration with community to the critical elements for higher education. This tendency is based on a belief that since ideal university seeks complete commitment to and responsibility for society, it is the university's role and accountability to foster community leaders and contribute to community development. Universities are not an island but a responsible citizen with community ownership.

There are various interpretations and definitions of Social Responsibility from different view points. There is no crisp meaning of this concept for example, social responsibility and social obligation, social responsibility and social approval, and social responsibility as a systemic approach. Thus, from an organizations integral vision and through responsible management, it should be minimized damage and maximized all the positive impacts for the benefit of both society and education involving students, stake-holders, teachers and employees.

The Social Responsibility of Educational Institutions is an area under discussion which is relevant and current in the perspective of structural changes that companies generally go through. Given the complexity of global challenges, present and future, education's mission should be to play a leading role in the social construction of knowledge addressing global challenges, highlighting intercultural dialogue, renewable energy, health public policy, ethics and holistic education.

RESEARCH OBJECTIVES

1. Develop a proposed model for discharging SR by educational institutions.
2. To identify the drivers and to understand the value of CSR in Education
3. This paper also highlights the role of educational institutions to have social relevance and to help students find their sense of direction.

RESEARCH METHODOLOGY

The research paper is an attempt of exploratory research in which the researchers have used the secondary data including journals, magazines, articles and media reports.

DRIVERS OF CSR

The drivers of CSR are:

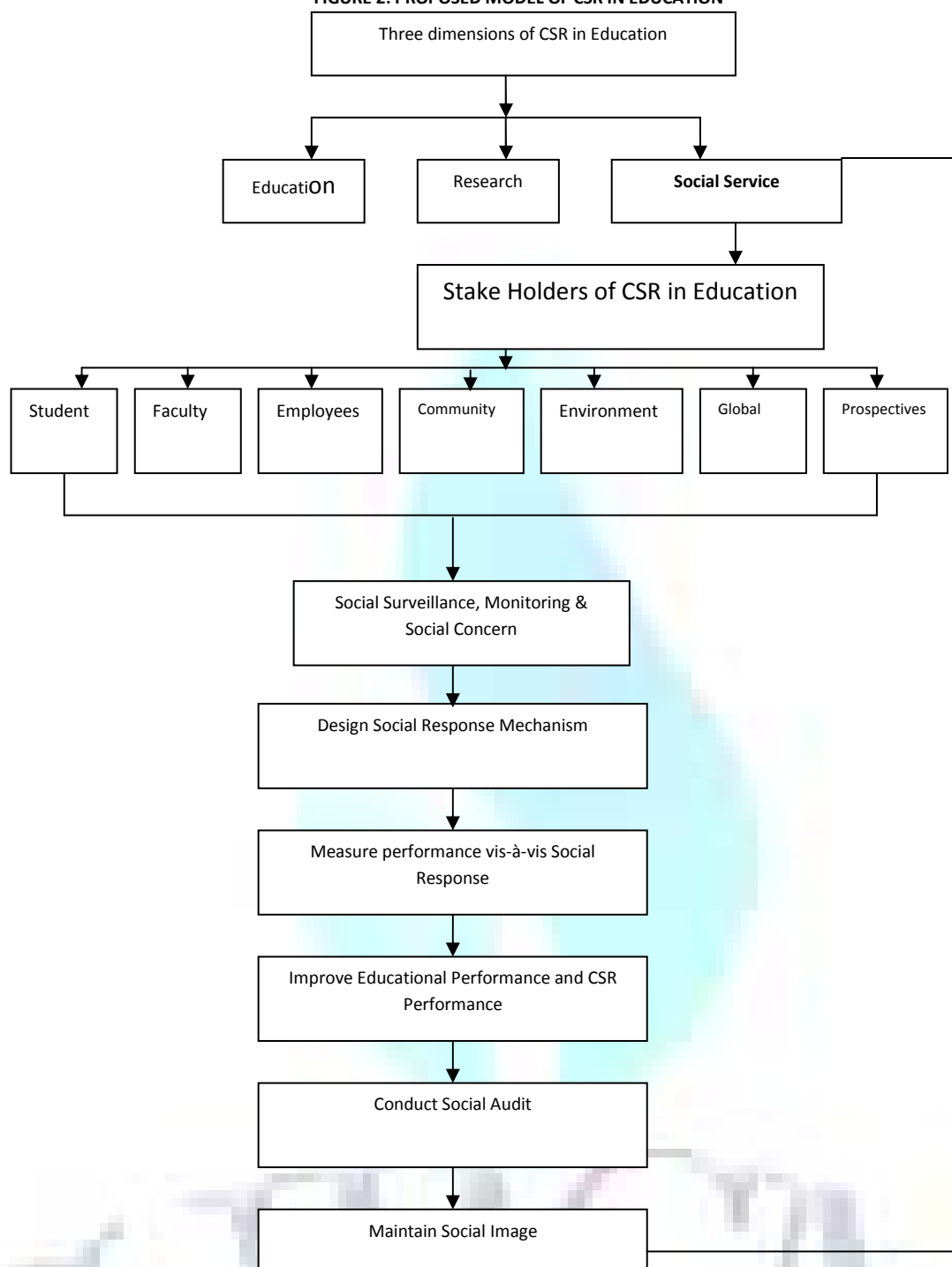
- Ethical
- Globalization
- Society awareness and education
- Regulatory authorities
- Stakeholders demands

RECOMMENDATIONS FOR AN EFFECTIVE CSR

- Determine a minimum CSR Expenditure – Every college should spend a minimum of its annual income on CSR activities.
- CSR philosophy to be defined- Duke President Richard H. Brodhead said "Making a Difference" will focus on enhancing the education of Duke Students and on extending Duke's contributions to society.
- Create inclusive employment – The employment should be offered to those who find it difficult to get jobs, by reserving a small percentage of workforces for such jobs.
- Involve employees in CSR – The employees should always be involved in social responsibility efforts. It helps institutions to undertake more effective CSR.
- Relate your core competency to benefit the society – Every organization has its core competency that should always benefit society rather than randomly wasting the efforts.
- Support areas and issues that are neglected – The institutions must come forward for those areas that are neglected by the society because they make future leaders.
- Developing internal CSR implementation systems – There should always be an in-house CSR implementation team as well.

PROPOSED MODEL OF CSR IN EDUCATION

FIGURE 2: PROPOSED MODEL OF CSR IN EDUCATION



BENEFITS OF DISCHARGING CSR TO EDUCATIONAL INSTITUTES

- Positive and long term relationship with communities
- Nation building and prosperity of the region of their operations and activities
- Providing support where government support is inadequate
- Increased Stakeholders belief and participation
- To obtain tax benefit
- Increased social and brand image

AUTHORS NOTE

Corporate social responsibility is the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large. Several forces are driving companies to practice a higher level of corporate social responsibility: rising customer expectations, changing employee expectations, government legislation and pressure, the inclusion of social criteria by investors, and changing business procurement practices. Companies need to evaluate whether they are truly practicing ethical and socially responsible marketing. For the new generation of corporate leaders, **optimization of profits** is the key, rather than the **maximization of profit**. Hence there is a shift from accountability to shareholders to accountability to stakeholders (including employees, consumers and affected communities).

REFERENCES

1. Banerjee P K (2003) Corporate Governance & Business Ethics in the 21st Century ICFAI Journal of Corporate Governance Vol III No 2 April 2004
2. Baron, D. (2001). 'Private politics, corporate social responsibility and integrated strategy'. *Journal of Economics and Management Strategy*, **10**, 7–45.
3. Banerjee P K (2003) Corporate Governance & Business Ethics in the 21st Century ICFAI Journal of Corporate Governance Vol III No 2 April 2004
4. Dr. Madan Bhasin (2008), Corporate Governance Scenario in India: Perspectives and Prospects, Chartered Secretary, pg.168-175.
5. Gundlach, Gregory D. and Patrick E. Murphy (1993), "Ethical and Legal Foundations of Relational Marketing Exchanges", *Journal of Marketing*, 57 (October), 35-46.
6. Krishnan, S. (2001). Corporate social responsibility: How and why in India, Retrieved on August 14, 2004 from http://www.coolavenues.com/know/m/corporate_citizenship.php3
7. Moon, J. (2002). 'Corporate Social Responsibility: An Overview' in *International Directory of Corporate Philanthropy*, London, Europa Publications.
8. Mohan, A. (2001). 'Corporate Citizenship: Perspectives from India', *Journal of Corporate Citizenship*, Spring, pp 107-117.
9. Raynard, P., & Forstater, M. (2002), *Corporate Social Responsibility: Implications for Small and Medium Enterprises in Developing Countries*, United Nations Industrial Development Organization, Retrieved on August 11, 2004 from www.unido.org/userfiles/BethkeK/csr.pdf
10. Weeden, Curt (1998), *Corporate Social Investing: New Strategies for Giving and Getting Corporate Contributions*. San Francisco: Berett-Koehler Publishers, Inc.
11. Warhust, A. (2001). "Corporate Citizenship and Corporate Social Investment: Drivers of Tri-Sector Partnerships", *Journal of Corporate Citizenship*, Spring, pp 57-73.

A STUDY ON EFFECTIVENESS OF CAPITAL STRUCTURE AMONG SELECTED PRIVATE TEXTILE COMPANIES IN INDIA

VIVEK SUBRAMANIAM
ASST. PROFESSOR
RVS COLLEGE OF ENGINEERING AND TECHNOLOGY
COIMBATORE

ABSTRACT

The present study has been done in order to identify the major factors influencing the capital structure of selected textile companies. The researcher has selected 30 private textile companies in India for the purpose of this study. The major reasons for selecting a study on the effectiveness of capital structure is due to the recent problems faced by textile companies in India with regard to the raising of long- term funds. Majority of the textile companies in India have not been able to maximize their levels of EPS and they have not been able to achieve high levels of EBIT due to the high levels of cost of production incurred by these companies. Therefore, due to these factors the companies have not been able to maintain consistent and high level of profits over a long time period. So, the short- term liquidity and the ability of these companies to meet their short- term debt obligations are also not effectively managed by selected companies. So, the researcher, in this study, has made an attempt to precisely identify those factors which contribute towards the effectiveness of capital structure of the selected companies. Appropriate suggestions have also been provided by the researcher for selected companies and it has been found whether the high debt firms or the less debt firms have been able to contribute towards the effectiveness of the capital structure among the selected large, medium and small sized companies.

KEYWORDS

EPS- Earnings Per Share, EBIT- Earnings Before Interest and Tax, Financial Leverage, EBIT-EPS approach and Debt Equity Ratio.

INTRODUCTION

This chapter deals with the analysis and interpretation of the data collected by the researcher. Statistical as well as financial tools and other methods have been used for the purpose of identifying whether companies with high debt or low debt have been able to perform better than the other companies and also the correlation between the debt equity ratio and other influencing factors have also been used as a basis for evaluating the effectiveness of the capital structure of the companies. For the purpose of analysis, the selected 30 companies have been classified into large- sized, medium- sized and small- sized companies.

The researcher has used tools such as the ratio analysis, EBIT/EPS analysis and also the Cross Table Bi- Variate Correlation Analysis for the purpose of assessing the influence of various factors of capital structure such as the profitability, liquidity, efficiency, interest coverage, Debtor effectiveness, and the effectiveness of turnover of these companies.

The purpose of using these tools is to find out whether increasing levels of the debt, financial leverage, maximization of EPS have a significant influence on the effectiveness of capital structure of the selected companies.

The researcher has classified the selected companies into large- sized, medium- sized and small- sized companies on the basis of the total paid- up capital of these companies. From the analysis, it has been revealed that not all companies with high paid- up capital and low debt levels are able to achieve operational efficiency, liquidity or EPS. Therefore, various other factors such as the tax levels of the company, the market factors also play an important role in determining the effectiveness of the capital structure.

STATEMENT OF THE PROBLEM

According to the theory of capital structure established by Modigliani and Miller, it has been proved that the capital structure of a firm assumes perfect market conditions and also it has been proved that the debt leverage of a firm can maximize the firm's value by reducing the overall cost of capital. It also assumes that corporate tax structure included in the process of debt leveraging has an impact on the overall value of the firm.

According to another model established by Shyam Sunder and Myer's, it has been proved that their trade- off theory is a dynamic model with a target optimum achieved by cross- sectoral variations in debt ratios through asset risk, profitability, tax status and asset type. In this study, the researchers have attempted to find out the effectiveness of the overall capital structure of selected companies in the textile industry.

For the purpose of determining the effectiveness, various factors affecting the companies such as the liquidity position, the profitability position and the efficiency level of the company have been analyzed and the impact of EPS on leveraging of earnings of the companies and also on the capital structure has been assessed in this study. Further, the influence of financial leverage and factors of profitability, liquidity as well as EPS on each other and it's impact on the capital structure of the selected companies has also been analyzed in this study.

SCOPE OF THE STUDY

The study covers selected companies in the textile industry in India. The effectiveness of capital structure of these companies have been analyzed by classifying these selected 30 companies into three different categories namely, large sized companies, medium sized companies and small sized companies on the basis of their average total paid-up equity share capital.

For the purpose of determining the effectiveness of their capital structure, specific factors such as profitability, liquidity and efficiency of the companies have been considered and selected ratios have been used to find out the relationship between these factors and the debt equity ratio of the company. Also, the Earnings Per Share (EPS) provided by the companies to their equity shareholders has also been considered to find out whether the companies have been able to maximize their earnings when they have maintained low debt or high debt in their total capital structure.

OBJECTIVES OF THE STUDY

PRIMARY OBJECTIVE

The primary objective of the study is to assess the effectiveness of the capital structure of selected private companies in the textile industry during the period 2000-01 to 2009-10.

SECONDARY OBJECTIVES

The following are the secondary objectives of the study:

- To determine the level of profitability of the selected companies and it's impact on the sales level of the companies and also their total assets.
- To determine the liquidity position of the selected companies and it's impact on the debt equity position of the companies.
- To determine the efficiency of the selected companies through factors such as the inventory, working capital, and fixed assets and it's impact on the turnover of the companies.
- To know whether the selected companies are able to maximize their EPS with increasing or decreasing levels of debt.
- To know whether the selected companies have been able to provide a high financial leverage for their shareholders.

f) To find out as to whether there is any significant correlation between the influencing factors of the debt equity ratio.

PERIOD OF THE STUDY

Data collected for the study has been taken for a period of 10 years from 2000-01 to 2009-10.

RESEARCH METHODOLOGY

SAMPLING DESIGN

The type of sampling design used for this study is complex random sampling design. The total population of the private textile companies in India has been divided into three different strata, that is, into 10 large- sized companies, 10 medium- sized companies and 10 small- sized companies.

Therefore, stratified random sampling method has been used in this study to categorize the selected 30 companies and arrive at the findings of the study. The companies have been classified on the basis of the average total paid-up equity capital raised by the companies.

Companies with total average paid- up equity capital of more than Rs. 1,800 crores during 2000-01 to 2009-10 have been classified as large- sized companies, companies with total average paid- up equity capital of more than 25 crores and up to Rs.1800 crores during 2000-01 to 2009-10 have been classified as medium- sized companies and companies whose total average paid-up equity capital is less than 25 crores during 2000-01 to 2009-10 have been classified as small- sized companies.

POPULATION AND SAMPLE SIZE

For the purpose of this study, the researcher has considered a total population of 1834 Private Textile companies in India as indicated by Capitaline database on September 2009.

The number of companies in the textile industry which have been considered for this study are 30 companies which have been classified into large- sized, medium- sized and small-sized companies.

TOOLS AND TECHNIQUES USED

The following tools have been used by the researcher in this study:

- Ratio Analysis and EPS Analysis
- EBIT- EPS Analysis
- Bi-variate Cross Table Correlation Analysis

HYPOTHESES FRAMED

The following hypotheses have been framed for arriving at findings in this study:

- Profitability, Liquidity, Efficiency, Interest coverage, Turnover ratios and EPS would be favourable for the selected companies and companies with low debt levels would be able to maximize the EPS for their equity shareholders among the selected large sized, medium sized and small sized companies.
- Companies with a high EPS would be able to achieve high levels of EBIT therefore providing high financial leverage for their equity shareholders.
- The factors of Profitability, Liquidity, Debtors Collection Period, Creditors Payment Period, EPS and EBIT would have correlation of 0.5 or more with each other among the selected large, medium and small sized companies.

ANALYSIS

TABLE NO 1: RELATIONSHIP BETWEEN PROFITABILITY, LIQUIDITY, EFFICIENCY, COVERAGE RATIOS, EPS AND DEBT EQUITY RATIO OF SELECTED LARGE SIZED COMPANIES DURING 2000-01 TO 2009-10

	Aditya Birla Nuvo Ltd	Amol Dicalite Ltd	AroraFibres Ltd	Ashnoor Textile Mills Ltd	Banswara Fabrics Ltd	Chandni Textiles Engineering Industries Ltd	Cheslin d Textiles Ltd	Dhanlaxmi Fabrics Ltd	Evinix Industries Ltd	Gem Spinners India Ltd
Debt Equity Ratio	0.75	1.66	0.35	0.98	0.99	0.51	2.65	1.32	0.85	2.18
PROFITABILITY RATIOS										
Gross Profit Ratio	11.38	21.07	-5.93	3.48	14.37	0.23	6.09	14.32	9.63	-0.36
Net Profit Ratio	5.69	7.61	-11.41	-3.76	6.54	-2.21	-1.06	4.8	6.7	-5.31
Operating Profit Ratio	16.27	26.84	-3.96	8.23	14.27	3.69	12.59	16.01	13.34	9.26
Return on total Assets	3.80	6.62	-10.35	-5.97	7.69	-2.75	-1.02	8.41	9.46	-5.36
LIQUIDITY RATIOS										
Current Ratio	2.82	3.13	4.89	2.4	0.89	2.73	2.74	2.22	4.89	1.64
Quick Ratio	1.76	2.13	2.63	1.29	0.67	1.82	1.13	1.65	2.82	1.03
COVERAGE RATIOS										
Fixed Interest Cover	2.53	10.61	6.25	-1.55	44	-14	0.06	3.38	1.3	-1.39
EFFICIENCY RATIOS										
Working Capital Turnover Ratio	2.64	0.63	3.03	4.48	-33.84	3.73	3.42	4.04	2.44	4.53
Inventory Turnover Ratio	5.61	1.33	5.23	5.63	0.56	2.58	18.34	8.27	3.12	4.46
Debtors Turnover Ratio	6.09	1.25	9.61	9.4	0.93	4.31	30.64	5.78	2.97	4.33
Debtors Collection Period	1.97 months	9.54 months	1.25 months	1.28 months	12.8 months	2.79 months	0.39 months	2.08 months	2.82 months	2.8 months
Creditors Turnover Ratio	2.87	2.48	11.28	2.01	4.17	4.01	3.71	2.06	6.59	1.04
Creditors Payment Period	4.36 Months	4.81 months	1.06 months	2.18 months	0.35 months	2.99 months	1.92 months	5.82 months	1.55 months	11.53 months
Fixed Assets turnover ratio	2.62	0.22	1.71	2.52	0.25	1.15	8.35	1.74	4.2	2.05
EPS	19.43	14	-1.65	1.2	5.71	0.27	1.29	2.75	11.74	0.08

INFERENCES

From the above analysis of the selected 10 large- sized companies for a period of 10 years from 2000-01 to 2009-10, it was found that companies such as AmolDicalite Ltd, AroraFibres Ltd, Evinix Industries Ltd, Cheslind Textiles, Banswara Fabrics Ltd, Gem Spinners India Ltd and Aditya Birla Nuvo Ltd have performed well in terms of profitability, liquidity, efficiency, fixed interest coverage, efficiency, EPS and EBIT. Among these companies, AmolDicalite Ltd, has a debt equity ratio of more than 1, that is 1.66 and an EPS of 14, which is not maximized by the company.

But the debt equity ratio of AroraFibres Ltd has a debt equity ratio of 0.35, a Debtors Collection Period of 1.25 months, and the EPS of the company has not been maximized even though the debt equity ratio is below the ideal ratio of 1 and the Debtors Collection Period was 1.25 months which was higher than other selected companies. But Aditya Birla Nuvo Ltd, has a debt equity ratio of 0.75 which is less than 1, the Debtors Collection Period was minimum with 1.97 months and the EPS was maximized by the company during this period with 19.43.

Therefore, Aditya Birla Nuvo Ltd provides the highest EPS to its equity shareholders due to the favourable debt equity position and also favourable Debtors Collection Period which shows that the company has been able to effectively make use of its existing capital structure.

TABLE NO 2: RELATIONSHIP BETWEEN PROFITABILITY, LIQUIDITY, EFFICIENCY COVERAGE RATIOS, EPS AND DEBT EQUITY RATIO OF SELECTED MEDIUM-SIZED COMPANIES DURING 2000-01 TO 2009-10

	Goldwon Textiles Ltd	Indian Acrylics Ltd	JJ Exporters Ltd	Lakshmi Mills Company Ltd	Ludlow Jute & Specialities Ltd	Mohit Industries Ltd	Oswal Knit India Ltd	Padam Cotton Yarns Ltd	Pasari Spinning Mills Ltd	RaiSaheb Rekhchand MohotaSpg.&Wvg. Mills Ltd
Debt Equity Ratio	3.88	1.36	0.72	0.68	0.27	1.07	1.32	0.5	0.58	1.67
PROFITABILITY RATIOS										
Gross Profit Ratio	-22.9	2.6	11.52	4.12	2.89	4.14	1.43	4.14	6.95	3.81
Net Profit Ratio	-27	-2.14	5.55	1.07	0.9	1.47	0.37	1.38	0.99	-0.15
Operating Profit Ratio	-23	9.58	14.43	9.44	4	5.75	8.43	10.03	9.09	6.81
Return on total Assets	-5.77	-2.23	5.34	1.14	3.17	3.71	1.2	12.46	0.73	-0.2
LIQUIDITY RATIOS										
Current Ratio	0.22	1.3	4.45	2.27	1.23	5.09	1.16	5.69	2.28	4.1
Quick Ratio	0.09	0.68	2.28	1.01	0.4	3.92	0.56	5.26	1.53	2.04
COVERAGE RATIOS										
Fixed interest cover	-2.44	-1.3	1.35	7.93	-1.01	1.38	-2.81	0.41	-0.04	-1.04
EFFICIENCY RATIOS										
Working Capital Turnover Ratio	-0.71	10.09	1.81	0.4	18.7	5.06	8.86	17.17	5.5	2.8
Inventory Turnover Ratio	4.38	4.86	1.01	2.36	1.96	0.99	2.34	2.54	0.43	4.21
Debtors Turnover Ratio	14.29	9.04	1.88	4.39	3.65	1.85	2.86	3.1	0.76	6.15
Debtors Collection Period	0.85 MONTHS	1.31 MONTHS	6.38 MONTHS	2.73 MONTHS	0.3 MONTHS	6.5 months	4.2 months	3.87 months	0.002 months	0.53 months
Creditors Turnover Ratio	0.61	1.29	1.28	0.31	1.28	0.27	0.48	0.03	0.51	3.22
Creditors Payment Period	1.11 MONTHS	9.49 MONTHS	9.38 MONTHS	9.4 MONTHS	9.38 MONTHS	9.4 months	24.7 months	24.89 months	24.5m	3.73 months
Fixed Assets turnover ratio	0.08	1.88	0.39	0.91	0.76	0.38	7.85	8.52	1.44	2.78
EPS	0.02	0.6	5.35	35.06	1.34	0.99	1.378	0.99	1.11	2.07

INFERENCES

From the above analysis, it is found that, JJ Exporters Ltd, Padam Cotton Yarns Ltd, Lakshmi Mills Company Ltd, Pasaari Spinning Mills Ltd have contributed the maximum towards profitability, liquidity, EPS and Debtors Collection Period of the selected medium- sized companies during 2000-01to 2009-10.

But the Debtors Collection Period of JJ Exporters Ltd is high with 6.38 months and the company has not been able to maximize its EPS for the equity shareholders which has only a minimum value of 5.36 Rs. The debt equity ratio of the company is 0.72 which is below the required ratio of 1.

Lakshmi Mills Company Ltd, has a debt equity ratio of 0.68, which is less than the ideal ratio of 1with a maximum EPS of Rs. 35.06 and a debt collection period of 2.73 months which was not the minimum duration taken for collecting the dues from the Debtors of the company .Other companies such as Padam Cotton Yarns Ltd, JJ Exporters Ltd and Pasaari Spinning Mills Ltd have a debt equity ratio of less than 1 and still have not maximized the EPS for their equity shareholders. Pasaari Spinning Mills Ltd have achieved the lowest duration of Debt Collection of 0.02 months but still have not been able to maximize their EPS. But, the Debtors Collection Period of Padam Cotton Yarns Ltd is higher, which has also been one of the major reasons for the company not maximizing their EPS.

TABLE NO- 3: RELATIONSHIP BETWEEN PROFITABILITY, LIQUIDITY, EFFICIENCY RATIOS AND THE DEBT EQUITY RATIO OF SELECTED SMALL- SIZED COMPANIES DURING 2000-01 TO 2009-10

	Riba Textiles Ltd	Ritesh Exports Ltd	Surat Textile Mills Ltd	Seasons Furnishings Ltd	Shri Dinesh Mills Ltd	SM Energy Teknik& Electronics Ltd	Spenta International Ltd	Vijay Textiles Ltd	Vogue Textiles Ltd	Zenith Exports Ltd
Debt Equity Ratio	1.77	0.31	0.89	1.02	0.32	0.38	1.05	2.58	1.62	0.77
PROFITABILITY RATIOS										
Gross Profit Ratio	9.65	-10.58	1.69	4.18	18.86	-14.64	20.32	9.26	8.59	5.79
Net Profit Ratio	4.74	-16.41	-1.22	0.98	8.41	-17.72	9.63	4.52	1.06	1.76
Operating Profit Ratio	14.43	-9.94	2.62	7.3	21.5	-6.94	24.03	19.85	16.72	8.75
Return on total Assets	4.58	-6.54	-1.37	2.21	7.2	-7.43	15.24	3.05	0.58	3.07
LIQUIDITY RATIOS										
Current Ratio	9.42	5.75	2.03	2.3	2.12	0.65	2.22	8.29	3.88	4.1
Quick Ratio	4.06	5.31	0.74	1.2	1.16	0.32	1.73	3.58	1.92	0.18
Fixed interest cover	0.11	-29	-1.35	-0.44	3.77	-3.27	2.28	-0.26	-0.77	0.7
EFFICIENCY RATIOS										
Working Capital Turnover Ratio	2.12	0.05	4.11	3.04	2.21	-2.25	3.04	1.22	1.38	2.02
Inventory Turnover Ratio	1.03	0.01	6.17	3.56	2.57	2.45	3.36	2.03	0.23	3.6
Debtors Turnover Ratio	1.5	8.34	32.37	5.36	9.3	4.64	6.36	2.62	0.3	8.04
Debtors Collection Period	7.98 month	NIL	0.42 months	2.24months	0.77 months	2.59 months	1.88months	4.57 month	39.8 month	1.49 month
Creditors Turnover Ratio	3.22	3.2	14.43	1.86	0.41	0.47	2.56	0.06	12	4.48
Creditors Payment Period	1.79 month	4.17 month	0.83 months	6.47months	55.83months	25.75months	4.68 months	1.8 month	0.47 month	2.68 month
Fixed Assets turnover ratio	0.67	0.01	2.54	3.91	1.81	2.77	1.66	2.36	0.27	3.06
EPS	0.02	2.57	0.067	0.411	69.31	0.234	3.285	1.094	0.399	6.281

INFERENCES

From the above analysis made for the selected small- sized companies during 2000-01 to 2009-10, it has been found that Spenta International Ltd , Shri Dinesh Mills Ltd, Ritesh Textiles Ltd, Riba Textiles Ltd have contributed maximum towards the profitability and liquidity of the selected small sized companies.

The Debt Equity Ratio of Shri Dinesh Mills Ltd and Ritesh Textiles Ltd have are less than the ideal ratio of 1 with 0.77 and 0.31 but they have not been able to contribute towards their profitability and liquidity.

So, Riba Textiles Ltd and Spenta International Ltd have not been able to achieve effectiveness of their capital structure due to their debt equity ratio being more than 1.

TABLE NO-4: EBIT - EPS/ OF SELECTED LARGE SIZED COMPANIES DURING 2000-01 TO 2009-10

	Aditya Birla Nuvo Ltd	AmolDicalite Ltd	AroraFibres Ltd	Ashnoor Textile Mills Ltd	Banswara Fabrics Ltd	Chandni Textiles Engineering Industries Ltd	Cheslind Textiles Ltd	Dhanlaxmi Fabrics Ltd	Evinix Industries Ltd	Gem Spinners India Ltd
EPS	19.43	14.0	-1.65	1.2	5.71	0.27	1.29	2.75	11.74	0.08
EBIT	331.59	15.6	4.81	-2.8	0.44	-7.52	0.44	2.03	2.82	-9.53

INFERENCES

From the above analysis done, it is found that in terms of EBIT/EPS analysis, AmolDicalite has performed better than other selected large- sized companies. But only Aditya Birla Nuvo Ltd has been able to maximize the EPS for it's equity shareholders and also achieve a higher financial leverage for it's equity shareholders. This shows that, among the selected large- sized textile companies, companies with a debt equity ratio of less than 1 and high profitability have been able to effectively contribute towards the EPS and also the capital structure of these companies.

TABLE NO- 5: EBIT /EPS OF SELECTED MEDIUM SIZED COMPANIES DURING 2000-01 TO 2009-10

	Goldwon Textiles Ltd	Indian Acrylics Ltd	J J Exporters Ltd	Lakshmi Mills Company Ltd	Ludlow Jute & Specialities Ltd	Mohit Industries Ltd	Oswal Knit India Ltd	Padam Cotton Yarns Ltd	Pasari Spinning Mills Ltd	RaiSahebRekhchandMohotaSpg.&Wvg. Mills Ltd
EPS	0.02	0.6	5.35	35.06	1.34	0.99	1.378	0.99	1.11	2.07
EBIT	-3.24	-27	2.51	-7.4	0.32	0.40	-3.94	0.41	-0.18	-3.91

INFERENCES

From the above analysis made, it is inferred that Goldwon Textiles Ltd has not been able to maximize it's EPS and Indian Acrylics Ltd has not been able to maximize financial leverage for it's equity shareholders among the selected companies and Lakshmi Mills Company Ltd has achieved the maximum EPS but it has not been able to achieve maximum financial leverage for it's equity shareholders.

TABLE NO- 6: EBIT /EPS OF SELECTED SMALL SIZED COMPANIES DURING 2000-01 TO 2009-10

	Riba Textiles Ltd	Ritesh Exports Ltd	Surat Textile Mills Ltd	Seasons Furnishings Ltd	Shri Dinesh Mills Ltd	SM Energy Teknik& Electronics Ltd	Spenta International Ltd	Vijay Textiles Ltd	Vogue Textiles Ltd	Zenith Exports Ltd
EPS	0.02	2.57	0.07	0.41	69.31	0.23	3.29	1.09	0.40	6.28
EBIT	0.16	-0.29	-1.99	-0.33	6.14	-1.96	0.91	-2.10	-0.56	3.79

INFERENCES

From the above analysis, it is inferred that among the selected small- sized companies, companies with a debt equity ratio of less than 1 have been able to provide a high financial leverage to it's equity shareholders with increasing EPS, thereby contributing effectively towards the maximization of capital structure of the company.

TABLE NO. 7: CROSS-TABLE BI- VARIATE CORRELATION BETWEEN THE INFLUENCING FACTORS OF DEBT EQUITY RATIO OF SELECTED LARGE- SIZED COMPANIES DURING 2000-01 TO 2009-10

	Debt Equity Ratio	Current Ratio	Quick Ratio	Gross Profit Ratio	Net Profit Ratio	Operating Profit Ratio	Return on total Assets	Working Capital Turnover Ratio	Inventory Turnover Ratio	Debtors Turnover Ratio	Debtors Collection Period	Creditors Turnover Ratio	Creditors Payment Period	Fixed Assets turnover ratio	EPS	EBIT
Debt Equity Ratio	1.0															
Current Ratio	-0.4	1.0														
Quick Ratio	-0.5	0.9	1.0													
Gross Profit Ratio	0.2	-0.3	-0.1	1.0												
Net Profit Ratio	0.1	-0.2	0.0	0.9	1.0											
Operating Profit Ratio	0.4	-0.3	-0.1	0.9	0.9	1.0										
Return on total Assets	0.1	-0.1	0.0	0.9	1.0	0.8	1.0									
Working Capital Turnover Ratio	0.1	0.5	0.5	-0.4	-0.4	-0.2	-0.4	1.0								
Inventory Turnover Ratio	0.6	0.0	-0.2	-0.2	-0.2	-0.1	-0.2	0.4	1.0							
Debtors Turnover Ratio	0.5	0.1	-0.2	-0.3	-0.3	-0.2	-0.3	0.3	1.0	1.0						
Debtors Collection Period	0.03	-0.4	-0.3	0.6	0.5	0.5	0.5	-0.8	-0.6	-0.5	1.0					
Creditors Turnover Ratio	-0.5	0.7	0.6	-0.4	-0.4	-0.6	-0.3	0.0	-0.1	0.1	-0.1	1.0				
Creditors Payment Period	0.5	-0.3	-0.2	0.0	-0.1	0.2	-0.1	0.4	0.0	-0.2	-0.1	-0.6	1.0			
Fixed Assets turnover ratio	0.5	0.2	0.0	-0.2	-0.1	-0.1	-0.1	0.3	0.9	0.9	-0.6	0.0	-0.2	1.0		
EPS	-0.1	0.1	0.3	0.7	0.8	0.7	0.7	-0.1	-0.3	-0.3	0.3	-0.2	0.0	-0.1	1.0	
EBIT	-0.2	0.0	0.1	0.2	0.3	0.2	0.2	0.1	0.0	-0.1	-0.1	-0.1	0.1	0.0	0.7	1.0

INFERENCES

From the above table, it is inferred that there is a significant positive correlation between the profitability ratios and the quick ratios of the large- sized companies. But there is a negative correlation between profitability and the turnover ratios of these large sized companies during 2000-01 to 2009-10.

Therefore, it is inferred that there is a significant positive correlation among the various factors of profitability and liquidity of the large sized companies during 2000-01 to 2009-10.

TABLE NO- 8: CROSS- TABLE BI- VARIATE CORRELATION BETWEEN INFLUENCING FACTORS OF DEBT EQUITY RATIO OF SELECTED MEDIUM- SIZED COMPANIES DURING 2000-01 TO 2009-10

	Debt Equity Ratio	Current Ratio	Quick Ratio	Gross Profit Ratio	Net Profit Ratio	Operating Profit Ratio	Return on total Assets	Working Capital Turnover Ratio	Inventory Turnover Ratio	Debtors Turnover Ratio	Debtors Collection Period	Creditors Turnover Ratio	Creditors Payment Period	Fixed Assets turnover ratio	EPS	EBIT
Debt Equity Ratio	1.0															
Current Ratio	-0.5	1.0														
Quick Ratio	-0.5	0.9	1.0													
Gross Profit Ratio	-0.8	0.6	0.4	1.0												
Net Profit Ratio	-0.9	0.6	0.4	1.0	1.0											
Operating Profit Ratio	-0.8	0.4	0.3	1.0	1.0	1.0										
Return on total Assets	-0.7	0.8	0.8	0.6	0.6	0.5	1.0									
Working Capital Turnover Ratio	-0.5	0.1	0.2	0.2	0.3	0.2	0.6	1.0								
Inventory Turnover Ratio	0.5	-0.3	-0.3	-0.3	-0.4	-0.2	-0.5	-0.2	1.0							
Debtors Turnover Ratio	0.8	-0.6	-0.5	-0.8	-0.9	-0.8	-0.8	-0.3	0.7	1.0						
Debtors Collection Period	-0.3	0.6	0.5	0.3	0.4	0.3	0.5	-0.1	-0.8	-0.6	1.0					
Creditors Turnover Ratio	0.1	0.3	0.0	0.2	0.2	0.2	-0.2	-0.2	0.3	0.0	-0.2	1.0				
Creditors Payment Period	-0.6	0.2	0.3	0.4	0.4	0.4	0.5	0.4	-0.1	-0.4	0.1	-0.6	1.0			
Fixed Assets turnover ratio	-0.3	0.0	0.2	0.3	0.2	0.2	0.2	0.1	0.3	-0.1	-0.3	-0.4	0.8	1.0		
EPS	-0.2	0.0	-0.1	0.2	0.2	0.2	0.0	-0.3	-0.2	-0.2	0.1	0.1	-0.1	-0.2	1.0	
EBIT	-0.1	0.4	0.4	0.1	0.1	-0.1	0.5	0.0	-0.4	-0.4	0.3	-0.1	0.2	0.2	-0.1	1.0

INFERENCES

From the above table, it is inferred that there is a positive correlation between the liquidity ratios of the selected medium sized companies during 2000-01 to 2009-10. But there is a negative correlation between the factors of profitability and turnover ratios.

TABLE NO-9: CROSS- TABLE BI- VARIATE CORRELATION ANALYSIS BETWEEN INFLUENCING FACTORS OF DEBT EQUITY RATIO OF SELECTED SMALL- SIZED COMPANIES DURING 2000-01 TO 2009-10

	Debt Equity Ratio	Current Ratio	Quick Ratio	Gross Profit Ratio	Net Profit Ratio	Operating Profit Ratio	Return on total Assets	Working Capital Turnover Ratio	Inventory Turnover Ratio	Debtors Turnover Ratio	Debtors Collection Period	Creditors Turnover Ratio	Creditors Payment Period	Fixed Assets turnover ratio	EPS	EBIT
Debt Equity Ratio	1.0															
Current Ratio	0.7	1.0														
Quick Ratio	0.3	0.8	1.0													
Gross Profit Ratio	0.4	0.1	-0.1	1.0												
Net Profit Ratio	0.5	0.2	-0.1	1.0	1.0											
Operating Profit Ratio	0.5	0.2	-0.1	1.0	0.9	1.0										
Return on total Assets	0.3	0.0	-0.1	0.9	0.9	0.9	1.0									
Working Capital Turnover Ratio	0.2	0.0	-0.2	0.7	0.7	0.5	0.6	1.0								
Inventory Turnover Ratio	-0.2	-0.5	-0.7	0.1	0.2	0.0	0.2	0.6	1.0							
Debtors Turnover Ratio	-0.3	-0.4	-0.3	-0.1	-0.1	-0.3	-0.1	0.5	0.8	1.0						
Debtors Collection Period	0.4	0.2	0.2	0.1	0.0	0.2	-0.1	-0.1	-0.7	-0.4	1.0					
Creditors Turnover Ratio	0.1	-0.2	-0.2	0.0	0.0	-0.1	-0.2	0.4	0.3	0.6	0.5	1.0				
Creditors Payment Period	-0.5	-0.4	-0.3	0.1	0.0	0.1	0.1	-0.2	0.0	0.0	-0.3	-0.4	1.0			
Fixed Assets turnover ratio	-0.1	-0.4	-0.7	0.0	0.1	0.0	0.0	0.2	0.7	0.2	-0.7	-0.2	0.1	1.0		
EPS	-0.4	-0.2	-0.2	0.4	0.3	0.4	0.3	0.1	0.0	0.0	-0.2	-0.3	0.9	0.0	1.0	
EBIT	-0.4	-0.2	-0.2	0.5	0.4	0.4	0.5	0.2	0.0	-0.1	-0.2	-0.3	0.6	0.0	0.8	1.0

INFERENCES

From the above table, it is inferred that there is a positive correlation between the EPS and the Creditors Turnover Ratio of the selected small sized companies, which shows that these companies have been able to maximize EPS and also provide maximum financial leverage for it's equity shareholders.

SUMMARY OF ANALYSIS AND INTERPRETATION

i) The selected large- sized companies have performed well in terms of liquidity, but have not performed well in terms of profitability and also efficiency. But these companies have maximized EPS for their shareholders and also there is a positive correlation between factors of profitability and liquidity and the company has achieved maximum financial leverage for it's equity shareholders.

ii) The selected medium- sized companies have performed well in terms of profitability, liquidity, efficiency, interest coverage. These companies have maximized the EPS but they have not provided maximum financial leverage for it's equity shareholders. The factors of profitability show a negative correlation for these companies.

The selected small- sized companies have not performed well in terms of profitability and liquidity and there is a negative correlation between factors of profitability, liquidity and efficiency ratios of these companies.

SUMMARY OF FINDINGS, SUGGESTIONS AND CONCLUSION

In this chapter, major findings of the large- sized, medium- sized and small- sized companies with regard to the effectiveness of the capital structure of these companies and also the way in which the factors relating to the capital structure have made an influenced has also been analyzed in this chapter.

Specific findings relating to companies with an ideal debt equity ratio maximizing their EPS and also maximizing the financial leverage have been analyzed in this chapter.

SUMMARY OF FINDINGS

Based on the hypotheses framed for the study, the researcher has provided a brief summary of various findings of the selected large, medium and small sized companies and their relevance to the study as given below.

LARGE- SIZED COMPANIES

i) From the above findings, it is seen that large- sized companies have not been able to effectively utilize their existing capital structure due to lack of efficiency and also a negative correlation between the debt equity ratio and the liquidity ratios of these companies, between the debt equity ratio and EPS, EBIT of the large- sized companies.

MEDIUM- SIZED COMPANIES

i) From the above findings, it is seen that the medium- sized companies have been able to effectively utilize their existing capital structure due to their ability to maximize the EPS and also the financial leverage. Also, there is a negative correlation between the debt equity ratio and the profitability, liquidity ratios, EPS and EBIT of these companies.

SMALL- SIZED COMPANIES

i) From the above findings, it is seen that the small- sized companies have been able to effectively utilize their existing capital structure due to favourable profitability and liquidity, the ability of these companies to achieve a high financial leverage and also due to the positive correlation between the debt equity ratios and the profitability, liquidity ratios of these companies.

SUGGESTIONS**LARGE- SIZED COMPANIES****i) For Improving Profitability, Liquidity and Efficiency**

The researcher has made an attempt to provide effective suggestions with regard to specific factors influencing the effectiveness of capital structure of the selected large- sized companies which would be useful for them in the future. From the above findings, it is seen that among the large- sized companies, only selected companies have not been able to effectively maintain their capital structure due to high debt levels and also the profitability, liquidity and efficiency of these companies needs improvement and therefore, the researcher has provided the following required suggestions for these companies

- i) Among the selected large sized companies, companies like Banswara Fabrics Ltd shall improve upon their various areas of performance of capital structure such as profitability and liquidity which shall lead to an effective management of their capital structure in the future.
- ii) The company has raised secured loans of Rs. 1.45 crores during the year 2000-01. Therefore, the company shall take steps to ensure that it ensures Creditor's protection for it's borrowed funds in the future.
- iii) AmolDicaliteLtd's average term loans raised from institutions was Rs. 13.4 crores during 2005-06 to 2009-10. But the company has not raised term loans during 2000-01 to 2009-10. Therefore, the company shall take steps to ensure that it does not face the pressure of debt repayment from it's Creditors.
- iv) Cheslind Industries Ltd's average loans raised from banks was Rs. 0.5 crores during 2000-01 to 2005-06. But the company has raised loans from banks for Rs. 52 crores from 2006-07 to 2009-10. Therefore, the company shall take necessary steps to ensure that it does not face the risk of non- payment of debt to banks in the future.
- v) Banswara Fabrics Ltd shall improve upon it's overall profitability in the future which would enable them to pay equity dividends to their shareholders.

MEDIUM- SIZED COMPANIES**i) For improving profitability, efficiency, interest coverage, Debtors effectiveness**

The researcher has made an attempt to provide effective suggestions with regard to specific factors of effectiveness of capital structure of the selected medium- sized companies which would be useful for them in the future. From the above findings, it is seen that among the medium- sized companies, most of the companies have not been able to maintain effective debt levels and also for these companies the profitability, efficiency, interest coverage, and the Debtor effectiveness needs improvement and therefore, the researcher has provided the following required suggestions for these companies:

1. Goldwon Textiles Ltd has achieved negative operating profits during 2000-01 to 2009-10. Therefore, the company shall improve upon it's level of operating profits in the future.
2. Oswal Knit India Ltd and Pasaari Spinning Mills Ltd have not performed well in terms of efficiency during 2000-01 to 2009-10.
3. The company has achieved fluctuating sales levels during this period. Therefore, the company shall take necessary steps to maintain consistent level of sales in the future.
4. Among the selected medium sized companies, Goldwon Textiles has not contributed towards the effectiveness of the interest coverage of the firm. The company has not earned income from dividends or retained earnings during 2005-06 to 2009-10. Therefore, the company shall take necessary steps to improve upon it's level of dividend income and retained earnings for meeting out it's expenses towards interest payment.
5. The average debt equity ratio of JJ Exporters Ltd during 2000-01 to 2009-10 is more than the ideal ratio of 1 and the Debtors Collection Period of the company is not effective because of the increasing term loans of the company during 2007-08 to 2009-10. The average money raised from long- term Debtors during 2000-01 to 2009-10 was Rs. 11.6 crores and the average money raised from short- term Debtors during 2000-01 to 2009-10 was Rs. 0.27 crores. Therefore, the company shall take steps to reduce the time taken to recover the money from short- term Debtors.

SMALL- SIZED COMPANIES**i) For Improving Profitability, Liquidity, Efficiency and Maximization of Financial Leverage**

The researcher has made an attempt to provide effective suggestions with regard to specific factors of effectiveness of capital structure of the selected medium- sized companies which would be useful for them in the future. From the above findings, it is seen that among the small- sized companies, selected companies have not been able to maintain effective debt levels and also for these companies the profitability, liquidity and the Financial Leverage needs improvement and therefore, the researcher has provided the following required suggestions for these companies:

1. The Profit Before Tax (PBT) of SM Energy Ltd is negative for a period of 10 years from 2000-01 to 2009-10, which has negatively influenced the overall profitability of the company. Therefore, the company shall take necessary steps to achieve a higher PBT in the future.
2. The Current Ratio of Vijay Textiles Ltd shall be improved. The company's long- term debtors has been increasing from the year 2006-07 till 2009-10 because of which the company has not been able to raise short- term funds effectively. Therefore, the company shall take necessary steps to raise short- term funds in the future.
3. Zenith Exports Ltd has paid an average advance tax of Rs. 0.6 crores during 2000-01 to 2009-10 due to which the liquidity position of the company during this period has been adversely affected. Therefore, the company shall take necessary steps to ensure that the tax dues are paid by the company when it is due.
4. The sales volume of Ritesh Exports Ltd is not high during the period of 2004-05 to 2009-10. Due to the low sales volume, the working capital turnover ratio of the company is not effective. Therefore, the company shall take necessary steps to improve upon it's sales performance in the future.
5. Riba Textiles Ltd has been able to earn dividend income and interest income on debt and equity to an extent of Rs. 0.003 crores. But, the company has paid an average debenture interest of Rs. 1.5 crores due to which the company has not been able to provide high financial leverage to it's shareholders. Therefore, the company shall take steps to increase it's dividend and interest income in the future.

CONCLUSION

From this study conducted on selected 30 private textile companies in India, it is seen that large sized companies with a debt equity ratio of less than 1 are able to maximize the EPS and also have achieved financial leverage for their equity shareholders and in the case of small sized companies, companies with a debt equity ratio of less than 1 have achieved EPS and have also maximized financial leverage.

Therefore, the debt equity levels of large sized companies with a debt equity ratio of more than 1 and an average paid-up capital structure of more than Rs 1800 crores for a period of 10 years and small sized companies with a debt equity ratio of more than 1 and an average paid up capital of less than Rs. 25 crores are not significantly influenced by factors of EPS and EBIT.

The medium-sized companies have been able to maximize the EPS but have not been able to maximize the financial leverage for its equity shareholders. But in the case of large-sized and small-sized companies, EPS as well as financial leverage has been maximized for equity shareholders.

Factors of EPS and turnover ratios have a significant correlation between each other in the case of small-sized companies. But in the case of large-sized companies, the correlation between the factors of profitability and liquidity indicate a significantly positive correlation.

But in the case of medium sized companies, the profitability, liquidity of the selected companies have contributed well, but these companies have not been able to achieve a high financial leverage for their equity shareholders..

Therefore, among the large sized, medium-sized and small sized companies, medium sized companies have not effectively utilized their existing capital structure and it is seen that these companies will have to take steps in the future for effective utilization of their capital structure.

FUTURE EXTENSION OF THE STUDY

This study Titled "A study on the effectiveness of capital structure among the selected textile companies" has analyzed the effectiveness of selected 30 companies on the basis of factors influencing the capital structure has not analyzed factors such as the control maintained by the companies by either not going for fresh issue of equity shares or not going for dilution of stake of the company through mergers, acquisitions, etc.

Also, the ability of the selected companies to be flexible by ensuring regular payment of their debt funds, etc have not been analyzed by the researcher in this study. Therefore, the findings and suggestions of this study can be further used for determining such factors in the future.

REFERENCES**BOOKS**

1. Maheshwari S.N., Principles of Management Accounting, New Delhi, Sultan Chand Publishers Pvt. Ltd., 2006, 14th Edition, p. 12.
2. Kothari C.R., Research Methodology, New Delhi, Himalaya Publishing House Pvt. Ltd, 2002, Second Edition, pp. 213-225.
3. Pandeyl. M., Financial Management, Tata McGraw Hill Publishers Co. Pvt. Ltd, 2006, 8th Edition, pp. 715-718.

WEBSITES

4. www.ibef.org
5. www.ebschost.com
6. www.capitaline.com
7. www.hbr.org
8. www.accountingformanagement.com
9. www.investorwords.com
10. www.investopedia.com

JOURNALS

11. Kiranjith Sett and Jayadeb Sarkehel, "Macro Economic Variables, financial sector development and capital structure of the Indian Private Corporate Sector", IUP Journal of Applied Finance Volume XII, September 2010, pp.13- 15.
12. Editorial Board of Capital Market journal, "Effect of Changes in Corporate Taxes and Corporate Governance on Equity Prices", Capital Market Journal - Volume XIII, September 2009, p.27.
13. Raiyani J.R. and Dr. Bhatasna R.B. "The current trends in the Indian economy and a comparative study between the pre- liberalization and the post-liberalization era among selected manufacturing industries in India", The Indian Journal of Finance, Volume V, p. 45.
14. Editorial Board of the Textile Magazine Journal, "The origin and Growth of the textile industry in India", Textile Magazine Journal, Volume VIII, May 2010, pp.19-21.
15. Chakrabarthy S, "Textile Engineering Industry of India", Journal of Textile Association, Volume VII, pp. 73- 76.
16. Nair D. K., "Textile Exports and Imports", Textile Times, Volume VIII, July 2010, p.32

IMPACT OF GLOBAL FINANCIAL CRISIS ON BUSINESS CYCLES IN DEVELOPING ASIA AND THE DECOUPLING HYPOTHESIS

DR. RAVI SINGLA
ASST. PROFESSOR
UNIVERSITY COLLEGE OF ENGINEERING
PUNJABI UNIVERSITY
PATIALA

ABSTRACT

The global financial meltdown which was initiated by US based subprime lending market has led to the global financial crisis and the consequent economic crisis in the developed economies. Given the mammoth size of the crisis in the advanced economies some economists have started comparing it with the great depression of 1930s. There was a widespread optimism that the growth in the developing and emerging economies of East Asia would be decoupled from the difficulties that have pervaded the developed economies and the region would continue to move ahead as an autonomous growth pole. The present paper evaluates the impact of global financial crisis of 2008 on business cycles of major developing Asian economies by computing cyclical variation in their time series data. It reveals that the global financial crisis of 2008 has led the decline in the growth rate of the developing Asian countries and hence refutes the decoupling hypothesis. Moreover a very high rate of negative cyclical variation observed in the export figures of developing Asian economies in the year 2009 implies that the high level of global integration of these economies proves to be the major setback to the decoupling hypothesis.

KEYWORDS

decoupling hypothesis, economic crisis, global financial crisis, business cycles.

INTRODUCTION

After many years of impressive growth the world economy has experienced an equally important downturn that started in the third quarter of year 2008. The crisis was initiated by the financial meltdown in the US based sub prime lending market which later on led to the global financial crisis and the consequent economic crisis in the developed world. Initially many economists were optimistic that the growth in the developing and emerging economies of East Asia would be decoupled from the difficulties faced by the developed economies and the region would continue to move ahead as an autonomous growth pole. Such a view of number of economists was based on ample researches that have talked about some sort of decoupling of these emerging economies from the industrial world. Kose et. al (2008) observed that though there was substantial convergence of business cycles among the industrial economies and among Emerging Market Economies, but there has also been a concomitant divergence or decoupling of business cycles between these two groups of countries during the globalization period. They further suggested that even the existence of large spillover effects across financial markets need not necessarily imply real spillovers of similar magnitude. Rather the changing relative importance of global factors and group specific factors must be considered relevant in assessing the likely impact of such spillover effects. Pula and Peltonen (2009) though could not find any evidence of decoupling, but has calculated that emerging Asia is less “coupled” with the rest of the world than what is suggested by trade data. Fidrmuc and Korhonen (2009) have shown that in the last two decades the business cycles in the large emerging Asian economies and the developed economies have been quite different. Many developed countries have shown low or even negative dynamic correlations with China and India for the traditional business cycles which support the decoupling hypothesis. However their study has also argued that the increased co-movement of business cycles post 2008 crisis has at least represented a temporary setback to the decoupling hypothesis. Dooley and Hutchison (2009) also found evidence on decoupling–recoupling hypothesis as they have observed that emerging markets which were largely insulated and decoupled from the developments in U.S. financial markets from early 2007 to summer 2008 have later on responded very strongly to the deteriorating situation in the U.S. financial system and the real economy. Kim et al (2009) also found that real economic interdependence between emerging Asia and major industrial countries have also increased significantly in the post 1997-98 Asian financial crisis period, suggesting recoupling rather than decoupling in the recent years. (Boorman, 2009) opined that the explosion of global trade – the major force in the rapid growth of many emerging economies over the last few decades together with the ever increasing integration of financial markets has in fact increased the coupling of these economies with the industrial world. Walti (2010) has also found that there is no decoupling of business cycles in the emerging economies and the advanced economies in the recent years. Rather their study has found that the degree of business cycle interdependence has become stronger. Thus as observed in number of researches the decoupling hypothesis was short lived and soon proved superfluous. When the global crisis intensified it spread to the developing economies through current and capital accounts of balance of payments. The high level global integration of many developing economies and dependence on export led growth proved the major negatives. Consequentially, the region could not avoid a significant drop in growth. Growth even fell in the countries like China which have responded aggressively to the crisis. India too, could not remain immune to such global economic shock. The present paper evaluates the impact of Global financial crisis of 2008 on such developing economies and attempts to determine the decoupling status of such economies with major advanced economies.

OBJECTIVES OF THE RESEARCH

The present paper aims to achieve the following objectives:

1. To find the impact of global financial crisis on growth rate of developing Asia.
2. To find the impact of global financial crisis on the inflation in developing Asia.
3. To find the impact of global financial crisis on the exports and imports of goods and services of developing Asian economies.
4. To find the impact of global financial crisis on the currencies exchange rate of developing Asia.
5. To find the impact of global financial crisis on the FDI and the FPI inflows to the developing Asian countries.

DATA AND METHODOLOGY

The study analyses the impact of global financial crisis of 2008 on seven major developing economies of Asia, namely, China, India, Indonesia, Malaysia, Philippines, Thailand and Vietnam. For the purpose of the study the data source used is the International Financial Statistics (IFS) of International Monetary Fund. The present paper finds the impact of global financial crisis of 2008 on developing Asia by doing the time series analysis. To achieve first four objectives the study has used the relative cyclical residual method and identified the cyclical variation in the time series data. For this purpose firstly, the data on different economic variables was collected using the IFS for the years 2003 to 2009. Secondly, the trend values for the respective years were obtained using the exponential trend equation. Thirdly, the yearly data as a percentage of yearly trend values was computed and then the deviation of these figures from 100 is measured to know the cyclical variation in the time series data. Finally, ‘t’ test is applied to establish the significance of cyclical variation. It is important to mention here that the seasonal variation never incorporates into annual data. Further the irregular component of time series is ignored as it is relatively small as well as unpredictable.

RESULTS AND ANALYSIS

The results and analysis section is divided into five parts which corresponds to the five objectives of the present research paper.

IMPACT ON ECONOMIC GROWTH

The impact of 2008 financial crisis on developing Asia's economic growth is assessed by evaluating the impact of such crisis on real GDP growth rate and the share prices. Table 1 (Figure 1) shows the impact of global financial and economic crisis on the developing Asia's Real GDP growth rate. In 2009, the developing Asian economies have observed a negative cyclical variation of 2.1 percentage points on average basis in their Real GDP growth rate which is found significant at 95 % level. Further, the growth was worst hit in Thailand and Malaysia i.e. 4.4 percent and 4.2 percent respectively. India's growth suffered only 1.2 percentage points. Moreover it is important to mention here that in year 2009 real GDP growth rate was hit negatively in all the seven selected developing Asian economies. Table 1 also reveals that the cyclical impact on real GDP growth rate had peaked out in year 2007 when the developing Asia's real GDP growth observed a positive cyclical variation of 1.7 percentage points. Figure 1 shows that the Thailand and Malaysia proved to be the most volatile economies in this economic cycle whereas Indonesia proved itself to be the most stable economy. India had shown moderate stability in its real GDP growth rate. In nutshell, a statistically significant negative cyclical variation in 2009 real GDP data implies that the global financial crisis of 2008 has led the downturn in the business cycles of developing Asian economies and hence rejects the decoupling hypothesis.

TABLE 1: DEVELOPING ASIA'S REAL GDP GROWTH RATE (% VARIATION FROM TREND VALUES)

	2003	2004	2005	2006	2007	2008	2009
CHINA	0.5	-0.8	-1.0	0.0	2.4	0.6	-1.6
INDIA	0.0	-1.0	-0.1	0.9	1.6	-0.1	-1.2
INDONESIA	0.3	-0.3	-0.2	-0.4	0.3	0.6	-0.4
MALAYSIA	-1.8	-0.1	0.2	1.1	2.6	2.3	-4.2
PHILIPPINES	-0.3	0.5	-0.1	-0.7	0.7	1.0	-0.9
THAILAND	-2.3	-0.2	0.4	2.0	3.0	1.6	-4.4
VIETNAM	-0.7	-0.5	0.2	0.8	1.6	0.4	-1.8
AVERAGE	-0.6	-0.3	-0.1	0.5	1.7	0.9	-2.1
STD. DEV.	1.1	0.5	0.5	0.9	1.0	0.8	1.6
t VALUE	1.54	1.87	0.52	1.51	4.56 **	2.93 *	3.46 *

* Significant at 95% level, ** Significant at 99% Level

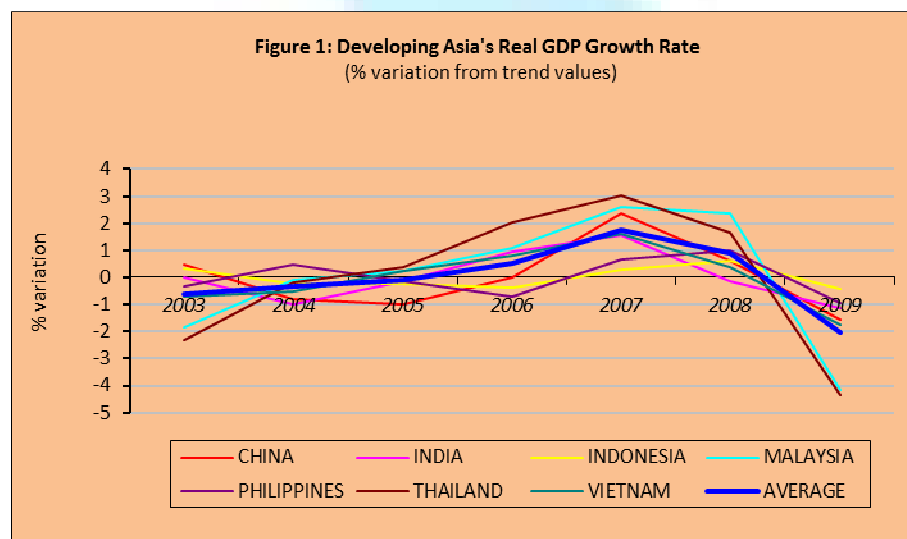
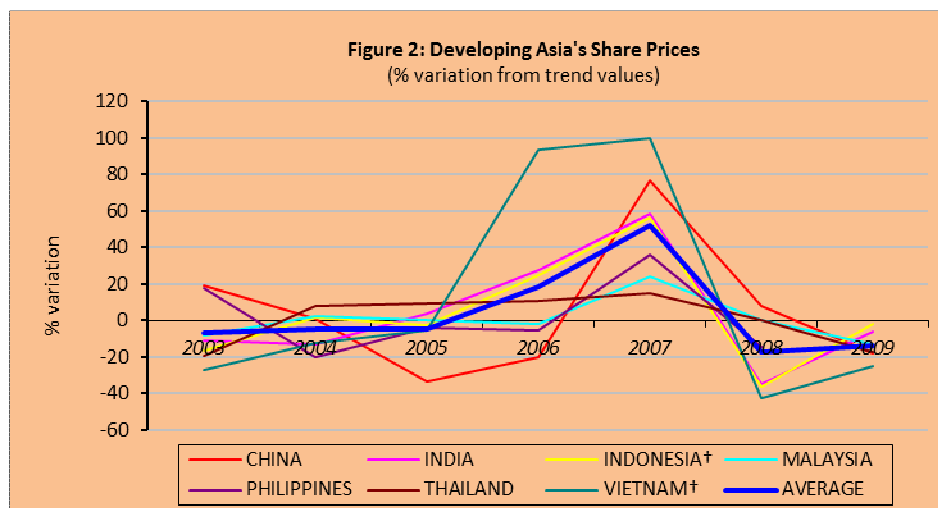


Table 2 analyses the impact of global financial crisis on the developing Asia's share prices. It shows that the yearly average share prices in developing Asia had negatively deviated from the secular trend figures by 17.1 and 13.1 percentage points for year 2008 and 2009 respectively. Figure 2 shows that the cyclical impact on share prices had peaked out in year 2007 when the share prices in developing Asia had deviated positively by 52.3 percentage points from their secular trend values. Again it is worth mentioning here that all the developing Asian economies witnessed positive cyclical variation in their share prices in 2007 and the same has turned negative for all of these economies in year 2009.

TABLE 2: DEVELOPING ASIA'S SHARE PRICES (% VARIATION FROM TREND VALUES)

YEAR	2003	2004	2005	2006	2007	2008	2009
CHINA	19.1	0.9	-33.4	-20.3	76.4	8.0	-17.8
INDIA	-10.9	-12.8	3.6	27.9	58.7	-34.7	-6.3
INDONESIA [†]	-16.3	1.6	-2.7	24.5	56.1	-36.5	-2.2
MALAYSIA	-8.1	2.4	0.5	-1.9	23.9	0.2	-13.1
PHILIPPINES	17.7	-20.1	-3.8	-5.2	36.0	-14.2	N.A.
THAILAND	-19.6	7.6	9.3	10.8	15.0	0.4	-17.2
VIETNAM [†]	-27.2	-12.5	-5.7	93.5	100.2	-42.8	-24.8
AVERAGE	-6.5	-4.7	-4.6	18.5	52.3	-17.1	-13.6
STD. DEV.	18.1	10.3	13.7	37.2	30.0	20.8	8.3
t VALUE	0.90	1.20	0.90	1.30	4.6 **	2.20	4.3 **

[†] For Indonesia and Vietnam share prices are year- end share prices. For others it is yearly average share prices.



IMPACT ON INFLATION

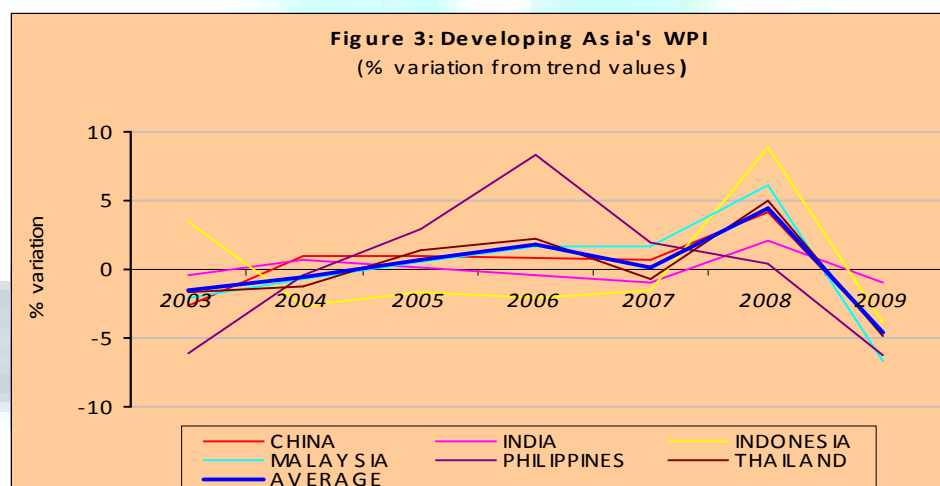
Table 3 shows the impact of global financial crisis of 2008 on inflation figures in developing Asia. It is revealed that in 2009 the cyclical variation has led an average decline of 4.6 percentage points in developing Asia's inflation figure (significant at 99% level). However India witnessed only a meager 1 percent point decline in inflation as a result of cyclical variation. Further the table shows that in year 2008, developing Asia has witnessed a very high positive cyclical variation in inflation, that is, 4.5 percentage points on average basis (significant at 95% level). Perhaps this was the one important reason that had hampered the developing Asia's performance in this period. Figure 3 shows that the cyclical variation component in inflation was higher for almost all the developing Asian economies. India is the only country where inflation was relatively less impacted by cyclical component.

TABLE 3: DEVELOPING ASIA WPI (% VARIATION FROM TREND VALUES)

YEAR	2003	2004	2005	2006	2007	2008	2009
CHINA	-2.7	1.0	0.9	0.8	0.6	4.2	-4.6
INDIA	-0.4	0.7	0.1	-0.5	-1.0	2.1	-1.0
INDONESIA	3.5	-2.6	-1.7	-2.0	-1.5	8.9	-3.9
MALAYSIA	-2.1	-0.7	0.5	1.6	1.7	6.2	-6.7
PHILIPPINES	-6.1	-0.4	2.9	8.3	1.9	0.5	-6.3
THAILAND	-1.6	-1.2	1.5	2.2	-0.7	5.0	-4.9
AVERAGE†	-1.6	-0.5	0.7	1.7	0.2	4.5	-4.6
STD. DEV.	3.1	1.3	1.5	3.6	1.4	3.0	2.0
t VALUE	1.2	1.0	1.2	1.2	0.3	3.7	5.5
						*	**

Significant at 95% level, ** Significant at 99% Level

† Excluding Vietnam as the WPI data for Vietnam was not available.



IMPACT ON EXPORT AND IMPORT OF GOODS AND SERVICES

Table 4 shows that in year 2009 the developing Asia's export of goods and services were knocked down by a negative cyclical variation of 17.5 percentage points on average basis (significant at 99 %). The table also shows that exports from India and China were the worst hit as these countries have observed a negative cyclical variation of 20.9 percent and 21.7 percent respectively in their export figures. Further it is revealed that the cyclical impact on developing Asia's exports of goods and services peaked out in year 2008 when it witnessed a positive cyclical impact of 11.3 percent points (significant at 99% level). Figure 4 reveal that broadly the export of goods and services from all the developing Asian economies were hit in line with the average figure. Moreover it also shows that the cyclical component had played a great role in the export of goods and services from developing Asia in the study period.

TABLE 4: DEVELOPING ASIA EXPORT OF GOODS & SERVICES (% VARIATION FROM TREND VALUES)

YEAR	2003	2004	2005	2006	2007	2008	2009
CHINA	-12.0	-1.4	4.3	9.6	14.8	12.1	-21.7
INDIA	-12.0	-1.6	6.8	9.0	10.6	13.5	-20.9
INDONESIA	-7.2	-2.2	4.2	6.0	6.2	11.3	-15.4
MALAYSIA	-9.5	0.4	2.8	6.2	9.3	11.6	-17.4
PHILIPPINES	-6.4	-1.9	-2.8	8.9	15.5	7.0	-16.7
THAILAND	-6.7	0.0	0.2	4.3	9.3	10.8	-15.3
VIETNAM	-7.1	0.6	1.5	4.1	5.7	12.9	-15.1
AVERAGE	-8.7	-0.9	2.4	6.9	10.2	11.3	-17.5
STD. DEV.	2.4	1.2	3.1	2.3	3.8	2.1	2.7
t VALUE	9.40	2.00	2.00	7.90	7.10	14.30	17.00 **
	**			**	**	**	

* Significant at 95% level, ** Significant at 99% Level

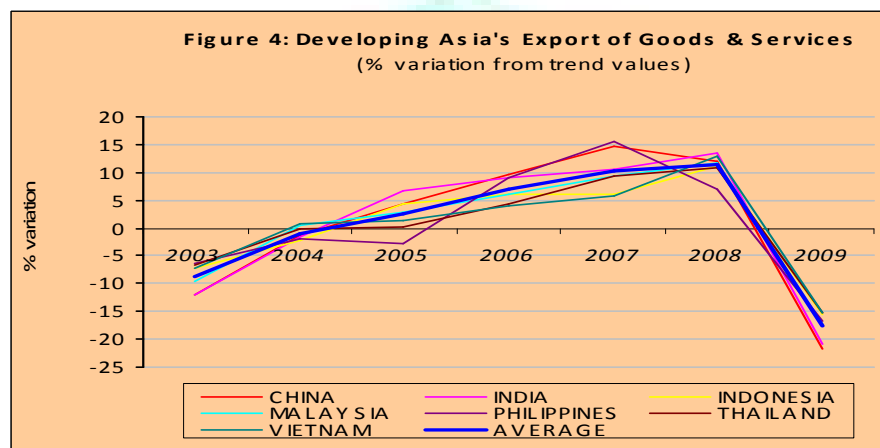
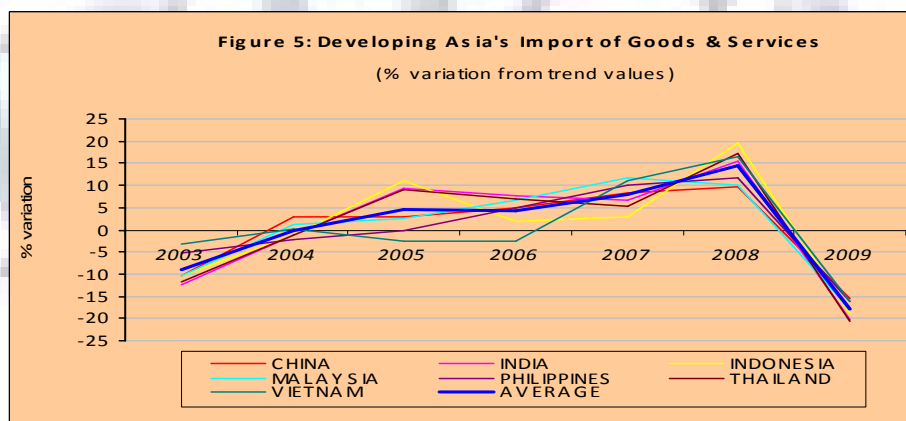


Table 5 shows that like exports the imports of developing Asian economies has observed a similar impact as a result of global crisis. In 2009, the cyclical variation had reduced the imports of goods and services of developing Asian economies by 17.9 percent points (significant at 99% level). It also reveal that the impact of cyclical variation on imports had also peaked in year 2008 when the average imports from developing Asia observed a positive cyclical variation of 14.3 percent points (significant at 99% level). Figure 5 shows that that the import of goods and services of all these developing economies were affected in line with the average figure.

TABLE 5: DEVELOPING ASIA IMPORT OF GOODS & SERVICES (% VARIATION FROM TREND VALUES)

YEAR	2003	2004	2005	2006	2007	2008	2009
CHINA	-10.4	3.0	2.9	4.9	8.3	9.8	-15.6
INDIA	-12.3	-1.3	9.2	7.8	6.7	15.4	-20.4
INDONESIA	-10.3	-1.1	11.2	1.7	2.8	19.4	-18.8
MALAYSIA	-10.5	1.0	2.6	6.6	11.6	10.1	-17.8
PHILIPPINES	-5.2	-2.4	-0.3	5.1	10.0	11.7	-16.1
THAILAND	-11.8	-1.2	8.9	7.1	5.4	17.3	-20.4
VIETNAM	-3.2	0.2	-2.7	-2.5	11.2	16.6	-16.3
AVERAGE	-9.1	-0.2	4.6	4.4	8.0	14.3	-17.9
STD. DEV.	3.5	1.8	5.3	3.6	3.3	3.8	2.0
t VALUE	6.90	0.30	2.30	3.20	6.50	10.00	23.50 **
	**			*	**	**	**

* Significant at 95% level, ** Significant at 99% Level



IMPACT ON CURRENCY EXCHANGE RATE

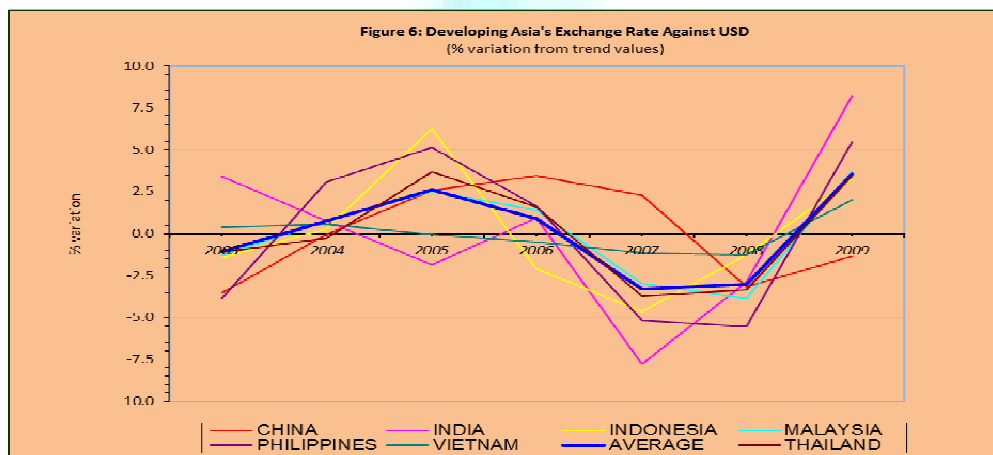
Table 6 reveals that in the year 2009, cyclical movement has caused an average depreciation of 3.5 percent points in developing Asia currencies versus USD (significant at 95 % level). Indian rupee had suffered the most followed by Philippines as a result of cyclical movement, whereas China was the only country

whose currency has rather appreciated against USD in this crisis period. Figure 6 show that Indian rupee has been the most volatile currency against USD in this period. Further it is also revealed that the cyclical variation in the developing Asian currencies had peaked out in year 2007.

TABLE 6: DEVELOPING ASIA YEARLY AVERAGE EXCHANGE RATE VERSUS USD (% VARIATION FROM TREND VALUES)

YEAR	2003	2004	2005	2006	2007	2008	2009
CHINA	-3.5	0.0	2.6	3.4	2.3	-3.2	-1.3
INDIA	3.4	0.7	-1.9	0.9	-7.8	-2.9	8.2
INDONESIA	-1.4	0.3	6.3	-2.1	-4.6	-1.2	3.3
MALAYSIA	-1.3	0.8	2.5	1.4	-3.0	-3.9	3.7
PHILIPPINES	-3.9	3.1	5.1	1.6	-5.2	-5.5	5.4
THAILAND	-1.1	-0.3	3.7	1.6	-3.7	-3.3	3.5
VIETNAM	0.4	0.6	0.0	-0.5	-1.1	-1.3	2.0
AVERAGE	-1.1	0.7	2.6	0.9	-3.3	-3.0	3.5
STD. DEV.	2.5	1.1	2.8	1.8	3.2	1.5	2.9
t VALUE	1.1	1.7	2.4	1.4	2.7	5.4	3.2
					*	**	*

* Significant at 95% level, ** Significant at 99% Level



IMPACT ON FOREIGN DIRECT INVESTMENT (FDI) AND FOREIGN PORTFOLIO INVESTMENT (FPI) INFLOWS

Since the FDI and FPI inflows fluctuate widely over the years it was neither appropriate, nor possible to identify the secular trend in the FDI inflows. Thus to find the impact of global crisis on FDI and FPI inflows, the figures for the year 2008 and 2009 were compared with the average figures of year 2003 to 2007.

IMPACT ON FDI INFLOWS

Table 7 shows the impact of global financial crisis on FDI inflows to developing Asian economies. It reveals that the average FDI inflows to developing Asian economies were nearly double (up 101 percent, significant at 95% level) in year 2008 as compared to the average of 2003 to 2007. However these FDI inflows came down drastically in year 2009. Compared to the average of 2003 to 2007 these inflows were only higher by 36 percent points and off course were lesser than year 2008. India had not suffered much as far as the impact of crisis on FDI inflows is concerned. Malaysia and Thailand suffered the most on account of FDI inflows.

TABLE 7: FDI INFLOWS TO DEVELOPING ASIA (IN MILLION USDs)

YEAR	2003	2004	2005	2006	2007	2008	2009	Average FDI Inflows in Million USD (2003 to 2007)	FDI Inflows in 2008 (% Deviation from Average of 2003-2007)	FDI Inflows in 2009 (% Deviation from Average of 2003-2007)
CHINA	47077	54937	79127	78095	138413	147791	78193	79530	86	-2
INDIA	4323	5771	7606	20336	25483	41315	34577	12704	225	172
INDONESIA	-597	1896	8336	4914	6928	9318	4877	4296	117	14
MALAYSIA	2473	4624	3966	6076	8590	7376	1387	5146	43	-73
PHILIPPINES	491	688	1854	2921	2916	1544	1948	1774	-13	10
THAILAND	5232	5860	8055	9453	11324	8531	4976	7985	7	-38
VIETNAM	1450	1610	1954	2400	6700	9579	7600	2823	239	169
AVERAGE									101	36
STD. DEV.									100	97
t VALUE									2.5	0.9
									*	

* Significant at 95% level

IMPACT ON FPI INFLOWS

Table 8 shows the impact of global financial crisis on FPI inflows to developing Asian countries. It clearly shows that huge money was withdrawn by the FIIs from these developing economies to face the mammoth crisis in their home country. When developing Asia was put together it was a clear cut case of negative FPI flows in year 2008. However in average percentage terms flows to developing Asia had fallen to one third of the average flows from year 2003 to 2007. Malaysia was worst hit both in absolute terms as well as in percentage terms. India was the second badly hit economy in year 2008 in terms of FPI inflows. China and Indonesia were the only two developing Asian economies which have observed a positive FPI flows. The table further shows that the FPI flows to these countries were mixed in year 2009. In absolute terms all of these countries observed positive FPI flows. China received the highest FPI inflows followed by India and Indonesia. When compared with the average inflows to these countries from year 2003 to 2007, Indonesia performed best on account of FPI inflows in year 2009 followed by India.

TABLE 8: FPI INFLOWS TO DEVELOPING ASIA (IN MILLION USDs)

YEAR	2003	2004	2005	2006	2007	2008	2009	Average (2003 to 2007)	Portfolio Inflows in 2008 (% Deviation from Average of 2003-2007)	Portfolio Inflows in 2009 (% Deviation from Average of 2003-2007)
CHINA	8444	13203	21224	42861	20996	9910	28804	21346	-54	35
INDIA	8216	9054	12151	9509	32863	-15029	21112	14359	-205	47
INDONESIA	2251	4056	5270	6107	9981	3059	10480	5533	-45	89
MALAYSIA	1174	8675	-2985	5557	9320	-21083	6048	4348	-585	39
PHILIPPINES	1381	288	3446	6144	3922	-4417	2331	3036	-245	-23
THAILAND	851	1856	7070	5714	2899	-2561	2343	3678	-170	-36
VIETNAM	n.a.	n.a.	865	1313	6243	-578	128	2807	-121	-95
AVERAGE									-203	8
STD. DEV.									184	63
t VALUE									2.9	0.3
									*	

* Significant at 95% level

CONCLUSIONS

The analysis of cyclical variation in time series data reveals that the global financial crisis of 2008 has definitely dented the growth in developing Asian countries and hence refutes the decoupling hypothesis. It happened primarily because of the contraction of global business which has caused a substantial decline in the exports of goods and services from the developing Asian countries. The huge outflow of foreign funds from the equity markets of these countries and a decline in the FDI inflows has also aggravated the problem by initiating rapid falls in these economies currency exchange rate against the US Dollar. The study also found that the present crisis has largely checked the high rates of inflation that has prevailed in most of these economies in the pre crisis period. Thus besides the global financial and economic reasons, the higher domestic inflation in these economies seem to be another important reason that had led the decline in the growth of these economies.

REFERENCES

1. Dooley, Michael and Hutchison, Michael (2009), "Transmission of the U.S. Subprime Crisis to Emerging Markets: Evidence on the Decoupling-Recoupling Hypothesis", NBER Working Paper No. 15120. viewed on Jan. 17, 2012, <http://www.nber.org/papers/w15120.pdf>
2. Gabor Pula and Tuomas A. Peltonen (2009), "Has Emerging Asia Decoupled? An Analysis of Production and Trade Linkages Using the Asian International Input-Output Table", European Central Bank Working Paper Series No. 993, viewed on June 9, 2011, <http://www.ecb.int/pub/pdf/scpwps/ecbwp993.pdf>
3. Jack Boorman (2009), "The Impact of the Financial Crisis on Emerging Market Economies: The Transmission Mechanism, Policy Response and Lessons", Discussion Draft of Global Meeting of the Emerging Markets Forum, Mumbai, India, June 23, 2009, viewed on June 9, 2011, <http://www.osservatoriocrisi.it/docs/archivio/altri/OERARC76.pdf>
4. Kose, M. Ayhan, Christopher Otrok, and Eswar S. Parsad, "Global Business Cycles: Convergence or Decoupling?" NBER Working Paper No. 14292, viewed on June 10, 2011, <http://www.nber.org/papers/w14292>
5. Kim, S., J.-W. Lee, and C. Y. Park (2009), "Emerging Asia: Decoupling or Recoupling," ADB Working Paper Series on Regional Economic Integration No. 31, viewed on June 9, 2011, http://www.aric.adb.org/pdf/workingpaper/WP31_Decoupling_or_Recoupling.pdf
6. Fidrmuc, Jarko and Korhonen, Ilkka, "The Impact of the Global Financial Crisis on Business Cycles in Asian Emerging Economies," Journal of Asian Economics, Vol. 21, Issue 3, pp. 293-303.
7. Sébastien Wälti (2010), "No decoupling, more interdependence: business cycle comovements between advanced and emerging economies", MPRA Paper No. 20869, viewed on June 9, 2011, <http://www.mpra.ub.uni-muenchen.de/20869>
8. Morris G. and Daniel X. (2009), "The Impact of the Financial Crisis on Emerging Asia", Working Paper, 09-11, Peterson Institute of International Economics.

SYSTEMATIC RISK AND RETURN ANALYSIS IN SECURITY MARKET**NIVEDHITA.J****ASST.PROFESSOR****DEPARTMENT OF MANAGEMENT STUDIES****KALAINAR KARUNANIDHI INSTITUTE OF TECHNOLOGY****KANNAMPALAYAM****REVATHI.P****ASST.PROFESSOR****DEPARTMENT OF MANAGEMENT STUDIES****KALAINAR KARUNANIDHI INSTITUTE OF TECHNOLOGY****KANNAMPALAYAM****ABSTRACT**

Investment is setting aside a particular amount for a long term/short term period, where there should be certain sum in return. Among various investment patterns, investing in securities plays a vital role. This type of investment bears risk as the future is unknown but it too yields return to the investor. This study meant to find and suggest the better investment portfolio in three different sectors such as oil & gas, utility and software sector. The returns of the selected sectors company shares were analyzed based on portfolio return, risk involved, risk adjusted performance, scope for diversification using Return, Beta, Standard Deviation, for each selected company shares. A Financial evaluation was conducted on the shares for the period of 01.04.2010 to 31.03.2011. The top performing shares was indentified through the above evaluation techniques. The sectors taken for the study is Utility Sector (Gas Authority of India Limited (GAIL), National Hydroelectric Power Corporation Limited (NHPC), National Thermal Power Corporation (NTPC), Tata Power Company Limited, and Power Grade Corporation of India. Software Sector (Tata Consultancy Services, Wipro Limited, Infosys Technologies Limited, HCL Technologies, Satyam Computers) and Oil & Gas Sector (Reliance Industries, Oil and Natural Gas Corporation (ONGC), Indian Oil Corporation (IOC), Bharat Petroleum, Hindustan Petroleum Corporation). The comparison of companies shares with bench mark return (Index Return).the shares performed best were ranked using several criteria like risk, return, volatility, risk adjusted performance, risk free rate, market return.

KEYWORDS

Systematic risk, Return, Volatility, Equity Share Price, Standard Deviation, Beta, Benchmark Index, S&P CNX Nifty.

INTRODUCTION

The recent volatility in the capital market has caused many individuals & corporations to lose substantial amounts of money. For some, this volatility presents investment opportunities and they have capitalized on these opportunities to reap handsome profits. Capital Markets are not static; there is always a turning point to a downturn.

OBJECTIVE OF THE STUDY

- To analyze the return of selected Information Technology sector, Oil and Gas sector, Utilities Sector.
- To analyze the systematic risk involved in selected sector.
- Comparing the growth of selected Sector with the benchmark as S&P CNX Nifty.
- To suggest optimal performing company's share in selected sectors for the investors.

SCOPE OF THE STUDY

- Selections of companies are restricted was based on present trend in the equity market.
- No other factors other than the share price movements, index movements, rate of return on government securities and beta values for the securities for the past 1 year are taken for analysis.

LIMITATIONS OF THE STUDY

- Only 1 year data has been considered for the construction of optimal Portfolio.
- The bias of the executive in selecting the scripts for the projects.
- The returns in this study are limited.
- The intraday prices of the shares are not taken.

RESEARCH DESIGN

The purpose of the study is to analyze the share price trends of the selected companies and as well as the statistical estimation of the selected variables, which are identified as affected the market prices of equity shares. So, it is both descriptive and analytical.

The variables in the present study are the average market price and average return on selected shares. These variables were tested by many investment analysts in their attempt to find their influence on share prices. Also these variables have been considered as important investment indicators by the investors in buying shares.

- The stock price movements, closing index points of the companies and beta values for the past 1 year are collected for analysis
- The risk free rate of return is known

SOURCE OF DATA

The study is based on Secondary Data. The required data was collected in the form of historical data available of the selected companies and the study covers a period of one year from 1st April 2010 to 31st March 2011.

METHODS OF SAMPLING

The researcher selected 15 companies from the list of companies based on sectors.

UTILITIES SECTOR

- Gas Authority of India Ltd (GAIL)
- National Hydroelectric Power Corporation Ltd (NHPC).
- National Thermal Power Corporation (NTPC)
- Tata Power Company Limited
- Power Grid Corporation Of India

SOFTWARE AND SERVICES SECTOR

- Tata Consultancy Services (TCS)
- Wipro Limited
- Infosys Technologies Ltd.
- HCL Technologies
- Satyam Computers

OIL AND GAS OPERATION SECTOR

- Reliance Industries
- Oil And Natural Gas Corporation (ONGC)
- Indian Oil Corporation (IOC)
- Bharat Petroleum
- Hindustan Petroleum Corporation

TOOLS USED FOR ANALYSIS

The following tools are used for behavior of share prices.

- Standard deviation
- Beta

RETURN

For each company shares the monthly return are computed as:

$$R_i = \frac{\text{Current Closing Price} - \text{Previous Closing Price}}{\text{Previous closing price}}$$

AVERAGE

$$\bar{R} = \frac{\sum R_i}{n}$$

$i = 1, 2, 3, \dots, n$

STANDARD DEVIATION

Measurement of total risk (standard deviation) and variance are equally accepted and equivalent measures of an asset's total risk whereas, the standard deviation is calculated as:

$$\sigma = \left[\frac{\sum (R_i - \bar{R})^2}{n} \right]^{1/2}$$

Beta: Measure of systematic risk (beta) of the shares,

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

ANALYSIS OF UTILITIES SECTOR

TABLE NO: 1.1: ANALYSIS OF UTILITIES SECTOR SHARES PERFORMANCE USING RETURN (2010-2011)

S.No	COMPANY NAME	AVERAGE RETURN (01.04.2010 to 31.03.2011)
1	Gas Authority of India Ltd (GAIL)	0.9451
2	National Hydroelectric Power Corporation Ltd (NHPC)	-2.3671
3	National Thermal Power Corporation (NTPC)	-0.9558
4	Tata Power Company Limited	-0.5530
5	Power Grid Corporation Of India	-0.6648
6	BENCH MARK INDEX (S&P CNX Nifty.)	0.7396

From the table during 2010- 2011 Gas authority of India Ltd (GAIL), gives high return of 0.9451 which is higher than the benchmark index return of 0.7396 and all other firm's share price shows negative return.

TABLE NO: 1.2: ANALYSIS OF UTILITIES SECTOR SHARES PERFORMANCE USING BETA (2010-2011)

S.No	COMPANY NAME	BETA
1	Gas Authority of India Ltd (GAIL)	0.6120
2	National Hydroelectric Power Corporation Ltd (NHPC).	0.9845
3	National Thermal Power Corporation (NTPC)	0.6628
4	Tata Power Company Limited	0.7618
5	Power Grid Corporation Of India	0.3271
6	BENCH MARK INDEX (S&P CNX Nifty)	1.0000

From the table during 2010- 2011 the beta value shows that, all the share prices are positively moved towards the market. Power Grid Corporation of India value 0.3271 is less risky and it moves along with the market. National Hydroelectric Power Corporation Ltd (NHPC) value is 0.9845 which is high risky and high return when compared to all other share price and it goes along with the market but, less risky than benchmark return.

TABLE NO: 1.3: ANALYSIS OF UTILITIES SECTOR SHARES PERFORMANCE USING STANDARD DEVIATION (2010-2011)

S.No	COMPANY NAME	STANDARD DEVIATION
1	Gas Authority of India Ltd (GAIL)	4.1656
2	National Hydroelectric Power Corporation Ltd (NHPC).	5.1741
3	National Thermal Power Corporation (NTPC)	4.2462
4	Tata Power Company Limited	4.6936
5	Power Grid Corporation Of India	2.8270
6	BENCH MARK INDEX (S&P CNX Nifty)	0.7396

From the table, the return volatility of selected firms is high than benchmark index return of 0.7396. As we compare all the five companies the return volatility of National Hydroelectric Power Corporation Ltd (NHPC) value 5.1741 is high.

ANALYSIS OF SOFTWARE AND SERVICES SECTOR

TABLE NO: 2.1: ANALYSIS OF SOFTWARE AND SERVICES SECTOR SHARES PERFORMANCE USING RETURN (2010-2011)

S.No	COMPANY NAME	AVERAGE RETURN (01.04.2010 to 31.03.2011)
1	Tata Consultancy Services (TCS)	2.8817
2	Wipro Limited	-3.2434
3	Infosys Technologies Ltd.	1.1172
4	HCL Technologies	2.1146
5	Satyam Computers	-2.8927
6	BENCH MARK INDEX (S&P CNX Nifty)	0.7396

From the table during 2010- 2011 Tata Consultancy Services (TCS) gives high return of 2.8817 which is higher than the benchmark index return and Infosys technologies value is 1.1172 and HCL technologies value is 2.1146 which is moderate return. Wipro limited and satyam computers share shows negative return. It could be ascertain from the table that all other firms performed well than benchmark other than wipro limited and satyam computers.

TABLE NO: 2.2: ANALYSIS OF SOFTWARE AND SERVICES SECTOR SHARES PERFORMANCE USING BETA (2010-2011)

S.No	COMPANY NAME	BETA
1	Tata Consultancy Services (TCS)	0.6130
2	Wipro Limited	0.1941
3	Infosys Technologies Ltd.	0.5873
4	HCL Technologies	-0.1796
5	Satyam Computers	0.9360
6	BENCH MARK INDEX (S&P CNX Nifty)	1.0000

From the table during 2010-2011 the beta value shows that, the shares are positively moved towards the market other than HCL Technologies. Wipro limited value is 0.1941 less risky and it moves along with the market. Satyam Computers value is 0.9360 which is high risky when compared to all other shares and it goes along with the market but, less risky than benchmark return.

TABLE NO: 2.3: ANALYSIS OF SOFTWARE AND SERVICES SECTOR SHARES PERFORMANCE USING STANDARD DEVIATION (2010-2011)

S.No	COMPANY NAME	STANDARD DEVIATION
1	Tata Consultancy Services (TCS)	4.8271
2	Wipro Limited	10.1535
3	Infosys Technologies Ltd.	3.8247
4	HCL Technologies	5.8054
5	Satyam Computers	7.8966
6	BENCH MARK INDEX (S&P CNX Nifty)	0.7396

From the table, the return volatility of selected firms is high than benchmark index return of 0.7396. As we compare all the five companies the return volatility of Wipro Limited value 10.1535 is high.

ANALYSIS OF OIL AND GAS OPERATION SECTOR

TABLE NO: 3.1: ANALYSIS OF OIL AND GAS OPERATION SECTOR SHARES PERFORMANCE USING RETURN (2010-2011)

S.No	COMPANY NAME	AVERAGE RETURN (01.04.2010 to 31.03.2011)
1	Reliance Industries	-0.2207
2	Oil And Natural Gas Corporation (ONGC)	-7.6688
3	Indian Oil Corporation (IOC)	0.5155
4	Bharat Petroleum	0.9803
5	Hindustan Petroleum Corporation	0.6644
6	BENCH MARK INDEX (S&P CNX Nifty.)	0.7396

From the above table oil and gas operations sector, during 2010- 2011 Bharat Petroleum corporation limited gives high return of 0.9803 which is higher than the benchmark index return and Indian Oil Corporation (IOC) value is 0.5155 and Hindustan Petroleum Corporation value is 0.6644 which is moderate return. Oil And Natural Gas Corporation and Reliance Industries share shows negative return.

TABLE NO: 3.2: ANALYSIS OF OIL AND GAS OPERATION SECTOR SHARES PERFORMANCE USING BETA (2010-2011)

S.No	COMPANY NAME	BETA
1	Reliance Industries	0.8530
2	Oil And Natural Gas Corporation (ONGC)	2.3196
3	Indian Oil Corporation (IOC)	0.7541
4	Bharat Petroleum corporation limited	0.7064
5	Hindustan Petroleum Corporation	1.0129
6	BENCH MARK INDEX (S&P CNX Nifty.)	1.0000

From the above table oil and gas operations sector, during the year 2010- 2011 the beta value shows that, the shares are positively moved towards the market. Bharat Petroleum corporation limited value 0.7064 is less risky than others and it moves along with the market. Oil And Natural Gas Corporation (ONGC) value is 2.3196 which is high risky when compared to bench mark return and all other company shares.

TABLE NO: 3.3: ANALYSIS OF OIL AND GAS OPERATION SECTOR SHARES PERFORMANCE USING STANDARD DEVIATION (2010-2011)

S.No	COMPANY NAME	STANDARD DEVIATION
1	Reliance Industries	4.8373
2	Oil And Natural Gas Corporation (ONGC)	21.4983
3	Indian Oil Corporation (IOC)	7.9674
4	Bharat Petroleum	7.9816
5	Hindustan Petroleum Corporation	10.9336
6	BENCH MARK INDEX (S&P CNX Nifty)	0.7396

From the table, the return volatility of selected firms is high than benchmark index return of 0.7396. As we compare all the five companies the return volatility of Oil and Natural Gas Corporation (ONGC) value 21.4983 is high.

COMPARATIVE ANALYSIS OF SELECTED COMPANIES IN UTILITIES SECTOR (2010-2011)

From the table we can ascertain that, performance of the Gas authority of India limited shows high value 0.9451. And it also proves NO.1 in utilities sector. Tata Power Company Limited attains rank No: 2 but performed less than Gas authority of India limited. National Hydroelectric Power Corporation attains fifth rank and it performed least.

SECTOR	COMPANY NAME	RETURN	S.D	BETA	RANK
Utilities sector	Gas Authority of India Ltd (GAIL)	0.9451	4.1656	0.6120	1
	National Hydroelectric Power Corporation	-2.3671	5.1741	0.9845	5
	National Thermal Power Corporation	-0.9558	4.2462	0.6628	4
	Tata Power Company Limited	-0.5530	4.6936	0.7618	2
	Power Grid Corporation Of India	-0.6648	2.8270	0.3271	3

COMPARATIVE ANALYSIS OF SELECTED COMPANIES IN IT SECTOR (2010-2011)

SECTOR	COMPANY NAME	RETURN	S D	BETA	RANK
IT sector	Tata Consultancy Services (TCS)	2.8817	4.8271	0.6130	1
	Wipro Limited	-3.2434	10.1535	0.1941	5
	Infosys Technologies Ltd.	1.1172	3.8247	0.5873	3
	HCL Technologies	2.1146	5.8054	-0.1796	2
	Satyam Computers	-2.8927	7.8966	0.9360	4

From the table we can ascertain that, performance of the Tata Consultancy Services (TCS) shows high value 2.8817. And it also proves NO.1 in utilities sector. HCL Technologies attains rank No: 2 but performed less than Gas authority of India limited. Wipro Limited attains fifth rank and it performed least.

COMPARATIVE ANALYSIS OF SELECTED COMPANIES IN OIL AND GAS SECTOR (2010-2011)

SECTOR	COMPANY NAME	RETURN	S D	BETA	RANK
Oil and Gas sector	Reliance Industries	-0.2207	4.8373	0.8530	4
	Oil And Natural Gas Corporation	-7.6688	21.4983	2.3196	5
	Indian Oil Corporation	0.5155	7.9674	0.7541	3
	Bharat Petroleum	0.9803	7.9816	0.7064	1
	Hindustan Petroleum Corporation	0.6644	10.9336	1.0129	2

From the table we can ascertain that, performance of the Bharat Petroleum shows high value 0.9803. And it also proves NO.1 in utilities sector. Hindustan Petroleum Corporation attains rank No: 2 but performed less than Gas authority of India limited. Oil And Natural Gas Corporation attains fifth rank and it performed least.

SUGGESTIONS

HIGH RISK AND RETURN

Gas authority of India ltd shares, Tata consultancy services shares and Bharat petroleum corporation limited shares in utilities, IT and oil and gas sector respectively are suitable for the investors who expect the higher rate of return with the high level of risk.

AVERAGE RISK AND RETURN

In utilities sector Tata power and power Grid Corporation, in IT sector HCL Technologies and Infosys Technologies and in oil and gas sector Hindustan petroleum and Indian Oil Corporation are suitable for the investors who expect the moderate rate of return with the average level of risk.

LOW RISK AND RETURN

In utilities sector NTPC and NHPC, in IT sector Satyam computers and Wipro limited, and in oil and gas sector reliance industries and oil and Gas Corporation of India are suitable for the investors who expect the low rate of return with the low level of risk.

CONCLUSION

The study analyzed the returns of shares for the period of 1st April 2010 to 31st March 2011. In addition return has been comparing with to market portfolios, namely S&P CNX Nifty which considered being the bench mark. Through these study the researcher analysis the performance of selected sector shares and providing the investors the information about the best avenue available to invest according to their investment objective. That decision isn't as simple as choosing a share that gives high returns but primarily, it is about selecting a sector with top five companies that is in line with your risk appetite.

Based on the findings we can conclude that the Gas authority of India ltd shares, Tata consultancy services shares and Bharat petroleum corporation limited shares in utilities, IT and oil and gas sector respectively performed well then other shares. Though shares trading are quite fluctuating day-by-day, the performance of shares depends on the volatility of the market.

REFERENCES

1. Punithavathy Pandian (2007), "Security Analysis and Portfolio Management", Vikas Publishing House Private Limited, New Delhi.
2. V.A.Avadhani (2000), "Security Analysis and Portfolio Management", 5th Edition, Himalaya Publishing House, New Delhi.
3. S.Kevin (2004), "Portfolio Management", 1st edition, Prentice Hall of India Private Limited, New Delhi.

4. Preeti Singh (2006) "Investment Management", 14th edition, Himalaya Publishing House, New Delhi.

WEBSITES

5. www.nseindia.com
6. www.ndtvprofit.com
7. www.esnips.com
8. www.answers.com
9. www.sharekhan.com
10. www.moneycontrol.com



ASSETS FORMATION AND BUSINESS IN PUNJAB NATIONAL BANK: A CASE STUDY

NAMITA MAINI
ASST. PROFESSOR
GURU NANAK KHALSA COLLEGE FOR WOMEN
LUDHIANA

ABSTRACT

Assets formation in the Punjab National Bank witnessed significant growth, but the return on assets could not make pace with the assets. Business per unit of branch and per unit of workforce in the Bank is quite encouraging. The assets, business per branch and business per employee would further increase in Punjab National Bank.

KEYWORDS

Assets, Business, Return, Punjab National Bank, C.G.R., Future Projections.

INTRODUCTION

Banking sector has experienced three important phases in from 70s to 90s in India. During 70s nationalization of commercial banks was done, while 80s was the period of consolidation and nineties was the era of financial sector reforms. Though, there was impressive expansion of banking sector in the seventies and eighties, but there was general consensus that public sector banks in India had not proved to be sound and vibrant in the era of competition since 1990s. By 1990, there was cause of concern on account of poor financial position of public sector commercial banks, some of which has already become unprofitable, under-capitalised and with high level of non-performing loans. Consequently, the Narsimham Committee was set up in 1991 and the report presented by it became the referral point for a cohesive strategy of financial sector reforms. These financial sector reforms aim at promoting a diversified, efficient and competitive financial system with the ultimate objective of improving the efficiency through operational flexibility, improved viability and institutional strengthening. In this research paper, an attempt is made to evaluate the performance in terms of returns on assets and business per unit of bank and per employee of Punjab National Bank, leading public sector bank in India for the 5 year period i.e. 2006-07 to 2010-11. This research paper focuses mainly on

1. To study the trends in assets formation and returns on assets in Punjab National Bank;
2. To examine the trend in business per branch and per employee in the Bank; and
3. To highlight the future projections of assets and business in Punjab National Bank.

REVIEW OF LITERATURE

Sreedhar (1992) made an attempt to analyse what the public sector banks are doing to better their present performance, as also if any long range planning is being undertaken to prepare these corporate giants to be flexible and strong so as to gain from the inevitable changes in coming years. The results indicate that present image of public sector banks is hardly that of an efficient and professional one responsive to the needs of the customer. Decision-making is passed back and fourth, and delegation and control leave much to be desired. Industrial Relations/vigilance department staffed by ex-lawyers and ex-cops rule the roost. Where business decisions are questioned, business ceases. Instead of questioning the decisions, training for better decision making will yield better results. But this may be a very long-term plan in this context of public sector banks' functioning.

Pathania and Singh, (1998) in their study 'A Study of Performance of HP State Coop. Bank' observed that the performance of the Himachal Pradesh State Cooperative Bank Ltd. in term of membership drive, share capital, deposit mobilization, working capital and advances has improved over the period of five years i.e. 1991-92 to 1995-96. However, recovery performance was unsatisfactory and overdues had increased sharply. This was due to the after effects of loan waiver scheme. The per member and per branch performance of the bank revealed that there is a significant growth in share capital, deposits, borrowings, advances and profits. They suggested that in the context of globalization and liberalization of economy, cooperative bank should ensure their business on healthy lines by having professional manpower, training and a sense of competition.

Chaudhari and Tripathy (2004) evaluated the relative efficiency of public sector banks by using data envelopment analysis. The efficiency of banks is evaluated on the basis of five indicators-Profitability, Financial Management, Growth, Productivity and liquidity. The relative efficiency is measured in relation to its peer units. It has been found that Corporation Bank is efficient in all indicators followed by Oriental Bank of Commerce. The results shows that most of the banks form efficient frontier in profitability and financial indicators compared to productivity, growth and liquidity indicators. It means that banks are mostly concentrating on profitability and financial management indicators rather than on productivity; growth and liquidity indicators.

R.K. Raul and J.U. Ahmed (2005) had conducted an empirical analysis of different aspects of bank's performance in the Barak Velly, southern part of Assam in the context of national level performance of PSBs in particular during two distinct time period, pre (1981-91) and post (1992-2001) reform regimes, in their study **Public Sectors Banks in India- Impact of Financial Sector Reforms**. They concluded that profitability of banks had come under reverse pressure and PSBs had witnessed a low percentage of profits to total assets during the post reform years due to lower interest spread and greater priority sector lending. They suggested that corporate governance should be implemented in these banks to encourage and pursue market discipline through transparency, consistency and accountability. They stressed greater autonomy for banks to lay down internal guidance and procedures for transparency, disclosures and risk management.

Alamelu and Devamohan (2010) in their article 'Efficiency of Commercial Banks in India' calculated the business ratios such as interest income to average working funds, non interest income to average working funds, operating profit to average working funds, return on assets, business per employee and profit per employee for Public sector banks, private sector banks and foreign banks for the year 2004-05 to 2008-09. It was observed that the Foreign banks and new generation private banks have superior business ratios. They effectively leverage technology, outsourcing and workforce professionalism which helped them to protect their bottom-line. In contrast, the Public sector banks are yet to exploit fully the advantages of vast branch network and large workforce. That's why they have unimpressive business ratios. Old generation private banks do not have impressive business ratios, as they are constrained by small size and conservatism.

RESEARCH METHODOLOGY

Being a case study, Punjab National Bank was selected purposely being a leading public sector bank in India. The data were collected from different annual Reports of the Bank. The data were analyzed by working out compound growth rates in exponential regression form and future trend in linear regression form. The algebraic forms of these equations are as under:

$$\begin{array}{lcl} \text{For C.G.R.} & Y & = ab^t \\ \text{For Future Projection} & Y & = a + bt \end{array}$$

The coefficient of correlation between total assets and return on assets was also computed by using the Karl Pearson's Coefficient of Correlation formula.

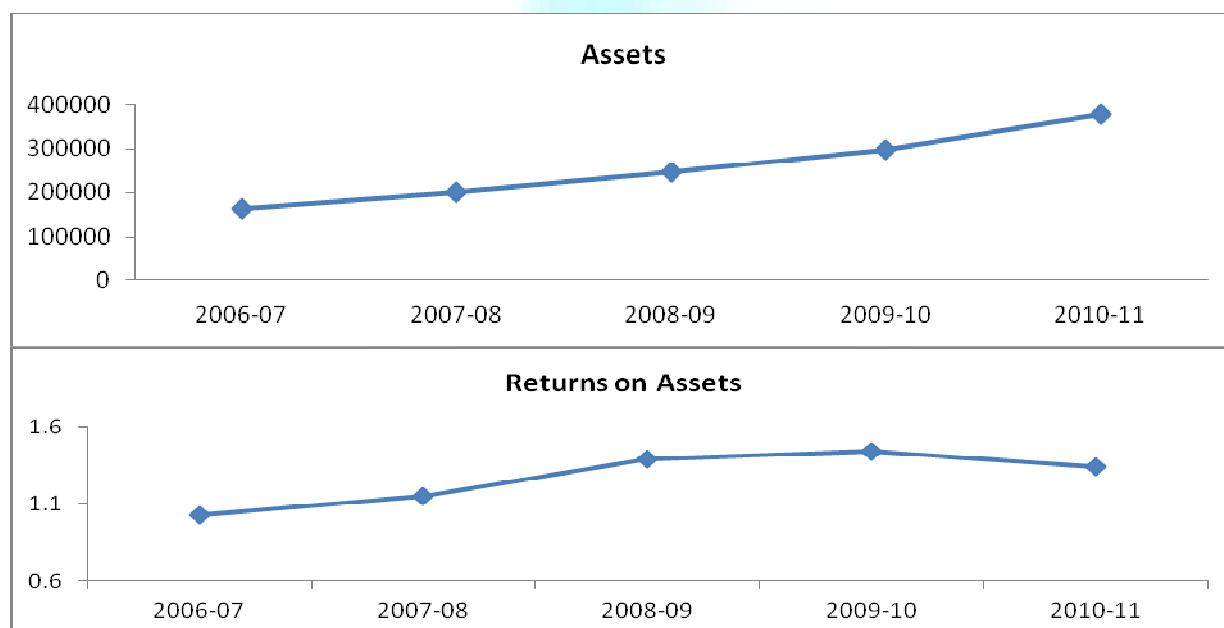
RESULTS AND DISCUSSION

EXISTING TRENDS IN ASSETS AND RETURN ON ASSETS

Table 1 contains the information about assets formation and returns on assets. The analysis shows that the total assets in Punjab National Bank increased from Rs. 162422 crores in 2006-07 to Rs. 378325 crore. The increase was significant at the rate of 23.24 percent compounded annually. The yearly increase was of the order of 22.53 percent from 2006-07 to 2007-08, 24.07 percent from 2007-08 to 2008-09, 20.13 percent from 2008-09 to 2009-10 and 27.54 percent from 2009-10 to 2010-11. This shows that there was a consistent growth of assets in Punjab National Bank from 2006-07 to 2010-11.

TABLE 1: EXISTING TRENDS IN TOTAL ASSETS AND RETURNS ON ASSETS IN PUNJAB NATIONAL BANK

Year	Assets (Cr. Rs.)	% change	Returns on Assets (%)
2006-07	162422		1.03
2007-08	199020	22.53	1.15
2008-09	246919	24.07	1.39
2009-10	296633	20.13	1.44
2010-11	378325	27.54	1.34
Average	256664		1.27
C.V.	33.00		13.65
C.G.R.	23.24		7.80
t-value	40.36**	r-value b/w assets & return = 0.744	
			2.57



Return on assets is taken as the returns per 100 rupees of assets i.e. the rate of returns on assets. It is obvious from Table 1 that the rate of returns on assets was 1.03 percent in 2006-07 which slightly increased to 1.34 percent in 2010-11 after experiencing ups and downs in a short period of 5 years under study. The growth rate also came to be non-significant. This reveals that assets formation could not fetch returns in pace with the proportion of increase in assets in the Bank. This points toward the poor management of assets in the Bank. This was also proved by the insignificant correlation between assets formation and return on assets.

FUTURE PROJECTIONS OF ASSETS AND RETURN ON ASSETS

A perusal of Table 2 shows that the assets formation in PNB would increase significantly in 2015-16 and 2020-21. It will increase to the level of Rs.627258 crore in 2015-16 and Rs. 891968 crore in 2020-21 registering an increase of 65.80 and 135.77 percent respectively over 2010-11.

TABLE 2: FUTURE PROJECTIONS IN TOTAL ASSETS AND RETURNS ON ASSETS IN PUNJAB NATIONAL BANK

Particular	Assets (Cr. Rs.)	Returns on Assets (%)
Trend Equation		
A	97838	0.9970
B	52942	0.0910
Future Projections		
2015-16	627258	1.91
2020-21	891968	2.36
%change over 2010-11		
2015-16	65.80	42.31
2020-21	135.77	76.27

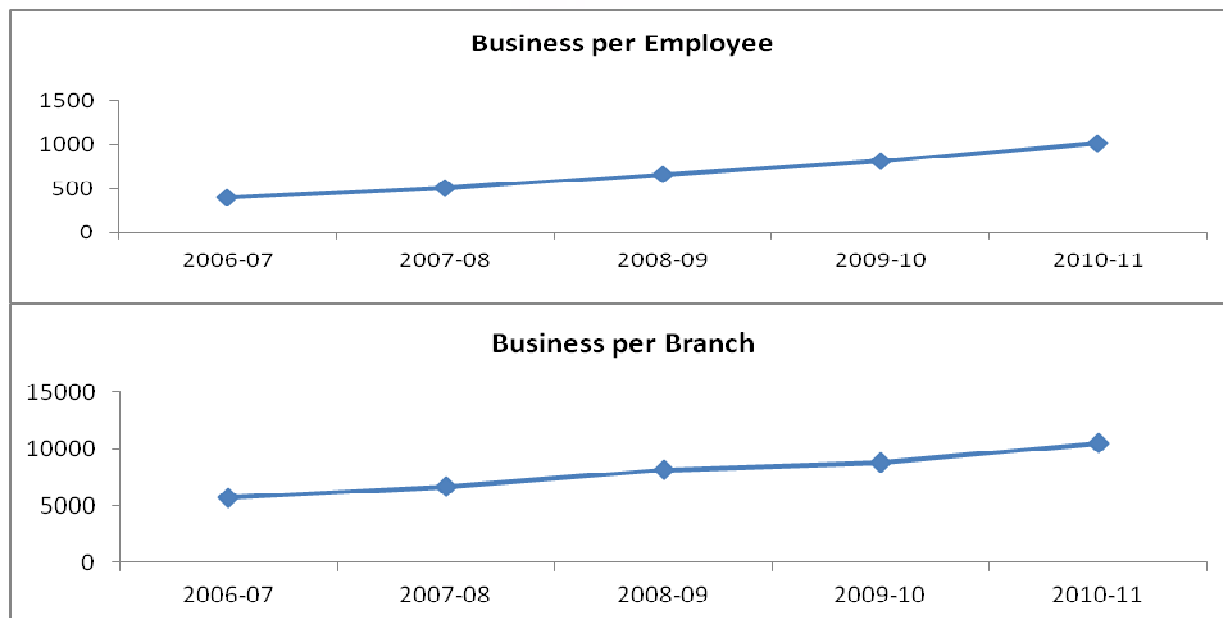
However, there is a scope of improvement in return on assets in future. It may increase to the level of 1.91 percent in 2015-16 and 2.36 percent in 2020-21 from 1.34 in 2010-11. On the basis of future projections, it may be said that the Bank would make some special efforts to improve upon the return on assets.

EXISTING TREND IN BUSINESS PER BRANCH AND BUSINESS PER EMPLOYEE

Business is the sum total of deposits and advances made by the bank. It is encouraging to note that the business per branch as well as business per employee registered highly significant growth from 2006-07 to 2010-11 in Punjab National Bank. Business per branch increased from Rs. 591 lac in 2006-07 to Rs. 10475 lac in 2010-11 at the compound growth rate of 16.11 percent per annum. The annual increase was 16.48 percent from 2006-07 to 2007-08, 22.25 percent from 2007-08 to 2008-09, 7.56 percent from 2008-09 to 2009-10 and 20.17 percent from 2009-10 to 2010-11. The relatively low increase from 2008-09 to 2009-10 may be said a matter of concern which may have been dealt with properly in the next year. However, such fluctuations need to be checked.

TABLE 3: EXISTING TRENDS IN BUSINESS IN PUNJAB NATIONAL BANK (Lac Rs.)

Year	Business/Branch	% change	Business/Employee	% change
2006-07	5691		407	
2007-08	6629	16.48	505	24.08
2008-09	8104	22.25	655	29.70
2009-10	8717	7.56	808	23.36
2010-11	10475	20.17	1016	25.74
Average	7923		678	
C.V.	23.47		35.74	
C.G.R.	16.11		25.86	
t-value	13.52**		51.04**	



The Business per employee increased from Rs. 407 lac in 2006-07 to Rs. 1016 lac in 2010-11 in the Bank. This registered a significant growth rate of 25.86 percent compounded annually. The analysis reveals that rate of growth of business per employee was higher than that of business per branch. This possibly may be due to the expansion of branches and retrenchment of employees after the financial reform era in Punjab National Bank.

FUTURE PROJECTIONS OF BUSINESS

It can be seen from Table 4 that the business per branch would increase to the level of Rs. 16086 lacs in 2015-16 and Rs. 21916 lacs in 2020-21. This will be an increase of 53.57 and 109.22 percent respectively over 2010-11. Similarly, the business per employee would increase to the level of Rs. 1742 lac and 2502 lac in 2015-16 and 2020-21 respectively in Punjab National Bank. This will be a respective increase of 71.46 and 146.26 percent over 2010-11.

TABLE 4: FUTURE PROJECTIONS IN BUSINESS IN PUNJAB NATIONAL BANK (Lac Rs.)

Particular	Business/Branch	Business/Employee
Trend Equation		
a	4426	222
b	1166	152
Future Projections		
2015-16	16086	1742.00
2020-21	21916	2502.00
%change over 2010-11		
2015-16	53.57	71.46
2020-21	109.22	146.26

Business trends show that the Bank is economically viable as far as number of branches and employees are concerned. This conveys that productivity and profitability in the Bank is quite satisfactory.

CONCLUSIONS

The study highlights that the assets formation in the Punjab National Bank witnessed significant growth, but the return on assets could not make pace with the assets. Business per unit of branch and per unit of workforce in the Bank is quite encouraging. The assets, business per branch and business per employee would further increase in Punjab National Bank. However, the Bank should focus on enhancing the rate of return on assets so as to make rational utilization of such huge assets. Otherwise, the assets will become idle which would be harmful for the financial health of the Bank in the era of severe competition.

REFERENCES

1. Alamelu and Devamohan (2011) "Efficiency of Commercial Banks in India" *Professional Bankers*, ICFAI University Press, Hyderabad, 2010.
2. Chaudhari, Sanjay and Arabinda Tripathy (2004): "Measuring bank performance: An application of DEA", *Prajnan*, Vol. XXXII, No. 4, 2003-04, PP.287-304.
3. Pathania and Singh (1998) "A Study of Performance of HP State Cooperative Bank" *Indian Cooperative Review*, XXXIX, No. 2, 1998
4. R.K. Paul and J.U. Ahmed (2005) "Public Sector Banks in India-Impact of Financial Sector Reforms", Kalpaz Publications, Delhi, 2005
5. Sreedhar, G (1992): "Corporate Planning in Public Sector Banks", *The Banker*, Vol. 39, No.8. October 1992.

GOVERNANCE AND RESPONSIBILITY - A JOINT VENTURE (WITH SPECIAL REFERENCE TO TATA)

RADHAKRISHNA MISHRA
ASST. PROFESSOR
DEPARTMENT OF MBA
GANDHI INSTITUTE FOR TECHNOLOGY
CHANDRASEKHARPUR

MALAVIKA PATNAIK
LECTURER
DEPARTMENT OF MBA
GANDHI INSTITUTE FOR TECHNOLOGY
BHUBANESWAR

ABSTRACT

This is an exploratory paper with the aim of determining the point of intersection between "CORPORATE GOVERNANCE & CORPORATE SOCIAL RESPONSIBILITY". Corporate social responsibility is undoubtedly associated with corporate governance as part of business ethics. There is a strong argument that CSR is nothing but a superficial window dressing which distracts the businesses from their fundamental economic role. Besides, the demand for more ethical business practices is constantly increasing. Corporate governance includes the relationships among the many stakeholders involved and the goals for which the corporation is governed. The principal stakeholders are the shareholders, the board of directors, employees, customers, creditors, suppliers, and the community at large. Companies that aim to perform better can increase shareholder value by properly managing risks, anticipating regulatory action or accessing new markets while at the same time contributing to the sustainable development of the societies in which they operate. The purpose of this paper is to discover the facts on this issue. The basic question here is whether the corporate houses are really concerned and clean enough to provide for the community in which they are established. Moreover should CSR be a morally guided concept or should there be an overseer rule or procedures to drive the cause. We further move to investigate the point of convergence of Corporate Governance with Corporate Social Responsibility.

KEYWORDS

business ethics, corporate social responsibility and corporate governance.

INTRODUCTION

The thinkers today round the globe prefer using the term **corporate citizenship** instead of Corporate Social Responsibility (CSR). CSR is now being considered as set of rights, responsibilities and obligations of the corporations. Corporate social responsibility (CSR) has been defined as the obligation of firms to be responsible for the environment and for their stakeholders in a manner that goes beyond financial goals (Gössling & Vocht 2007).

At the same time, increasing public and stakeholder concern about the social and environmental impacts of business practices is forcing companies to come to terms with a broader set of interests and expectations. Companies must embrace these challenges in order to reap the benefits- proactive legal, social, environmental and reputation risk management; enhanced organizational effectiveness; improved relationships with stakeholders; and 'social license'- to operate within communities.

There are two levels of thought as far as convergence of CSR with CG is concerned – one at the **level of values** and the other at the **operational risk level**

CSR & CORPORATE GOVERNANCE: - VALUES INTERTWINED

Corporate governance has no doubt emerged as a critical issue today owing to the occurrences of a number of high profile corporate frauds. The corporate scandals of recent years, such as those of the Lehman Brothers, Enron, WorldCom and Satyam have created a significantly more constrained regulatory environment. Those corporate failures have focused attention on issues of good governance and ethics, heightening the discussion of corporate governance (CG) and the ethics of economic conduct (Marsiglia & Falautano 2005). This has surely slapped on the face of those corporate governance regulations and institutions involved. Many other rules are underway which aim at identifying and codifying good governance practices. The issue is "what exactly is good governance practice?"

Good governance is primarily about values rather than rules. If this is so, then good values need to be stated in words and manifested in action. CSR is an external manifestation of those values. Part of the governance process is determining what kind of corporate citizen the company seeks to be; CSR is part of this exercise. The ethical thread joins the corporate governance with the CSR. If corporate governance has to be preached as technical exercise sans ethical background then results would be perhaps yet another SATYAM or ENRON. Ethical or value-based governance considers such issues as the kind of product and service the company produces, how it is produced and the social and environmental impacts of production — considerations of a CSR nature. A value-based governance program would include a corporate philosophy governing medium and long term actions, articulating an approach that reconciles short term profits with long term profitability. Every business house is accountable; for what it contributes to the community at large. For example selling edible oil is profitable business but adulterating argemone oil with it is an unforgivable guilt. Thus to inculcate this value-based governance in the corporate culture, it has been extensively being felt that CSR should be hands in glove with CG.

CASE STUDY ON VALUE DRIVEN CORPORATE GOVERNANCE**THE TATA GROUP: INTEGRATING SOCIAL RESPONSIBILITY WITH CORPORATE GOVERNANCE**

The Tata group has been credited for aggressively pursuing several corporate social responsibility (CSR) initiatives in India. The case describes the vision and mission of Tata group which places importance on CSR in alignment with its governance procedures. It then examines how the group's vision is translated into action through the various community development programmes.

The case focuses on issues like, how the Tata group had gone about integrating various CSR initiatives across the group companies, the measures it is adopting for institutionalizing the concept and the various benchmarks adopted. Finally, the case examines how Tata Group is integrating CSR with its business ethics and governance in the organization's journey towards excellence.

"In a free enterprise, the community is not just another stakeholder in business but is in fact the very purpose of its existence."

- Jamsetji N. Tata, Founder, Tata Group.

"Corporate Social Responsibility should be in the DNA of every organization. Our processes should be aligned so as to benefit the society. If society prospers, so shall the organization..."

- Manoj Chakravarti, General Manager - Corporate Affairs and Corporate Head - Social Responsibility, Titan Industries Limited in 2004

- In July 2004, B. Muthuraman, Managing Director, Tata Steel Limited (TISCO) announced that in future TISCO would not deal with companies, which do not confirm to the company's Corporate Social Responsibility (CSR) standards.
- The Tata group generated total revenues of Rs. 614.34 billion during the year 2003-04 through its various companies in seven key industry sectors. The group has 80 companies in diverse sectors, and has been moving from product-driven businesses to brand-driven businesses.
- While the materials sector comprised of the flagship company - TISCO and contributed 19% of the group's total revenues in 2003-04, as much as 24% came from the automotive & engineering sector i.e. Tata Engineering and Locomotive Company Limited (TELCO).

Companies like TCS and Tata Tele Services, operating in the IT and telecommunication industry contributed the largest share of 27% in the group's earnings in 2003-04. Tata is credited with pioneering India's steel industry, civil aviation and starting the country's first power plant. The guiding mission of the Tata group was stated by JRD Tata in the following words: "No success or achievement in material terms is worthwhile unless it serves the needs or interests of the country and its people."

INTEGRATION OF CSR AND GOVERNANCE AT TATA

- Considered as pioneers in the area of CSR, the Tata group has played an active role in nation building and socio-economic development since the early 1900s. A survey conducted by the website www.indianngos.com revealed that Tatas spent Rs. 1.5 billion on community development and social services during the fiscal 2001-02 the highest by any corporate house in India.
- Even when economic conditions were adverse, as in the late 1990s, the financial commitment of the group towards social activities kept on increasing, from Rs 670 million in 1997-98 to Rs 1.36 billion in 1999-2000. From its inception, the Tata group has taken up a number of initiatives for the development of society. A unique feature of the group is that 63 percent of the equity capital of the parent firm - Tata Sons Limited - is held by Tata trusts, which are philanthropic in nature. According to a statement on the Tata group's website (www.tata.com), "The wealth gathered by Jamsetji Tata and his sons in half a century of industrial pioneering formed but a minute fraction of the amount by which they enriched the nation..."

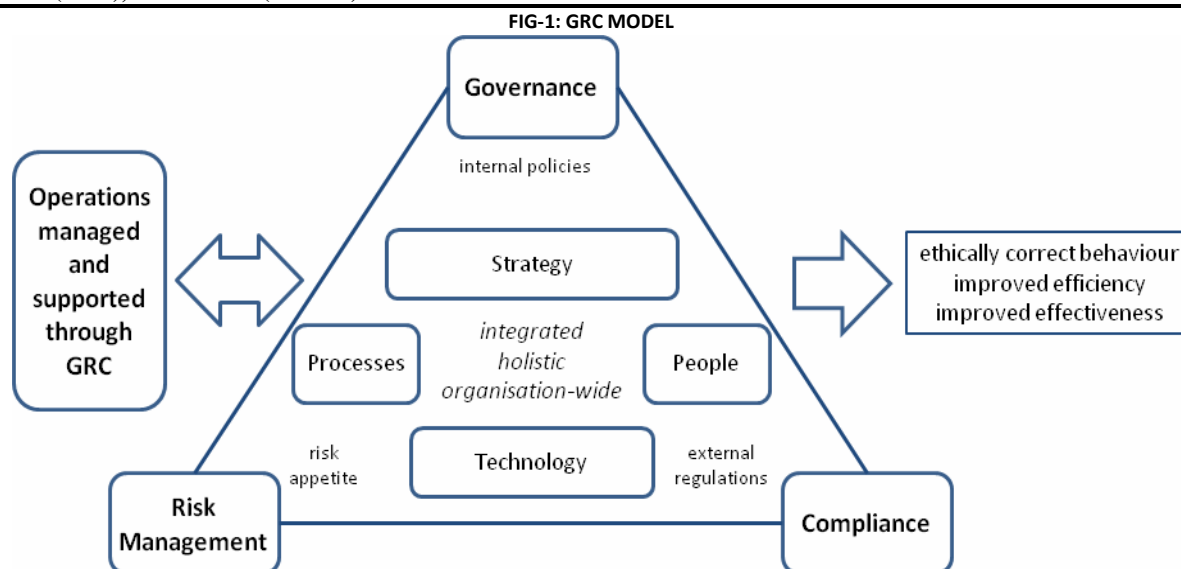
CSR AS A STRATEGIC INITIATIVE AT TATA

There Tata group has long accepted the idea that CSR makes business sense. This was realized by JN Tata way back in 1895, when he stated, "We do not claim to be more unselfish, more generous or more philanthropic than others, but we think we started on sound and straightforward business principles considering the interests of the shareholders, our own and the health and welfare of our employees... the sure foundation of prosperity. Since inception, the Tata group has placed equal importance on maximizing financial returns as on fulfilling its social and environmental responsibilities - popularly known as the triple bottom line. After decades of corporate philanthropy, the efforts of the group in recent years have been directed towards synchronization of the Triple Bottom Line (TBL). Through its TBL initiative, the Tata group aimed at harmonizing environmental factors by reducing the negative impact of its commercial activities and initiating drives encouraging environment-friendly practices. In order to build **social capital** in the community, the group has got its senior management involved in social programs, and has encouraged employees to share their skills with others and work with community-based organizations. Therefore, suitable amendments were made to the Articles of Association of the major Tata group companies in the 1970s. Newly included was an article stating that the "company shall be mindful of its social and moral responsibilities to consumers, employees, shareholders, society and the local community". In another bid to institutionalize the CSR charter, a clause on this was put in the company code of conduct. This clause stated that group companies had to actively assist in improving the quality of life in the communities in which they operated. All the group companies were signatories to this code. CSR was included as one of the key business processes in TISCO. CSR was one of the **eight key business processes** identified by TISCO's management and considered critical to the success of the company...

As the only Indian company trying to put into practice the Global Compact principles on human rights, labor and environment, TISCO was also conferred the Global Business Coalition Award in 2003 for its efforts in spreading awareness about HIV/AIDS...

OPERATIONAL RISK LEVEL: CSR MEETS CG

Looking at another perspective where there can be a possible coalition between CSR & CG is the operational risk level. Any business today essentially has to manage certain issues or risks which are inevitable with its existence. It becomes indispensable for the organization to manage this very important aspect in order to keep up in the business. Corporate governance is now defined in a way that includes risk management and in the case of CSR; social and environmental risks are the areas of concern. It has now been realized that CSR risks can have a **financial impact** on a company and companies should be managing this area. Companies are recognizing the **financial risks** evident in CSR. CSR is evolving from an NGO-driven movement for greater good to a business led Risk Management strategy, and because of this CSR is central to governance. Long range risk management business planning is central to a global company's strategy in a globalized world. Convergence is being driven by the view that boards have a fiduciary responsibility to address risks and CSR is fundamentally about risk management. However, it is agreed that because the nature of CSR management can differentiate company performance it is relevant to corporate governance. They agreed that effective management of CSR risks and opportunities can improve financial results thereby warranting governance oversight. Corporations face a broader portfolio of risks today than in the past — today's risks are more diverse with significant financial impacts. Traditional governance tools fail to capture these new and emergent risks such as labour issues in the supply chain, environmental stewardship, human rights, and other issues society cares about and which can be extremely material. Corporations lacking processes for identifying and managing these risks fly blindly. A burgeoning new area of enterprise risk management looks at risk issues more holistically. For example, the positive constructive management of stakeholder relations should result in lower operational risk — less disruption, fewer law suits, and reduced brand risks. To assess companies' overarching risks, financial analysts are starting to develop a better understanding of social, environmental and ethical corporate performance issues. Risk management is also about leveraging market opportunities — companies addressing social and environmental issues have an opportunity to grow their business in new and competitive ways. From a strategic perspective, maintaining a positive relationship with non-financial stakeholders can play an important role in promoting the sustainable competitive advantage of an individual firm. Companies which do this well will develop strategic strength.



The above figure (Fig-1) gives a clear picture of the relationship among Governance, Risk Management and Compliance. Governance, Risk Management and Compliance are the core disciplines of GRC. Each of the disciplines consists of the four basic components of GRC: strategy, processes, technology and people. The organisation's risk appetite, its internal policies and external regulations constitute the rules of GRC. The disciplines, their components and rules are now to be merged in an integrated, holistic and organisation-wide (the three main characteristics of GRC) manner – aligned with the (business) operations that are managed and supported through GRC. In applying this approach, organisations long to achieve the objectives of GRC: ethically correct behaviour, and improved efficiency and effectiveness of any of the elements involved.

DRIVERS AT THE RISK LEVEL INCLUDE

- Shareholders seeking financial rewards are recognizing CSR issues can act on share price and want to know what companies are doing about their CSR risks.
- Mainstream financial analysts and companies are also becoming aware that CSR issues are not marginal but have materiality for a company, necessitating more strategic thinking about CSR.
- New regulations requiring more robust risk reporting compel companies to be more mindful of non-financial issues, thereby driving CSR into corporate governance and accounting processes.

GOVERNANCE PRACTICES DEMONSTRATING CSR PRINCIPLE

- The Global Reporting Initiative identifies a number of cross-over indicators, including Independence and expertise of directors; board-level processes for overseeing the identification and management of economic, environmental and social risks and opportunities, and the linkage between executive compensation and achievement of financial and non-financial goals.
- Risk management oversight is a fundamental connection point. A key board duty is the consideration of long term corporate risks. Directors' competencies, their proactive efforts to take a broad view of things that affect intangible assets and their ability to assess strategy in this area are critical for effective governance and corporate performance.
- Disclosure, transparency and accountability as key cross-over practices, Companies need meaningful disclosure of social, environmental, and ethical issues so they and others can see beyond candy-coated window dressing.
- Some include compensation (i.e. board, executive and staff compensation) as a crossover governance practice that can affect corporate social performance.

CONCLUSION

CSR is definitely an extension of corporate governance. The rigid boundaries that have long existed between business and philanthropy, between making money and 'doing good' are becoming increasingly blurred. We live in a world in which capitalism and globalization have changed the way in which we live and work and in which emerging markets are becoming key players in the business world. Meanwhile consumers are demanding sustainable and value-driven offerings, and issues such as climate change, global health and international development have bubbled up to the surface of the collective consciousness. Focused on uniting business opportunity with positive social, economic or environmental impacts, convergence allows the corporate world and the development sector to work together in the fight against global challenges, creating partnerships that are mutually beneficial, sustainable and scalable.

But, the basic question still remains unanswered "How far out can companies be held responsible for issues like corruption? Should the legal machinery be more active and demanding? How is a company preparing to take on new regulatory demands? What is its climate change policy and how is it preparing for the impact of climate change on its markets?"

For the most part, the paper predicts a modest but increasing convergence between governance and CSR at either or both the values and risk levels. This trend is largely driven by external events such as corporate scandals, climate change and globalization, a growing awareness of the business case for CSR performance and best practices of leading companies. Thus, one can expect greater attention paid to CSR within governance circles in the years ahead, and growing evidence of CSR practices within leading company boards.

REFERENCES

1. Corporate Frauds Trends and Lessons, ICFAI, ISBN No.: 81-7881-4
2. Human Resource Management, Tata McGraw Hill, K.Ashwathappa
3. www.corostrandberg.com
4. www.jmo.e-contentmanagement.com
5. www.blogs.accenture.com
6. www.ncdrc.nic.in
7. www.envfor.nic.in

FACTORS EFFECTING READING DECISION OF PRINT ADVERTISEMENT: AN EXPLORATORY AND EXPERIMENTAL STUDY

ANUPAMA SUNDAR

ASST. PROFESSOR

DEPARTMENT OF MANAGEMENT STUDIES

**SRI JAYACHAMARAJENDRA COLLEGE OF ENGINEERING
MYSORE**

JATIN PANDEY

MBA STUDENT

DEPARTMENT OF MANAGEMENT STUDIES

**SRI JAYACHAMARAJENDRA COLLEGE OF ENGINEERING
MYSORE**

ABSTRACT

The paper identifies the factors that affect the reading decision of students in print advertisements. A preliminary study was conducted to identify the constructs followed by questionnaire design, analysis and interpretation. The three factors identified were font effect, source effect and content effect. An experimental study investigated how font size and font type would influence the appeal of advertisements based solely on appearance, and if that would impact the likelihood that the advertisement would be viewed. Two ways to achieve this goal is use the best Font size and font type. If the advertisement is not readable, then the subjects will not be able to appreciate the advertiser's effort or may not decide to look further into the advertisement details. The experiment revealed a significant impact of font size and type. The most proffered combination is of big font size in normal font type.

KEYWORDS

Advertisement readability, Font effect, Font size, Font type, Source Effect.

INTRODUCTION

American marketing association Defines marketing as "Marketing is the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large." (Approved October 2007)

The definition deals with communicating which is also the promotional part of marketing mix. Promotion mix is defined as the various communication techniques such as advertising, personal selling, sales promotion, and public relations/product publicity available to a marketer that are combined to achieve specific goals.

In the promotion mix advertising plays an important role. Any announcement or persuasive message placed in the mass media in paid or donated time or space by an identified individual, company, or organization.

For advertisement to reach people mass media is essential, print media is one such medium which serves the purpose. The print media is not intrusive like radio and TV, and they generally require some effort on the part of the reader for the advertising message to have impact. For this reason it is often referred to as high involvement mediaⁱ.

Since it is referred as high involvement media it demands greater conviction to make audience read the intended message. The message in print media is usually through the use of characters and images.

Characters form the unit of the message therefore must be clear and appealing the two factors that can make or break the attention of the audience are Font size (also referred as point) and font type which can be termed as "Font Effect".

CSS defines the font size to be the size of the font when set solid. This means that the height of the font is the distance from the highest point in the highest glyph to the lowest point in the lowest glyph

Font Type here refers basically to the presentation of characters and has been classified into simple that are easy to read and complex those are not very legible

An evaluation of popular print advertisements brought to notice that the font type and size varies to a large extent in print advertisements. A large part of the print space remains unutilized still the fonts are not legible in terms of size and font type these observations led the researcher to consider the font effect in the evaluation of print media.

Gary L. Clark, Peter F. Kaminski, Gene Brown uses Gunning's Fog Index to compare the readability levels of 101 trade journal advertisements to the readability levels of articles in 13 trade journals randomly selected for analysis.ⁱⁱⁱ

Steven B Leichter, Janice A Nieman, Robert W Moore, Peggy Collins and Anne Rhodes conducted a study on the readability of written instructional materials for diabetic patients it argues assessment should be carried out by multiple formulas to produce a more representative index of reading difficulty than the application of a single test.^{iv}

DC Spadaro, LA Robinson, and LT Smith described tests that provide relatively simple methods for assessing readability levels.^v

RESEARCH METHODOLOGY

A preliminary study with 10 students was conducted to identify the constructs that might affect the reading decision of an advertisement by students. A questionnaire was prepared and administered to 30 students the standard deviation of the responses was substituted in the formula

Sample size = $((Z * S)/e)^2$

The required sample size was 110. The questionnaire was analyzed using SPSS. The reliability of the questions was found to be .89 which is above .7 hence the questions are reliable.

An exploratory factor analysis was done on the responses to find the predominant factors that affect the reading decision. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy had the value of .810 which is greater than .5 hence the sample was adequate for factor analysis. Three factors were extracted based on Eigen values greater than 1. The factors were named Font Effect, Source Effect and Content Effect by the researcher after the analysis of the questions that compose each factors

Next and experiment was conducted to test the font effect identified through factor analysis

PARTICIPANTS

A total of 30 participants, from the JSSCMS Mysore, completed a questionnaire for this experiment. The reason they were chosen were due to their aptitude to look at the advertisement from the rational view and allocate score without biases.

DESIGN

This study used two 2 (Font type: Times New Roman (Simple), Informal Roman (complex)) x 3 (font size: 8-point font (Small), 12-point font (medium), 16-point font (Large)) within design. The dependent variable was rating score.

The study uses Factorial Design with two factors experimental design. This type of design is employed when we have two or more independent factors in the present study font type and font size are the independent factors and the score is the dependent factor.

MATERIALS

Six custom made advertisements were created using the font size and font type combinations Containing same general content and format. The questionnaire included rating those advertisements with maximum 10-point.

PROCEDURE

The study took place at JSSCMS in the SJCE Campus Mysore. The 3rd semester MBA class were included to participate in the experiment. The packs of advertisements with different font type and size combinations were given to thirty students randomly. Each participant rated each advertisement that he/she received.

Experiment took approximately ten minutes.

RESULTS

At 95% confidence level

Font size had a significant main effect, $F = 231$, $p < .05$; 16-point font (large) ($M=7.3$) was rated most positive.

Font type had a significant main effect, $F = 61.5$, $p < .05$; Times New Roman font (Simple) ($M=4.867$) was rated most positive.

The 2 (font type) x 3 (font size) has a significant interaction effect= 4.455 , $p < .05$;

The advertisement with Times New Roman font (Simple) and 16-point font (large) ($M=8.6$) was rated most positive.

The means score plot shows a steep upwards bent as font size is increased from medium to large thus indicating the chances of reading an advertisement increases drastically as font size is increased from medium to higher size.

CONCLUSION

The study identifies three factors that influence the reading decision of an advertisement. The factors are font effect, Content Effect and Source effect. The study also shows that large and simple font size and type combination are preferred by audience of a print advertisement. It brings into concern the complex font and small font sizes used in many print advertisements to give additional information is not effective. Many observations showed that inspire of the existence of free space small font sizes have been used instead the free space can be efficiently utilised for bigger font sizes.

REFERENCES

ⁱ American Marketing Association

ⁱⁱ Herbert Krugman, (1966-67), "the measurement of advertising involvement", Public Opinion Quarterly, pg 583-596

ⁱⁱⁱ The readability of advertisements and articles in trade journals, Gary L. Clark, Peter F. Kaminski, Gene Brown, Industrial Marketing Management, Volume 19, Issue 3, August 1990, Pages 251–260

^{iv} Readability of Self-Care Instructional Pamphlets for Diabetic Patients, Steven B Leichter, Janice A Nieman, Robert W Moore, Peggy Collins and Anne Rhodes, Diabetes journal, November/December 1981 vol. 4 no. 6 627-630

^v Assessing readability of patient information materials, DC Spadaro, LA Robinson, and LT Smith, American Journal of Health-System Pharmacy February 1, 1980 vol. 37 no. 2 215-221

APPENDIX**TABLE 1: RELIABILITY STATISTICS**

Cronbach's Alpha	N of Items
.899	25

TABLE 2: KMO AND BARTLETT'S TEST

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	Approx. Chi-Square	.810
Bartlett's Test of Sphericity	df	296.833
	Sig.	15
		.000

TABLE 3: ROTATED COMPONENT MATRIXA

	Component		
	1	2	3
I prefer big font size in print advertisements	.778		
I prefer coloured fonts in print advertisements	.718		
I prefer simple fonts to complex fonts in an advertisement	.891		
I prefer newspaper advertisement than other print advertisements		.758	
I prefer magazine advertisement than other print advertisements		0.767	
The paper quality decides my reading decision of an advertisement		0.657	
The heading has an impact on my reading decision			.571
I prefer images to text in a print advertisement			.605
I like cartoon characters in an advertisement			.559
Italics in an advertisement attract my attention	.538		
Bold letters in an advertisement attract my attention	.771		
Underlined letters in an advertisement attract my attention	.853		
The background colour of a print advertisement attracts my attention			.630
The justification of text in an advertisement affects my reading decision			.778
Highlighted text in an advertisement attracts my attention	.718		
The number of paragraphs in an advertisement have an impact on my reading decision			.891
The spacing between the words have an impact on my reading decision	.510		
I prefer the pictures in an advertisement to be on the left side of the ad space			.741
The headlines of the print ad should be attractive			0.784
The information in the ads should be of larger font	0.679		
I don't read print ads if it's not in normal font.	.729		
The headlines in a print ad should be in large font size	.842		
The amount of information given in the ad should be less.			.894
The emphasis of information should be only on key /attributes/USP points			.526

TABLE 4

Tests of Between-Subjects Effects

Dependent Variable: Score

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Model	675.200 ^a	6	112.533	306.909	.000
FontSize	169.400	2	84.700	231.000	.000
FontType	22.533	1	22.533	61.455	.000
FontSize * FontType	3.267	2	1.633	4.455	.023
Error	8.800	24	.367		
Total	684.000	30			

a. R Squared = .987 (Adjusted R Squared = .984)

TABLE 5

Estimated Marginal Means

1. FontSize

Dependent Variable: Score

FontSize	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Small	1.800	.191	1.405	2.195
Medium	2.900	.191	2.505	3.295
Large	7.300	.191	6.905	7.695

2. FontType

Dependent Variable: Score

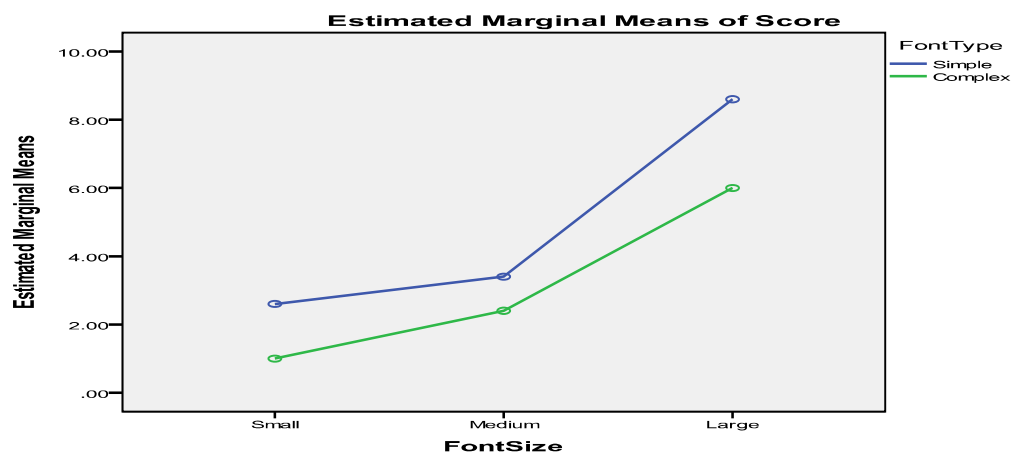
FontType	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Simple	4.867	.156	4.544	5.189
Complex	3.133	.156	2.811	3.456

3. FontSize * FontType

Dependent Variable: Score

FontSize	FontType	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Small	Simple	2.600	.271	2.041	3.159
	Complex	1.000	.271	.441	1.559
Medium	Simple	3.400	.271	2.841	3.959
	Complex	2.400	.271	1.841	2.959
Large	Simple	8.600	.271	8.041	9.159
	Complex	6.000	.271	5.441	6.559

FIGURE 1



WORKING CAPITAL MANAGEMENT AND PROFITABILITY –A CASE STUDY OF BALRAMPUR CHINNI MILLS LIMITED

DR. P. C. NARWARE
LECTURER
GOVERNMENT POLYTECHNIC COLLEGE
HOSHANGABAD

ABSTRACT

An accepted financial axiom is that the role of managers is to maximize the wealth by the efficient utilization of resources available to them. The management of Working Capital is one of the most dominant and challenging aspect of the overall financial management. Working Capital has acquired a great significance and sound position for the twin objects of "profitability and liquidity." The efficient working capital management is the most crucial factor in maintain survival, liquidity and profitability of the concerned business enterprise. In this paper an effort has been made to make a case study of Balrampur Chinni Mills Limited for assessing the trend of working capital management and also to suggest an appropriate audit program to facilitate proper working capital management in the Sugar Industry. For the purpose of investigation both primary and secondary data is used. The impact of working capital management on profitability has been examined by computing coefficient of correlation and multiple regression analysis between profitability ratio and some other statistical tools are included for prediction of working capital policy indicator ratios. The result reveals that there is a significance negative relationship between liquidity and profitability.

KEYWORDS

Inventory Management, Indian Sugar Industry, Liquidity Management, Payables Management, Receivables Management, Trend Analysis and, Working Capital Management.

INTRODUCTION



Sugar is more than just a business it is a way of life for a large part of India. The developing countries are normally faced with the problem of inefficient utilization of resources available to them. The importance of working capital to a manufacturing is such that the failure or success of an enterprise is determined by the availability of sufficient working capital. In the global competitive environment, rising capital cost and scare funds, the importance of working capital needs special emphasis. The study of impact of working capital management policies on corporate Performance occupies an important place in financial management. The efficient management of working capital is important from the point of view of both liquidity and Profitability. Liquidity and Profitability are two vital aspects of corporate business life. Liquidity measures the ability of an enterprise to honor all the maturing obligations. No firm can endure without liquidity. Profitability is the rate of return on firm's investment. It is, therefore, essential to maintain an adequate degree of liquidity for smooth running of the business operations. The liquidity should be neither excessive nor inadequate. All the above elements clearly indicate the crucial importance of working capital in management of finance.

COMPANY PROFILE

Indian sugar Industry has a prominent place in the world sugar Industry. Balrampur is one of the India's largest sugars producing company. It ranks amongst the fastest growing sugar mills in the country. BCML, one of the largest sugars manufactures in India's Private sector. Balrampur Chinni Mills Limited (BCML) was incorporated in 1975 under the companies Act as a wholly –owned subsidiary company of Balrampur Sugar Company Limited (Name changed to Balrampur Commercial Enterprises Limited) (BCEL). By an indenture of conveyance dated 21 February 1976, BCEL transferred to BCML the land, building and other assets and the entire staff of its Balrampur sugar factory with effect from 1 July 1975. BCML ceased to be a subsidiary of BCEL with effect from 25 Th June, 1979 and its shares were listed on the Calcutta Stock Exchange in 1979. The Balrampur Mill started with a crushing capacity of 800 TCD (Metric Tonnes Crushed per day) in 1975 and has since been expanded to its present capacity of 76590 TCD. There are nine production units of the company located in India. The company is engaged in the manufacture of sugar, power generation, Industrial –Alcohol, Molasses and Bagasse. BCML has refinery capacity of 500 TCD at its Haidergarh plant and of 700 TCD of the Rauzagaon plant. The capacity of two sub-divisions –(i) Indo –Gulf Industries Ltd, and (ii) Balrampur Overseas Pvt. Ltd. A wholly owned subsidiary incorporated in Hong Kong. BCML has acquired a 53.96 percent stake in the equity capital of Indo-Gulf Industries Ltd. BCML has taken over the management of IGIL after receiving of the approval from SEBI and completion of the open offer. The sugar division of IGIL situated at maizapur, gonad UP has been demerged from IGIL and merged with BCML pursuant to order dated 24.06.2011 of the BIFR apriority rehabilitation scheme of IGIL.

OBJECTIVES OF THE STUDY

This study focuses on the working capital management and profitability. The major objectives of the study can be indentified as hereunder.

- To assess the liquidity Management on profitability in the company.
- To examine the effectiveness of working capital management practices of the company.
- To examine the relationship between liquidity and profitability by using correlation coefficient and to test the significance of such correlation coefficient.
- To examine the impact of the ratio relating to working capital management and profitably with the assistance of correlation coefficient and regression analysis and to test the significance of the regression coefficients.
- To prescribe remedial measures to encounter the problems faced by the company.
- To examine the impact of inventory, debtors and creditors on current assets or profitability of the company.

DATABASE AND METHODOLOGY OF THE STUDY

The data and information required for this study comes in the secondary data. The data has been mainly collected from the Annual Reports, budgets and statistical Reports of the company. Apart from these some of the data has been collected through personal interview and discussions with the concerned executives of the corporate. For analyzing data, statistical techniques like simple regression analysis and multiple regressions are used for analyzing the data. For this empirical study one major private sector sugar industry namely Balrampur Chinni Mills Limited (BCML) has been purposively selected. The study covers a period of 10 years (2001-02, to 2010-2011). The present study is focused on understanding the impact of efficient working capital management on the profitability and liquidity of the company. Further in order to identify the influence of profitability, a linear multiple regression models were used. For this purpose, current ratio (CR), liquid ratio (LR), Working capital Turnover (WTR), Receivable Turnover Ratio (RTR), Creditor's Turnover Ratio (CTR), (all indicators working management policies and practices) have been taken as the independent variables and Profit before tax (PBT) to total assets ratios is taken as dependent variable. However, in the course of analysis, it was found that ITR is highly correlated. Therefore, ITR is removed for the analysis. The model taken was given under.

$PBT/TA = b_0 + b_1CR + b_2LR + b_3WTR + b_4RTR + b_5CTR + b_6WC/TA$

Where $b_0, b_1, b_2, b_3, b_4, b_5$ and b_6 are parameters to be estimated.

KEY OBSERVATIONS AND FINDINGS

The following are the major observations and findings of the study with respect to each component of the working capital of the sample company.

1. WORKING CAPITAL ANALYSIS

Component wise Gross Working Capital and Net Working Capital is exhibited in Table 1.

TABLE- 1: COMPONENTS OF WORKING CAPITAL (Rs. In lakhs)

Year	Cash & Bank	Inventory	Sundry Debtors	Loans & Advances	Other Current Assets	Gross Working Capital	Ratio of CA to TA	Current Liabilities & Provisions	Net Working Capital
2001-02	883.27 (2.68)	28848.9 (87.69)	1289.5 (3.92)	1814.64 (5.52)	61.89 (0.19)	32898.18 (100)	70.14	14911.15	17987.03
2002-03	345.12 (0.95)	30237.3 (82.89)	1522.09 (4.17)	3993.17 (10.95)	376.94 (1.03)	36474.62 (100)	57.42	12854.03	23620.59
2003-04	661.21 (1.34)	42470.8 (86.26)	2187.36 (4.44)	3586.69 (7.28)	329.39 (0.67)	49235.4 (100)	51.08	14551.49	34683.91
2004-05	1764.31 (3.01)	46442.3 (79.25)	3048.38 (5.2)	6933.07 (11.83)	412.68 (0.7)	58600.78 (100)	52.72	20583.86	38016.92
2005-06	15308.8 (13.47)	643.76 (0.57)	0	97605.72 (85.87)	106.96 (0.09)	113665.2 (100)	22.25	90093.5	23571.7
2006-07	18181.8 (11.83)	79459.9 (51.72)	5084.32 (3.31)	50329.04 (32.76)	581.5 (0.38)	153636.5 (100)	24.41	118941.54	34694.95
2007-08	3512.67 (3.99)	55639.1 (63.34)	4899.23 (5.58)	23608.25 (26.87)	179.72 (0.2)	87838.94 (100)	33.57	25116.76	62722.18
2008-09	3297.39 (4.67)	34343 (48.68)	1710.01 (2.42)	31123.01 (44.12)	68.76 (0.097)	70542.18 (100)	29.28	25812.1	44730.08
2009-10	3120.11 (2.62)	78686 (65.97)	5130.03 (4.3)	32225.05 (27.02)	105.03 (0.08)	119266.3 (100)	45.53	25714.2	93552.06
2010-11	3222.29 (1.64)	149131 (75.79)	8974.38 (4.56)	35337.93 (17.96)	79.96 (0.04)	196745.1 (100)	54.96	29118.97	167626.17

Source: - Computed from Annual Reports of the Respective years.

Note: Figures in the bracket show the percentage to total.

It is evident from Table 1 that the size of current assets has increased from Rs. 32,898.18 lakhs in 2001-2002 to Rs. 1, 96,745.14 lakhs in 2010-2011, the growth being approximately 5.98 times. In the analysis the increase in current assets has been regular through out the period except in 2007-2008 and 2008-2009 it has decreased. The reason for decrease in current assets in 2007-2008, was due to decrease in Loan and Advances component of the selected company. The table also reveals that on an average 44.14 per cent of the total assets of the company are current assets. This indicates that during this period the major portion of the total investment of the BCML has been made on the working Capital. A component wise analysis of the working capital also done to trace the component responsible for the significant changes in different years. From the table it is evident that the two components namely inventory and loans and advances contributed and average of 64 percent and 27 percent respectively towards the gross working capital, whereas cash and bank, sundry debtors and other current assets contributed 5.4 and 0.35 percent respectively. The share of different components of current assets during the study period reflects fluctuation trends in BCML. Major portion of current liabilities includes salaries and wages creditors and cost of raw materials and other liabilities regarding employees etc. Component wise analysis explicitly depicted that the company having enough working capital through out the period under study. There is positive trend working capital and shot-term liquidity is considered good.

2. FINANCING OF WORKING CAPITAL

It is most dominant task to select an assortment of appropriate sources to finance the current assets. An enterprise has various sources to meet its financial requirement within the time. Generally the current assets of a business firm are associated by a combination of long-term and short-term sources of financing. It is evident from Table 2, an attempt has been made to elaborate the relative significance of long-term and short-term debt in financing of working capital.

TABLE – 2: FINANCING OF WORKING CAPITAL (Rs. In lakhs)

Particulars	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Gross Working Capital	32898.18	36474.62	49235.4	58600.78	113665.2	153636.49	87838.9	70542.18	119266.26	196745.1
Sources of Working Capital										
(A) Long Term	9889.19	12780.71	15281.88	24860.36	85860.36	99863.72	60527.3	47594.81	80468.94	94604.86
(B) Short Term	23008.99	23693.91	33953.52	33740.42	27804.84	53772.77	27311.6	22947.37	38797.32	263340.1
Total Long Term Funds	44318.14	56559.77	89370.98	98010.03	755762.5	1178296.8	232126	240891.63	288863.53	357945
Percentage of Long Term Fund- used for Working Capital	22.31	22.59	17.09	25.37	11.36	8.48	26.07	19.76	27.85	26.43

Source. Computed from Annual Reports.

From the table analysis, the percentage of long-term funds used for financing working capital has reflected fluctuating trend during the period of study. In the year 2002 percentage of Long-Term funds used 22.31 percent, and afterwards it increased to 27.85 percent maximum in 2009-2010. In 2002-2003 it is decreased to 22.59 percent to and finally, it is decreased to 8.48 percent in the year 2006-2007. This declining trend reflected that BCML utilized its long-term funds more effectively and efficiently by investing them in the fixed assets. It can be observed in the table also reflects the fact that the capacity of the BCML to make efficient management of its current assets.

3. WORKING CAPITAL TREND

In the working capital analysis the dimension of change over a span of time it is vital aspect in the financial management. **Man Mohan and Goyal** have suggested the importance of analysis of working capital trends, the practice and prevailing policy of the management with regard to working capital good enough or an improvement is to be made in managing the working capital funds. In the study original and trend values of working capital of BCML is presented in Table 3.

TABLE 3: ORIGINAL AND TREND VALUES OF WORKING CAPITAL (Rs. In lakhs)

Year	Original Working Capital	Trend Value	Chi-Square
2002	17987.03	345.78	900033.84
2003	23620.59	12295.73	10430.65
2004	34683.91	24245.68	4493.85
2005	38016.92	36195.63	91.64
2006	23571.7	48145.58	12542.7
2007	34694.95	60095.53	10736.06
2008	62722.18	72045.48	1206.51
2009	44730.08	83995.43	18355.37
2010	93552.06	95945.38	59.7
2011	167626.17	107895.33	33066.98
Total			991017.3

Note: $-(Y'/C = -11604.17 + (11949.95)(x))$

(Origin of x--2001-2002, x in units of years)

Source: Compiled from Annual Reports. (Statistical Computations have been done through SPSS.)

The number of degrees of freedom $v = n - 1 = 10 - 1 = 9$

From the given values we find that 5 % value of Chi-square for 9 degrees of freedom=16.92

The Calculated value of chi-square viz, 991017.30 is much greater than the table value.

It is evident from the table that the working capital of BCML exhibited increasing trend during the study. The net working capital of BCML increased to Rs.1, 67,626.17 lakhs in 2010-2011 from Rs. 17,987.03 lakhs in 2001-2002. The linear least square trend values of working capital in BCML are also reflected in Table3. The yearly increase in working capital comes to Rs.11, 949.95 lakhs in 2001-2002. The difference in original working capital and trend values were negative in the year 2005-2006, 2007-2008, 2008-2009 and 2009-2010 while they were positive in the remaining years. The calculated value of Chi-square is 9, 91,017.30 while the table value of Chi-Square only 16.92 at 5 percent level of significance. Therefore, it can be observed that in BCML, the difference between the original and trend values of working capital are significant because the calculated value Chi-Square is much greater than the table value of Chi-Square.

4. IMPACT OF WORKING CAPITAL ON PROFITABILITY

In order to analyze the liquidity condition and its impact on profitability, it is important to judge the different working capital ratios as reflected in Table 4. It is evident from the table that current ratios of BCML have moved between 1.26 to 6.76 during the period of study. On an average, it comes at 3.14 for the entire period. Conventionally, a standard of 2:1 is considered satisfactory. Therefore the results indicated that the liquidity position of BCML, as measured satisfactory. This result indicates that the margin of safety available to short-term creditors is usually high i.e. for every rupee of current liability the cushion available is Rs.3.14. The Co-efficient of correlation between the profitability ratio and current ratio of BCML is (-0.365). This signifies that there is a lower degree of negative correlation between the two variables.

TABLE- 4: IMPACT OF WORKING CAPITAL ON PROFITABILITY

Year	C.R.	L.R.	WTR.	ITR	RTR	CTR	WC/TA	PBT	ACP
2001-02	2.21	0.05	3.05	1.9	42.57	62.15	0.41	0.13	8 days
2002-03	2.84	0.02	2.39	1.87	37.12	163.72	0.42	0.07	10 days
2003-04	3.38	0.04	2.13	1.74	33.75	111.64	0.39	0.09	11 days
2004-05	2.85	0.08	2.14	1.75	26.66	46.06	0.39	0.17	14 days
2005-06	1.26	0.17	8.05	294.89	0	12.4	0.06	0.23	0
2006-07	1.29	0.16	4.01	1.75	27.37	7.65	0.03	0.02	13 days
2007-08	3.49	0.14	2.33	2.63	29.87	41.66	0.24	0.05	12 days
2008-09	2.73	0.13	3.8	4.95	99.42	51.56	0.19	0.1	4 days
2009-10	4.63	0.12	2.3	2.74	41.98	69.02	0.37	0.08	9 days
2010-11	6.76	0.11	1.77	1.99	33.12	92.24	0.47	0.06	11 days
Coefficient of correlation	-0.365	0.055	0.618	0.737	-0.299	-0.271	-0.387		

CR-Current Ratio; LR- Liquid Ratio, WTR- Working Capital Turnover Ratio; ITR- Inventory Turnover Ratio; RTR- Receivable Turnover Ratio; CRT- Cash Turnover Ratio; WC/TA- Working Capital to Total Assets; PBT- Profit before to Total Assets. ACP-Average Collection Period.

Source: Compiled from Annual Reports. (Statistical Computations have been done through SPSS.)

The liquid ratio of the BCML has varied between 0.02 to 0.17 during the entire period of study. Normally 1:1 is considered to be the standard Liquid Ratio. On an average it has been maintained at Rs.0.102 for every rupee of quick liabilities. The co-efficient of correlation between the profitability ratio and liquid ratio of BCML is 0.055. This signifies that there is a lower degree of positive correlation between the two variables.

Working Capital Turnover ratio indicates the efficiency of the business firm in utilizing the working capital in the business. Working capital turnover ratio has been found to be positive through out the period under study. It varies between 1.77 times and 8.05 times. This ratio signifies that on an average a rupee of positive working capital to generate Rs. 3.197 worth of business firm which is obviously an alarming situation for the liquidity management purpose. The correlation between profitability ratio and working capital turnover ratio reflects a moderate positive correlation of 0.618.

The inventory turnover ratio of the BCML has varies between 1.74 to 294.89 during the entire period of study, it reflects a fluctuating trend. It indicates that, on an average a rupee invested in inventory generates Rs.31.6 worth of sales, which is satisfactory good. But inventory turnover ratio in 2003-2004 is not at all satisfactory in comparison to the other years. However, on overall inventory analysis, it pointed out that the management of inventory in BCML is considered good. The correlation between profitability ratio and inventory turnover ratio indicates a moderate positive correlation of 0.737.

The Receivables turnover ratio is highest (99.42 times) in 2008-2009 and lowest (27.37 times) in 2006-2007 and average is 37.19 times. It indicates that receivables management appears to be satisfactory good. The correlation between profitability ratio and receivable turnover ratio indicates a negative lower degree correlation of (-0.299).

The correlation co-efficient between profitability ratio and cash turnover ratio and working capital to total assets exhibits a negative correlation coefficient of 0.271 and 0.387 respectively. Therefore, the correlation analysis exhibited that LR, WTR, ITR and RTR have reflected positive correlation with profitability ratio and CR, CTR and WC/TA have reflected negative correlation with profitability ratio.

The average collection period is 9 days and it indicates that the company has to wait for 9 days for receiving for collection from debtors on account of credit sales. It indicates that the credit marketing policy of the company is very strict and rigid. It should be improved by making a good and effective credit marketing policy in the company.

5. MULTIPLE REGRESSION ANALYSIS

For performing regression analysis pooled data was used, and results of the model showing the impact of working capital ratio on profitability for the BCML are exhibited in Table 5.

TABLE 5

MULTIPLE REGRESSION ANALYSIS

Regression Statistics	
Multiple R	0.737
R Square	0.543
Adjusted R Square	0.486
Standard Error	0.04446

ANOVA					
	df	SS	MS	Overall F	Significant F
Regression	1	0.019	0.019	9.501*	0.015
Residual	8	0.016	0.002		
Total	9	0.035			

Variables	Beta Co-efficient Value	t-Value	Partial Correlation	Significant	Significant/Insignificant
Constant	0.084	5.646*	0	0.015	Significant
CR	-0.777	-0.276*	-0.104	0.791	Significant
LR	-0.364	-1.438*	-0.477	0.194	Significant
WTR	-0.384	-0.607*	-0.223	0.563	Significant
RTR	0.111	0.375*	0.14	0.719	Significant
CTR	0.03	0.108*	0.041	0.917	Significant
WC/TA	0.393	1.497*	0.492	0.178	Significant

*Significant at 5% Level.

Note: SS-Sum of Square

MS-Mean Square

Source: Compiled from Annual Reports. (Statistical Computations have been done through SPSS.)

The table reflects that the impact of current ratio, liquid ratio, working capital turnover ratio, cash turnover ratio and working capital to total assets ratio were statistically significant as seen from the values of regression coefficient. For a unit increase in liquid ratio profitability decreased by 0.364 unit which was statistically significant at 5 percent level. Similarly, one unit increase in working capital turnover ratio would decrease the profitability by 0.384 units which is also significant at 5 percent level. The co-efficient of regression between the profitability ratio and receivables turnover ratio is calculated as 0.111 which suggests that one unit increase in receivables turnover ratio would increase the profitability by 0.111 units and this co-efficient also statistically significant at 5 percent level. The table also indicates that one unit increase in working capital to total assets ratio would increase the profitability by 0.393 units.

The six independent variables contribute 54 percent of the variations in profitability of the BCML. Hence the overall analysis exhibited in the table is encouraging. The sign of all co-efficient are as expected and the co-efficient are also statistically significant.

RECOMMENDATIONS

The BCML study is strongly recommended to adopt the following measures immediately for its revival and overcoming working capital crises. Followings are the recommendations which I have observed are as follows.

1. Effort reducing working capital is a continuous exercise and it is an opportunity for improvement. All the managers should try to sort –out the problem arising due to this situation.
2. The company has idle cash in Bank it should be utilized in purchase of short-term marketable securities to boost the financial health of the company.
3. Inventory level should be fixed up scientifically and introduction of Just in time (JIT) is prescribed so that inventory carrying cost can be reduced to the minimum extent. No inventory should be allowed to accumulate as the inventory is the graveyard of any business. Company has glut of inventory which is blocking big portion of working capital hence efficient inventory management is required.
4. Lack of proper debt –management hence a proper credit policy required so company need to adopt an effective credit and collection policy.
5. To make SWOT analysis for determining appropriate revival business strategy for the company.
6. The company is finally advised to follow the principles to manage liquidity, solvency, profitability, survival and growth of the business.

CONCLUSION

Working Capital Management plays a crucial role in the success of a business firm. From my observation it is also clear that the overall financial health of company not only depends on the profitability of the concern but also it depends on the liquidity health of the company. The efficient management of working capital is important from the point of view of both liquidity and profitability. Working Capital Management should not be treated as an isolated management function but it is integral part of corporate management and impact of management policy and strategy effects working capital management of the company. In this research study normally indicates a moderate trend in the financial situation and the utilization of working capital. An attempt should also be made use funds more effectively by keeping more current assets causes of decline in profitability of the company. Hence, effort should be made proper working capital with effective and efficiently in the company.

REFERENCES**BOOKS**

1. Bhattacharya Hrishikes, (2002) "Working Capital Management Strategies and Techniques", Prentice-Hall of India Pvt. Ltd, New Delhi.
2. Beehler (1992) "Contemporary Cash Management" John Wiley and Sons, New Delhi.
3. Gupta S.P. (2000), "Statistical Methods" Sultan Chand and Sons New Delhi.
4. Gupta M.C. (1989) "Profitability Analysis" Pointer Publishers Jaipur.
5. Mehta Dileep R.(1980) "Working Capital Management" Prentice-Hall of India Pvt. Ltd. New Delhi.
6. Man Mohan and Goyal (1979) "Principles of Management Accounting" Sahitya Prakash Agra.

JOURNAL AND OTHER ARTICLES

7. Mukhopadhyay D. (2001) "Working Capital Management a perspective", The Management Accountant March pp.181-184.
8. Prasad R.S. (2001) "Working Capital Management in India paper Industries ", Finance India.Vol.xv, No.1 March pp.185-188.
9. Gole V.L. (1959), "The Management of Working Capital ", Australian Accountant, June pp.229-250.
10. Emery G.W. (1984), "Measuring Short –Term Liquidity "Journal of Cash Management, July-August pp.25-32.
11. Yadav S.S. (2001), "Management of Working Capital-A comparative study of India, Sigapure and Thailand", Journal of Management and Change, Vol.5 No.2 Winter.

ONLINE RESOURCES

12. www.icwai.org
13. www.sagepublications.com
14. www.eurojournals.com/finance.htm

ROLE OF ICT MICRO ENTERPRISES ON WOMEN DEVELOPMENT IN KERALA

DR. C.S. SIVA PRAKASH
LECTURER
INSTITUTE OF MANAGEMENT IN KERALA
UNIVERSITY OF KERALA
TRIVANDRUM

ABSTRACT

The Kudumbashree, the State Poverty Eradication Mission, launched by Government of Kerala for wiping out absolute poverty from the State within a period of ten years opted to achieve the goal through empowerment of women. The Mission is a process approach rather than a project approach. The Kudumbashree envisages prosperity of the poor families in the state with multiple programmes that will provide them information, create awareness, build up their capability and capacity, enhance their confidence and show them opportunity for better social security and empower them physically, socially, economically and politically. Today, Kudumbashree is on its way to developing a unique community brand that is ethnic, homely and environment-friendly, while seeking no compromise on quality. One of the successful strategies of Kudumbashree has been the conversion of social needs into business opportunities. This approach has reaped good dividends in areas as diverse as solid waste management, supplementary nutrition and Information communication technology (ICT).

KEYWORDS

Kudumbashree, Poverty, Information communication technology, Kerala, Women Empowerment.

INTRODUCTION

In the post independence era in fact there is no dearth of programmes and projects to gear the poverty situation prevailing in the country. But all the programmes are designed and developed at the whims and fancies of the bureaucrats and followed a top down approach. These programmes were supply driven and not need based and demand driven. The magnitude of poverty, causes of poverty, variables of poverty were not taken in to account. The perception of poverty itself was uncertain and indistinct. The estimation of poverty was inaccurate, insufficient and directionless. Over a period of time the eradication of poverty has become the inevitable responsibility of the local self-governments. This enabled the poor to realize the presence of Government in their vicinity. In this context in Kerala a Mission was set up to facilitate the local self governments in its anti poverty initiatives with the brand name "Kudumbashree". The Kudumbashree, the State Poverty Eradication Mission, launched by Government of Kerala for wiping out absolute poverty from the State within a period of 10 years is a holistic, participatory, women oriented innovative overarching poverty reduction approach within a definite time frame, opted to achieve the goal through empowerment of women. The Mission follows a process approach rather than a project approach. 'Kudumbashree' envisages prosperity of the poor families in the state with multiple programmes that will provide them information, create awareness, build up their capability and capacity, enhance their confidence and show them opportunity for better social security and empower them physically, socially, economically and politically. Kudumbashree, the state poverty eradication mission of Kerala was inaugurated by the then Prime Minister of India, Shri. Atal Behari Vajapayee in Kottakunnu Ground in Malappuram district of Kerala on 1998 May 17 and started implementing from 1999 April 1 in Urban Local Bodies of the state.

The process of empowerment is by following sequential steps right from organizing them in to Community Based Organisation. A three-tier structure has been designed and developed by the Mission with the Neighbourhood groups (NHG) at its grass roots and a federated unit namely Area Development Society (ADS) at every ward of the local body and the Community Development Society (CDS) at the local body level. Neighbourhood groups (NHG) is the basic unit of our women folk where they are free to ventilate their feelings, discuss their problems, share their joy, learn many new things and make joint effort to find solutions to their grievances. Hence, the first step of empowerment that is self-discovery of the poor women takes place in the weekly meetings of the Neighbourhood Groups. The NHGs are strengthened by nurturing it with facilitation trainings, education and strong support system of the Government, especially the support of Local Self Government. These support system strongly motivate them to come up with their dreams and Action Plans, which is the second step of their empowerment process. Then they start acting on the dream plans and on the process, they feel highly confident and empowered which results in the improvement in their poverty status. The process encompasses Political, Social, Educational and Economic aspects. Today, Kudumbashree is on its way to developing a unique community brand that is ethnic, homely and environment-friendly, while seeking no compromise on quality. One of the successful strategies of Kudumbashree has been the conversion of social needs into business opportunities. This approach has reaped good dividends in areas as diverse as solid waste management, supplementary nutrition and Information communication technology (ICT).

WOMEN'S ICT BASED ENTERPRISES IN KERALA**MAJOR DEMOGRAPHIC AND SOCIO- HEALTH INDICATORS OF KERALA STATE****TABLE - 1: DEMOGRAPHIC AND SOCIO- HEALTH INDICATORS OF KERALA STATE AS COMPARED TO INDIA**

S. No.	Item	Kerala	India
1	Total population (Census 2001) (in million)	31.84	1028.61
2	Decadal Growth (Census 2001) (%)	9.43	21.54
3	Population below Poverty line (%)	12.72	26.10
4	Total Fertility Rate (SRS2008)	1.7	2.6
5	Infant Mortality Rate (SRS 2008)	12	53
6	Maternal Mortality Ratio (SRS 2004 - 2006)	95	254
7	Sex Ratio (Census 2001)	1058	933
8	Life Expectancy of Females(SRS 2008)	76.3	69.61
9	Female Literacy Rate (SRS 2008) (%)	87.83	64.84
10	Human Development Index(SRS 2005)	0.814(Very High)	0.612

Source: Ministry of Health & Family Welfare, Govt. of India

The Table-1 shows the comparison of major demographic and socio-health indicators of Kerala with India according to 2001 census and sample rating system (SRS 2004, 2005, 2006 & 2008). From the table it is very clear that the Kerala population contributing 31.84million to Indian population of 1028.1million and with a decadal growth of 9.43million. The Population below poverty line was 12.72% which is significantly low compared with national average 26.10%. In the case of women fertility rate Kerala state was shown a controlled improvement (1.7 fertility rates per women) compared to national average rate of 2.6 fertility rates per women, this is one of the reasons for control in population in Kerala. The infant mortality in Kerala during the period 2008 was 12 per 1000 live births, which is far below compared to national average 53 per 1,000 live births. Also the case of maternal mortality ratio the Kerala state (95 per 1lakh live births) got significant improvement compares to national average (254 per 1 lakh live births).The sex ratio of kerala state clearly shows that women are outnumbered men (1058 women for 933 men), that means women in Kerala population is higher than men, so their empowerment and contribution to state economic sustainability is

significantly important. According to 2008 SRS survey the women life expectancy in Kerala is significantly higher (76.3 years) than national average of 69.61 years.

A very highly significant and noticeable point in Kerala compared to other states in India is improvement in literacy rate (education indicator). Kerala is the number one state in India with higher literacy rate (90.20% according to SRS, 2008) against nation average of 64.84%. If we look on the female literacy rate also Kerala (87.83%) is number one in India against national average 54.6%. Another important indicator for socio economic growth is human development index (HDI). This is a composite statistic used to rank countries by level of "human development" and separate developed (high development), developing (middle development), and underdeveloped (low development) countries. The index is developed from data on life expectancy, education and per-capita GDP (as an indicator of Standard of living) collected at the national level. The HDI index, which has become one of the most influential and widely used indices to measure human development across countries. By critically analyzing the human development index ranking of states in India we could see that the Kerala got highest HDI index of 0.814 against all India index of 0.612, which give Kerala model of socio-economic development an international recognition.

All the demographic and socio health indicators above mentioned are basic foundation highlighted by the Kudumbashree for the viability of women ICT based macro enterprises in Kerala apart of setting up of traditional micro enterprise for women empowerment and poverty alleviation. In which very significant and highly important factor is women literacy rate.

By considering the above factors the Kudumbashree with the financial support from the central goverove nment schemes called Development of Women and Children in the Urban Areas (DWCUA) under Swarna Jayanti Shahari Rojgar Yojana (SJSRY)). The first ICT unit was started on 15th Sept 1999, when Kudumbashree management identified a market opportunity in data entry work of government records. The training and team building process was begun by the Kudumbashree team to identify potential women from below poverty line (BPL) families to join the micro ICT unit and financial requirements were also proposed. Because of the sincere team work, the first data entry job went successfully and that brought goodwill and reputation. Kudumbashree central team requested the district officials to formally visit he first ICT unit and the result was that the Kudumbashree team set a target to setup 36 ICT units by 31st March 2000, but fortunately they managed to setup 48 micro ICT units. Meanwhile Kudumbashree central official's team invited women members of the Community Development Societies (CDSs) to visit the first ICT unit, and they got 2-3 day attachments with the unit for a few other potential unit founders. In addition, there was significant exposure within the media about the ICT unit. As a result, after just a very few more ICT units had been set up, there started to be much more bottom-up interest and then demand for creation of ICT units from the CDSs. Demand for women's ICT units further got momentum during the period 2001-2004 when the state government ICT department agreed to give an order that state government departments could give orders for ICT services direct to Kudumbashree without need for tendering. Subsequently a similar order was issued for local governments throughout Kerala. Currently more than 225 women ICT enterprises are spread across Kerala exclusively governed by poor women flock under the aegis of Kudumbashree. This research paper only highlighting the change in the state of vulnerability among core group members before and after joining the ICT micro enterprises and various individual benefits acquired by the members after joining ICT enterprises.

DEFINITION FOR WOMEN'S ICT BASED ENTERPRISES

According to **Hafkin & Taggart (2001)** Women's ICT-based enterprises can defined as those using ICTs (Information, Communication and Technologies) for new economic activities that arise from the advent of ICTs and are majority owned ,managed by women. There are three main categories.

ICTs as an enterprise output: Micro Enterprises that produce hardware, software and telecommunications products.

ICTs as a primary processing technology: Micro Enterprises that provide data entry services, ICT-based business services, software customization, ICT-based distance learning, etc.

Other ICT-related support activities: Micro Enterprises that provide computer training, consultancy and other services.

OBJECTIVES OF THE STUDY

1. To assess the Extent of risk/vulnerabilities before and after joining the enterprises.
2. To analyze the Employment stability core group members working ICT enterprises.
3. To analyze the Skill improvement among core group members working ICT enterprises.
4. To analyze the Financial improvement among core group members working ICT enterprises.
5. To analyze the Social capital improvement among core group members working ICT enterprises.
6. To analyze the empowerment support from ICT enterprises.

HYPOTHESES FOR THE STUDY

H₀: There is no significant improvement in the state of vulnerability among core group members before and after joining the ICT.

H₀: There is no significant improvement in employment stability among core group members before and after joining the ICT.

H₀: There is no significant improvement in various skills among core group members.

H₀: There is no significant financial improvement among core group members working ICT enterprises

H₀: There is no significant improvement on social capital among core group members working ICT enterprises.

H₀: There is no significant support from the ICT enterprises for women empowerment.

RESEARCH METHODOLOGY

A research design is the overall plan or programme of research. It is the general blue print for the collection, measurement and analysis of data. Since the present study aims at describing the current performance of women ICT based enterprises in Kerala under Kudumbashree and by considering above stated objectives of research we have chosen empirical research.

SAMPLE SIZE AND SELECTION

Based on the activities the women micro ICT enterprises under the aegis of Kudumbashree can be classified in three categories as Data processing units, IT @ School, and Hardware assembling units the data processing units are only considered for the study. A sample of 50 % of the total data processing units(36 out of 72) were selected for the study and 95 core group members out of total 216 considered for individual survey from the selected 36 ICT units. The percentage of sample has been fixed after conducting pilot study and statistical validation and reliability test. A Stratified simple random sampling survey was carried for selecting sample for survey by considering number of units in each district in Kerala and also number of core group members in each ICT unit.

COLLECTION OF DATA

The data for the study were collected through primary and secondary sources. The Primary data for the study was collected through a systematic survey executing interview schedule. The schedule was prepaid using dichotomous, Likert scale and ranking questions and also relevant open ended questions. Personal interviews were also conducted for first hand information from Kudumbashree officials (District Coordinators) ,community development societies(CDS) ,area development societies(ADS) and also experts and resource personals closely associated with Kudumbashree. The secondary sources of information's collected from relevant journals(including E-journals) of reputed organizations closely associated with women empowerment ,rural community development, women entrepreneurship in India and aboard, annual reports of Kudumbashree, news paper writes-up were utilized .

STATISTICAL TOOLS USED FOR TESTING HYPOTHESES

To arrive at the findings and testing of hypotheses, following statistical tools were applied. This includes Descriptive analyses like Percentages, Frequencies, Mean, Standard deviation (SD) and inferential statistical tools namely Wilcoxon Signed rank test and t-test .

DISCUSSION ON OBJECTIVES AND FINDINGS**VULNERABILITY ANALYSIS****VULNERABILITIES BEFORE JOINING ICT**

From the Table-2 it is clear that, 60% of core group members reported that “lack of income” was a great problem, 14.7% reported it was very high and 25.3% moderately affected before joining ICT enterprise. In the case of “lack of employment”, 60% reported that unemployment was a problem before joining ICT enterprise, 15.8% reported it was very high and 24.2% reported it was moderately affected before joining ICT enterprise. 58.9% members reported that “lack of appropriate skills” was a major issue before joining ICT enterprises to get a decent job, 11.6% reported it was very high and 24.2% reported it was moderately affected before joining ICT enterprise. Debt was another major problem, faced by the core group member’s before joining ICT enterprise. 58.9% said it was high, 15.8% said it was very high before joining ICT enterprise and 25.3% reported it was moderately affected before joining ICT enterprise. Majority (66.3%) of members reported that the lack of assets /equipments to earn money was a major problem before joining ICT enterprise, 10.5% it was very high and 23.2% it was moderately affected before joining ICT enterprise. Before joining to ICT majority (60.0%) of the members is not able to support to household needs, 15.8% said it was very high and 24.2% said it was moderately affected before joining ICT enterprise. Lack of good contact was the another problem reported by majority (64.2%) of core group members, 11.6% said it was very high before joining ICT enterprise and 24.2% said it was moderately affected before joining ICT enterprise. However in the case of vulnerability to “Problems of abuse/violence” and “Crime / Harassment” majority of members reported that before joining ICT, it was very low (71.6% and 74.8%), 14.7% and 8.4% reported low respectively and 13.7% and 16.8% reported it was moderately affected.

TABLE - 2: VULNERABILITIES BEFORE JOINING ICT

Factors	Opinion (Frequency (%))					Total
	Very High	High	Moderate	Low	Very Low	
Lack of income	14 (14.7)	57 (60.0)	24 (25.3)			95 (100.0)
Lack of employment	15 (15.8)	57 (60.0)	23 (24.2)			95 (100.0)
Lack of appropriate skills	11 (11.6)	61 (64.2)	23 (24.2)			95 (100.0)
Debt	15 (15.8)	56 (58.9)	24 (25.3)			95 (100.0)
Lack of assets/ equipment to earn money	10 (10.5)	63 (66.3)	22 (23.2)			95 (100.0)
Problems of abuse/violence			13 (13.7)	14 (14.7)	68 (71.6)	95 (100.0)
Crime / Harassment			16 (16.8)	8 (8.4)	71 (74.8)	95 (100.0)
Lack of help to household needs	15 (15.8)	57 (60.0)	23 (24.2)			95 (100.0)
Lack of good contact and relations	11 (11.6)	61 (64.2)	23 (24.2)			95 (100.0)

Source: Primary data

VULNERABILITIES AFTER JOINING ICT

From the Table-3 it is clear that, 61.1% of core group members reported that vulnerability to “lack of income” is comparatively low after joining ICT enterprise, and 38.9% moderately improved after joining ICT enterprise. In the case of “lack of employment”, 68.4% reported that vulnerability in terms of employment is very low after joining ICT enterprise and also 31.6% reported it is low very after joining ICT enterprise. 38.9% members reported that vulnerability in terms of “lack of appropriate skills” is low after joining ICT enterprises to get a decent job, 38.9% reported it is very low and 31.6% reported it is moderately improved after joining ICT enterprise. 44.2% of members reported that vulnerability to debt is low after joining ICT enterprise. 33.7% said it is very low, 22.1% members reported it is moderately improved after joining ICT enterprise. In the case of vulnerability to “the lack of assets /equipments to earn money”, 51.5% reported it is low after joining ICT enterprise, 25.3% said it is very low and 23.2% it is reported moderately improved after joining ICT enterprise. After joining to ICT majority (44.2%) of the members reported vulnerability on “support to household needs”, low and 33.7% said it is very low, 22.1% reported it is moderately improved after joining ICT enterprise. Vulnerability to “Lack of good contact” is low (58.9%) after joining ICT enterprise, 23.2% reported is very low and 17.9% said it is moderately improved after joining ICT enterprise. However in the case of vulnerability to “Problems of abuse/violence” and “Crime / Harassment”, we could see that there no significant change from the opinion from the core group members before and after joining ICT enterprise.

TABLE - 3: VULNERABILITIES AFTER JOINING ICT

Factors	Opinion (Frequency(%))					Total
	Very High	High	Moderate	Low	Very Low	
Lack of income			37 (38.9)	58 (61.1)		95 (100.0)
Lack of employment				30 (31.6)	65 (68.4)	95 (100.0)
Lack of appropriate skills			30 (31.6)	37 (38.9)	28 (29.5)	95 (100.0)
Debt			21 (22.1)	42 (44.2)	32 (33.7)	95 (100.0)
Lack of assets/ equipment to earn money			22 (23.2)	49 (51.6)	24 (25.3)	95 (100.0)
Problems of abuse/violence			18 (18.9)	13 (13.7)	64 (67.4)	95 (100.0)
Crime / harassment			17 (17.9)	14 (14.7)	64 (67.4)	95 (100.0)
Lack of help to household needs			21 (22.1)	42 (44.2)	32 (33.7)	95 (100.0)
Lack of good contact and relations			17 (17.9)	56 (58.9)	22 (23.2)	95 (100.0)

Source: Primary data

WILCOXON SIGNED RANK TEST TO TEST THE CHANGE IN STATE OF VULNERABILITY AMONG CORE GROUP MEMBERS BEFORE AND AFTER JOINING THE ICT

The null and alternative hypothesis formulated for the study is given below:

H₀: There is no significant improvement in the state of vulnerability among core group members before and after joining the ICT.

H₁: There is a significant improvement in the state of vulnerability among core group members before and after joining the ICT.

The Table-4 shows Wilcoxon Signed rank test to test the change in state of vulnerability. From the table it is understood that except factors "Problems of abuse/violence" with mean score(before:4.58 and after:4.48, p value=0.405) and "Crime / harassment" with mean score(before:4.58 and after:4.49, p value=0.610), indicates that there is no significant change in mean score before and after joining ICT enterprise. All other factors got significant change in the mean score before and after joining ICT enterprise, hence there is a significantly improved at 1% level of significance (p<0.01%). So we could accept the alternate hypothesis that is "There is a significant improvement in the state of vulnerability among core group members before and after joining the ICT".

TABLE - 4: WILCOXON SIGNED RANK TEST TO TEST THE CHANGE IN STATE OF VULNERABILITY

Vulnerabilities	Mean (SD)		Wilcoxon Signed rank test	
	Before joining ICT	After Joining ICT	Z-value	p-value
Lack of income	2.11 (.63)	4.22 (.98)	-8.150	.000*
Lack of employment	2.08 (.63)	4.68 (.47)	-8.614	.000*
Lack of appropriate skills	2.13 (.59)	3.98 (.79)	-8.302	.000*
Debt	2.09 (.64)	4.12 (.74)	-8.240	.000*
Lack of assets/ equipment to earn money	2.13 (.57)	4.02 (.70)	-8.399	.000*
Problems of abuse/violence	4.58 (.72)	4.48 (.80)	-.832	.405
Crime / harassment	4.58 (.77)	4.49 (.78)	-.510	.610
Lack of help to other household needs	2.08 (.63)	4.12 (.74)	-8.336	.000*
Lack of good contact and relations	2.13 (.59)	4.05 (.64)	-8.295	.000*

Source: Primary data

EMPLOYMENT STABILITY

From the Table-5 it is understood that 64.2% of core group members reported that their employment stability improved and 26.3% reported highly improved. However 9.5% reported no change in the state.

TABLE - 5: EMPLOYMENT STABILITY

Factors	Opinion (Frequency(%))					Total
	Not Improved	Less Improved	No change	Improved	Highly improved	
Employment Stability			9 (9.5)	61 (64.2)	25 (26.3)	95 (100.0)

Source: Primary data

ONE SAMPLE T TEST TO TEST EMPLOYMENT STABILITY AMONG CORE GROUP MEMBERS

The null and alternative hypothesis formulated for the study is given below:

H₀: There is no significant improvement in employment stability among core group members before and after joining the ICT.

H₁: There is a significant improvement in employment stability among core group members before and after joining the ICT.

TABLE - 6: T-TEST EMPLOYMENT STABILITY

One-Sample t- test				
Factors	Mean	Std. Deviation	t-value	p-value
Employment stability	4.17	.577	19.734	.000*

* Significantly more than 3 at 1% level

Source: Primary data

The Table-6 shows one sample t- test of improvement in employment stability among core group members working in ICT enterprises. The mean score obtained for employment stability is 4.17 which is significantly more than 3 at 1% level of significance (p-value<0.01). Hence we could accept the alternate hypothesis that is "There is a significant improvement in employment stability among core group members before and after joining the ICT".

SKILL IMPROVEMENT AMONG CORE GROUP MEMBERS WORKING ICT ENTERPRISES

The Table-7 shows skill improvement among core group members working ICT enterprises. From the table it is understood that 65.2% of members reported that technical skills has improved, 9.5% reported highly improved and 25.3% reported no change in the state. In the case of improvement in language and communication skills, 63.2% reported highly improved, 36.8% reported improved. 35.8% of members reported their entrepreneurial skills are highly improved, 51.6% reported improved and 12.6% reported no change in the state. Also in the case of management and supervisory skills, 54.7% reported there is an improvement, 22.1% reported no change in the state, however 23.2% reported that their management and supervisory skills highly improved.

TABLE - 7: SKILL IMPROVEMENT AMONG CORE GROUP MEMBERS WORKING ICT ENTERPRISES

Factors	Opinion (Frequency(%))					Total
	Not Improved	Less Improved	No change	Improved	Highly improved	
Technical skills			24 (25.3)	62 (65.2)	9 (9.5)	95 (100.0)
Language and communication skills				35 (36.8)	60 (63.2)	95 (100.0)
Entrepreneurial skills			12 (12.6)	49 (51.6)	34 (35.8)	95 (100.0)
Management / supervisory skills			21 (22.1)	52 (54.7)	22 (23.2)	95 (100.0)

Source: Primary data

ONE SAMPLE T TEST TO TEST THE IMPROVEMENT IN VARIOUS SKILLS AMONG CORE GROUP MEMBERS

The null and alternative hypothesis formulated for the study is given below:

H₀: There is no significant improvement in various skills among core group members.H₁: There is a significant improvement in various skills among core group members.

TABLE - 8: ONE SAMPLE T TEST TO TEST THE IMPROVEMENT IN VARIOUS SKILLS AMONG CORE GROUP MEMBERS

One-Sample t- test				
Factors	Mean	Std. Deviation	t-value	p-value
Technical skills	3.84	.571	14.378	.000*
Language and personal skills	3.63	.485	12.694	.000*
Entrepreneurial skills	4.23	.660	18.197	.000*
Management/ supervisory skills	4.01	.676	14.564	.000*

* Significantly more than 3 at 1% level

Source: Primary data

From the Table 4.31 it understood that the mean score of all the factors are more than value 3 (p value =<0.01). Hence we could conclude that there is a significant improvement in various skills among the core group members working in ICT enterprise. So the alternate hypothesis could be accepted, that is "There is a significant improvement in various skills among core group members".

FINANCIAL IMPROVEMENT AMONG CORE GROUP MEMBERS WORKING ICT ENTERPRISES

TABLE - 9: FINANCIAL IMPROVEMENT AMONG CORE GROUP MEMBERS WORKING ICT ENTERPRISES

Factors	Opinion [Frequency(%)]					Total
	Not Improved	Less Improved	No change	Improved	Highly improved	
Income level and savings				64 (67.4)	31 (32.6)	95 (100.0)
Income stability and household financial support			31 (32.6)	64 (67.4)		95 (100.0)
Changes in physical assets	12 (12.6)	9 (9.5)	22 (23.2)	43 (45.3)	9 (9.5)	95 (100.0)

Source: Primary data

The Table-9 shows the opinion of the members working in ICT enterprises about financial improvement. From the table it is understood that 67.4% reported that income level and savings have improved and 32.6% reported high improvement. In the case of improvement in income stability and household financial support, 67.4% reported significant improvement; however 32.6% reported no change in the state. In the case of change in physical assets, 45.3% reported that the physical assets were improved, 9.5% reported less improvement, 12.65 reported not improved and 23.2% reported no change in the state. However 9.5% reported there is a high improvement in physical asset after joining ICT enterprise.

ONE SAMPLE T TEST TO TEST THE FINANCIAL IMPROVEMENT AMONG CORE GROUP MEMBERS WORKING ICT ENTERPRISES

The null and alternative hypothesis formulated for the study is given below:

H₀: There is no significant financial improvement among core group members working ICT enterprisesH₁: There is a significant financial improvement among core group members working ICT enterprises

TABLE - 10: ONE SAMPLE T TEST TO TEST THE FINANCIAL IMPROVEMENT AMONG CORE GROUP MEMBERS WORKING ICT ENTERPRISES

One-Sample t- test				
Factors	Mean	Std. Deviation	t-value	p-value
Income level and savings	4.33	.471	27.426	.000*
Income stability and household financial support	3.67	.471	13.931	.000*
Changes in physical assets	3.29	1.166	2.464	.016**

Significantly more than 3 at 1% level

** Significantly more than 3 at 5% level

Source: Primary data

The Table-10 shows one sample t test to test the financial improvement among core group members working ICT enterprises. From the table it is understood that all the factors have mean score more than value 3 at 1% level of significance (p value= <0.01). However in the case of statement "change in physical assets" the mean score is least (mean score 3.29), hence it is significantly more than 3 at 5% level of significance (p value= 0.016). So we could accept the alternate hypothesis that is "There is a significant financial improvement among core group members working in ICT enterprises".

TABLE - 11: SOCIAL CAPITAL IMPROVEMENT AMONG CORE GROUP MEMBERS WORKING ICT ENTERPRISES

Factors	Opinion [(Frequency(%))]					Total
	Not Improved	Less Improved	No change	Improved	Highly improved	
Networking /Contacts and relationship building				62 (65.3)	33 (34.7)	95 (100.0)
Social relationship and public activity participation				62 (65.3)	33 (34.7)	95 (100.0)

Source: Primary data

The Table-11 shows the social capital improvement among core group members working ICT enterprises. The table indicates that 65.3% said that they are improve to build networks among other ICT enterprise and building contacts and relationship, 34.7% said they are highly improved in this aspect. In the case of social relationship and public participation, 34.7% reported high improvement and 65.3% said they have improved on social relationship and public participation.

ONE SAMPLE T TEST TO TEST THE SOCIAL CAPITAL IMPROVEMENT AMONG CORE GROUP MEMBERS WORKING ICT ENTERPRISES

The null and alternative hypothesis formulated for the study is given below:

H₀: There is no significant improvement on social capital among core group members working ICT enterprises.

H₁: There is a significant improvement on social capital among core group members working ICT enterprises.

TABLE - 12: ONE SAMPLE T TEST TO TEST THE SOCIAL CAPITAL IMPROVEMENT AMONG CORE GROUP MEMBERS WORKING ICT ENTERPRISES

One-Sample t- test				
Factors	Mean	Std. Deviation	t-value	p-value
Networking /Contacts and relationship building	4.35	.479	27.436	.000*
Social relationship and public activity participation	4.35	.479	27.436	.000*

* Significantly more than 3 at 1% level

Source: Primary data

The Table-12 shows one sample t test to test the social capital improvement among core group members working ICT enterprises. From the table it is understood that both the factors got same mean score value (mean 4.35) and it is more than value 3 at 1% level of significance (p value = <0.01). So we could accept the alternate hypothesis that is "There is a significant improvement on social capital among core group members working ICT enterprises".

OPINION OF CORE GROUP MEMBERS ABOUT EMPOWERMENT SUPPORT FROM ICT ENTERPRISE

The Table-13 shows the opinion of core group members about empowerment support from ICT enterprise. In the case of first statement "Confidence to run the business alone", 31.6% said they are highly improved, 34.7% reported improvement and 32.6% reported no change in the state. In the case of community level participation 67.4% reported they have significant improvement and 31.6% reported high improvement. The same response received for the improvement in family support. 46.3% reported that social status have been improve after joining the ICT enterprise, 12.6% reported high improvement, 31.6% reported no change in the status, however 9.5% of members said only less improvement in social status. In the case of contribution to family income 53.7% reported there is an improvement, 13.7% reported high improvement, 23.2% reported no change in the state, however 9.5% said very less improvement in contribution to family income. There is no strong opinion about improvement on decision making power, however 64.4% reported improvement in decision making power and 32.6% said no change in the state. In the case of improvement on freedom in household expenditure, the response is same what is got for decision making. It is to be noted that majority (65.3%) of the group members, there is no improvement in political participation, and 34.7% reported no change in this regard.

TABLE - 13: OPINION OF CORE GROUP MEMBERS ABOUT EMPOWERMENT SUPPORT FROM ICT ENTERPRISE

Factors	Opinion (Frequency (%))					Total
	Not Improved	Less Improved	No change	Improved	Highly improved	
Confidence to run the business alone			31 (32.6)	33 (34.7)	31 (32.6)	95 (100.0)
Community level participation				64 (67.4)	31 (32.6)	95 (100.0)
Support from the family				64 (67.4)	31 (32.6)	95 (100.0)
Change in social status in the family		9 (9.5)	30 (31.6)	44 (46.3)	12 (12.6)	95 (100.0)
Contribution to family income		9 (9.5)	22 (23.2)	51 (53.7)	13 (13.7)	95 (100.0)
Decision making power			31 (32.6)	64 (67.4)		95 (100.0)
Freedom in household expenditure			31 (32.6)	64 (67.4)		95 (100.0)
Participation in political activity	62 (65.3)		33 (34.7)			95 (100.0)

Source: Primary data

ONE SAMPLE T TEST TO TEST THE OPINION OF CORE GROUP MEMBERS ABOUT EMPOWERMENT SUPPORT FROM ICT ENTERPRISE

The null and alternative hypothesis formulated for the study is given below:

H₀: There is no significant support from the ICT enterprises for women empowerment.

H₁: There is a significant support from the ICT enterprises for women empowerment.

TABLE -14: ONE SAMPLE T TEST TO TEST THE OPINION OF CORE GROUP MEMBERS ABOUT EMPOWERMENT SUPPORT FROM ICT ENTERPRISE

One-Sample t- test				
Factors	Mean	Std. Deviation	t-value	p-value
Confidence to run the business alone	4.00	.812	12.001	.000*
Community level participation	4.33	.471	27.426	.000*
Support from the family to work in an ICT unit	4.33	.471	27.426	.000*
Change in status in the family	3.62	.827	7.316	.000*
Contribution to family income	3.62	1.044	5.801	.000*
Decision making power	3.67	.471	13.931	.000*
Freedom in household expenditure	3.67	.471	13.931	.000*
Participation in political activity	1.69	.957	-13.289	.000#

* Significantly more than 3 at 1% level

Significantly less than 3 at 1% level

Source: Primary data

The Table-14 shows the one sample t test to test the opinion of core group members about empowerment support from ICT enterprise. From the table it is understood that except one factor "Participation in political activity" all other factors got means score value more than 3 and significant at 1% level of significance (p value ≤ 0.01). However in the case of statement "Participation in political activity", which got mean score less than value 3 (mean 1.69) and it is not significant at 1% level of significance. Since majority of the factors are significant we could accept the alternate hypothesis that is "There is a significant support from the ICT enterprises for women empowerment"

CONCLUSION

The study of women ICT based micro enterprises under Kudumbashree in Kerala clearly shows that in the case of vulnerability there is a significant improvement in the state of vulnerability among core group members before and after joining the ICT. The study also indicates that there is a significant improvement in employment stability among core group members before and after joining the ICT. In the case of skill, social capital and financial improvement among core group members working ICT enterprises, the result is highly positive. One of the core objectives of the Kudumbashree is to empower the poor women flock, so it is inevitable to analyze the empowerment factors. Fortunately the result of the analysis of women empowerment factors in this study shows a positive result, i.e. the ICT enterprises are supporting for women empowerment.

REFERENCES

1. Brown, M.M. 2001. Can ICTs address the needs of the poor? Choices (June). NY: UNDP.
2. Bhatnagar, S. 2000. Social implications of ICT in developing countries: Lessons from Asian success stories. EJSDC 1(4).
3. Bhattacharya, Malini (2004) *Globalization*, Tulika Books, New Delhi. Claudia Golden (1992) "Women Employment and Technical Change: A Historical Perspective," in *Computer Chips and Paper Chip* (ed.) Heidi I Hartman, National Academic Press.
4. Duncombe, Richard, Heeks Richard, Sharon Morgan and Sobha Arun 'Supporting Women ICT based Enterprises' A Handbook for Agencies in Development, DFID, 2005.
5. Hafkin N. and Taggart N., Gender, Information Technology and Developing Countries: An Analytic Study. Washington, DC: WID Office USAID, 2001.
6. Heeks, R.B (1999) *Information and Communications Technology, Poverty and Development*, Development Informatics paper no.5, IDPM, University of Manchester, UK.
7. Heeks, R.B, Arun, S and Morgan, S (2004) *Researching ICT-based Enterprise for Women in Developing Countries: An Enterprise Perspective*, IDPM, University of Manchester, UK.
8. Huyer, S (2003) 'ICT, Globalization and Poverty Reduction: Gender Dimensions of the Knowledge Society', UN Commission on Science and Technology for Development (UNCSTD).
9. M.A.Aboobacker (2001) Small Steps Great Leaps – Success stories of Kudumbashree Micro enterprises, State Poverty eradication Mission Thiruvananthapuram.
10. Mridul Eapen, Praveena Kodoth (2005) "Looking Beyond Gender Parity" *Economic and Political Weekly*, Bombay.
11. Nirmal Banerjee (2004) *Globalisation and Women's Work in Globalisation* (ed) Malini Bhattacharya, Tulika Books, New Delhi.
12. Pillai P.M, Shanta, N, (2008). ICT and employment promotion among poor women -some reflections on Kerala's, paper publish in CDS online, Trivandrum,
13. Shoba Arun, Richard Heeks & Sharon Morgan, (2004) *ICT Initiatives, Women and Work in Developing Countries: Reinforcing or Changing Gender Inequalities in South India?* Institute for Development Policy and Management University of Manchester, Precinct Centre, Manchester.
14. Saith Aswini (2001) 'Information- Communication Technologies and Poverty Alleviation: Hope or Hype', Institute of Social Studies, Hague, Netherlands.
15. T.K Jose (2006) 'Kudumbashree-case study', Kudumbashree, Trivandrum, Kerala.
16. Website References: <http://www.kudumbashree.org/>

ENTREPRENEURSHIP AMONG RURAL WOMEN -A STUDY IN ANDHRA PRADESH

DR. NANU LUNAVATH
JACT- ACCOUNTS
NATIONAL INSTITUTE OF TECHNOLOGY
WARANGAL

ABSTRACT

Women entrepreneurship development is an essential part of Human resource development. The development of women entrepreneurship in India is increase with the time but still it is very low in rural areas. This is because of the lack of awareness. The women in the rural areas are not aware about the various schemes and program which are launched by the Government. Entrepreneurship among women has been a recent concern. Women have become aware their existence, their rights and their work situation. The progress is more visible among upper class families in urban cities. This paper focus on women entrepreneur. Any understanding of Indian women of their identity and especially of their role taking and breaking new paths will be incomplete without a walk down the corridors of Indian history where women have lived and internationalized various roles. The Main focus of this paper is to develop entrepreneurship among women. This paper talks about the different ways to develop women entrepreneurship and about the status of women entrepreneurs and problem faced by them when they come out and faced challenges in the competitive world of business environment.

KEYWORDS

Entrepreneurship, Rural Women.

INTRODUCTION

An entrepreneur is one of the important segments of economic growth; entrepreneurial competence makes all the difference in the rate of economic development and growth. Basically an entrepreneur is a person who is responsive for setting up business or an enterprise. In fact he is one who has the initiative, skill for innovation and who looks for high achievement. He is a catalytic agent of change and works for the good of people. Successful entrepreneur try to create value put up new Greenfield project that actually create wealth and make a contribution, they aim high. The entrepreneur is a critical factor in the socio-economic change. He is the key man who envisages new opportunities, new technique, new lines of production, new product and co-ordinate all other activities. Leadership and innovation are the hall-make of successful entrepreneurs. The entrepreneur is important agent in every society. Yet he is one of the most enigmatic characters on the drama of economic development, particularly in the less developed world. Although, it is his purposive activity that bridges the gap between plan and reality, the precise way this change agent acts is often unclear. A better understanding of entrepreneurship in the less developed countries could have a particularly high return for mankind. The entrepreneur performs a central mediating role between the larger society and a single operating unit. Alternation or changes in entrepreneurial action generate a process that is likely to mediate changes to both the economic unit and its environment and accumulate to produce system wide effects and feedback repeses.

ENTREPRENEURSHIP DEFINATION

In Schumpeter's view, entrepreneur is essentially creative an activity. The entrepreneur is the innovator who introduces something new into economy. The innovation may be method of production not yet treated by experience in the branch of manufacturing concerned, or a with which consumers in not yet familiar, or a new source of raw material or of new market which is unexploited or other innovations in the strict sense of the term. According to him entrepreneurs are business leader and not simple owner of capital, they are men of vision drive and talent who spot out opportunities and promptly size then for exploitation.

Coined by the French economist J.B. Say, the word "Entrepreneur" has been in vogue for some too year now, yet defining entrepreneurship has remained a difficult exercise for scholars and practitioners of management. Attributes like creativity, innovativeness, initiative, imagination and risk taking are normally taken as qualifying characteristics for a successful entrepreneurship, but the question of the correct mix –of how much of what remains.

The definition of the entrepreneur is one of most crucial and difficult aspects of theory. There are two main approaches to define entrepreneurship. In the context of the entrepreneur Casson, say quite simply that "an entrepreneur is what an entrepreneur does". It specifies a certain function and dreams anyone who performs this function to be an entrepreneur.

According to Adam Smith, the father of Political Economy, the entrepreneur was a proprietary capitalist, a supplier of capital and at the same time working as manager intervening between the labour and consumer and also treated him as employer, master, merchant and undertaker, but explicitly identified him with capitalist. Smith described entrepreneur as a person who only provides capital without taking active part in the leading role in enterprise.

Peter F Drucker define an entrepreneur as one who always search for change, responds to it and exploits it as an opportunity. Innovation is the specific tool of entrepreneurs.

Martin Luther King, said Entrepreneur is one who distinguishes as a person who undertakes to organize manage and assume the risk of running factory and business or an enterprise.

The New Encyclopedia Britannia considers an entrepreneur 'an individual who bear the risk of operating a business in the future conditions. Leading economist of all schools including Karl Marx have emphasized the contribution of the economics but Joseph Schumpeter who argues that the rate of growth in extent on the activates of entrepreneurship has probable put great emphasis on the entrepreneurial function any other economist.

EVOLUTION OF THE CONCEPT OF ENTREPRENURSHIP

The word 'entrepreneur' has been taken from the French language where it carded and was originally mean to designate an organizer of musical or other entertainments. Oxford English Dictionary (in 1897) also defined entrepreneur in a similar way as the director or manager of public musical institution. In the early 16th century, it was applied to those who were engaged in military expeditions. It was extended to over civil engineering activates such as constructions and fortification in the 17th century. It was only beginning of the 18th century that the word was used to refer to economic aspects. In this way, the evolution of the concept of entrepreneurship is considered over more than two centuries. Since then, the term 'entrepreneur' is used in various ways.

ROLE OF WOMEN ENTREPRENEURS

The role of women is undergoing a radical transformation in the modern society. Gone are the days when women were confined within the four walls of the house. These days' women are playing a vital role in socio-economic development of the country. Search for identify made her surge out of the four wall barrier and walk in hand with men. She is today playing a vital role in all spheres. She is the caring nurse, the brave pilot, the bold cop, the enterprising entrepreneur. The constitution of India guarantees of all citizens, irrespective of sex, equality of status and opportunities, social economic and political justices, liberty and dignity of the individuals significant steps have been initiated to these into realities. The emergence of women on the economic scene as entrepreneurs is a significant development in the emancipation of women and for securing for them place in the society. Women entrepreneurs would make a success of their enterprises and help economic progress of developing and underdeveloped counties.

IMPORTANT OF AN ENTREPRENEUR

The entrepreneur is one of the most important inputs in the economic development of country or of region within the country. Entrepreneurial competence makes all the difference in the rate of economic growth. The need for a broad-based entrepreneurial class in India arises from the need to speed up the process of activating the factor of production leading to higher rate of economic growth, dispersal of economic activities development of backward and tribal areas, creation of employment opportunities improvement in the standard of living of the weaker section of the society and involvement of all section of the society in the process of growth. Several factors go into the making of an entrepreneur individual who initiate establishment constitute of entrepreneurial class. The social political and economic conditions the availability of industrial technology and know-how state of art and culture of business and trading existence of markets for product and services and the incentive and facilities available for starting an industry or business all have bearing on the growth of entrepreneurship. A conducive environment is created through the policies and interest of the government in economic and industrial development.

THE WOMEN ENTREPRENEURS

The emergence of entrepreneurs, in society dependence to a great extent on the economics, social, religious cultural and psychological factors prevailing in the society. In the advanced countries of the world there is a phenomenal increase in the number of self employed women U.S. U.K. Canada the number of self-employed increased rapidly. Women entrepreneurs have been making a significant impact in all segment of economy in Canada, Britain, Germany and Australia. The areas chosen by women are retail trade, restaurants, hotel, and education, cultural, cleaner, insurance and manufacturing. They have made their make in business for the following reason. They want new challenges and opportunities for self-fulfillment and in innovative competitive jobs. They want the change to control the balance between their family responsibilities and their business lives.

WOMEN ENTREPRENEURSHIP

The new Industrial Policy of Government of India has specially highlighted the need for special entrepreneurship programs for women entrepreneurs in the nature of product-process oriented to enable them to start small-scale industries. It further adds that the objective of this course is to give representation to women in the field of small industry development with a view to uplifting their status in the economic and social fields. Due to the aforesaid fillip growth of Industrializations, urbanization education and democratic system in the country, the tradition-bound Indian society has seen a major technological changes and the women are now seeking gainful employment in several fields in increasing numbers. The women entrepreneurship movement has taken off the ground and it is felt that the moment has crossed the stage of transition. It is only during the last two decade women have stated becoming entrepreneurs and stated industries and business and they are yet to go a long way to be on par with men. The fact however cannot be denied that women have to play a dual role as housewife and also as an income-earner. Thus arises a role conflict in many a woman. This prevents them from taking a prompt decision in entering business. Despite the modernization and other factors mentioned above, the weight of tradition and the responsibilities of the finally tends to slow down this movement, further, occupational backgrounds of the families and the educational attainment of the husbands have a direct bearing on the development of women entrepreneurship.

REVIEW OF LITERATURE

Review of the literature available on the subject to find out the extent of research conducted in this field. This review encompasses various aspects of entrepreneurship. The main purpose is to draw the attention of policy makers, researchers, and entrepreneurs in the field. It is evident that lot of efforts have gone into conducting research in entrepreneurship developing tools and techniques in the area of motivation achievement, motivational and training of entrepreneurs.

Vinayshil Goutam (1979) studied the major sector of self-employment in this nation. The role of the heritage variable in economic growth has been examined and problems of organization, structure, finance, personal, marketing, corporate, issues etc., have been highlighted with reference to entrepreneurial development.

Committee of Development of Small and medium Enterprises (1975) constituted by the government of India (1973) studied the growth of entrepreneurship. Among new and medium entrepreneurs, existing position of facilities at the central, state and other level suggest measure for the enlargement and intensification of such facilities, and working act to co-ordinate schemes and program for bringing about rapid growth of new and medium entrepreneurship.

Patrick R. Lies (1972) emphasized the seven major areas of entrepreneurship, viz., searching for venture opportunities, matching, and individual team with a venture situation, evaluating the potential and long term viability of a venture, evaluating sources of finance, structuring and financing of a company carrying out negotiation and managing operations.

Malgaokar (1974) analysed the problem of training for entrepreneurs development in context of the present environment in the country, and some specific approaches to achieve the objective of entrepreneurial development have been identified the analysis has been illustrated by reference to fields studies conducted by the S.I.E.T instituted in several states in the country.

The National Seminar on Entrepreneurship Development in Small Scale Industries (1975) discussed the socio-economic, cultural and psychological factors in habituating growth of entrepreneurship in the small scale sector, program to stimulate growth of entrepreneurship in small industries particularly backward areas and among educated unemployment, role of training and other inputs in entrepreneurship development and organization support for entrepreneurial development.

Sharma, S.V.S. (1979) conducted a study based on a collaboration research project on small entrepreneurial development by seven counties viz., Bangladesh, Hongkong, India, Korea, Malaysia, Philippines and Thailand. The report attempts to analyses the existing status and conditions of small enterprises examines the growth trends of small enterprises, policies and their evaluation in regard to the promotion of small enterprises, in the participating countries. Further it attempts to give a competitive account of policy developments, program and organization set up with detailed assessment of the impact of the various programs in participating of countries. It explored the responsibility of arriving at a general profile of the Asian entrepreneurs. Attempts reported by small entrepreneurs with possible suggestion for improvement and future action.

Venkat Rao (1975) emphasizes the need for developing indigenous, entrepreneurship giving the examples of well-known economists who recognized its importance. Highlights the multi-dimensional approaches to entrepreneurial development, with special reference to nature of entrepreneur's functions, which are broadly classified as motivation and training, information and consultancy, and supporting facilities and services.

Sharma (1975) high lights the programs for development of small industries in under developed areas, in India and the consequent efforts as stimulation of entrepreneurship initiated from the central as well as the state levels, especially in Gujarat, A.P. and Jammu and Kashmir, Concludes that stimulation programs has to be followed by development of entrepreneurship and that it should from part an ever act programmers if industrialization is to become fully effective.

OBJECTIVE OF THE STUDY

The objectives of this study are as per following:

1. Examine the Socio economic profile of rural women entrepreneurship in A.P.
2. Find out into the major problem encountered by rural women entrepreneurs suggest measures to overcome these problems

METHODOLOGY

In the present study statistical tools such as percentage, average ratio. In present study only rural women entrepreneurs in selected area the study based on primary data provided by the women entrepreneur the conclusions based on this data.

STATUS OF WOMEN ENTREPRENEURS IN INDIA

Indian women have played an outstanding role in the freedom struggle and contributed a great deal to the Indian cultural heritage. Legally and constitutionally, women in India enjoy all rights and opportunities conferred they are equal citizens expected to enjoy all rights and opportunities conferred upon all the people by the state. Women are entitled to the same fundamental rights as are guaranteed to men. Article 14 and 15 of the constitution ensures equality before law, and prohibits differentiation on the grounds of religion, race, caste, gender, birth place etc., Article 3 empowers the State to make special provisions for women and children even in violation of principles of indiscriminate among citizens, inter-alia of sex, This provisions provides rights to government to make special provision for women with regard to appointment in public services too, the Constitution has assured, equal opportunities to women along with men, Women are free in selecting, choosing, any form of education, training for getting a better career. Many women are not presenting higher studies and are confined white collar job in public and private sectors. From the economic point of view the position and status of women is not satisfactory.

SOCIO-ECONOMIC PROFILE OF RURAL WOMEN ENTREPRENEURS

Therefore Socio-economic background selected respondent in terms of their age, marital status, educational qualification, occupation background and cast, economic status is presented in tables.

1. MARITAL STATUS OF SAMPLE WOMEN ENTREPRENEURS

Marriage system is an important in culture. This is an important phase in an individual's life generally the concern for the family and phase of life cycle. It is one of the crucial and precious phases in one's life. This phase enable them but also of their children. However, there may be a few exemptions to this where an individual chooses entrepreneurship as his/her career even before their marriage.

The data relating to marital status of 80 sample Women Entrepreneurs is presented in the Table given below.

TABLE NO. 1: MARITAL STATUS-WISE DISTRIBUTION OF SAMPLE WOMEN ENTREPRENEURS

Sl. No	Marital status	No. of respondent	Total
1	Married	65	83.00
2	Unmarried	15	17.00
	Total	80	100

Source: Compiled from questionnaire data

It is evident from the table that a great majority of (83%) of the respondent were married while 17% of them were unmarried. This confirms the fact that the in general women in particular are choosing their career as entrepreneur only after getting married. However, a sizeable portion of young married women entrepreneurs became entrepreneurs before their marriage. These indicate the growing dynamism of women Entrepreneurs this is a welcoming feature.

2. AGE-WISE DISTRIBUTION OF SAMPLE WOMEN ENTREPRENEURS

Age is an important element in the personality of individual for entrepreneurship. It has been observe that youth are generally more energetic change prone progressive and innovative. Therefore an analysis is make to examine the age distribution of Women entrepreneurs the relevant data is presented in Table Age-wise Distribution of Women Entrepreneurs.

TABLE NO. 2: AGE-WISE DISTRIBUTION OF SAMPLE WOMEN ENTREPRENEURS

Sl.No	Age (in Year)	No.of Respondents	Total
1	Below – 25	32	40
2	25 - 35	31	39
3	35 - 45	16	20
4	Above 45 Year	1	1
	Total	80	100

Source: Compiled from Questionnaire.

An analysis of table reveals that sample respondent work almost equally divided among the first two age groups Among these groups the groups Below 25 age ranks First in significant portion of up to 25 ages groups. This confirms the fact that the best age for entry into entrepreneurship was observed between 20-35 years. This indicate the concern and interest common the youth to achieve something in their lives. However, other search studies also revealed that they are evidence with regards to the influence of age on entrepreneurial behavior.

3. COMMUNITY-WISE DISTRIBUTION OF WOMEN ENTREPRENEURS

There exists an indicate relationship between occupation and cast of population particularly in most of the developing countries like India. The caste and community is important and oldest institution of the society. It has a definite role to play in the crisis of life. The social retraction on women the people notions about women and their role in the domestics and extra domestics sphere are largely derived on the basis of their caste background.

TABLE NO. 3: COMMUNITY-WISE DISTRIBUTION OF WOMEN ENTREPRENEURS

Sl.No	Community Backgrounds	No.of Respondents	Total
1	Schedule Tribe	3	4
2	Schedule Caste	13	16
3	Backward Caste	53	66
4	Forward Caste & General	11	14
	Total	80	100

Source: Compiled from questionnaire data

The table reveals that (66%) of the respondent were from the backward Community. It is interest to note that there was little representation from Schedule Tribe entrepreneurs (4%) while Schedule Caste was represented (16%) of the entrepreneur. This also demonstrated the departure of entrepreneurship from traditional strong entrepreneurial areas. Among the Scheduled Tribes and Scheduled Caste (Weaker Section) it was lower than expectation. The gradual entry of entrepreneurs belonging to SC,ST,BC, was on account of institutional assistance incentives, encouragement etc.,

4. EDUCATIONAL BACKGROUD OF WOMEN ENTREPRENEURS

Education is an important determinant of Social class. It is an important instrument of increasing and betterment of the change of women employability and empowering themselves. Education has been reposted as a crucial factor for developing modern entrepreneurship and it accelerates the entrepreneurial spirit the table shows the education qualifications of sample women entrepreneurs.

TABLE NO. 4: EDUCATIONAL BACKGROUD OF WOMEN ENTREPRENEURS

Sl.No	Educational Background	No.of Respondents	Total
1	Primary	30	37
2	Secondary	35	44
3	Graduate	8	12
4	Technical	0	0
5	Other (certificate courses)	6	7
	Total	80	100

Source: Compiled questionnaire

Analysis of the table indicate that of the total 80 respondent a majority of (44%) were with secondary education followed by primary education with (37%) There was (12%) Graduate background. There are no Technical basis entrepreneurs. Though on the whole there has been a change with regards to educational background of entrepreneurs it is not up to the expectation level. In this ever-changing and most competitive world of business entrepreneurs must have good technical and professional background. This is also one of the reasons for the failure of many entrepreneurs.

5. OCCUPATIONAL BACKGROUND WOMEN ENTREPRENEURS

Traditional entrepreneurs have come from business communities Indian Industrialist are usually member of old trading families where still dominated the business activity of the country. The data relating to family occupational of the entrepreneurs is shown in the table given below.

TABLE NO 5: OCCUPATIONAL BACKGROUND WOMEN ENTREPRENEURS

Sl.No	Occupational Distribution	No.of Respondents	Total
1	Agriculture	29	38
2	Business	35	44
3	Govt. Employee	0	0
4	Private Employee	3	4
5	Other	13	15
		80	100

Source: Compiled from questionnaire data

Relationship between family occupational and their parents' occupation Majority of 44% of the sample entrepreneurs were from business background while rest of 38% of sample respondent from Agriculture. The entry of other non-business communities particularly from Agriculture related.

6. TYPE OF FAMILY OF WOMEN ENTREPRENEURS

Family is the primary group where in every member is directly associated with its activities. It is directs and guides the behavior of its members. The type of and size of the family determines the extent to which an entrepreneurs can take a decision by himself and need not depend upon other. There are different reports on impact of family profile on the entrepreneurial performance many Women Entrepreneurs found belonging to Nuclear families women entrepreneurs from joint families experienced lack stress than women belonging to Nuclear families.

TABLE NO. 6: TYPE OF FAMILY OF WOMEN ENTREPRENEURS

Sl.No	Type of family	No.of Respondents	Total
1	Nuclear family	67	84
2	Joint family	13	16
	Total	80	100

Source: Compiled from Questionnaire

Contrary to the research finding mentioned above it can be observed from the table. Those about 84% of the Women Entrepreneurs were from nuclear family joint family background.

7. REASONS FOR CHOOSING PRESENT LINE OF BUSINESS

It is true that the entrepreneurs have come from diverse economic social and geographical background inter alias, influence is entrepreneurial spirit. However, as it is rightly pointed out, that immediately conceding is not their miles rather the factors which have ultimately influenced them to take to the entrepreneurial motivation and entrepreneurial ability to make correct decisions by knowing reasons for his entry into the present business. To bring out the immediate factors which influenced the women entrepreneur to accept entrepreneurship as a career the respondent were to give the reasons and choosing the present line of business.

TABLE NO. 7: REASONS FOR CHOOSING PRESENT LINE OF BUSINESS

Sl.No	Reasons for chosen	No.of Respondents	Total
1	Parents already in lines	24	29
2	Attractive	3	4
3	Unemployment	25	31
4	Urge of independent life	23	28
5	Other	5	7
		80	100

Source from Compiled questionnaire

Amajority of its respondents gave more reasons for entry into entrepreneurship as several reasons that gives ranks of different reasons for finding out major reasons which brought them into entrepreneurship. Indicate that most of the women entrepreneurship stated their enterprise because of unemployment reasons followed by parents already in the fields and urge of independent life. Majority of women entrepreneurship chosen entrepreneurship as career for socio, economic reasons such as unemployment consequents need for earning livelihood, economic gain, desire for independent life, lack of collateral security occupied the last position.

8. SOURCE OF INITIAL IDEA

In addition to the various factors which influenced the entrepreneurs to choose entrepreneurship as a career the data pertaining to importance source of initial idea was also collected to shed light on the various source which were responsible for starting their enterprise Table given below explain different sources from which women entrepreneurs got initial idea.

TABLE NO. 8: SOURCE OF INITIAL IDEA

Sl.No	Source of initial idea	No.of Respondents	Total
1	Own idea	26	31
2	Friends & Relatives	7	8
3	Guides from Govt. Org	12	15
4	Advised by Husband	28	34
5	Other	7	8
		80	100

Source: Compiled from questionnaire data.

It is gratifying to note that as many as (30%) of women respondent got the initial idea of starting the enterprise on their own followed by A good number of Women entrepreneurs also got idea of starting enterprise advised by friends and relatives.

9. TURNOVER PER ANNUM

Turnover is an indication of success of business or failure of business depends upon its earning capacities profit depends up on the turnover is a symbol of success. The business turnover of the respondents is show in the table given below.

TABLE NO 9: TURNOVER PER ANNUM

Sl.No	Turnover per annum	No.of Respondents	Total
1	Below Rs.25,000	33	41
2	Rs.25,000 -- 50,000	28	35
3	Rs. 50,000 --1,00,000	14	18
4	Above 1,00,000	03	04
		80	100

Source: compiled from questionnaire

The analysis of turnover per annum is below Rs.25,000 is majority of respondent followed by Rs25,000 to 50,000 turnover with 35% of respondents only 4% of respondents is above 1,00,000. This is indicated Rural Entrepreneurs not getting sufficient turnover for their business activities.

NATURE OF BUSINESS

Nature of business is also important factor to development of women entrepreneurs in rural areas the following information related to nature of business.

TABLE NO. 10: NATURE OF BUSINESS

Sl.No	Nature of business	No.of Respondents	Total
1	Manufacturing	47	55
2	Trading	09	11
3	Services	20	25
4	Other	47	06
		80	100

Source: compiled from questionnaire

Manufacturing is major activities among the respondents followed by service sector observing this sector is rapidly growth and feature of this sector. Women entrepreneurs only little part (11%) of the respondent participates trading activities in rural areas.

Rural development implies both the economic betterment of people as well as greater social transformation. In order to provide the rural people with better prospects for economic development, increased participation of people in the rural development programs, decentralization of planning, better enforcement of land reforms and greater access to credit are envisaged.

Initially main thrust for development was laid on agriculture industry, communication, education, health and allied sectors but later on it was realized that accelerated development can be provided only if governmental efforts are adequately supplemented by direct and indirect involvement of people at the grass root level. Accordingly, on 31st March 1952, an organization known as Community Projects Administration was set up under the Planning Commission to administer the programs relating to community development. The community development program inaugurated on October 2, 1952, was an important landmark in the history of the rural development. In October 1974, the Department of Rural Development came into existence as a part of Ministry of Food and Agriculture. On 18th August 1979, the Department of Rural Development was elevated to the status of a new Ministry of Rural Reconstruction. That Ministry was renamed as Ministry of Rural Development on 23rd January 1982. In January 1985, the Ministry of Rural Development was again converted into a Department under the Ministry of Agriculture and Rural Development which was later rechristened as Ministry of Agriculture in September 1985. On July 5, 1991 the Department was upgraded as Ministry of Rural Development. Another Department viz. Department of Wasteland Development was created under this Ministry on 2nd July 1992. In March 1995, the Ministry was renamed as the Ministry of Rural Areas and Employment with three departments namely Department of Rural Employment and Poverty Alleviation, Rural Development and Wasteland Development. In 1999 Ministry of Rural Areas and Employment was renamed as Ministry of Rural Development. This Ministry has been acting as a catalyst effecting the change in rural areas through the implementation of wide spectrum of programs which are aimed at poverty alleviation, employment generation, infrastructure development and social security. Over the years, with the experience gained, in the implementation of the programs and in response to the felt needs of the poor, several programs have been modified and new programs have been introduced. This Ministry's main objective is to alleviate rural poverty and ensure improved quality of life for the rural population especially those below the poverty line. These objectives are achieved through formulation, development and implementation of programs relating to various spheres of rural life and activities, from income generation to environmental replenishment.

In order to ensure that the fruits of economic reform are shared by all sections of societies five elements of social and economic infrastructure, critical to the quality of life in rural areas, were identified. These are health education drinking water, housing and roads. To impart greater momentum to the efforts in these sectors the Government had launched the Pradhan Mantri Gramdoya Yojana (PMGY) and the ministry of rural development was entrusted with the responsibility of implementing drinking water, housing and rural roads component of PMGY.

During the Ninth Plan period, several anti-poverty Programs have been restructured to enhance the efficiency of the Programs for providing increased benefits to the rural poor. Self-Employment Programs have been revamped by merging the Integrated Rural Development Program (IRDP), the Development of Women and Children in Rural Areas (DWCRA), the Supply of Improved Tool-Kits to Rural Artisans (SITRA), the Training of Rural Youth for Self Employment (TRYSEM), the Ganga Kalyan Yojana (GKY) and the Million Wells Scheme (MWS) into a holistic self-employment scheme called Swarnjayanti Gram Swarozgar Yojana (SGSY).

The empowerment of rural women is crucial for the development of rural India. Bringing women into the mainstream of development is a major concern for the Government of India. Therefore, the programs for poverty alleviation have a women's component to ensure flow of adequate funds to this section. The Constitutional (73rd) Amendment, Act 1992 provides for reservation of selective posts for women. The Constitution has placed enormous responsibility on the Panchayats to formulate and execute various programs of economic development and social justice, and a number of Centrally Sponsored Schemes are being implemented through Panchayats. To impart training for elected representatives of PRIs is primarily the responsibility of the State Governments/Union Territory Administrations. Ministry of Rural Development also extends some financial assistance to the States/UTs with a view to improve the quality of training programs and to catalyze capacity building initiatives for the PRI elected members and functionaries.

The Department of Rural Development implements schemes for generation of self-employment and wage employment, provision of housing and minor irrigation assets to rural poor, social assistance to the destitute and Rural Roads. Apart from this, the Department provides the support services and other quality inputs such as assistance for strengthening of DRDA Administration, panchayat raj institutions, training & research, human resource development, development of voluntary action etc. for the proper implementation of the program. The major programs of the Department of Rural Development are Pradhan Mantri Gram Sadak Yojana, (PMGSY), Rural Housing (RH) Sampoorna Gramin Rozgar Yojana (SGRY) and Swarnjayanti Gram Swarozgar Yojana (SGSY).

PROBLEMS & PROSPECTIVE OF RURAL WOMEN ENTREPRENEURS IN A.P.

The very nature of entrepreneurship is to assume risk and face many challenges threats and problems in the process of achieving the goals. Though these problems are common for all the types of entrepreneurs, there are certain peculiar problems that are encountered by women entrepreneurs. Now an attempt is made to briefly examining the problems of women entrepreneurs.

EDUCATION AND EXPERIENCE

In India, certain women are comparatively more educated and aware of their rights and opportunities than the rural women. Lower literacy level and experience when compared to men hinder the women to carry out their activity. Many women cannot communicate effectively to the outsiders, especially higher officials because of lack of exposure to the outside world. Women of India have been perfectly trained to listen, obey and leave decisions to the male members of the family. The lack of education and experience among women entrepreneurs has a direct effect on the preparation of viable project report. The bankers take project report as a pre-requisite for formal lending to the entrepreneurs. Many a times the application for loans gets rejected due to faulty preparation of the

project reports. The entrepreneurs can stand on their own foot by accruing a necessary skill, through education and training. But it is sorry to say that many women entrepreneur are not willing to come leave their villages and attend training courses at the far off places.

LACK OF CONFIDENCE

In general, women lack of confidence in their strength and competence. The family members and the society are reluctant to stand beside their entrepreneur growth. To a certain extent this situation is changing among Indian women and yet to face a tremendous change to increase the rate of growth in entrepreneurship.

MOTIVATIONAL FACTORS

Self-motivation can be realized through a mind set for a successful business, attitude to take up risk and behavior towards the business society by shouldering the social responsibilities. Other factors are family support, government policies, financial assistance from public and private institutions and also the environment suitable for women to establish business units.

KNOWLEDGE IN BUSINESS ADMINISTRATION

Women must be educated and trained constantly to acquire the skills and knowledge in all the functional areas of business management. This can facilitate women to excel in decision making process and develop a good business network.

EXPOSED TO THE TRAINING PROGRAM

Training programs and works hops for every type of entrepreneur is available through the social and welfare association based on duration, skill and the purpose of the training program. Such programs are really useful to new rural and young entrepreneurs who want to set up a small and medium scale unit on their own.

IDENTIFYING THE AVAILABLE RESOURCES

Women are hesitant to find out the access to cater their needs in the financial and marketing areas. In spite of the mushrooming growth of associations institution and the scheme from the government side, women are not enterprising and dynamic to optimize the resources in the form of reserves, assets mankind or business volunteers.

BIAS OF OFFICIALS

The subtle bias of the officials of the government and financial institutions towards aspiring women entrepreneurs has scuttled their growth. There is wrong notion in the mind of the officials that the women entrepreneurs are incompetent and lacks of articulations. Women are viewed as women but not as a business person. This built-in gender bias has aggravated the problem of women entrepreneurs.

INFORMATION

Women entrepreneurs are scared of the information about the facilities available like bank finance, training facilities, schemes run by the government. Legal problems involved not only at each step of starting the enterprise but for their development and expansion. Therefore women entrepreneurs borrow from the family or even moneylenders at exorbitant rate of interest to start the activity insured of approaching the financial institutions.

MARKETING

If the proof of pudding lies in eating, the proof of all production lies in consumption. Marketing is one of the serious hurdles for the women entrepreneurs. The presences of middlemen in marketing further add to her problem. To market the product, women entrepreneurs have to be at the mere of the middlemen who eats up a substantial amount or margin. The low-key market development efforts and error in marketing strategy has kept the sales at low ebb affecting the growth of the units.

MAJOR PERSONAL PROBLEM

It is evident that major problems with which a majority of respondent confronted was personal problems followed by financial and marketing problems. Among the other major problems educational, socio-cultural, technical and other problems etc., were important. Thus it is clear that through almost all the women entrepreneurs faced all the problems were varying in case of different entrepreneur. With regard to personal problems a significant number of entrepreneurs expressed their problems as excessive burden of work, health problems lack of leisure time, excess of tension and poor risk taking ability. But a sizeable portion of women entrepreneurs indicate more than one problems or a combination of several problems among personal problems as all the entrepreneurs were facing all the problems. A significant number of entrepreneurs expressed excessive burden of work as housewife and their dual responsibility made them not to avail leisure time. A few of the entrepreneurs expressed excessive tension because of competition in the business.

AWARENESS ABOUT FINANCIAL ASSISTANT

Various institutions in the financial sector extend their maximum support in the form of incentives, loans, schemes etc. Even then every women entrepreneur may not be aware of all the assistance provided by the institutions. So the sincere efforts taken towards women entrepreneurs may not reach the entrepreneurs in rural and backward areas. Financial management plays a significant role in the successful operation of an enterprise an analysis of the major financial problems encountered by the women entrepreneurs. The major problems with which a majority of respondent suffered were heavy interest rate followed by shortage of fixed capital economic incredibility and limited working capital

MARKETING PROBLEMS

Lack of marketing experience heavy competition, poor research, poor credit collection bad debt etc., was identified as the major problem of women entrepreneurs are the marketing. Lack of marketing experience was the biggest marketing problems before the women entrepreneurs followed by heavy competition other major problems were poor research, credit collection. Marketing knowledge is very important for survival and growth of business enterprise generally women are confined there were, since they have must knowledge of local and regional markets. Hence that is the biggest problems of women entrepreneurs and now, a day every business in being run under perfect markets conditions. To overcome this competition ever entrepreneurs should have capitation on skill and knowledge. Innovation playing important role, in the fast changing environment innovation possible through research for conducting researches the entrepreneurs' analytical skills. But the women entrepreneurs had low level of education, which is also one of the major problems of women entrepreneurs.

PRODUCTION RELATED PROBLEM

Majority of women entrepreneurs faced various production related problems. Among them lack of knowledge and equipment, lack of technical know-how about running a unit lack of knowledge of specialized skill, non-availability of raw material, power failure etc., There existed an inter-relationship among the various problems faced by the women entrepreneurs. Basically there was no adequate capital to produce sophisticated machinery and equipment the problems is further complies by the lack of technical knowledge and skill among the women entrepreneurs. This resulted the production of goods of inferior quality ultimately there lead to poor marketing of these inferior goods most of the entrepreneurs neither possessed among technical skill nor has higher educational modification and training. Therefore, there is a need to set up training center in each district to provide training and technical to the entire women entrepreneur.

SOCIO-CULTUREAL BARRIERS

Women's family and personal obligations are sometimes a great barrier for succeeding in business career only few women are able to manage both home and business efficiently devoting enough time to perform all their responsibilities in priority.

CONCLUSIONS

The emergence of entrepreneur the society depends to a great extent on the economic, social cultural and psychological developed and developing counties of the world there is a significant increase in the number of women entrepreneurs. Today were found in different types of industries traditional as well as non-traditional motivation is a critical factor that leads women towards entrepreneurship.

The challenges and adventure to do something new, to lead an independence life are source of the attractive leverages for women. However, the basic problem of women entrepreneurs is that she is women. Being a woman her responsibility is three-fold viz., family business and society. Women have been confronted

by several constraints experience is technical, marketing financial matters and the attitude of the family and of the society. Therefore, in this concluding chapter to major finding have emerged from the study are presented followed by few suggestion.

Analysis of marital status of women entrepreneurs revealed that a great majority of 80% of the respondent were married while 20% of women entrepreneurs were unmarried. This confirms that fact that the men, in general and women in particular we choosing their career as entrepreneurs only after getting married. This reveal a close relationship between marital status and choosing their career on one hand and a departure from the traditional value system of confirming housewives to household activities alone on the other. However a sizable partition of young married women entrepreneurs became entrepreneurs before their marriage. This indicates the growing dynamism of women entrepreneurs which is welcome feature. This may be on account of higher levels of education among women, change in value system and the encouragement that is being extended by the Government and other agencies in the recent past.

Age wise distribution of women entrepreneurs revealed that the single respondent are almost that is below 35 years between age 25-35 rank first between portion 1% only were represented by the age group of above 45 years. This is confirms the fact best age for entry into entrepreneurship was observed to be between 20-40 years. This may be again because of the concern and interest among the youth to achieve same thing in their lives.

An enquiry into the community background of women entrepreneurs revealed that two-third of the respondent were from backward community followed by forward cast schedule caste category equally. Lastly schedule Tribe 4% of the respondent belonging to SC and ST was on account of institution assistance, incentives, and encouragement

An enquiry into educational background of respondent revealed that the total 80 respondents a majority of were Secondary education followed by primary education. There were no single entrepreneurs with technical background.

In this ever changing and most competitive world of business entrepreneurs must have good professional and technical background. This is one of the reasons for the failures of many entrepreneurs.

An examination occupational background of women entrepreneurs revealed that sample almost 35% of them were from business background and the rest of from agricultural backgrounds. The increased role of women in decision making in their household affairs has relatively increased in some aspects while the male dominance continues in some areas. Women power has stepped up its involvement in solving community problems.

HOW TO DEVELOP WOMEN ENTREPRENEURS?

First of all, it is necessary to create an enterprising environment in the economy as well as entrepreneurial attitudes among the unemployed youth. For this the youngster should be connected intimately with the business. So far, the efforts by the academic institutes towards promoting entrepreneurship are largely unsatisfactory. Most of the Technical and professional institution in the countries ignore this aspect and put emphasis mainly on training and placement of their students. Considering the need of the day, these institutes, along with their training & placement cell should form a separate cell to encourage and guide their students towards entrepreneurship development in the line of their technical and or professional knowledge and enterprise. This quite important as in also present era of technology and market driven discontinuity and knowledge dominance, educated persons have definite advantage over other in spotting the appropriate venture and running the same successfully.

Right efforts on from are areas required in the development of women entrepreneurs and their great participation in the entrepreneurial activities. Following efforts can be taken into account for effective development of women entrepreneurs.

1. Development plans should be on the basis of vocational pattern and requirement of particular segment of rural area.
2. Official associated with such programs should be made more accountable and aware.
3. Activities of different programs on rural development should be highly coordinated to avoid wastage of funds.
4. Political interference in such program should be kept at minimum. Government should also encourage private investigated in sub programs.
5. Attention of the government as well as the voluntary organizations need to be drawn in rectifying these problems by making liberal assistance and gearing up the various facilities for enhancement of the status of women entrepreneurs.
6. Association of women entrepreneurs should assume responsibility of creating a greater awareness among women similarly efforts shall be made by all association throughout the country. This program can be linked up with youth programs of educations. Programs on a continuous basis have to be designed planned and implemented for the benefit of women students in all university of our country to attractive young women to take up entrepreneurial activates.
7. The university should setup consultancy center for women entrepreneurs.
8. Adequate insurance coverage should provide to the industrial and business units promoted by women entrepreneur agriculturist the business risks (financial losses) in order to safeguard and interest of the entrepreneur as well as the employees of the enterprise.
9. The schemes of providing hundred percent loans without any collateral security to technocrat should be revived by the commercial banks and the application received from women entrepreneur for financial under this scheme should be considered sympathetically, similarly term loan /working capital loans should be sanctioned to women entrepreneur more liberally on comparatively easier terms.
10. All allied activities beneficial to the entrepreneurs have been conducted under one roof. This will enable women entrepreneurs to avail the various facilities/benefits with comparatively less or difficult energies and money.
11. Periodical training at regular intervals to group's members on self-management aspect may be impacted with the help of experienced resource persons. Adequate and regular incomes must be provided through suitable micro enterprises developed through micro finance to encourage the group's survival.
12. Single window approach should be adopted for clear solutions and disbursing the amount of loans for the industrial units promoted by women entrepreneurs.
13. The legislative measure for dealing with the problems of small scale units run by women entrepreneurs should be relaxed and more liberal policies and attitudes should be adopted in these matters.
14. Traditional norm and family restrictions etc., are contributing to under development of the women entrepreneurship. Therefore social attitudes must change towards women entrepreneurs.
15. Marketing assistance schemes and necessary for economically to provide quality product at reasonable and high rates to their finished products and introduce common brand names.
16. Separate financial corporation should be setup to provide financial assistance at even district center this has to provide both long-term and short term capital to women entrepreneurs.
17. Adequate infrastructure support by one single co-ordination or nodal agency to facilitate flow of adequate working capital technology electricity, land and marketing for rural women entrepreneurs. May be helpful and mobile training center should be opened post training follow-up is vital for the success of entrepreneurs development programs.
18. Home Marketing facilities for product (Raw material and finished goods) are available at near production center. Training is need for skill improvement for unskilled entrepreneurs.
19. Control male/husband domination to women entrepreneurs.
20. Some seasonal work (Greeting card business) remaining period of entrepreneurs providing basic needs to entrepreneurs(employment in remaining time)
21. Transport and Banking facilities are near to enterprise. Immediately sanction license if necessary to enterprise. Taxes remove on Agro-Business Product.
22. Subsidies give to village/rural entrepreneurs for encouragement.
23. Entrepreneurial development program conduct training to respective product.

24. Consider women as specific target group for all development programs.
25. Better educational facilities and schemes should be extended to women folk from government.
26. Adequate training program on management skills to be provided to women community.
27. Encourage women's participation in decision making.
28. Vocational training to be extended to women community that enables them to understand the production process and Production management.
29. Training on professional competence and leadership skill to women entrepreneurs.
30. Training and counseling on a large scale of existing women entrepreneurs to remove psychological causes like lack of self-confidence and fear of success.
31. Counseling through the aid of committed NGO's, psycho logistics, managerial experts and technical personnel should be provided to existing and emerging women entrepreneurs.
32. Continuous monitoring and improvement of training programmers.
33. Activities in which women are trained should focus on their marketability and Profitability.
34. Making provision of marketing and sales assistance from Government part.
35. To encourage more passive women entrepreneurs the women training program should be organized that taught to recognize her own psychological needs to express them.
36. State financial corporations and financing institutions should permit by statute to extend purely trade related finance to women entrepreneurs.
37. The financial institutions should provide more working capital assistance.
38. Infrastructure in the form of industrial plots and sheds, to set up industries is to be provided by state run agencies.
39. A women entrepreneur's guidance cell set up to handle the various problems of women entrepreneurs all over the state.
40. Industrial estates could also provide marketing outlets for the display and sale of products made by women.
41. District Industries centers and single window agencies should make use of assisting women in their trade and business guidance.
42. Training in entrepreneurial attitude should start at the high school level through well designed courses, which could build Confidence through behavioral games.

CONCLUSION

Entrepreneurship among women, no doubt improves the wealth of the nation in general and of the family in particular. Women today are more willing to take up activities. Women entrepreneurship must be molded properly with entrepreneurial traits and skills to meet the change in trends, challenges global markets and also be competent enough to sustain and strive for excellence in the entrepreneurial arena.

REFERENCES

1. Aliva Mohanty "Women in Management of Micro enterprise problems and Prospects" Journal of Social Science Vol 8.
2. Baty Entrepreneurship to win-Prentice Hall Inc. 1979.
3. Dhameja S K(2002), Women Entrepreneurs Opportunities, performance, problems. Deep publications (P) Ltd New Delhi
4. Govt.of India Development of small and medium Entrepreneurs Ministry of Industrial evelopment New Delhi 1979.
5. Hadimani, R.N. Dynamics of Industrial Entrepreneurship -Ashish Publishing House NewDelhi 1985.
6. Krishnalal Sharma Entrepreneurial Performance in role Perspective - Abhinav publicationNew Delhi 1990.
7. Ram Sagar Singh Rural Elite Entrepreneurship and Social change - Rawat publication.
8. Sharma Sheetal (2006) "Educated women, powered, women" Yojana Vol. 50
9. Singh,P.NDevelopment Entrepreneurship for Economic Growth Vikas publishing 1980
10. Shiva Ramu, S. Entrepreneurship and Enterprise Growth-Seema publication 1985.
11. Grasley: Understanding Entrepreneurs Entrepreneurship Development Review 1987.
12. Mohiuddin: A Entrepreneurship in Rural Women -Kuruskhetra 1987.
13. Vasanth Desai Dynamics of Entrepreneurs Development and Management -Himalaya Publishing House New Delhi 1997.
14. Gopalan, S. Employment of Women. The Indian Situation: 2nd InternationalConference of Women Entrepreneurs, NAYE, New Delhi, 1981.
15. Malgavkar, P.D. Training for Entrepreneurial development Reviewand an approach, Occasional paper No. 5, Training Division, Dept. of Personnel and Administrative Reforms, New Delhi, 1974.
16. National Seminar on Entrepreneurship Development in Small Scaleindustries, Summary of Proceeding Controller of Publication, New Delhi, 1975.
17. Sharma SVS. Small Entrepreneurial Development in some AsianCountries, Light and Life Publusers, New Delhi, 1979.

BUSINESS EXCELLENCE MODELS: QUANTIFYING THE IMPLEMENTATION AND MATURITY LEVEL – A STATISTICAL APPROACH

RUCHIK GANDHI
GRADUATE ENGINEER TRAINEE
TATA TECHNOLOGIES
PUNE

JUBIN MEHTA
GRADUATE ENGINEER TRAINEE
TATA TECHNOLOGIES
BANGALORE

ABSTRACT

It is of utmost importance to quantify the results of any theory that is applied practically to an industry. There are numerous quality techniques which are in practice in the industry from more than half a century. Business Excellence Models for each firm encompasses the set of relevant quality and production improvement techniques. In many of the cases, after the application of these concepts, the results are either not measured at all and if inspected the grading depends heavily on the perception of the audit inspector. This paper aims at studying the concept of Business Excellence Models and proposes a systematic approach to quantify the level of implementation and the level of maturity it has achieved using the statistical tools. Further it also suggests a new approach for getting data and feedback which is not based on perception and gives more real and transparent figures. This paper aims at developing a methodology and a structure which helps in pinning a number to actual implementation level of the model or a degree to which the model has been followed. Also, the analysis will show which of the category or parameter is critical for rapid and holistic overall improvement of the organization. Thus, this methodology will help the companies conduct internal audits without the need of an audit inspector, highlight the key focus areas and aid improve the status of their firm vis-a-vis their business excellence model.

KEYWORDS

ANOVA, Business Excellence Models, Quantification, Non-Perspective based Questionnaire.

BUSINESS EXCELLENCE MODELS

Business excellence is the systematic use of quality management principles and tools in business management, with the goal of improving performance based on the principles of customer focus, stakeholder value, and process management. There are many excellence models in existence and thousands of companies have adopted these models or its various according to its needs [1]. The following are some of the prevailing frameworks available globally:

1. Malcolm Baldrige Criteria for Performance Excellence
2. European Foundation for Quality Management (EFQM) Excellence Model
3. Singapore Quality Award Framework
4. Canadian Framework for Business Excellence
5. Australian Business Excellence Framework
6. Business Performance Improvement Resource Model
7. Corporate World Class Manufacturing

IN INDIA

8. Ram Krishna National Quality Award
9. Indira Gandhi National Quality Award
10. Rajiv Gandhi National Quality Award

Business excellence, as described by the European Foundation for Quality Management (EFQM), refers to "outstanding practices in managing the organization and achieving results, all based on a set of eight fundamental concepts." These concepts are "results orientation, customer focus, leadership and constancy of purpose, management by processes and facts, people development and involvement, continuous learning, innovation and improvement; partnership development, and public responsibility."

All the prevailing excellence models provide the framework to achieve business excellence. They provide guidelines which are to be followed by companies in order to achieve excellence in business. The guidelines are generally broadly divided into the above mentioned categories and teams or committees are specially given responsibility for the each specific category [5].

We therefore, propose to represent a methodology which based on the business excellence model adopted by the organization will help it to find out the present implementation value and the maturity level of the organization.

THE METHODOLOGY

Any company adopting the Business Excellence Model has a certain roadmap to follow. The company takes all steps in its control to follow the guidelines as closely as possible generally by dedicating a separate department which will look after the smooth and proper implementation of the practices. This Quality Assurance or Business Excellence department oversees the overall working of the company and tries to keep the working in line with the company's vision and mission or according to the pre-decided benchmark [4]. Also continuous monitoring for validation of the implemented techniques and quality initiatives reaping expected benefits needs to be carried out for which the proposed methodology will be of utmost use.

OBJECTIVES OF THE METHODOLOGY

The purpose of the exercise is to evaluate the organisation, measure its performance and to indicate the scope of improvement. The methodology is so designed that it can be adapted to any model with a slight modification in the questionnaire to make it more relevant to the model. Objectives of the methodology are:

1. To determine the implementation level of the model as per the guidelines mentioned in the framework provided by the Business Excellence Model that is adopted by the company.
2. To determine the maturity level of the implemented model.
3. Criterion wise implementation and maturity level.

This methodology will help the organization to highlight the key areas where improvements are required, focus on these improvements and maximize the efforts to optimize the outputs.

METHODOLOGY FOR QUANTIFICATION

The roadmap of the company should be studied and after its rigorous analysis, a questionnaire is to be prepared in such a way that it covers all the criterions for the Enablers and Processes. Enablers are criterion which deal with visionary leadership and strategic planning and set the goals for the organization. Processes are the means by which these aims can be achieved. Further the questions should be designed after exhaustive consultancy with the unit representative so that justified weight-age is given to all the aspects and criterions of the model. A pilot test is first conducted with feedback from 20% of the total sample size. The pilot test is used to validate the questions and it is important to include the background information of the respondents according to the analysis required. After this, more data has to be collected with an appropriate sample size.

The feedback collected is then carefully organized, measured and analyzed [2]. Based on the feedback and due consultations with the respective heads and the unit representative improvement measures are suggested which may help the organization achieve higher outputs and better quality.

A CASE STUDY

A company has been trying to improve its business processes in lieu with its Business Excellence Model for the growth of its business. It has taken few steps to improve along the lines as suggested by the model. In order to find the areas which critically need improvement it needs to check the present status of the implementation of its business excellence model. The following questionnaire is created and data was collected. Table 1 exhibits a sample of a conventional questionnaire which is currently being employed in industries for auditing purposes.

In this kind of a questionnaire, the respondent is asked to tick mark on any one of the options against a question according to his preference.

All the employees are asked to fill up the form like the one mentioned in table 1 and data is collected. For analysing this data, background details of the employees are also collected. Background details may include number of years of work experience, educational qualifications, designation, committee it belongs to, gender, age, etc. An appropriate sample size is very important for reliable analysis. All the responses are to be given a value. In this case, 'strongly disagree' is assigned a rating of one, 'disagree' is assigned a rating of two, 'agree' with three and 'strongly agree' with four. No response can be assigned with zero and is not to be taken for analysis as it may be either due to lack of sufficient knowledge or because of a special cause. After collecting and assimilating the data, analysis is carried out.

Sr. No.	Question	Strongly disagree	Disagree	Agree	Strongly agree	No comments
1	Transparency in knowledge sharing				Yes	
2	Practice of housekeeping techniques as a culture and everyday practice			Yes		
3	Identifying Value added / Non-value added (NVA) activities			Yes		
4	Preventive maintenance for the upkeep of equipments		Yes			
5	Providing regular training and monitoring to improve employees' performance				Yes	

Statistical tests need to be carried out on the data to give the necessary quantification for exercise and gives the underlying trends and patterns. The ANOVA (analysis of variance) and t-test are the most important tools used to determine the co-relationship between the background information and the rating (for instance, relation between respondents of a particular department and the rating). This is helpful in identifying the departments or categories which require the maximum focus for improvement [3].

INTERPRETATION OF GRAPHS AND TABLE

The data summarized in the above table has been assumed for the purpose of illustration. The Table 2 shows the outcome of ANOVA analysis which shows the significance values for the change in the value of a particular criterion with the required background information. Figure 1 and Figure 2 shows two examples where mean of the values given by respondents in the criterions of Work Environment and Information Technology are shown varying with change in the number of work experience in the firm. While figure 1 clearly indicates an upward trend which shows that the anticipated implementation value of the Business Excellence Model in the criterion of Work Experience improves with the number of work experience (in years). Though, the significance value in the ANOVA chart is 0.615 (greater than 0.05 for 95% confidence level) which means that though the variation is visible through graphs it is not of statistical significance.

TABLE 2: TOTAL WORK EXPERIENCE - ANOVA

Sr. No.	Criterion		Sum of Squares	df	Mean Square	F	Sig.
1	Strategic Leadership	Between Groups	1.786	4	.446	2.000	0.110
		Within Groups	10.490	47	.223		
		Total	12.275	51			
2	Work Environment	Between Groups	1.449	4	.362	0.671	0.615
		Within Groups	24.843	46	.540		
		Total	26.292	50			
3	Information Technology	Between Groups	1.441	4	.360	0.692	0.601
		Within Groups	24.459	47	.520		
		Total	25.901	51			
4	Supply Chain Management	Between Groups	1.028	4	.257	0.562	0.692
		Within Groups	20.128	44	.457		
		Total	21.156	48			
5	Customer Focus	Between Groups	2.233	4	.558	0.837	0.509
		Within Groups	30.019	45	.667		
		Total	32.251	49			

FIG. 1

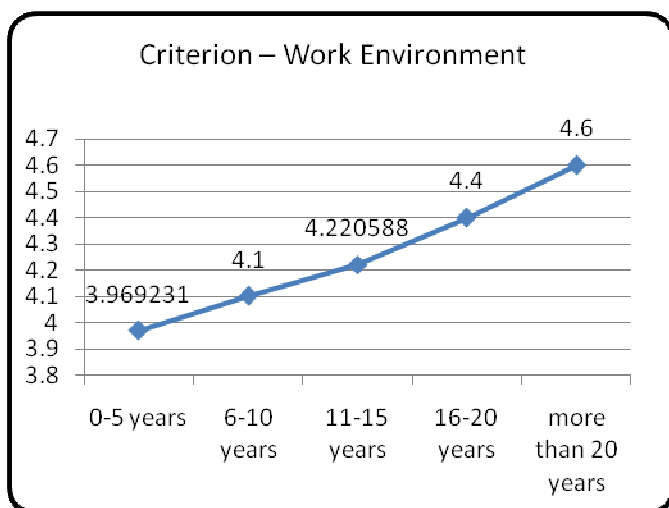
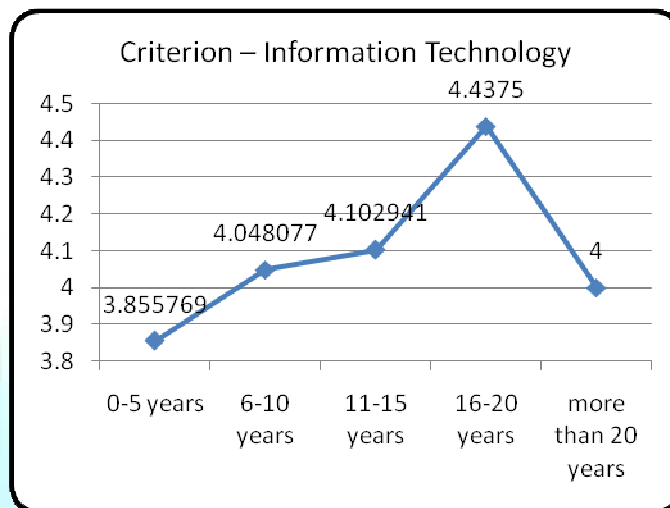


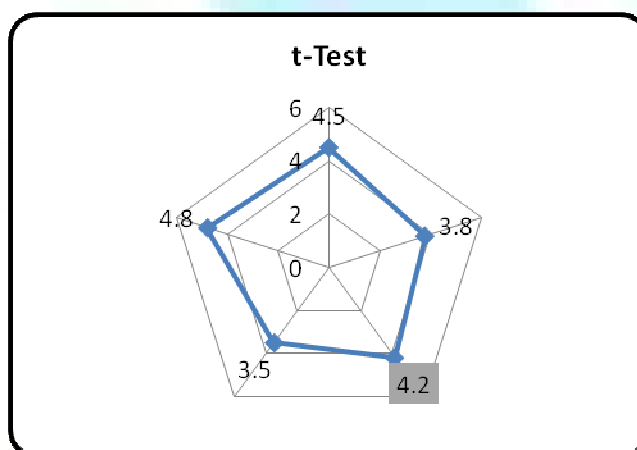
FIG. 2



THE BASIS BEHIND THESE TESTS

Both of these tests, namely, t-Test and ANOVA (analysis of variance) are used to find out a relationship between means of groups. The difference being the two being that the t-Test can be used to compare means of two groups while ANOVA can be used to compare means of multiple groups. This name is derived from the fact that in order to test for statistical significance between means, we are actually comparing (i.e., analyzing) variances. The variance is used as a measure of how far a set of numbers are spread out from each other. It is one of several descriptors of a probability distribution, describing how far the numbers lie from the mean (expected value).

The table and figure exhibit the results of ANOVA and t-Test. Table shows the relationship or trend with respect to the age groups. The respondents were divided into groups according to their age and the test determines whether there exists a relationship between the age of the respondent and their responses. In the case sighted above, the significant or the p-value in each of the case is above 0.05 (tolerance is 95%) and hence the null hypothesis is accepted. Figure shows the trend for two of the criterion (namely criteria 2 and 3) pictorially. There is a trend when the graphs are visualized but the tests show that this trend is not statistically significant and hence no conclusion about the relationship can be drawn.



The figure shows the result of a t-Test. It tells what one of the age-group thinks about the criterion or what were the criteria-wise responses of one of the age-groups.

QUANTIFICATION

Carrying out this exercise for all the various background information collected a clear idea about the mean implementation value pertaining to different criterions and different background information can be found out. Taking a mean of all these values will give one value of the implementation level. A better method is to find the weighted mean average giving due weight-age to responses from a particular committee while calculating the mean value for the department related to it. For this the t-test may be used. If the entire questionnaire is divided into various criterions like for example, work environment, preventive maintenance, innovation and technology, etc. then after carrying out the t-test a high weight-age must be given to values pertaining to the work environment department for the responses given by the work environment department. The highlighted part in the above radar representation of the t-test shows the same. The final implementation value calculated from this way will be a weighted mean average and will be more authentic than the overall mean.

The maturity level can be found out by asking the respondents in the questionnaire 'the scope for improvement'. Higher the scope for improvement would mean lesser maturity level. Hence, by inverting the scale and calculating in the above manner will give the maturity level.

This kind of a questionnaire has a few pitfalls which this paper aims at filling up. The limitations of the prevalent exercise:

- This questionnaire doesn't have a well-defined scheme for drawing conclusions from a specific rating. While measuring the same parameter, if two respondents have the same views but still it might be possible that one of the respondent marks 'agree' while the other marks 'strongly agree'. The limitation arises from the fact that both the respondents have different baselines or reference points which they set up in their minds.
- There might be difficulty in associating the language in the options with respect to the question.
- The result sometimes may differ from the actual situation. It is an approximate result and the reality may be different.

TABLE 3: NEW REVISED NON-PERSPECTIVE BASED QUESTIONNAIRE

Sr. No.	Question	Options				
1	Knowledge Sharing	Training Modules	Interaction	LAN Servers	Self Learning	No sharing
		✓	✓			
2	Housekeeping Tools	Just a Program	In the Culture	Full knowledge	Necessary	Not Necessary
				✓	✓	
3	Identification of Value Added/Non Value Added activities	Satisfactory	Profitable	Frequent	Can be Better	Don't Know
			✓		✓	
4	Preventative Equipment maintainance	Weekly	Monthly	Bi-annually	Annually	No Maintenance
				✓		
5	Training Programs	Relevant	✓ Effective	No use	Can be Better	Don't Know

THE NEW METHODOLOGY PROPOSED

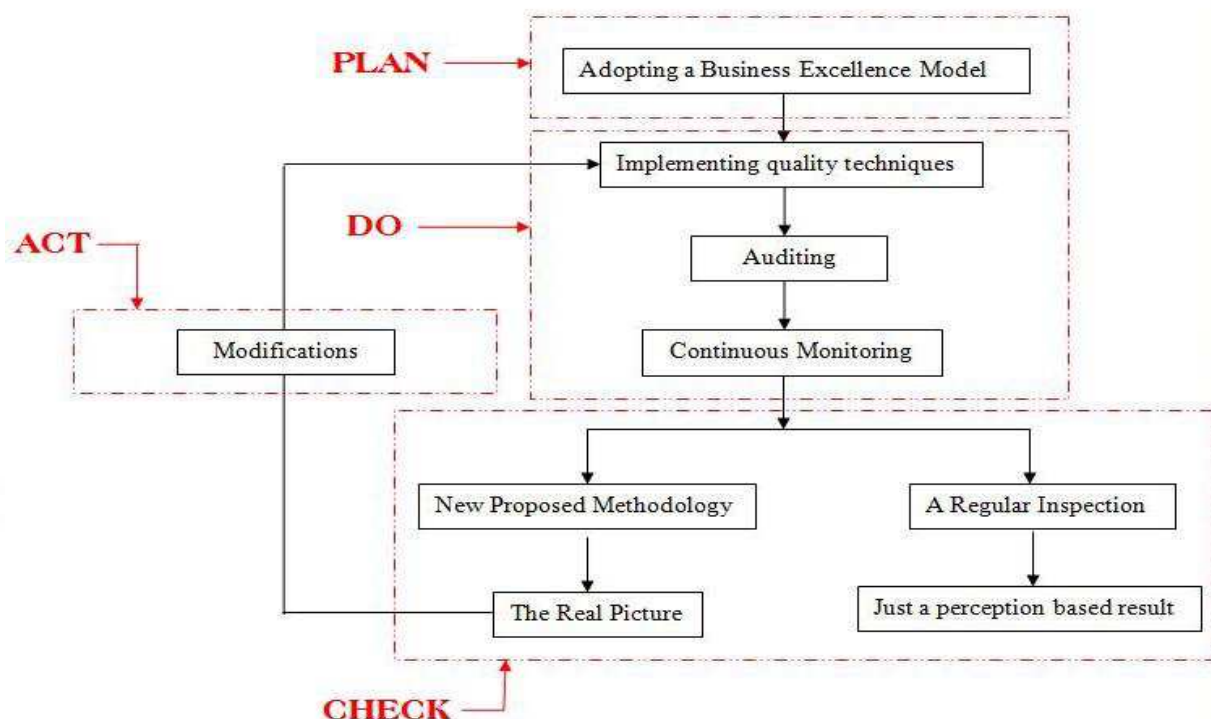
Questionnaires should be prepared with a more substantial basis. The reference line should be the same for all the respondents which will provide more accurate results. Instead of lengthy questionnaires, lesser number of questions may be included but the questions should have customized answers. Each of the answer should have a reference to it with which the respondent can relate to and mark accordingly.

THE NEW METHODOLOGY EXPLAINED

Multiple answers are allowed for this type of a questionnaire (sample given in table 3) and each box has a predefined weight-age. For example, for the question based on knowledge sharing if the organization has been trying to improve knowledge sharing through the use of Information Technology and if a respondent marks knowledge sharing through LAN Servers, then it is a positive sign for improvement. If majority of respondents mark training modules or interaction, then it means that even if knowledge sharing is prevalent, it is not through the desired channel. Moreover, it gives an indication to the firm to improve their modules and also organize more seminars for better interaction. Self Learning or No knowledge sharing would become a sign of concern for the firm, which represents that the maturity of the implemented model is not yet achieved. Similar analysis can be done using these types of options for the revised and re-designed questionnaire sample. It may be noted that though table 1 and table 3 primarily ask the same questions, much detailed information may be collected through table 3. Moreover as it asks objective questions, the possibility of perception ruling a choice is nullified.

A few questions can be included which should ideally elicit the same response. This will help in validating the authenticity of the data. If the respondent is filling up the questionnaire without reading, he'll be giving different responses to these basically same questions.

THE FLOW CHART DEPICTION OF THE PROCESS INTEGRATED WITH THE PDCA FLOW



CONCLUSIONS

The paper has demonstrated a unique, simple and easily executable methodology of using statistical tools to review any system based on a fixed business approach. The statistical tools used, thus can aid the reviewer with an overall analysis of the current standing of any organization based on its vision, mission and other strategic plans. It will also help in highlighting the key focus areas by providing regions where there are maximum opportunities for improvement alongside showing the dependencies of different parameters on the background information collected of the respondents.

Further in the case study segment of the paper two issues have been identified which drove the analysis in this paper.

Firstly, most of the companies adopting Business Excellence Models have a weak review system despite the fact that the methodologies implemented need to be rigorously evaluated to find out their actual worth to the organization.

Secondly, the prevalent method of analysing data through questionnaires is based on perception and hence a modification is needed here. This is one of the major draw-back with the current review system because each respondent has his/her own reference system. The data thus collected does not represent the actual system in an authenticated manner.

The paper meets these issues by pointing out the importance of quality checks and providing a methodology (and also suggests the modification in the methodology) for the review system. The methodology assigns a true value to the model implementation through questionnaires based on quantitative guidelines and not just on perception. This helps in arriving at a real standing of the company from where it can set its benchmark and work its way towards achieving Business Excellence. The best way of doing this is by taking feedback in the format as demonstrated in Table 3. Each respondent can select one or more than one of the given options and a pre-defined weight-age can be given to each of the option. This can further boost the analysis and its accuracy.

REFERENCES

1. Balvir Talwar, (2009) "Comparative study of core values of excellence models vis-à-vis human values", *Measuring Business Excellence*, Vol. 13 Iss: 4, pp.34 – 46
2. Jiju Antony, Mike Kaye, Andreas Frangou, (1998) "A strategic methodology to the use of advanced statistical quality improvement techniques", *The TQM Magazine*, Vol. 10 Iss: 3, pp.169 – 176
3. Miller, R G Jr, (1997) "Beyond ANOVA, basics of applied statistics", Chapman and Hall Publications
4. Mohamed Zairi, Yasar F. Jarrar "Versatility of the Business Excellence Model as a Generic Benchmarking Tool", *European Centre for Best Practise Management*, Research Paper: RP—ECBPM/0002
5. Rodney McAdam, Brian Bailie, (2002) "Business performance measures and alignment impact on strategy: The role of business improvement models", *International Journal of Operations & Production Management*, Vol. 22 Iss: 9, pp.972 – 996



STUDENT'S ATTITUDE TOWARDS APPLICATION OF STATISTICS: A STUDY OF UNIVERSITY OF JAMMU

ANJU THAPA
RESEARCH SCHOLAR
THE BUSINESS SCHOOL
UNIVERSITY OF JAMMU
JAMMU

ANKUSH BHARTI
RESEARCH SCHOLAR
DEPARTMENT OF STATISTICS
UNIVERSITY OF JAMMU
JAMMU

ABSTRACT

Today statistics has been widely employed in government, business, and all the different fields of sciences. With the emergence of science and technology the focus of the researchers is towards the applicability of the work to be done in their related fields. Statistics is not an exception; rather it is one of the most important analytical activities which have the wider applicability in all the fields. The present paper is an attempt to investigate the attitude of the post-graduate students of University of Jammu towards the use and application of statistics in their respective fields. A comparative study of the use of statistics has been done in different post-graduate departments having different disciplines.

KEYWORDS

Statistics, Science and Technology and Analytical activities.

INTRODUCTION

Today statistics has been widely employed in government, business, and all the different fields of sciences and technology. Statistical science is concerned with the planning of studies, especially with the design of randomized experiments and with the planning of surveys using random sampling. The history of statistics can be said to start around 1749 although, over time, there have been changes to the interpretation of what the word *statistics* means. In early times, the meaning was restricted to information about states. This was later extended to include all collections of information of all types, and later still it was extended to include the analysis and interpretation of such data. In modern terms, "statistics" means both sets of collected information, as in national accounts and temperature records, and analytical work which require statistical inference. A number of statistical concepts have an important impact on a wide range of sciences. These include the design of experiments and approaches to statistical inference such as Bayesian inference, each of which can be considered to have their own sequence in the development of the ideas underlying modern statistics.

Thus, Statistics is the mathematical science that involves the collection, analysis and interpretation of data. A number of specialties have evolved to apply statistical theory and methods to various disciplines. Statistics plays a vital role in every fields of human activity. Statistics has important role in determining the existing position of per capita income, unemployment, population growth rate, housing, schooling medical facilities etc. in a country. Now statistics holds a central position in almost every field like Industry, Commerce, Trade, Physics, Chemistry, Economics, Mathematics, Biology, Botany, Psychology, Astronomy etc., so application of statistics is very wide. The various disciplines where Statistics plays a significant role are: Actuarial science (discipline that applies mathematical and statistical methods to assess risk in the insurance and finance industries), Biostatistics (studies biological phenomena and observations by means of statistical analysis, and includes medical statistics), Business Analytics (developing business process that applies statistical methods to data sets to develop new insights and understanding of business performance & opportunities), Demography (statistical study of all populations), Econometrics (branch of economics that applies statistical methods to the empirical study of economic theories and relationships), Environmental statistics (application of statistical methods to environmental science. Weather, climate, air and water quality are included, as are studies of plant and animal populations), Epidemiology (study of factors affecting the health and illness of populations, and serves as the foundation and logic of interventions made in the interest of public health and preventive medicine), Geostatistics (branch of geography that deals with the analysis of data from disciplines such as petroleum geology, hydrogeology, hydrology, meteorology, oceanography, geochemistry, geography), Operations research (an interdisciplinary branch of applied mathematics and formal science that uses methods such as mathematical modeling, statistics, and algorithms to arrive at optimal or near optimal solutions to complex problems), Psychometrics (theory and technique of educational and psychological measurement of knowledge, abilities, attitudes, and personality traits), Quality control (reviews the factors involved in manufacturing and production; it can make use of statistical sampling of product items to aid decisions in process control or in accepting deliveries), Statistical mechanics (application of probability theory, which includes mathematical tools for dealing with large populations, to the field of mechanics, which is concerned with the motion of particles or objects when subjected to a force) etc.

Thus, it has been seen that the statistics has been used in different disciplines and different areas and the present paper is an extension to it and an attempt has been made to study the attitude of post-graduate students towards applicability of statistics in different fields. For this a study has been done on the use and application of statistics by students in different departments of the University of Jammu.

SCOPE OF THE STUDY

The focus of the study is to determine the attitude of students towards applicability of statistics in different disciplines. The study has been conducted in the University of Jammu, Jammu region of the state Jammu and Kashmir. The respondents of the research study comprise the students of the Post-Graduate department of Commerce and Education, University of Jammu, Jammu.

OBJECTIVES

The objectives of the study are as follows:

1. To study the attitude of Post-Graduate students towards application of Statistics of the select institution.
2. To compare the attitude of students towards application of Statistics on discipline basis.

REVIEW OF LITERATURE

An extensive literature has been done and it has been seen from the previous studies that the attitudes toward statistics are related to previous math experience (Brown and Brown, 1995; Schau, 2003), level of statistics course (Waters *et al.*, 1989) and previous statistics experience (Sutarso, 1992 cited in Mills, 2004) cited in Awan and Ullah (2011) research paper. The ultimate goal of statistics education is to produce individuals who appropriately use statistical thinking. Most college students take only one statistics course, the introductory course. This course, then, is where we, as statistics instructors, do or do not

motivate students to apply the statistics that they have learned in their jobs and in their lives (Schau, 2003). It has been found that about 61% of Augsburg students saw more value in statistics after their course than before; this difference was not statistically significant. These students had a statistically significant increase in their feeling of cognitive competence after their course even though they found it more difficult than expected (Schield and Schield, 2008).

Macnaughton (2004) argues that the primary goal of an introductory statistics course should be to give students "a lasting appreciation for the value of statistics." It has been also revealed from the study (Nooriafshar and Maraseni, 2004), that the perceptions of the university students, from two different parts of the world (University of Southern Queensland, Australia and Apex College, Kathmandu) when compared found that there were very minor differences in numbers to the perception between the two groups of students. Testing the statistical validity, has confirmed that there are no statistically significant differences in perceptions between two groups of students. Further analysis and investigation into the research findings of the high school students from two different parts of the world (Iran and Australia) and the university students' study has revealed that as the level of education goes higher the percentage of students regarding mathematics/statistics 'an enjoyable subject' with high practical and relevance to the future profession also increases. Secondly, as we move from the high school level towards the university level the more homogenous the perception between two counterparts (respective groups) of students becomes. Also, it has been found that regardless of country or cultural background students have a preference for visual features in learning.

Suanpang et. al. in the given study, showed that there is highly significant differences in students' attitudes towards learning statistics online and using a traditional approach. It has been also found that there is no significant difference between attitudes of students studying on campus and those studying by distance. In all four subscales the patterns shown from before to after, from online to traditional, were essentially the same for the distance students as for the campus-based students. Thus, based upon the existing literature, the present paper is an attempt to study the attitude of the post-graduate students of the University of Jammu, Jammu towards the application of Statistics in their respective fields. Also, a comparative study of students of different post-graduate departments of University of Jammu has been done.

RESEARCH METHODOLOGY

The present study has been conducted among the students of the Post-Graduate department of University of Jammu, Jammu region of the state Jammu and Kashmir. This sector has been chosen for the study, as it is one of the biggest service organizations which deal with the common people and frequently use statistics in their course curriculum. Also, this study will be helpful in evaluating the attitude of students of the select University towards applicability of Statistics in their respective fields. For the purpose of the given study primary as well as secondary data has been used. The Secondary data has been collected from various books, journals, published research papers and websites etc. The primary data has been collected by means of a standard questionnaire (Source: Awan, A.I. and Ullah, A. (2011), "Attitude of Students towards Statistics in Teacher Education Institutions". *International Journal of Academic Research*, Vol. 3. No. 6). Copies of the questionnaire were given personally to respondents in different Post-graduate departments of Commerce and Education, University of Jammu. The questionnaire contained a total of 28 items with 5-point Likert scale ranging from 1-strongly disagreed to 5-strongly agreed. The sample was randomly selected and 200 respondents were personally collected to give their responses.

DATA ANALYSIS AND INTERPRETATION

The study deals with the analysis of the attitude of students towards the application of statistics and makes comparison between different post-graduate students in terms of their discipline. The data collected from the respondents has been first subjected to simple percentage method and mean score method has been used in order to know the attitude of students towards the application of statistics in the select university.

DEMOGRAPHIC PROFILE

For studying about the demographic profile of the students, simple percentage method has been used. A total of 200 respondents were randomly selected, 100 from each department i.e. Commerce and Education. The result shows that more than half of the respondents are females (52%) and males (48%). In terms of age majority of respondents (71%) are between 20-22 years, 18% are between 22-25 years and 11% students have their age above 25 years. More than half (57.1%) of the students are graduate, 25.7% are under graduate and 11.4% are post-graduate. It has been also found that 35% respondents have their family income above Rs.35,000 per month, 52.6% have family income ranging Rs. 15,000 to 25,000 and 12.4% family income below Rs. 15,000 per month.

AFFECT

The factor *Affect* has 6 items measuring positive and negative feeling concerning statistics. This section deals with the items which show that how students felt about statistics, enjoyed the course, or were stressed by and scared of statistics.

TABLE 1- AFFECT

	Affect	Commerce	Education
1.	I like statistics	3.57	3.13
2.	Feel insecure to do statistics problems	2.90	3.93
3.	Frustrated over using statistics tests	3.07	3.20
4.	Under stress during statistic class	3.00	3.17
5.	Enjoy taking statistics courses	4.23	3.40
6.	Afraid of learning statistics	2.83	3.13

Table-1 given above shows the factor *Affect* among the Commerce and Education discipline students. The table consisted of six items on which mean scores were calculated for comparing the attitude of students of Commerce and Education discipline. As revealed by the table, the Commerce students enjoy taking statistics courses (4.23) has maximum mean score followed by I like statistics (3.57), Frustrated over using statistics tests (3.07), Under stress during statistic class (3.00), Feel insecure to do statistics problems (2.90) and Afraid of learning statistics (2.83) has minimum mean score. While the students of Education stream, Feel insecure to do statistics problems (3.93) has maximum mean followed by Enjoy taking statistics courses (3.40), Frustrated over using statistics tests (3.20), Under stress during statistic class (3.17) and both the items, I like statistics and Afraid of learning statistics (3.13) has same mean score. Since, the item no. 2,3,4 and 6 are negative statements, the lower mean scores in case of commerce students than education students shows that the commerce students has comparatively positive attitude towards use and application of statistics.

COGNITIVE COMPETENCE

The factor *Cognitive Competence* has 6 items measuring attitudes about intellectual knowledge and skills when applied to statistics. Cognitive Competence has been associated with their understanding of statistics, their methods of learning such as solving equations, skill in problem solving and ability to learn.

TABLE 2- COGNITIVE COMPETENCE

	Cognitive Competence	Commerce	Education
7.	Trouble in understanding statistics	3.19	3.20
8.	No idea of what's going on in statistics	2.17	3.07
9.	Makes lot of math errors in statistics	3.50	3.50
10.	I can learn statistics	3.93	3.50
11.	I understand statistics equations	3.87	3.60
12.	Find difficult to understand statistics concepts	3.17	3.20

Table-2 given above shows the *Cognitive Competence* among the students of Commerce and Education discipline. The table consisted of six items on which mean scores were calculated for comparing the attitude of students of Commerce and Education discipline. As revealed by the table, I can learn statistics (3.93) maximum mean score followed by I understand statistics equations (3.87), Makes lot of math errors in statistics (3.50), Trouble in understanding statistics (3.19),

Find difficult to understand statistics concepts (3.17), and least in case of the item no idea of what's going on in statistics (2.17). While the students of Education stream, I understand statistics equations (3.60), Makes lot of math errors in statistics and I can learn statistics has same mean scores (3.50), followed by Trouble in understanding statistics and Find difficult to understand statistics concepts (3.20) and No idea of what's going on in statistics (3.07). Since, the item no. 7,8,9 and 12 are negative statements, the lower mean scores in case of commerce students than education students shows that the commerce students has comparatively positive attitude towards use and application of statistics.

VALUE

The factor *Value* has 9 items measuring attitudes about the use, relevance and worth of statistics in personal and professional life. *Value* was associated with the importance of statistics that related to their daily life, future work, and professional job.

TABLE 3-VALUE

	Value	Commerce	Education
13.	Statistics is worthless	2.63	2.80
14.	Statistics as a part of my professional training	4.00	3.03
15.	Statistical skills will be more employable	3.30	3.00
16.	Statistics is not useful to the typical professional	2.37	3.33
17.	Statistical thinking is not applicable outside job	2.33	2.77
18.	Use statistics in everyday life	3.37	2.90
19.	Statistics conclusions are rarely presented	3.67	3.80
20.	No application for statistics in my profession	2.40	2.80
21.	Statistics is irrelevant in my life	1.53	3.00

Table-3 given above shows the Value of statistics among the students of Commerce and Education discipline. The table consisted of nine items on which mean scores were calculated for comparing the attitude of students of Commerce and Education discipline. As revealed by the table, Statistics as a part of my professional training (4.00) has maximum mean score followed by Statistics conclusions are rarely presented (3.67), Use statistics in everyday life (3.37), Statistical skills will be more employable (3.30), Statistics is worthless (2.63), No application for statistics in my profession (2.40), Statistics is not useful to the typical professional (2.37), Statistical thinking is not applicable outside job (2.33) and Statistics is irrelevant in my life (1.53). While the students of Education stream, Statistics is not useful to the typical professional (3.33) has maximum mean score, Statistics as a part of my professional training (3.03), Statistical skills will be more employable and Statistics is irrelevant in my life (3.00), Use statistics in everyday life (2.90), Statistics is worthless, Statistics conclusions are rarely presented and No application for statistics in my profession (2.80) has same mean scores, followed by Statistical thinking is not applicable outside job (2.77) has least mean score. Since, the item no. 13,16,17, 19, 20 and 21 are negative statements, the lower mean scores in case of Commerce students than education students shows that the Commerce students has comparatively positive attitude towards use and application of statistics.

EASINESS

The factor *Easiness* had 7 items measuring attitudes about the ease or difficulty of the statistics subject. *Easiness* measured how easy they found it to study and learn statistics and to apply the results of their studies to computation skills, and ways of thinking in statistics.

TABLE 4- EASINESS

	Easiness	Commerce	Education
22.	Statistics formulas are easy to understand	3.57	3.30
23.	Statistics is a complicated subject	3.31	3.47
24.	Statistics is quickly learned by most people	3.35	3.12
25.	Learning requires a great deal of discipline	3.18	3.20
26.	Statistics involves massive computations	3.45	3.60
27.	Statistics is highly technical	3.23	3.30
28.	Learn a new way of thinking to do statistics	3.50	2.93

Table-4 given above shows the Easiness among the students of Commerce and Education discipline. The table consisted of seven items on which mean scores were calculated for comparing the attitude of students of Commerce and Education discipline. As revealed by the table, Statistics formulas are easy to understand (3.57) has maximum mean score followed by Learn a new way of thinking to do statistics (3.50), Statistics involves massive computations (3.45), Statistics is quickly learned by most people (3.35), Statistics is a complicated subject (3.31), Statistics is highly technical (3.23), and Learning requires a great deal of discipline (3.18) has least mean scores. While the students of Education stream, Statistics involves massive computations (3.60) has maximum mean score followed by Statistics is a complicated subject (3.47), Statistics formulas are easy to understand and Statistics is highly technical (3.30), followed by Learning requires a great deal of discipline (3.20), Statistics is quickly learned by most people (3.12) and Learn a new way of thinking to do statistics (2.93) has minimum mean score. Since, the item no. 23,25,26, 27 and 28 are negative statements, the lower mean scores in case of Commerce students than education students again shows that the commerce students has comparatively positive attitude towards use and application of statistics.

CONCLUSION

Thus, it can be concluded that the use and applicability of the statistics has been widely employed in different fields including Commerce and Education as in the present scenario. The present paper investigated that the post-graduate students of University of Jammu exhibits positive attitude towards the use and application of statistics in their respective fields. It has been found that all the four factors *Affect*, *Cognitive competence*, *Value* and *Easiness* has positive attitude towards use of statistics. A comparative study of the use of statistics in commerce and education department has been done which shows that the commerce students feel comparatively more at ease, they value the worthiness of subject, understand easily and shows positive attitude towards use and application of statistics in their respective field.

REFERENCES

1. Awan, A.I. and Ullah, A. (2011), "Attitude of Students towards Statistics in Teacher Education Institutions". *International journal of academic research*. Vol. 3. No. 6.
2. Brown, M. and Ralph, S. (1996), "Barriers to women managers' advancement in education in Uganda", *International Journal of Educational Management*, Vol. 10 No. 6, pp. 18-23.
3. Macnaughton, D. (2004). The introductory statistics course: The entity-property approach
4. Nooriafshar M., Maraseni T.N. (2004), "A Comparison of Learning Preferences and Perceptions of Students for Statistics Concepts and Techniques", *University of Southern Queensland, Toowoomba, Australia*.
5. Schau, C. (2003). Students' attitudes: The "other" Important outcome in statistics education. *2003 ASA Proceedings: Papers presented at the American Statistical Association Joins statistical Meetings*. Alexandria, VA: American Statistical Association, Section on Statistical Education, [CD-ROM] pp. 3673 - 3681.
6. Schield, M. and Schield, C. (2008), Student Attitudes toward Statistics at Augsburg College. *Section on Statistical Education – JSM 2008*, pp. 2150-2157
7. Suanpang, P., Petocz, P. and Kalceff, W. Student Attitudes To Learning Business Statistics Online Vs Traditional Methods

REQUEST FOR FEEDBACK

Dear Readers

At the very outset, International Journal of Research in Commerce, IT and Management (IJRCM) acknowledges & appreciates your efforts in showing interest in our present issue under your kind perusal.

I would like to request you to supply your critical comments and suggestions about the material published in this issue as well as on the journal as a whole, on our E-mails i.e. **infoijrcm@gmail.com** or **info@ijrcm.org.in** for further improvements in the interest of research.

If you have any queries please feel free to contact us on our E-mail infoijrcm@gmail.com.

I am sure that your feedback and deliberations would make future issues better – a result of our joint effort.

Looking forward an appropriate consideration.

With sincere regards

Thanking you profoundly

Academically yours

Sd/-

Co-ordinator

ABOUT THE JOURNAL

In this age of Commerce, Economics, Computer, I.T. & Management and cut throat competition, a group of intellectuals felt the need to have some platform, where young and budding managers and academicians could express their views and discuss the problems among their peers. This journal was conceived with this noble intention in view. This journal has been introduced to give an opportunity for expressing refined and innovative ideas in this field. It is our humble endeavour to provide a springboard to the upcoming specialists and give a chance to know about the latest in the sphere of research and knowledge. We have taken a small step and we hope that with the active co-operation of like-minded scholars, we shall be able to serve the society with our humble efforts.

Our Other Journals

