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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.

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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, crystal clear, 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.

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

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EFFICIENCY AND PERFORMANCE OF e-LEARNING PROJECTS IN INDIA

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ABSTRACT

e-learning means providing education and learning with the help of electronic devices like computer and internet. It has changed the whole concept of the learning process that is why; its popularity is growing quite fast. In fact, e-learning is a very interactive and creative way of learning.it is very useful in developing countries like India where education is the most important area of concern for its development. Government has taken many initiatives in e-learning project in last few years to upgrade education system in the country. The International known projects like National Programme on Technology Enhanced Learning (NPTEL), National Mission on Education through ICT, National Knowledge Network, Sakshat Portal, e-Gyankosh, Pan Africa e-network project etc. has done credible work for the promotion and Development of e-learning. In this article researcher has tried to find out the efficiency and performance of these e-learning projects in India.

KEYWORDS

e-learning, e-learning projects,NPTEL,Sakshat portal ,India.

INTRODUCTION

e-learning is a teacher-less delivery mode of concept and a modern aspects of Information Communication and Technology (ICT), has the full potential to substitute traditional mode of learning. e-Learning is a cost-effective solution and comprises Voice-conferencing, Video-conferencing, Video-streaming, Virtual classroom, Virtual laboratories. It is the good option to bridge the digital gap.

E-Learning (or electronic learning) constitutes all forms of knowledge transfer including web-based learning, computer-based learning, virtual education opportunities and digital collaboration. It essentially relates to the computer and network-enabled transfer of skills and knowledge. Today e-Learning has integrated into every sphere where knowledge transfer is existent, be it in elementary schools, high schools, colleges, companies and more.

Experts claim that e-Learning medium is 'on a roll' due to the numerous benefits such as speed of delivery, increasing accessibility of learning, generating user specific content, reducing cost of learning and increasing flexibility. As, internet access grows across the globe, new users of e-Learning join the bandwagon with hefty investments into the e-tools of knowledge.

Now days government is also taking initiative in e-learning project to improve education level in the country. There are private companies and universities who are running e-learning projects for the betterment of the students. Universities are introducing distance courses through online classes to spread education to each and every corner of the country. Students are motivated to enroll in such kind of courses due to flexibility of the time and place. Young generation who is tech-savy is taking good advantage of these kind of projects for their knowledge enhancement.

WORLD FAME E-LEARNING PROJECTS

The International known projects like National Programme on Technology Enhanced Learning (NPTEL), National Mission on Education through ICT, National Knowledge Network, Sakshat Portal, e-Gyankosh, Pan Africa e-network project etc. has done credible work for the promotion and Development of e-learning. These all are the world famous projects in the   area of e-learning.

E-LEARNING INITIATIVES

 Sakshat Portal is the initiative of Ministry of Human Resource and Development(HRD), developed and designed by IGNOU and a repository of e-books, e-journals and digital repository **e-Gyankosh** is the digital repository of e-learning material, developed by IGNOU.

NPTL

NPTEL (National Programme on Technology Enhanced Learning) was conceived in 1999 and funded by MHRD (Ministry of Human Resource and Development). Under the project, 7 IITs (Indian Institutes of Technology) and IISc (Indian Institute of Science) Bangalore, worked on the Rs 20.5 crore project from 2003 to 2006, to create 112 video courses and 116 web courses. All these courses are on undergraduate engineering topics, and made to meet most of the requirements of an engineering undergraduate program (at any Indian university). These courses are available to students, working professionals and colleges (both government-aided and private) at virtually no cost or very low cost.

AMRITA VISHWA VIDYAPEETHAM-- This initiative launched in 2004 uses satellite technology to connect 4 campuses of Amrita University located in 4 cities of South India. There is collaboration with US universities also, and the project was expected to expand to 200 universities. It was based on technological support from ISRO.

BITS PILANI-- It has established a virtual university, with DIT sponsorship. BITS has been one of the pioneers in distance education. BITS has been providing courses for working professionals in distance education mode leveraging technology.

JADAVPUR UNIVERSITY-- It started a new inter-disciplinary Masters in Multimedia Development course in 2000-01, as a distance education course using print material, CD ROM, and web-based learning environment. Technology was provided by CDAC Kolkata and CMC.

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ALIGARH MUSLIM UNIVERSITY-- It worked on a project in 2006-07 to take its distance education program online, starting with a few courses which are industry-relevant.

CENTRAL INSTITUTE OF ENGLISH AND FOREIGN LANGUAGE-

Hyderabad It had a project for online learning software set-up and usage in 2006.

EXECUTIVE MBA PROGRAMS -

Another commercially successful initiative is MBA Programs being conducted for Working Professionals using Satellite Video technology, by institutions like IIM-Calcutta, IIM-Calicut, IIT-Delhi, IIFT, IIT Bombay, XLRI etc. This was done by these institutions using services provided by companies like HughesNet (formerly Hughes Direcway), Reliance Infocom and now NIIT Imperia.

Many other universities and colleges had had small projects/ initiatives where they bought software/hardware and other technology products, got content development done for e-Learning launch. It included the likes of Hyderabad University, Kerala University, Terna College Mumbai, MDI Gurgaon, etc.

In India, the University of Madras opened a Virtual University in partnership with University of Mumbai and University of Calcutta. This Virtual University system has led to the commencement of 10 joint degrees, post graduate and Ph.D programmes.

EDUCOMP –

Educomp Online is a comprehensive one-stop portal catering to the educational requirements of K-12 students, teachers and schools. It provides a host of teaching and learning solutions that includes rich media digital learning materials such as video tutorials and assessments to help students comprehend and internalize abstract learning concepts.

Educomp Online is a virtual school for Educomp smartclass schools. A portal for students, teachers, parents and schools, it provides the smartclass schools with a 360 degree learning experience.

Educomp works closely with schools to implement innovative models to create and deliver content to enhance student learning. Educomp's long undiluted focus on K-12, curriculum design and teacher education space in developing applications and products has revolutionized the learning process in India.

MAJOR PLAYERS IN THE INDIAN E-LEARNING MARKET

E-learning has attained a tremendous growth since 2000 and it has always continued to attract companies to enter the market. Some e-learning companies focus on diversified target segments and a few players focus on a specific e-learning sector.

The following is a list of some prominent e-learning companies in India.

- **NIIT TECHNOLOGIES** was set up in 1981 to provide training solutions for IT industry and now it has clients across 40 countries. This company is a pioneer in Indian e-learning industry and provides specialized learning solutions for corporations, government sectors, colleges, schools, and individuals. NIIT acquired ElementK, a leading US-based e-learning company, which provides a tailored catalogue of courses to corporate clients across the globe.

- **IBM INDIA** has a well established Learning Development division and has thousands of e-learning experts located in 55 countries across this globe. In India, they have-learning development centers at Delhi, Kolkata, Mumbai, Chennai, Bangalore, Pune, Gurgaon, Noida, and Hyderabad. IBM has also setup a **Knowledge factory** at its Bangalore location to analyze the external and internal training requirements and provide innovative-learning solutions.

- **TATA INTERACTIVE SYSTEMS (TIS)** is part of the Tata Group and was started in the year 1990. This company had a steady growth over years and has around 600 multi-disciplinary specialists today across the globe. With 19 years of experience, this company has established its presence worldwide and has developed e-learning content across 1500 projects to cater corporate, education, and government sectors.

- **SKILLSOFT** is an Ireland based leading provider of e-learning products and has a center established at Bangalore. SkillSoft's *Books24x7* is one of the largest online, on-demand book resources with more than 20,000 titles. It provides on-demand e-learning and performance support solutions to global destinations and local Indian clients in key cities of India, such as Mumbai, Bangalore, Delhi, and Hyderabad.

- **SIFY E-LEARNING** was formed in December 2000 and in India it has office locations at Chennai, Delhi, Mumbai, and Bangalore. With eight years of experience in this domain, Sify e-learning has developed over 5000 hours training so far and it focuses more on the corporate sector.

- **LIONBRIDGE INDIA** has set up development centers at Mumbai and Chennai, and employs highly skilled engineering and content development teams. Apart from e-learning services, this company also provides translation and localization services. This company has opened a translation institute in India, **Aksharmala**, to provide professional translation services for Indic languages.

- **EDUCOMP SOLUTIONS** was incorporated in September 1994. This Delhi-based education company is the largest provider of technology education and learning services for the K-12 market in India. It serves approximately eight million students worldwide and employs around 4000 employees. It also provides online tutoring services since 2005.

- **TUTORVISTA** was founded in 2005 at Bangalore. This company provides 24x7 personalized online tutoring services to students from K12 to graduate level across the globe. It has around 1500+ online tutors from various cities in India.

- **GURUKULONLINE** headquarted in Mumbai is one of the largest providers of online library courses and over the years has developed around 5000 hours of learning content across 16 industry domains.

- **HARBINGER KNOWLEDGE PRODUCTS** is a part of Harbinger Group and serves customers across 45 countries, including India. This company has its corporate headquarters at Pune, and also has units established in Mumbai and US locations.

Apart from these major players, there are several smaller companies in this segment, which play a powerful role in developing innovative e-learning solutions to the domestic and international market.

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COMPARATIVE ANALYSIS OF E-LEARNING PROJECTS

S. NO	Projects	Initiated or Managed by	Project started	Mode of teaching	Courses covered	Beneficiaries
1.	SAKSHT PORTAL	MHRD	2007	Online	e-books, e-journals digital repository	Undergraduate and post graduate students
2.	NPTEL	MHRD	1999	Audio and video classes	Engineering and science	Engineering colleges
3	**e-Gyankosh**	IGNOU		Online study material	Digital repository	All graduate and undergraduate courses
4	Amrita Vishwa Vidyapeetham-	Amrita university	2004	Satellite technology	Graduate and post graduate courses	Graduate or post graduate stuients
5.	Virtual university	BITS Pillani		Web base technology	Technology courses	Working professionals
6.	Masters in Multimedia Development course	**Jadavpur University**	2000-01	Web base technology	Multimedia courses for distance learning	Multimedia professionals
7.	Online courses	**Aligarh Muslim University**	2006-2007	Online classes	Industry relevant courses	Industry people
8	Online learning software	**Central Institute of English and Foreign Language**, Hyderabad	2006	Online learning software	language courses	Graduate and post graduate students
9	Executive MBA	**IIMs,IITs XLRI**	1998-99	Online classes	Management courses	Industry executives
10.	Educomp	**Educomp solutions**	1994-95	CD-ROM online study material	School courses	School students upto 12th class

OUTCOME OF THE STUDY

According to the above comparative study we find that all the e-learning project or initiative taken till date are giving benefit to mostly graduate or post graduate students. These projects are very successful and give extra knowledge to the students for their higher education and knowledge enhancement. Major advantage is flexibility of all the e-learning projects , students can access these sites 24X7 , anywhere according to their convenience. Government is also taking good initiative in e-learning projects like Sakshat, NPTEL projects are initiated by MHRDc(Ministry of Human Resource and Development). Reputed institutes of country like IIM's and IIT's are also working on E-learning projects to spread knowledge and success of almost all the projects shows the use of e-learning. MBA from IIMs, BITS Pillani virtual university, NPTEL are some of the projects useful for science or management students. These initiatives are more beneficial for distance teaching students who are not able to attend the classes in campus but still getting equally good quality lectures or study materials through e-learning technology.

International e-learning initiative taken at the government level, IGNOU, India's largest Open University, has announced the details of the virtual university for Africa after the Indian Prime Minister Manmohan Singh promised such an institution in May, 2011, at a summit in Addis Ababa, Ethiopia. The Pan-African E-learning Network of IGNOU will be devised as a robust e-learning network that will go a long way in alleviating the needs of African nations.

All the above e-learning projects and initiatives are successful and knowledge empowering, hence proves that how beneficial e-learning is in this knowledge era. Developing country like India can spread the education effectively to each and every corner of the country using e-learning technologies and projects.

CONCLUSION

In the above study the outcome is success of all the e-learning projects and initiatives that proves the quality education is given easily using e-learning technologies. Most of the initiatives are taken for graduate or post graduate level only few project like Educomp smart classes is useful for school students. Educomp smart classes give more clarity of subject through videos and animation. Students can easily correlate the topics with videos and take interest in subjects. It is installed in many schools in Delhi and NCR.

The above study shows that mostly e-learning project are giving benefits to only 40% of the country's population who are living in urban areas and are studying at graduate or post graduate level only. We should not forget that our 60% of the country population is still living in villages and are deprived from school education. If we really wants our country to grow we must develop some mechanism of e-learning that work for low income strata schools because knowledge is a power and country can only grow if most of the population is educated.

In the research "**Scope and challenges of e-learning in Rural areas of Haryana** " researcher has also given their recommendations which show that there is a need to work in the direction to primary education level, specially low income strata schools where actual problem lies.

The rural population of India is around 12.2% of the world's population and development of the rural sector and people living in rural areas is essential in the transformation of 'developing India into developed India'. E-learning technologies will definitely help in to attain the MDG (Millennium Development Goals) in rural India.

In the coming days, the e-learning would become easier. As the computers would be priced low and access to internet will be available easily, even in rural areas in India. So, when all the resources would be available the system of e-learning would excel. There will be a further improvement in the online Indian education system. Technology really has touched the lives of human beings by lending a comfort by making everything so easy. E-learning in India has already made its base and is now looking forward to rise outstandingly.

SCOPE OF THE STUDY

The above study shows the benefit of e-learning in higher education. All the e-learning initiatives are focusing more and more on graduate or postgraduate students but if we see World Bank statistics found that fewer than 40 percent of adolescents in India attend secondary schools.

The Economist reports that half of 10-year-old rural children could not read at a basic level, over 60% were unable to do division, and half dropped out by the age 14.So if we analyze then we come to know that till date mostly initiatives of e-learning were taken for higher education but e-learning at primary education level is still on its nascent stage. So according to researcher, the work should be done in direction to low strata income group schools where actual problems lie. People studying in these schools are not getting proper education and their ratio is more in the society. So we must try to find e-learning solution which helps in giving quality education to these schools. The problem should be treated at the root level to gain and establish an educated society. Only educated population will build develop strong nation and e-learning will be definitely helpful in achieving quality education in schools. The following research is showing the need of e-learning in schools.

'SCOPE AND CHALLENGES OF E-LEARNING IN RURAL AREAS OF HARYANA'

This study was done in 2006 by Ajai Pal Sharma Assistant Professor, Tecnia Institute of Advance Studies, Delhi. In this study researcher covered Humanities and science & technology programmes of MD University, Kurukshetra University and Guru Jambheshwer University of Haryana. This study concludes that "it was

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difficult for the subjects to decide the clear cut superiority regarding the effectiveness of 'Traditional Classroom' or 'Virtual Classroom'. E-learning will continue to become more thoroughly integrated into the preK-12 market. E-learning will enable schools to offer more classes to their students, make learning more flexible to meet individual's needs and help schools meet the requirements of No Child Left Behind. While the data is still being collected on the success of e-learning, proactive schools will prepare for the future by investing in the technology and teacher training necessary to develop and implement e-learning."

The above study indicate that although e-learning is very popular and effective in higher study but it is more needed at the primary level or school level to increase the education level of the country.

Recommendations in regards to e-learning from The National Education Technology Plan for states and schools districts include:

- Provide every student with access to e-learning
- Enable every teacher to participate in e-learning training
- Encourage the use of e-learning options to meet No Child Left Behind requirements for highly qualified teacher, supplemental services and parental choice.
- Explore creative ways to fund e-learning opportunities.
- Develop quality measures and accreditation standards for e-learning that mirror those required for course credit.

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AN ADAPTIVE DECISION SUPPORT SYSTEM FOR PRODUCTION PLANNING: A CASE OF CD REPLICATOR

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ABSTRACT

Latest advances in information and computer technology and production planning methods as well as improvements in development of user-friendly interfaces have led to considerable growth in the development and application of Decision Support Systems (DSS) for production planning. This study provides an example of the development and implementation of an adaptive DSS for management of production planning for a manufacturing company -ShimaFilm. The system provides an optimized real-time production plan based on new and existing orders, priorities, availability of production lines and available raw material. The system includes Customer Prioritizing (CP), Human Resource Management (HRM), Inventory Replenishment (IR), and Preventive Maintenance (PM) subsystems.

KEYWORDS

Adaptive decision support system, Information systems, Procurement planning, Production planning.

INTRODUCTION

owadays, organizations are facing globalization of markets, the ever-changing vigorous customer preferences and dynamic spirit of markets; which forces Top Management Team (TMT) of organizations make decisions besides managing the resources, (Clark et al., 1991, Davila et al., 2006). One of the most critical decisions that an industrial unit manager should make relates to production planning. However, always there are some uncertainties beyond the production process, in particular, uncertainties in demand and supply. Many researches strive for formalizing the uncertainty in production systems (Yano and Lee, 1995, Sethi et al., 2002).

Production planning in manufacturing firms includes several aspects, at different organizational levels, for example decisions on production and inventory quantities, resource acquisition, and sequencing the products. As a result, different and often contrasting objectives can be pursued; also, several limitations may need to be considered. In this complex context, TMT should make not only accurate but also swift decisions; which is not a straightforward task. In order to address this looming problem, a decision maker needs a system that can support him in different problem situations (Chuang and Yadav, 1998). Massive development in information and communication technology intensifies the approach to using computer systems to support decision-making.

Decision Support Systems (DSS) are computer-based systems designed to enhance the effectiveness of decision makers in performing semi-structured problems; tasks that the decision maker is uncertain about the nature of the problem or opportunity, the alternative solutions and the criteria or value for making a choice. Hence, the primary role of a DSS is to aid the judgment processes as the decision maker challenges inadequately defined problems (Alavi and Napier, 1984).

The nature of the production planning process is closely related to the type of manufacturing (Gelders and Van Wassenhove, 1981). In this research, we addressed tactical production planning and scheduling issues in a manufacturing company, which produces, replicated CDs and DVDs as well as developed DSS specifically for their use.

Section 2 summarizes the related literature and section 3 synthetically describes the addressed problem including product type and demand structure, production facility and planning the production lines. Section 4 describes the proposed approach. Section 5 is about developed ADSS. Final remarks and possible future developments are mentioned in Section 6.

BACKGROUND

This section reviews related literature to the subject of design and development decision support systems based on previous researches.

Gorry and Morton coined the phrase 'DSS' in 1971(Gorry and Morton, 1971). As a general definition, DSS is a system providing both problem-solving and communications capabilities for semi-structured problems (McLeod Jr and Schell, 2001). But while speaking in a precise and professional world, DSS is a system that supports a single manager or a relatively small group of managers working as a problem-solving team in the solution of a semi-structured problem by providing information or making suggestions concerning specific decisions (McLeod Jr and Schell, 2001). Based on studies of Keen and Morton (1978) a DSS may have three different objectives: (1) assist in solving semi-structured problems, (2) support, not replace, the manager, and (3) contribute to decision effectiveness, rather than efficiency. Power (2008) defined DSS as an interactive computer-based system intended to help managers make decisions; a DSS helps a manager to retrieve, summarize and analyze decisions relevant data.

DSS is a software package based on mathematical programming models defined and solved within a user customizable decision framework (Caricato and Grieco, 2009). According to Finlay (1994), a DSS is simply a computer-based system that aids the process of decision making. Turban presented another definition; an interactive, flexible and adaptable computer-based information system, especially developed for supporting the solution of a non-structured management problem for improved decision-making. It utilizes data, provides an easy-to-use interface and allows for the decision-makers' own insights (Turban, 1993).

A general notion about a DSS is that it is an interactive computerized system consisting of three major components: a dialog subsystem, a database subsystem, and a model base subsystem (Watson and Sprague Jr, 1993); or, an interface subsystem, a knowledge subsystem, and a problem processing subsystem (Bonczek et al., 1981, Holsapple et al., 1996). With the knowledge and other capabilities embodied in these components, a DSS is intended to help a decision maker interactively solve managerial decision problems (Chuang and Yadav, 1998). The three-component architecture is capable of managing data; fitting data into models; and providing methods to reach decisions (Angehrn and Jelassi, 1994). By manipulating models and data, the decision maker is able to examine various scenarios and their consequences. The user interface component, which may be individually tailored to the user's preferences and expertise, lends itself to being

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a friendly and effective communication facility. The three components, as a whole, contribute to the quality of decisions that are taken by a decision maker (Chuang and Yadav, 1998).

With the advent of Artificial Intelligence (AI) and expert system (ES) techniques, it has been broadly recognized that it is possible to empower a DSS by incorporating these techniques into the system (Angehrn and Jelassi, 1994, Chuang and Yadav, 1998, Finlay and Martin, 1989, Henderson, 1987, Holsapple and Whinston, 1985, Holsapple et al., 1996, Keen, 1987, Liang, 1993, Radermacher, 1994, Turban and Watkins, 1986). Such techniques can be incorporated into each component of the DSS (Holsapple et al., 1993, Turban and Watkins, 1986), and, accordingly, the performance of that strengthened component can be improved (Chuang and Yadav, 1998).

To deal with the ever-growing need of ventures for managing worldwide spread activities, various decision support techniques have been developed over last decade (Caricato and Grieco, 2009). Mathematical programming techniques in general and linear programming in particular have been widely used for production planning issues since the 1960s (e.g. van de Panne, 1965). However, since those early years, researchers suggest that managing the whole production as a huge single problem is not an efficient solution to realize effective decision support systems; and some more complex models such as the ones described in (Pochet and Wolsey, 2006) created. For instance, in (Anthony and Administration, 1965), the problem was already divided into three different levels: strategic planning, management control and operations control. A thorough analysis of planning and scheduling applications as applied in both manufacturing and services industries can be found in (Pinedo, 2009).

The term Adaptive Decision Support System (ADSS) was coined by Holsapple et al. (1993) to represent a category of decision support systems capable of self-teaching, which is accomplished by equipping systems with unsupervised inductive learning methods. One distinguishing feature of the systems in this category is that they are able to generate a better solution to a problem by gradually refining an initial solution (Holsapple et al., 1993). One distinguishing feature of the systems in this category is that they are able to generate a better explanation to a problem by gradually refining an initial solution (Holsapple et al., 1993). Also adaptiveness must be understood from the user's point of view: an adaptive DSS enables the user to build an information environment based on his needs (Deutsch and Metelka, 2008).

THE PROBLEM

ShimaFilm Company was established in 1994 in Iran, which is known as the first Iranian VHS cassette producer. Then the company was expanded and started to produce replicated Compact Discs (CD) by the end of 1999 and Digital Video Discs (DVD) in 2003. Today, by initiating an audio and video recording studio, photography and designing atelier, and distribution channel, the company is one of the largest digital media producers in the region.

The production of CD and DVD takes place in four different stages with dissimilar production speeds (Figure 1). Orders differ by number and some orders should deliver at precise time (for example at least one day before first day of an exhibition). When a potential order comes, the marketing manager does not know exactly what time it can be delivered. In addition, the production manager does not know which production line should product, which order to do not delay the customer order. We present a decision support system (DSS) being developed to provide managers with an effective tool for this task.

FIGURE 1: SHIMAFILM COMPANY PRODUCTION SYSTEM
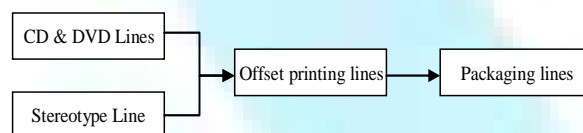
Product type and demand structure

The company offers two main kinds of productions, CDs and DVDs. Demand is specified in terms of kind (CD or DVD), quantity, printing (four or 5-color printing) and packaging (bulk, wallet and frame). In addition, the company has a costumer ranking system, so the priorities of orders differ. The customers are classified according to four criteria, which include loyalty, agreed price they can pay, their order size and their limitation in time. This classification leads to different priorities in production orders (normal, high and top priority), so the system changes its parameters and adapts itself related to background of each costumer.

The nature of products of this company is that it cannot be produced before finalizing the order and it cannot be stored. Because of the considerable variation in demand, the company management faces different decision-making problems.

Production facility

The production facility consists of six CD lines, seven DVD lines, one stereotype line, four offset printing and three packaging lines, each with its own capacity and production rate. Each line can be run on 1, 2 or 3 shifts operating mode depending on demand and raw material availability levels. The production rate will vary based on the operating mode.

The production is made of one primary type of raw material supplied by three major vendors. As it happens to raw material, the more expensive the quicker it can be supplied.

Planning the production lines

In producing these products, the company faces several decisions in order to take the advantage of the various planning trade-offs. Such decision involves: (1) prioritizing the orders, (2) timing and amount of production of each line in every stage, (3) raw material availability versus cost and (4) the best time for preventive maintenance.

On the other hand, the most important question each customer needs to know is that "what time, exactly, the order is ready?" The delay in delivery of orders leads to customer dissatisfaction so delivering the orders on time is the critical success factor and their core competency of ShimaFilm Company.

THE PROPOSED APPROACH

The proposed approach in this research consists of two main streams. First, one is designing the conceptual model and the second is developing the system.

Conceptual model

The basic problem from a user perspective is the production order. Actually, each production order can usually be decomposed into the production phases that can be individually assigned to different departments inside the firm.

Without considering any other aspect, orders could be in any array. If we denote the production order with i, the production line with j, the production phase with k, the production type with l and the priority of order with m. So the decision variable x_{ijklm} can be introduced. Being M the number of orders to be assigned, N the number of lines, O the number phases, P the type of product and Q the different priorities the solution space before considering any constraints has the cardinality of M*N* O*P*Q.

Possible choices for j, k, l and m are summarized in table 1, table 2, table 3 and table 4 respectively.

TABLE 1: PRODUCT LINE

j	1	2	...	20	21
meaning	1st CD line	2nd CD line	...	2nd packaging	3rd packaging

TABLE 2: PRODUCT PHASE

k	1	2	3	4
meaning	Production	Sterotyping	Printing	Packaging

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TABLE 3: PRODUCT TYPE

l	1	2
meaning	CD	DVD

TABLE 4: ORDER PRIORITY

m	1	2	3
meaning	Normal priority	High priority	Top priority

Without considering any priority, orders arrange chronologically. Suppose there is a new order. Depending on previous orders and the priority of the new order, the system should plan the lines so the orders serve in optimum time. Depending on priorities previous production planning may change.

The orders, depending on their types and the stage, should go to correct empty lines. If there is not any empty line, the order should wait in queue. The program should check every order in the queue and find first order with lower priority. Then it should change the sequence of orders according to do the higher priority before lower priority orders. Start and finish time of all the orders should be calculated and renewed. If the new finish day shows a delay more than 10 days of agreed deliver day, then the priority of that order should change to a higher priority. Also by adding new data of each customer to database, the system should adapt itself and learn of current operations. According to production, planning the system should recommend an optimum time for raw material inventory replenishment. In addition, it should plan the preventive maintenance program.

DEVELOPING THE SYSTEM

The way of designing a DSS is different from that of a transaction processing system. A fundamental assumption in the traditional "life cycle" approach is that the requirements can be determined prior to the start of the design and development process (Alavi and Napier, 1984). However, Sprague (Sprague Jr, 1980) stated that DSS designers literally "cannot get to first base" because the decision maker or user cannot define the functional requirements of the DSS in advance. The proposed approach in this article is adaptive design process based on previous researches e.g. (Alavi and Napier, 1984, Keen, 1980) but it has been revised. In an adaptive design approach, the four traditional system development activities (requirements analysis, design, development, and implementation) are combined into a single phase, which is iteratively repeated in a relatively short time (Sprague Jr, 1980). We used a five phase system life cycle based on (McLeod Jr and Schell, 2001) which includes planning, analyzing, designing, implementing and use for each subsystem. In the planning phase, a general description of potential system described. In the next phase, analyzing, a detailed analysis of subsystem defined. Design phase included defining data needs of proposed subsystem. In implementation phase, the proposed subsystem based on data needs gathered in previous phase developed and link between the subsystem and total system made. The last phase was auditing, using and improving each subsystem.

The ADSS

The developed ADSS includes several modules and procedures, each of them allocated to a specific task. Each module is written so that its behavior is entirely specified through its interface. The main modules and subsystems are introduced below:

The graphical user interface module, which is the connection between system and users.

The database module that updates the database and knowledgebase.

Queuing module, which is a simulation module that calculate the start and finish time of each order (This module is the decision module).

Customer Prioritizing (CP) subsystem, which prioritize the customers (and subsequently the orders).

Human Resource Management (HRM) subsystem that plans the overtime work of operators.

Inventory Replenishment (IR) subsystem, which suggests optimum time for ordering raw material.

Preventive Maintenance (PM) subsystem that seeks for potential idle time of production lines.

The connection of subsystems is shown conceptually in figure 2, in which arrows show that the flow of data and information.

FIGURE 2: CONCEPTUAL SUBSYSTEMS
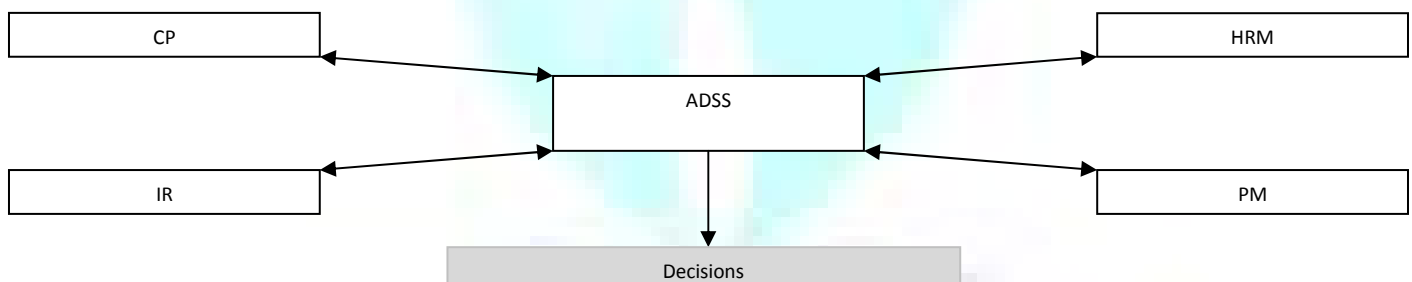
In the industry of producing CDs and DVDS, each customer should know the time that company can deliver his or her order. Many costumers tolerate an extra pay for taking their order sooner. On the other hand, some of them leave the company and go to competitor firms as the company cannot deliver the order on-time or he may claim against the company for delay.

While a potential customer negotiate with marketing manager, gives some data about the order and its properties. This is the time that marketing manager loads this data to the system, and system can provide different scenarios. The most generic scenario is that the order waits in the queue for its turn. Another one is the cheapest and often the slowest choice. If the customer be in a hurry he can select a top priority order but should pay an extra charge for human resource overtime work and sometimes the delay in other orders. The customer can select between scenarios. After the agreement about the conditions, this is the time for recording the order.

Now the DSS checks for inventory and if needed it can alert the inventory replenishment staffs. In addition, if the orders cannot be done in agreed time, the system plans the overtime of operators.

Before and after implementing this ADSS the satisfaction of two main interest groups, the marketing staffs and costumers, were measured. Statistics showed an 18 percent increase in staff satisfaction but about 40 percent in customer satisfaction.

CONCLUSION

This paper proposed and implemented adaptive design process in combination with traditional system life cycle to develop an ADSS to solve the problem of production planning in a manufacturing firm. It is assumed that under the condition of diversity in the orders, marketing manager does not know when the customer order can be delivered, inventory replenishment staffs do not know when, and how much they should order raw materials. In this occasion an ADSS, which mainly can plan the product lines, was developed.

One extension of the present study is implementing fuzzy logic in prioritizing the orders. Also by global use of internet, it is recommended that such systems designed for using in different production areas worldwide.

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CONSTRUCT THE TOURISM INTENTION MODEL OF CHINA TRAVELERS IN TAIWAN

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ABSTRACT

The study aims to explore the relationship among tourism image, experience marketing, customer value and behavioral intention with quantitative analysis and self-established questionnaire survey of China travelers. Targeting China travelers who stay in the Sun Moon Lake at Nantou County with 345 questionnaires distributed, reporting an up to 91.8% of return (317 valid questionnaires) in Taiwan. The research finding that the higher the tourism image, the higher intention in experience marketing relatively; Also, the better feeling the customer value, the higher the revisit intention when experience marketing reports a positive tendency; there is also a positive correlation between customer value and behavior intention.

KEYWORDS
tourism image, experiential marketing, consumer value, behavior intention.

INTRODUCTION

In recent years, tourism business has become the most potential asset to develop and offer job opportunity to earn foreign exchange of the nation. Due to the prevalence of China travelers coming to Taiwan, increasing needs of cultural and social interaction and trade between the cross straits from time to time, the government is proactively pushing for fully tourism open-up to China travelers who visit Taiwan, which is considerably helpful to the prosperity of tourism industry in Taiwan.

According to the statistics of international tourists announced by Ministry of Transportation and Communications (MOTC), there are 5,567,277 inbound visits in 2010 and reporting a 11.6% growth compared to 4,395,004 visits in 2009. Moreover, visitors by country in 2010 are Mainland China (1,630,065 visits), Japan (1,080,153 visits), Hong Kong and Macao (794,362 visits). According to the statistics listed above, Mainland China is currently where most tourists came from, followed by Japan, Hong Kong and Macao. In short, the total number of visitors from Mainland China, Hong Kong and Macao mainly consisted of the tourism market in Taiwan (MOTC, 2010).

The Mainland Affairs Council (MAC) in Taiwan made an announcement in 2011 that China travelers will be able to apply for admission to Taiwan by independent tour with 15 days of stay since the day of arrival and a quota of up to 500 China travelers visiting Taiwan per day since June 22, 2011.

There is influence and preference between level of tourists' feeling of experiences and tourism image; while tourists' experience and level of tourism image will also affect tourists' revisit intention. According to Goodall（1988）, it will turn into a preferential image if tourists report good experience acquired from travel, and would expect the next travel experience accordingly (Liang, 2002). Pearce（1982）found that, consumers' perception will be varied by the experiences of different tourist destination, it is found that tourists' cognitive images will be changed after they visited the sightseeing area, and therefore, the image of tourists on that region will be varied upon their experiences once they truly experienced the sightseeing area themselves.

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The tourism image related studies are mostly limited to leisure farm (Chiu, 2003, Ding, 2009), amusement park (Chang, 2006), tourist night market (Su, 2006), postcard (Jian, 2008) or resort village (Huang, 2005), while studies with regard to China travelers' tourism image on experience marketing, customer value and behavior intention are precious and rare. Tourism can be proclaimed as the core of leisure industry, the research motive of this study targets China travelers to conduct questionnaire survey on their images about Taiwan, to explore whether China travelers occurring strong memory or affection on the tourism image of Taiwan and to further proceed to tourism experience continuously.

Furthermore, to get to know the current situation of China travelers' images by different background variables, and the experience feeling and impression to tourists enabled by sense, feel, think, act and relate in experience marketing, as well as whether the customer value is generable through the experience process, and to revisit or to recommend to others willingly, in which the research outcome can be regarded as a reference for Taiwan tourism related units and China travelers to reinforce their feature and marketing skills.

LITERATURE REVIEW
TOURISM IMAGE
There are diverse translations and expressions about the image applying to tourism study, overseas studies mostly called it as Destination Image（Walmsley & Young, 1998）, Tourism Image（Gartner, 1989：Schroder, 1996）, Tourist Image（Selwyn, 1996）while there are many ways of translation such as destination tourism, tourism image and tourist image.

The study to start from the perspective of tourist, the images are just like information of certain media we receive to facilitate comprehension of the region, while it is expectation implicitly contained on potential tourists on existing regions or activities for the impression and cognition of those travel locations existed in the brain that tourists have never been to. A diversity of message dissemination for the time being has led to message receiving in different manners and subject to no character description, in which inconsistent viewpoints of each individual might be affected by audio or visual sense stimulation, which is important to trigger a motive for those potential tourists who have not visited the place.

According to Fakeye and Crompton（1991）, the formation process of destination image is highly associated with decision makings of tourism marketing and tourist destination. Therefore, to continue the research concept of destination image by Gunn (1972), the tourism image consisted of the following three images were:（a）Organic image：Refers to images of potential tourists formed by dissemination media, newspapers & magazines, news in which this information are provided by non tourism institutes；（b）Induced image：refers to images gradually enabled by potential tourists to begin collection related information proactively, with tourism motives caused from organic image, also, the information that affect the image this stage are mostly advertising provided by tourism institutes；（c）Complex image：The image this stage refers to the images formed in this region when tourists actually arrived in the tourist destination.

According to Selby and Morgan（1996）that an empirical study on sightseeing location could help managers understand the strengths and weaknesses of sightseeing area and who their potential tourists are. Besides, a good or bad tourism image of one city is one of the imperative factors that determine tourist's decision to travel (Tsai, 2005).

Gallarza, Saura and Garcia（2002）have even clearly pointed that tourism image is mixed with impressions of residents, retailer, tourism or service personnel. O'Neill and Jasper（1992）have pointed out the difference of images between affective cognition, affection refers to a response to one sentiment while cognition refers to related knowledge of environment characteristics, there is still a correlation of mutual effect between affective image and cognitive image (Liu and Huang, 2001) despite the difference between the two, in which the cognitive image will affect affective image according to the empirical study.

Looking back studies of tourism image domestically and abroad in recent years, the studies with regard to tourism image abroad originated from 1980s, Pike（2002）has consolidated the 142 studies on the image of travel location between 1973 and 2000 in terms of background, location descriptions, research type, target audience and method of independent variable, sample size and analysis methods, with research locations mostly focused on tourism image of North America (58 articles), followed by UK (45 articles), Asia (25 articles) and Australia (19 articles), the tourism image of a nation is the most favorable issue, followed by province (state), city, holiday region and countryside.

Selby and Morgan（1996）research on sightseeing location could help managers understand the strengths and weaknesses of sightseeing area and who their potential tourists are (Tsai, 2005). Besides, a good or bad tourism image of one city is one of the imperative factors that determine tourist's decision to travel.

According to a comprehensive discussion of aforementioned literature review, the study expects to explore what kind of response and effect of a process of tourism image formation brought through the formation of visual image, which regarded as a countermeasure to subsequent tourism marketing.

EXPERIENCE MARKETING
Schmitt（1999）is a scholar who firstly proposes "experience marketing" concept which emphasizes on the core of experience marketing is to create different experience patterns for customers, which will become the mainstream of modern marketing. What experience marketing talks about is a kind of consumption situation which combines product or service, is an experience that matches consumer's lifestyle and touches consumer's mind. According to Pine and Gilmore（1998）, consumers will be able to add positive and eliminate negative clue to create unforgettable 5 sense stimulation impression and other strategies to gain experience through the establishment of marketing topic.

Experience provider is a tool for experience marketing which normally includes communication, verbal identity and signage, product presence, co-branding, spatial environment, electronic media and people.

CUSTOMER VALUE
The customer value from experience perspective is what consumers have defined by product value, emphasizing on tangible performance of products (Holbrook & Hirschman，1982）while Bettman（1979）has pointed out that experience perspective is to attain consumption goal, what consumers care about is characteristics of perceptual products. However, customer value under experience perspective could be a kind of pure subjective conscious state, also, consumption at that time is also accompanied by many meanings of significance, hedonic response and aesthetic principle（Holbrook & Hirschman, 1982）. The difference between experience viewpoint and rational viewpoint is that the experience viewpoint is more subjective and personalized, what experience viewpoint pays attention to is subjective value caused by feeling and delight while rational viewpoint focuses on achievement of efficacy and mission.

According to scholars Woodruff, Cadotte and Jenkins（1983）, "customer value" is a perception of expected outcome perceived by the customer under certain consumption situation, so as to achieve purpose or goal aspired for through products or services provided by the suppliers.

BEHAVIORAL INTENTION
Therefore, whether the feeling of tourists attain their needs and choose to revisit in terms of value perspective during the sightseeing process, and even recommend to others positively by word of mouth is also the lifeblood to the survival of tourism and travel industry.

According to Hu (2003), "Behavioral intentions" is the dimension name introduced by Cronin, Brady and Hult（2000）, however the questions designed are mainly inquiring about interviewees' behavioral intentions in terms of "repeat purchase", therefore the measurement questions of similar studies can be provided as a reference for the study to measure tourists' revisit intention, recommendation intention and intention to pay more.

As there are so-called "revisit" or "recommend to others" commitments enabled from researchers while exploring a positive comment and affection of tourists on that tourist destination in the past, therefore actual behavioral decision after a visit will mostly subject to these two as primary measurement dimensions (Chen, Tsai, Lee, Chen & Chen, 2007).

RESEARCH METHODOLOGY AND DATA ANALYSIS
RESEARCH HYPOTHESES
A verification of below hypotheses will be conducted upon the results of research questions and related literature review:

H1: China travelers in different background variables will have an impact on the tourism image；

H 1-1 China travelers by gender report significant difference in terms of tourism image

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H 1-2 China travelers in different age report significant difference in terms of tourism image

H 1-3 China travelers in different level of education report significant difference in terms of tourism image

H 1-4 China travelers by different occupations report significant difference in terms of tourism image

H 1-5 China travelers in different monthly incomes report significant difference in terms of tourism image

H 2: The tourism images of China travelers have an impact on experience marketing；

H 3: The experience marketing of China travelers has an impact on the customer value；

H 4: The experience marketing of China travelers has an impact on the behavioral intention；

H 5: The customer value of China travelers is associated with their behavioral intentions.

QUESTIONNAIRE OBJECTIVES

The scope of the study mainly in China travelers who visit Taiwan with place of questionnaire distribution to Sun Moon Lake at Nantou County during March 1 to May 31, 2011 in Taiwan. And there are 345 questionnaires distributed in total so as to understand the difference among the effects of tourism image, experience marketing, customer value and behavioral value and related status.

EMPIRICAL ANALYSIS AND DISCUSSION

ANALYSIS OF PERSONAL INFORMATION

The official sampling of the study is conducted during March 1 to May 31, 2011 with 345 questionnaires distributed and 317 valid questionnaires returned after deleting 28 invalid questionnaires, reporting an up to 91.8% rate of return on valid questionnaire, with results derived as below after having a descriptive statistics.

a.   In terms of which province/city these China travelers are from, south of China is the majority, reporting 178 travelers (56.2%) in total; followed by north of China, reporting 67 travelers (21.1%) in total; the north east of China report the least amount of visitors, reporting 4 travelers (1.3%) in total only.

b.   For the China travelers by different background variables on gender distribution, "female" is the majority reporting 163 travelers in total (51.4%) while "female" report 154 travelers (48.6%).

c.   There are 53 travelers (16.7%) in age group 40-49, 52 travelers (16.4%) in age group "50-59", 45 travelers (14.2%) in age group 0-39; 41 travelers (12.9%) in age group 60 or above; only 6 travelers are in age group 18 or under (1.9%).

d.   China travelers by education level; 233 of travelers (73.5%) are from "college/university"; followed by 65 of travelers (20.5%) are from "senior high/vocational schools or under".

RELIABILITY TEST FROM RESEARCH VARIABLE DIMENSION

With regard to the analysis of official questionnaire, the study has conducted reliability analysis on the 317 valid questionnaires, reporting an up to a 0.864 α value in overall, a 0.807 α value for tourism image dimension, a 0.844 α value for experience marketing dimension, a 0.828 α value for customer value dimension and a 0.821 α value for behavioral intention, which are all within the scope of reliable range.

TABLE 1: RELIABILITY TEST OF ALL DIMENSION

Dimension	Cronbach's α	Cronbach's α of all
Tourism image	.807	0.864
Experiential marketing	.844	
Customer value	.828	
Behavior intention	.821	

Examining the results of tourism image by various factors, "store" reported highest score in average（M=4.25，SD=0.71）among the top 3 factors that report highest score, which falls between "agree" and "strongly agree" in overall. "the stores in Taiwan are hospitable to me" reported the highest score（M=4.31，SD=0.76）if the questions were analyzed from this dimension, while "the stores in Taiwan are satisfactory to me" reported the lowest（M=4.20，SD=0.77），however, the scores between the two are all between "agree" and "strongly agree", indicating that China travelers are very satisfied with the kind attitude and passion of service personnel at the stores in Taiwan.

"Public facility" reported the second highest score in average （M=4.14，SD=0.77），which falls between "agree" and "strongly agree" in overall. "the public facility in Taiwan is clean to me" reported the highest score （M=4.24，SD=0.74）if the questions were analyzed from this factor, while "the public facility of Taiwan is convenient to me" reported the lowest score（M=4.20，SD=0.77），however, the scores between the two are all between "agree" and strongly agree", indicating that China travelers are strongly agree with clean and convenient public facility in Taiwan among their images about Taiwan.

"Spatial environment" is the factor that reported highest score in average （M=3.90，SD=0.57），which falls between "average" and "agree", in which "the spatial environment in Taiwan is clean to me" reported the highest score （M=4.31，SD=0.69）while "the spatial environment in Taiwan looks crowded to me" reported the lowest（M=3.33，SD=0.96），indicating that China travelers possess positive attitude toward the cleanness of spatial environment while they possess an attitude of "average" and "agree" toward the spatial environment in Taiwan.

"Price standard" is the factor that reported lowest score in average（M=3.90，SD=0.57），which falls on "agree" in overall with less than 4 in average for all questions, in which "the price standard of Taiwan is reasonable to me" reported the highest score（M=3.43，SD=0.96）while "the price standard of Taiwan is inexpensive to me" reported the lowest（M=3.00，SD=1.01），however, partial China travelers visiting Taiwan recognized the price standard in Taiwan is reasonable but not cheap.

According to the aforementioned outcomes, China travelers are very satisfied with kind attitude and passion of stores in Taiwan, the public facilities are well-maintained, clean and convenient, and they are strongly agree with the clean spatial environment regarding the dimensions of tourism image, however, partial China travelers visiting Taiwan recognized the price standard in Taiwan is reasonable but not cheap.

Examining the results of experience marketing by various factors, "relate experience" scored （M=4.07，SD=0.63）in average score among the top 3 factors that report highest score, which falls "agree" in overall. "Tourism enabled more knowledge to me" reported the highest score（M=4.22，SD=0.72）if the questions were analyzed from such factor, while "strategic alliance between tourist destination and other industries will help enable diverse choices for travel" reported the lowest（M=3.93，SD=0.76），this result showed that a visit to Taiwan will enable more knowledge to China travelers; While they agree to a strategic alliance across industries which will help provide diverse choices for travel（Table 2）.

"Act experience" is the factor that reported second highest and scored （M=3.88，SD=0.56）in average, it inclines to "agree" in overall,. in which "I will take a photo of the featured scenes" reported the highest（M=4.11，SD=0.69）if the questions were analyzed from this dimension, while "the place reports global awareness which can be a reference for my visit" and "the experience activities provided by tourist destination are the best choices for travel" reported the lowest（M=3.81，SD=0.76；M=3.81，SD=0.73），this result showed that China travelers will take a photo for the beauty of Taiwan feature, which provided as a reference to the planning of tourism marketing project in the future.

"Feel experience" is the 3rd highest factor which scored（M=3.82，SD=0.67）in average and inclines to a perception of "agree". "service personnel to answer various questions proposed by the customers patiently" reported the highest（M=3.92，SD=0.82）from the questions of this dimension, while "the arrangement of tour schedule at tourist destination meets my requirement" reported the lowest （M=3.74，SD=0.82），this result showed that China travelers are very satisfied with the service personnel of tourist destination while the schedule arranged by the tour group also meets their requirements, in which they are all agreed to it in terms of this factor.

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"Sense experience" is the factor that reported lowest score（M=3.48, SD=0.41）, which inclined to "agree" in overall, with questions scored less than 4 in average, in which these questions are "person-in-charge of tourist destination is in tidy and neat dress" reported the highest（M=3.92, SD=0.75）while "the arrangement and décor of travel location make me feel as if I were the actor in the movie" reported the lowest（M=2.91, SD=0.92）, this result showed that the apparel of service personnel will also determine China travelers' sense experience in terms of experience marketing dimension; and according to relate experience, China travelers agreed that it will enable more knowledge after paying a visit to Taiwan, in which a strategic alliance across other industries help provide diverse choices for travel; and according to the act experience, they will also take a photo for the beauty of Taiwan features which provided as a reference for future visit. This result showed that China travelers are very satisfied with the service personnel of tourist destination while the schedule arranged by the tour group also meets their requirements, in which they are all agreed to it in terms of this factor.

TABLE 2: QUESTIONNAIRE ANALYSIS OF EXPERIENCE MARKETING

Contents of questions	Questions		Dimension	
	average	Standard deviation	average	Standard deviation
Sense experience			**3.48**	**0.41**
The feature of tourist destination is clear to identify for me	3.90	0.73		
Convenient traffic around the tourist destination	3.80	0.85		
A proper dynamic effect of official website at tourist destination with clear and easy-to-understand contents	3.66	0.86		
Neat and clean apparel of person-in-charge at tourist destination	3.92	0.75		
Overall planning of tourist destination meet my leisure demand.	2.37	0.94		
The arrangement and décor of tourism location make me feel as if I were the actor in the movie.	2.91	0.92		
Clear and easy-to-identify signage around the tourist destination reduce time for scenic spot searching	3.78	0.80		
Feel experience			**3.82**	**0.67**
Arrangement of travel schedule at tourist destination could meet my requirement	3.74	0.82		
Safe architecture structure of tourist destination sets my mind at rest	3.83	0.77		
There are tour guides providing professional counseling service at tourist destination	3.86	0.85		
You could reach service personnel at tourist destination for related inquiries anytime	3.76	0.91		
Service personnel of tourist destination will explain and deal with tourists' requirements and satisfy their needs	3.83	0.87		
Service personnel of tourist destination to answer various questions raised by the customers patiently	3.92	0.82		
Think experience			**3.57**	**0.37**
The objects exhibited in tourist destination make me feel like contributing effort of my own to protect the cultural heritage	4.02	0.67		
There are normally novel product at tourist destination, which enable my curiosity	3.73	0.74		
Tourist destination and location report a concept of visual space design	3.79	0.74		
Tourist destination matches the pictures on official websites	2.36	0.77		
I will discuss my sightseeing experience at tourist destination with friends/relatives and colleagues	3.95	0.69		
Act experience			**3.88**	**0.56**
The place reports global awareness which can be regarded as a reference for my visit	3.81	0.76		
I could search for the location and service hour of tourist destination at official website	3.85	0.71		
I will take photos at featured spots as a souvenir	4.11	0.69		
The feature of the place allows me to experience creativity and care	3.82	0.77		
The experience activity provided at the tourist destination is the best choice for travel	3.81	0.73		
Relate experience			**4.07**	**0.63**
Sightseeing enables more knowledge to me	4.22	0.72		
Good impression, reputation and word-of-mouth of tourist destination allow me to visit at ease	4.05	0.72		
Strategic alliance between tourist destination and other industries enables diverse choices for travel	3.93	0.76		
Overall measurement			3.72	0.43

EFFECT OF TOURISM IMAGE ON EXPERIENCE MARKETING

Here, it is mainly to discuss the effect of China travelers' tourism image on experience marketing, in which the study introduces simple regression analysis to examine aforementioned purposes, with tourism image regarded as independent variables, experience marketing as dependent variables to predict status of effect.

According to Table 3, the tourism image of China travelers reported level of significance（$p < .05$）in terms of its effect on experience marketing, the tourism image could affect variance of experience marketing by up to 76%（R^2=0.766）, reporting a β =.749 for regression coefficient, this prediction variable is a positive prediction.

Based on the aforementioned results, tourism image reported significant level of effect on experience marketing, reporting a 0.749 standardized regression coefficient if looking from the regression coefficient for the effect on experience marketing, in which experience marketing will increase by 0.749 points for every point that tourism image scored, representing a higher intention in going for an experience marketing, therefore hypothesis II are verified.

TABLE 3: REGRESSION ANALYSIS OF TOURISM IMAGE TO EXPERIENTIAL MARKETING IN MAINLAND TOURISTS TO TAIWAN

	Not standardized ß	S.E.	standardized ß	t		SS	D.f.	SSA	F
Constant	1.14	.130		8.80*	regression	32.13	3	32.13	402.776
tourism image	.67	.033	.749	20.07*	ε	25.13	315	.08	
					Total	57.25	316		
R^2/adj.R^2		0.766/0.587							

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EFFECT OF EXPERIENCE MARKETING ON CUSTOMER VALUE

According to Table 4, the effect of China travelers' experience marketing achieved level of significance（$p <.05$）in terms of customer value, experience marketing could affect variance of customer value by up to 31.6%, this prediction variable is a positive prediction, reporting a $β=.557$ for regression coefficient, this predictor is a positive prediction.

Based on aforementioned results, experience marketing reported significant effect on customer value, reporting a 0.557 standardized regression coefficient if looking from the regression coefficient for the effect on customer value,, in which customer value will increase by 0.57 points for every point that experience marketing scored, that is to say, the higher or the more positive experience marketing of China travelers, the higher expectation the customer value, therefore hypothesis 3 is verified.

TABLE 4: REGRESSION ANALYSIS OF EXPERIENTIAL MARKETING TO CUSTOMER VALUE IN MAINLAND TOURISTS TO TAIWAN

	Not standardized ß	standardized S.E.	ß	t		SS	D.f.	SSA	F
Constant	.76	.27		2.80*	regression	42.39	1	42.39	142.723
tourism image	.86	.07	.557	11.91*	ε	94.21	315	.30	
					Total	136.60	316		
R^2/adj.R^2		0.766/0.587							

EFFECT OF EXPERIENCE MARKETING ON BEHAVIORAL INTENTION

According to Table 5, the effect of China travelers' experience marketing achieved level of significance （$p < .05$）on behavioral intention, experience marketing could affect variance of customer value by up to 33.1% （R^2=0.331）, this predictor is a positive prediction and reporting regression coefficient $β =.557$, this predictor is a positive prediction.

According to the aforementioned results, experience marketing reported significant effect on behavioral intention, reporting a 0.565 standardized regression coefficient if looking from the effect of regression coefficient on behavioral intention, in which behavioral intention will increase by 0.565 points for every point that experience marketing scored, that is to say the higher or the more positive experience marketing of China travelers, the higher the behavioral intentions are, hypothesis 4 is therefore verified.

TABLE 5: REGRESSION ANALYSIS OF EXPERIENTIAL MARKETING TO BEHAVIOR INTENTION IN MAINLAND TOURISTS TO TAIWAN

	Not standardized ß	standardized S.E.	ß	t		SS	D.f.	SSA	F
Constant	.82	.27		3.07*	regression	42.62	1	42.62	147.607
tourism image	.86	.07	.565	12.15*	ε	90.96	315	.29	
					Total	133.58	316		
R^2/adj.R^2		0.766/0.587							

CONCLUSION AND SUGGESTIONS

CONCLUSIONS

According to the research, China travelers who visit Taiwan reported 277 visits to the middle, followed by 262 visits to the north, in which China travelers from south of China comprised 56% of total visitors, male is the majority with age segments mostly centered between 19-29, reporting an income of under NTD 10,000, college or university students.

Level of significance is achieved partially in terms of different gender among tourism image factors, males pay attention to whether a cheerful or busy "atmosphere" among the image factors, Taipei is the place which leads the trend in Taiwan, the hot spots such as Ximending, Shilin night market etc., such cheerful and busy life in Taipei make people yearn for and keep China travelers bearing in mind constantly.

Besides, whether foods are impressive and significant is what male cares about more in terms of "local cuisine" factor. Taiwan is famed for side dishes and reports a diversity of foods, in which many overseas tourists expect to taste it when coming to Taiwan, while many featured foods are named after place of origin.

"Atmosphere" and "store" achieved level of significance partially in terms of image dimension by age segment, according to a post hoc test, those who aged 40-49 reported higher effect on "atmosphere" than other age segments while those who aged 60 or above tend to pay attention to the kindness and passion of "store" more than other age segments, in which there is a significant difference between these two groups in terms of "atmosphere" and "store" value perspective.

Level of significance is achieved by different occupations, finance industry and other potential industries (free lancers, retirees) are more satisfied with cleanness and convenience of "public facility" than other occupations, it is speculated that the characteristics of this industry is to at the service of general public, featuring efficiency, swiftness and convenience, and hence will be concerned with public facility more.

A low level of relevance is achieved between sense experience and customer value stated above, China travelers do not need to pay attention to sense experience as they visit Taiwan by group tour, however, they were satisfied with rest of other experiences, in which customer value will relatively be enhanced, which is complied with overall evaluation on product efficacy for "acquiring things" and "cost paid" defined by Zeithaml, Berry and Parasuraman（1988）.

According to related analyses, when the customer value of customers is satisfied during the sightseeing process, e.g.: the sightseeing this time is worthwhile; it complies with economic benefits; is a behavior that will increase an intention in revisiting or recommending to others while a wonderful experience is acquired.

SUGGESTIONS

Image marketing of tourist destination cannot be ignored. The advertising video on official websites is mainly static state oriented in terms of destination image, which did not introduce lively atmosphere to attract audiences to come to visit.

Furthermore, in an era of paying attention to service quality, the service industry in Taiwan have far exceeded the service industry in China, therefore, only having a sincere attitude toward service will keep your feet on the ground steadily in a society of fierce competition, Taiwan should stay where they are in terms of service quality for the time being, to continuously reinforce its feel experience, as the feel experience a mood of pleasure will be enabled while being satisfied during the service process.

Itinerary of certain tour or group tour cannot the need of every tourist, in which marketing through a customized manner will be able to meet tourists' expectation about a novel experience, while word-of-mouth could also be trigger to attract potential tourists to come visit the destination, therefore a good word-of-mouth created will be perhaps a business opportunity for tourism promoters to consider in the future.

As the tourists coming to Taiwan are mostly from south of China, in which Taiwan travel guide can be placed at tourism information center and at the airports outside south of Taiwan for tourists in order to increase source of tourists; an intention in visiting Taiwan will be further increased once tourists obtain the information. On the other hand, the tourism promoters will be able to extend the source of tourists from middle/old age segments, retiree groups, high income in terms marketing strategy, or they may conduct education expo or student exchange program in a few regions so as to achieve their tourism benefits.

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FINANCIAL PLANNING CHALLENGES AFFECTING IMPLEMENTATION OF THE ECONOMIC STIMULUS PROGRAMME IN EMBU COUNTY, KENYA

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ABSTRACT

The Kenya's ESP though intended to be implemented in 2009/2010 financial year was still ongoing in October 2011. This study sought to make an insight into the Financial Planning challenges faced in the programme and their effect on the quality, completion and timeliness of implemented ESO projects. An expost facto research design was used in the study. The study covered the four constituencies in Embu County. The findings of this study will be important to all the stakeholders involved in the implementation of ESP projects including the CDF board, the departmental heads, the government and members of the public in several ways. The population of interest comprised of 1348 subjects from which a sample of 120 was selected using proportionate random sampling guide by Nassiuma (2000) formula. Questionnaires were pre-tested in Meru South District and found to be both reliable and valid followed by the actual data collection. Data collected was coded, edited, organized and cleaned. Analysis of data was by use of frequencies and percentages. Hypotheses were tested using chi-square test at 5% degree of significance. The study results indicated that financial planning challenges negatively affect the completion and timeliness in the implementation of ESP projects. The study recommends rolling out of a similar study in all the 47 counties.

KEYWORDS
Financial Planning, Implementation, Quality, Timeliness, ESP.

INTRODUCTION

The basic principles of Financial Management apply equally to the government companies or public sector undertakings as well as private sector. Public sector undertakings have to function like other business systems (Pandey, 2008). Most of the capital expenditure in government comes in the form of projects. This includes money spent by the government on health, roads, education and other government expenditure through ministries. It also includes expenditure from decentralised funds such as the constituency Development Fund (CDF), the Local Authority Transfer Fund (LATF), the Secondary School Education Bursary (SSEB), the Roads Maintenance Levy Fund (RMLF), the Aids Fund, the Youth Fund, the Women Fund, the Economic Stimulus Programme among others (Gikonyo, 2008). During economic booms, the government has a lot of resources to invest in projects while the reverse is true during economic recessions or during financial crises with the 2008 financial crisis being an example. The ESP though intended to be implemented in 2009/2010 financial year is still ongoing. According to Gikonyo (2010) delays in budget implementation could reduce the overall impact of the stimulus package. Investments in public services, particularly infrastructure, require lead time and are also often delayed due to cumbersome procurement procedures. During the fiscal year 2009/2010, she observes, the full stimulus was not achieved. This study sought to make an insight into the status of the various projects being implemented under the economic stimulus programme in Embu County in Kenya, the Financial Planning challenges faced and the effects of the challenges on the implementation of the projects.

REVIEW OF LITERATURE

A study conducted by the Civil Engineering Research Foundation (CERF) identified various challenges affecting government projects. The CERF report of 2004 attributes to failure of government funded projects as poor project management procedures. Projects that perform robust front-end planning face the fewest problems during project execution. In addition, the risk assessment and management skills of the project team are critical determinants of eventual project success. The study further insists that an acquisition strategy should be developed during the conceptual design phase of the project and integrated with the risk management program to avoid projects failure.

The need for proper projects planning is further stressed by Yahya (2000). He observes that end user participation from the project onset is an important factor contributing to the failure or success of I.T. projects implementation. Further planning challenges identified by Obadan (2009) are faulty budget formulation and

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lack of project preparation. The study observes that faulty planning on the part of Ministries, Departments and Agencies (MDA's) could arise from inadequate review by Budget Office and amendments to budget by treasury in the case of central government projects. Obadan (2009) points out that some projects meant for implementation over many years have full funds in one year. In contrast, some ongoing projects are not allocated enough funds pointing to lack of proper planning. The study further reveals that many projects admitted into the budget are often not prepared for processing/procurement by the time the budget is approved. Some delays arise where one MDA relies on another MDA to prepare project documents after budget approval, for example, the case of Ministry of Education's reliance on Ministry of Works. Lack of implementation plans affects government projects, notes Obadan (2009). The consequence is that government commits resources to projects without proper assessment of the results to be achieved. Usually there is no rational basis for prioritizing choices in the face of dwindling resources, so that the funds are channeled to the projects that can be completed and make maximum impact. Finally, lack of implementation plans leads to uncoordinated and disorderly implementation and avoidable delays. The financial planning challenge is further elucidated by Yahie (2007). It is noted from his study that challenges facing decentralized service delivery in Kenya are essentially an overhang of poor policy management, weak institutional capacity and poor governance that have persisted over the years. This is evidenced by the absence of a coherent planning and institutional framework for decentralized development planning and service delivery whereby national development planning is managed in isolation.

Financial planning challenges are not unique to central government projects but also occur in decentralized funds. Strategic planning information systems in project implementation is crucial because the best of plans can go awry when it comes to actual implementation especially in the public sector (Hashim, 2010). Lack of proper recourse to, and due consultation with, the people for whom the projects are being carried out to know their needs, their problems and potentials is a challenge faced in local government in the preparation of the estimates of revenue and expenditure is a financial planning challenge noted by Aloworo (2008). This leads to misplaced priorities whereby projects are done not according to or as demanded by the people but regrettably in tune with the selfish and aggrandisement of the political leadership in collaboration with the senior bureaucrats at the local government level of administration. Budgeting or fiscal issues are particularly problematic to the planning process in ICT projects, notes Hashim (2010). He observes that if there is not enough allocation, procuring or acquiring the ICT hardware and software is made difficult for these local governments to attain their goals. Hence, this necessitates acquiring technology over an extended timeline, which in turn creates a whole host of compatibility, upgradeability and standardization issues. In addition, expenses accumulate due to the very nature of the ICTs and their learning curve. This is also true of most other government projects.

NEED/IMPORTANCE OF THE STUDY

Efficient Financial Management enable public institutions to meet operational expenses settle liabilities and also finance fixed assets. Prudent utilization of public funds is key requirement for any country's financial stability. The findings of this study give a better insight about the financial planning challenges facing the ESP projects with the aim of tackling them effectively in future. The findings would further aid in shaping future policy by the government on ESP projects and possible replication to other development programs. The findings are also expected to provide reference for educators and readers in general and rekindle further research in the area.

RESEARCH OBJECTIVES

- To find out the effect of financial planning on the quality of implemented ESP projects.
- To find out the effect of financial planning on the completion of ESP projects.
- To find out the effect of financial planning on the timeliness of implementation of ESP projects.

HYPOTHESES

H_{O1}: There is no significant effect of financial planning on the quality of implemented ESP projects
H_{O2}: There is no significant effect of financial planning on the completion of ESP projects
H_{O3}: There is significant effect of financial planning on the timeliness in the implementation of ESP projects.

RESEARCH METHODOLOGY

RESEARCH DESIGN

Expost facto research design was used in this research. This research design is used to explore relationships between variables. The main purpose of Expost-facto research design is therefore to determine reasons or cause for current status of the phenomenon under study. This is because in the study, the researcher won't develop new treatment but will examine the effects of naturally existing treatment after occurrence of treatment. The design was perceived to bring out important data that was required in the study. The advantages of using Expost-facto research design according to Mugenda (2005) are that this type of study allows a comparison of groups without having to manipulate the independent variables .Further, causal comparative studies can be done to identify variables worthy of empirical investigation and these studies are relatively cheap.

TARGET POPULATION

The target population for this study included the members of the various committees involved in the implementation of the various ESP projects, the departmental heads, provincial administration and the contractors. The population for the purpose of this study was heterogeneous. The population also comprised of the primary schools ESP committees implementing the construction projects and the members of the primary schools committees implementing the trees planting projects. The subcommittees included the stimulus projects tender committee members, and various stimulus projects subcommittees' members under fisheries, Health, fresh produce market and the Constituency Development industrial centre.

The population of interest comprised of 1348 subjects as shown in Table 1.

Table 1

Summary of the Population per Category.

Category of respondents	Members per constituency	Total
SPMC	20	80
ESP Subcommittees	40	160
Sec schools infrastructure committees	42	168
Pry schools infrastructure committees	26	104
Schools tree planting committees	140	560
Contractors	8	32
Departmental heads	10	40
Provincial administration (Representing public)		204
Total	337	1348

Source: ESP Committees Records

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SAMPLING PROCEDURE AND SAMPLE SIZE

Proportionate Stratified random sampling was used to get samples from the various categories of respondents as these categories were expected to possess almost similar characteristics. The population was divided into 8 strata with each subgroup representing a particular category of respondents. The sample size was determined by the following formula recommended by Nassiuma (2000) for determining sample size

$$n = \frac{NC^2}{C^2 + [N-1]e^2}$$

Equation (1)

Where n = Sample size, N = Population size, C = Coefficient of variation and e = Standard margin of error. Nassiuma (2000) recommends a margin error ranging between 2%-5% and coefficient of variation ranging between 20%-30%. For this study N = 1,348 respondents, C = 20% and e = 0.02 which gives a sample of 94. The choice of c=0.2 was informed by the fact that coefficient of variation indicates how scattered about the mean a given set of data is. To ensure balance of respondents across the four constituencies per category and take care of attrition, the researcher revised the sample size upwards to 120 as shown in the table below. The sample for the various categories was identified through stratified random sampling. In all the categories, the sample selected was proportionate for each constituency as shown in Table 2.

Table 2

Summary of Sample Selected for the Study.

Category of respondents	Population	Sample
SPMC	80	8
ESP Subcommittees(5)	160	16
Sec schools ESP committees	168	16
Pry schools ESP committees-construction	104	8
Pry schools ESP committees-Trees	560	48
Contractors	32	4
Departmental heads	40	4
Administration (Representing public).	204	16
Total	**1348**	**120**

INSTRUMENTS

Bell (1993) suggests that whatever procedure for collecting data is selected, it should always be examined critically to see its reliability. Primary and secondary data was collected for the purpose of the study. Questionnaires were used to collect data from the sampled population. The researcher used questionnaires with both open ended and closed ended questions to assist in getting specific responses and also the views of the respondents which would ensure ease in tabulation and analysis. Questionnaires were used because they are relatively easy to administer and are cost effective without compromising the quality of information collected. The main demerit in the use of questionnaires is that they are tedious to develop.

PILOTING

Before the actual data collection, instruments were piloted. This was to assess the clarity of the instruments and ensure that items found to be inadequate could be discarded or modified to improve on validity (Mulusa, 1988). The researcher tried the questionnaires out on a small sample of 20 respondents which is 16.667% of the sample that was targeted in this study. A Pre-test sample of between 1% and 10% of the study sample is recommended (Mugenda & Mugenda, 2003). This pre-testing helped check on reliability and validity of the instruments. The instruments were piloted in Meru County. The choice of Meru County for the pilot was suitable because of its vicinity and similarities with the Embu County.

RELIABILITY

Reliability is a measure of the degree to which a research instrument yields consistent results or data after repeated trials (Mugenda & Mugenda, 2003). It refers to the consistency that an instrument demonstrates when applied repeatedly under similar situations (Kerlinger, 1983). The Cronbach Reliability coefficient was used to test for reliability. A coefficient of 0.89 was realised which implied that there was a high degree of reliability of the data and thus the instruments were considered to be reliable.

VALIDITY

The content validity of the item was discussed with the supervisor. The supervisor and other professionals in the field were also asked to read through the items and comment accordingly. They carried out verification of the items in the questionnaire to determine if these items were consistent with the objectives of the research and were devoid of any ambiguity. Where items were found to be unsuitable, they were discarded or changed appropriately and additional items were included in the questionnaire.

DATA COLLECTION

Questionnaires were used for primary data collection. The researcher distributed the 120 questionnaires to the respondents in person. However only 104 questionnaires were received back. The study used secondary data from the ESP secretariat, past studies on related subjects, the ESP website, journals among others.

DATA ANALYSIS

Items from research questions were arranged and grouped according to particular research objective. Pell (1995) maintains that when making the results of each research known to a variety of readers, percentages have a considerable advantage over more complex statistics. Descriptive statistical procedures were used to explain the distribution and derive patterns from the data. These are frequency distribution tables and cross tabulations. Qualitative data generated from open ended questions was organized into themes, categories and patterns pertinent to the study. Qualitative data generated from the open ended questions was organized into themes, categories and patterns pertinent for the study. The data was then analyzed by using SPSS version 17.0. Questionnaire responses were then analyzed both qualitatively and quantitatively to give comprehensive report.

RESULTS & DISCUSSION

RESPONDENTS PER CONSTITUENCY

The researcher commenced the study by analysing the number of respondents per constituency. The results are presented in Table 4.

Table 4

Respondents per Constituency

Name of constituency	no. of respondents	Percent
Runyenjes	23	22.1
Manyatta	27	26.0
Gachoka	24	23.1
Siakago	30	28.8
Total	**104**	**100.0**

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Table 4 shows that the responses from the four constituencies were almost uniform with Siakago constituency recording the highest response at 28.8% and Runyenjes Constituency recording the least number of respondents at 22.1%.

RESPONDENTS PER SECTOR

Analysis of the residents per sector was also done using descriptive statistics and results drawn in Table 5.

Table 5

Respondents per Sector

Project Sector	No. of respondents	Percent
Education	28	26.9
Local government	14	13.5
Health	21	20.2
Fisheries	16	15.4
Industrialization	12	11.5
Various	13	12.5
Total	**104**	**100.0**

The sector indicated as "various" refers to those respondents who were involved in implementation of more than one project in different sectors.

The analysis revealed that 26.9% of the respondents being the highest was in education sector followed by health at 20.2% and the least was in industrialization at 11.5%. This reflects the prominence that the government gives to education and health sectors.

RESPONDENTS BY GENDER

The study sought to find out how the sample population was spread out across the gender spectrum. This would help find out whether there are serious disparities in the management of ESP projects in terms of gender. The results are presented in Table 6.

Table 6

Respondents by Gender

Gender	No. of respondents	Percent
Male	66	63.5
Female	38	36.5
Total	**104**	**100.0**

The results in table 6 indicate that out of the sample population, 63.5% were male while 36.5 5 were female. Although the disparity is big, it is notable that the 36.5% female ratio in the population surpasses the national desired level of 33.33% of involvement for each gender in all government institutions.

RESPONDENTS BY AGE

The age distribution in any population is a very important. This aspect of the population was analyzed. The results are presented in Table 7.

Table 7

Respondents by Age

Age bracket	No. of respondents	Percent
20-30 years	12	11.5
30-40 years	49	47.1
40-50years	25	24.1
over 50 years	18	17.3
Total	**104**	**100.0**

From Table 7, 61% of the respondents were below the age 40 years. This indicates a high level of youth involvement in development activities which is desirable for the future of the county. Only 17.3% of the respondents are aged above 50 years.

EDUCATION LEVEL OF RESPONDENTS

The study sought to find out the number and distribution of the respondents who were graduates, diploma holders, those who had attained secondary level education and those that had only acquired primary school education. Frequencies and Percentages were used in carrying out the analysis.

Table 8

Education Level of Respondents

Level of education	No. of respondents	Percent
Primary School	4	3.8
Secondary School	31	29.8
Diploma Holder	44	42.3
Graduate	25	24.0
Total	**104**	**100.0**

From the analysis, majority of the respondents that is 42.3%, were diploma holders whereas 24% were graduates. Only 3.8 % of the respondents had not acquired post-primary school education. This implies that there was a high level of professionals' involvement in the implementation of ESP projects. This should translate into good quality of implemented projects in addition to good management practices. It is however not possible to apportion the effect this has specifically on the overall performance of ESP projects.

EFFECTS OF FINANCIAL PLANNING ON IMPLEMENTATION OF ESP PROJECTS

Planning is inevitable for success in any endeavor be it public or private, corporate or personal. Financial planning is a crucial aspect of the planning process for success to be achieved. The study sought to find out whether the level of consultations before ESP projects implementation was sufficient, if the planned implementation period was adequate and whether proper risk analysis was conducted at the inception of the projects.

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EFFECT OF CONSULTATIONS ON IMPLEMENTATION OF ESP PROJECTS

The level of consultations at the inception ESP projects and the resultant effect on implementation of ESP projects was studied. This was done through the use of both descriptive and inferential statistics. The chi-square statistic was used to analyze the relationship between sufficient consultations and timely implementation of ESP projects. The results are presented in Table 9.

Table 9

Effect of Consultations on Timely Implementation of ESP Projects

Were consultations sufficient?	How timely has the implementation of ESP projects been?				
	Timely	Indifferent	Late	Very Late	Total
YES	18	4	10	5	37
	48.6%	10.8%	27.0%	13.5%	100.0%
NO	6	4	23	22	55
	10.9%	7.3%	41.8%	40.0%	100.0%
Dont Know	1	1	7	3	12
	8.3%	8.3%	58.3%	25.0%	100.0%
Total	**25**	**9**	**40**	**30**	**104**
	24.0%	**8.7%**	**38.5%**	**28.8%**	**100.0%**

Chi-square value=22.919, df=6, p-value=0.01

Of the respondents who saw the consultations as sufficient, 48.6% of them rated the implementation of the ESP projects as timely while 40.5% rated the implementation as late. Out of those respondents who viewed the consultations as insufficient 10.9% rated ESP projects implementation as timely against 81.8% who rated it as late. The computed Chi-square value and p-value implies that there was a significant relationship between consultations at the inception of ESP projects and their timely implementation. This shows that consultations at the inception of ESP projects significantly influenced the projects' timely implementation. Thus the lack of sufficient consultations may have led to the delay in the implementation of ESP Projects. This is especially in areas where lands for implementing the projects were not readily available and had to be sought. This compares well with the findings of Yahya (2000) who observes that end user participation from the project onset is an important factor contributing to the failure or success of projects.

EFFECT OF PLANNED IMPLEMENTATION PERIOD ON IMPLEMENTATION OF ESP

The study explored the relationship between the planned implementation period and the timely implementation of ESP projects. It should be noted that the planned implementation period was the parameter against which the ESP projects were being gauged as being timely or not. It was therefore necessary to find out whether the planned implementation period was adequate or not. The results are presented in Table 10.

Table 10

Effect of Planned Implementation Period on Timely Implementation of ESP Projects

Implementation period adequate?	Timeliness in the implementation of ESP projects				
	Timely	Indifferent	Late	Very Late	Total
Yes	9	4	4	2	19
	47.4%	21.1%	21.1%	10.5%	100.0%
No	15	5	29	28	77
	19.5%	6.5%	37.7%	36.4%	100.0%
Dont Know	0	0	7	0	7
	.0%	.0%	100.0%	.0%	100.0%
Total	**24**	**9**	**40**	**30**	**103**
	23.3%	**8.7%**	**38.8%**	**29.1%**	**100.0%**

Chi-square value=25.188, df=9, p-value=0.03

From the results above, of the respondents who viewed the planned period as adequate 47.4% rated implementation of ESP projects as timely while 31.6% of the respondents 42 viewed it as late. On the other hand 19.5% of those respondents who viewed the planned implementation period as inadequate rated the implementation of ESP projects as timely while 74.1% rated it as late. All the respondents who did not know whether the planned implementation period was adequate rated the implementation of ESP projects as timely. The computed Chi-square statistic and p-value implies that there was a significant relationship between adequacy of planned implementation period and timely implementation of ESP projects. This implies that the inadequacy in the planned implementation period led to delays in the implementation of ESP projects. This mainly resulted from the return of unutilized funds to the treasury at the financial year end and the long periods it took for such funds to be voted back to the projects in the following year. This challenge was also highlighted in Nigeria where Obadan (2009) noted that that delayed budget enactment resulted in projects not being able to implement specific activities that were time-bound.

EFFECT OF PLANNED IMPLEMENTATION PERIOD ON COMPLETION ESP PROJECTS

The planned implementation period is important for project success. The study sought to find out whether the planned implementation period was adequate and the effect it has on the completion of ESP projects. The results are detailed in Table 11.

Table 11

Effect of Planned Implementation Period on Completion of ESP Projects

Was the planned implementation period adequate?	How complete are the ESP projects?			
	Totally complete	Partially complete	Totally incomplete	Total
YES	2	15	2	19
	10.5%	78.9%	10.5%	100.0%
NO	6	59	13	78
	7.8%	75.3%	16.9%	100.0%
Dont Know	0	5	1	6
	.0%	83.3%	.0%	100.0%
Total	**8**	**79**	**15**	**104**
	7.8%	**76.7%**	**14.6%**	**100.0%**

Chi-square value=18.550, df =9, p-value=0.029

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Out of those respondents who saw the planned implementation period as adequate, 10.5% rated the ESP projects as totally complete while 89.5% of the respondents rated the projects as incomplete. All the respondents who viewed the implementation period as insufficient rated their ESP projects as incomplete. The computed Chi-statistic and p-value implied that there was a significant relationship between planned implementation period and the level of completion of ESP projects. The significant relationship implies that inadequate planned implementation period led to many incomplete ESP projects with only 7.7 % of the projects totally complete. This might have resulted from factors for example inflation due to the lengthy implementation period leading to increase in cost of projects thus making their completion at the original planned budgets impossible. This in some cases led some contractors to abandon projects that prove unprofitable/too costly for example the contractor undertaking the Runyenjes District Industrial Development Centre. Lack of proper planning is also reflected in Nigerian government projects where According to Obadan (2009), projects lack implementation plans. The Consequence is that government commits resources to projects without proper assessment of the results to be achieved. In the case of ESP projects, money was allocated to projects across the country without an implementation schedule, before formation of implementation committees and before identification of the projects' locations. This caused protracted delays before implementation began eventually leading to the return of the allocated funds to the treasury in many cases.

EFFECT OF CONSULTATIONS ON THE TIMELY IMPLEMENTATION OF ESP PROJECTS

Table 12

Effect of Consultations on the Timely Implementation of ESP Projects

Was projects selection process consultative enough?	How timely has the implementation of ESP projects been?				
	Timely	Indifferent	Late	Very Late	Total
Strongly agree	4	0	0	1	5
	80.0%	.0%	.0%	20.0%	100.0%
Agree	16	7	12	5	40
	40.0%	17.5%	30.0%	12.5%	100.0%
Undecided	0	1	6	2	9
	.0%	11.1%	66.7%	22.2%	100.0%
Disagree	3	0	13	13	29
	10.3%	.0%	44.8%	44.8%	100.0%
Strongly disagree	1	1	9	9	20
	5.0%	5.0%	45.0%	45.0%	100.0%
Total	**24**	**9**	**40**	**30**	**103**
	23.3%	**8.7%**	**38.8%**	**29.1%**	**100.0%**

Chi-square value=38.886, df=12, p-value=0.000

From the results displayed in Table 12, majority of the undecided (88.9%) rated the process as late. Among the respondents who disagreed 89.6% of them viewed the ESP projects implementation process as late with only 10.3% rating the process as timely. Out of the 20 respondents who disagreed, 90% held the opinion that the implementation process was very late with only 5% rating the process as timely. It is clear from the analysis that majority of those who agreed rated the implementation process as timely while majority of those who disagreed rated the process as late. The computed Chi-statistic and p value implies that there is a significant relationship between consultations during the inception of the ESP projects and the completion of ESP projects. Thus the lack of consultations at the inception of the ESP projects contributed to non-completion of ESP projects. This is especially so where new land was required for implementation of some projects leading to delays in the implementation and eventually higher costs due to inflation.

EFFECT OF RISK ANALYSIS ON THE IMPLEMENTATION OF ESP PROJECTS

Unforeseen risks can make even the best of projects to fail. This therefore necessitates proper risk analysis at the projects inception in order to identify such risks and take steps to either deal with the risks, avoid them, transfer them among other approaches of dealing with risks. Table 13 presents the results of the analysis:

Table 13

Rating of Risk Analysis at the Inception of ESP Projects

Rating of risk analysis at the inception of the ESP projects		
Rating	No. of respondents	Percent
Excellent	1	1.0
Good	17	16.3
Fair	35	33.7
Poor	36	34.6
Very poor	15	14.4
Total	**104**	**100.0**

Only 17.3 % of the respondents felt that the risk analysis at the inception of ESP projects was either excellent (1%) or good(16.3%).The majority of the respondents being 82.7% rated the risk analysis as either fair, poor and very poor. No significant relationship was found to exist between risk analysis at the inception of ESP projects and their implementation. Poor risk analysis in the ESP projects might have failed to anticipate the delays in the implementation of some of these projects and uncover the difficulties faced in their implementation leading to delays and non-completion of projects.

FINDINGS

SUMMARY OF RESEARCH FINDINGS

The aim of the study was to find out the effect of Financial Management challenges on implementation of ESP projects. To do this, three objectives were identified and consequently three hypotheses were developed. The study established that in relation to financial planning majority of the respondents that is 53% confirmed that the consultations were insufficient against 35.5% who felt that the consultations were sufficient. Further the results of the study showed that 75% of respondents saw the planned implementation period as inadequate , 19% thought that the time was adequate while 6% did not know whether the period was adequate or not. The study further found that there was a significant relationship between consultations at the inception of ESP projects and their completion. Majority of the respondents either strongly disagreed (28%) or disagreed (20%).Only 5% of the respondents strongly disagreed while 39% agreed. On risk analysis the study found out that only 17.3 % of the respondents thought that the risk analysis at the inception of ESP projects was either excellent (1%) or good (16.3%).The majority of the respondents that is 82.7% rated the risk analysis as fair, poor or very poor. Overall there was a significant negative relationship between financial planning, timeliness of implementation of ESP projects and completion of ESP projects.

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RECOMMENDATIONS/SUGGESTIONS

From the findings of this study, it is recommended that:

i.   There is need for bottom up and more consultative approach in future projects being implemented by the government to ensure success. This is informed by the finding that consultations at project inception were insufficient and external interference was experienced. This requires the government to get projects proposals from the public as happens in other devolved funds like CDF and LATF other than imposing projects on the public.

CONCLUSION

In conclusion, the study found out that all the financial planning aspects affect implementation of ESP projects. The chi-square tests performed on all the financial planning aspects and their effects on implementation of ESP projects showed that significant relationship exists between the Financial planning aspects and implementation of ESP projects. This implies that the null hypotheses developed were rejected and consequently the alternative hypotheses accepted.

SCOPE FOR FURTHER RESEARCH

From the findings of the study, the following areas are suggested for further research:

i. Kenya is made up of 47 counties while this study covered only one county. Similar researches can be replicated in other counties for the purpose of comparing the results.

ii. Studies can be carried out to find the impact of the ESP on the economic well being of the people in Embu County.

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IMPACT OF ELECTRONIC COMMERCE PRACTICES ON CUSTOMER E-LOYALTY: A CASE STUDY OF PAKISTAN

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ABSTRACT

The purpose of this paper is to explore the impact of electronic commerce practices such as customization, care, and contact interactively on customer's E-loyalty. We collected data through structured questionnaires from customers of Amazon. We examined the relationship between independent variables i.e. care, customization, contact interactively and dependent variable customer's e-loyalty. This research study basically tries to find out the importance of electronic commerce tools and preferences of the customers of Amazon. Sample of 100 customers was taken to measure the extent of relationship among variables. We used t test, regression and correlation to test our hypothesis whether the relationship among variables is positive or either negative. The results of the study show that there is positive and significant relationship among independent variables i.e. Care, customization, contact interactively and dependent variable i.e. customer e-loyalty.

KEYWORDS
Contact Interactively, Customization, Care, E-Loyalty

1. INTRODUCTION

With the rapid advancement in technology, different companies are starting their business activities with the help of internet. The selling and purchasing of products with the help of electronic systems such as the Internet and other computer networks is known as electronic commerce (Mariga, 2003). Electronic commerce includes online development of entire system of purchasing and selling, promoting and distributing. The buying and selling of products conducted by electronic means has grown extremely with extensive use of Internet. There are different practices of electronic commerce in different industries such as electronic funds transfer, e marketing, online transaction processing, supply chain management, inventory management systems, and automated fund collection systems suggested by (Lendrum, 2011). Electronic commerce is usually conducted with the usage of World Wide Web, e-mail, mobile devices and telephones.

The paper begins with the reviewing the basic definition of electronic commerce and customers loyalty. After reviewing the definition given by different authors we examined the previous studies conducted by different researchers on care, customization a, contact interactively and customer's e loyalty.

2. LITERATURE REVIEW

There is vide variety of literature is available on customization, contact interactively care and customer's loyalty. Electronic commerce is defined by the (Applegate et al, 1996), Electronic Commerce is more than simple purchasing and selling of services and goods by using electronic means, it also includes electronic communication and all other actions which add value to the whole supply chain.

2.1. Customer's E-Loyalty

According to earlier researchers brand loyalty means repeat purchase behavior of consumers for specific product (Lipstein, 1959) suggested that brand loyalty is the probability of product re purchase of products. (Kuehn, 1962) is also said that it is a probability of product purchase.

2.2. Customization

Customization refers to offer customized products to the customers according to the requirement of every individual customer. According to (Schrage, 1999), Customization offers great potential for e-retailers as "the web has clearly entered the stage where its value proposition is as dependent upon its capabilities to allow customization as it is upon the variety of content it offers." Customizations add to the probability that customers will get something that they wish to buy. (Wind, 2001) suggested that the companies which do not provide customized products can lose its customers. The main objective of offer the customized products are to increase the satisfaction of the customers. A survey by NetSmart Research pointed out that 83% of Web surfers are irritated or puzzled when navigated web sites (Lidsky, 1999). A research study conducted by (Fung, 2008) found that customization of the products on website and customer e loyalty is strongly associated with each other. By personalizing its site, an e-retailer can minimize this dissatisfaction. Customization also creates the understanding of better choice by facilitate a quick focus on what the customer actually desires (Shostak, 1987).

2.3. Contact interactivity

Numerous researchers have conducted research the significance of interactivity and its relationship with customer loyalty in electronic commerce. Contact interactivity refers to the participation and engagement between e tailor and customer through its website. According to the findings of (Salvati, 1999), e-retailers can not capture major market share until they "collect the full measure of commitment desired to attain and capitalize upon electronic interactivity." (Alba et al, 1997) suggested that contact interactivity enables a search process of products that can swiftly locate a wanted product and service, thus replacing reliance on comprehensive consumer memory. By changing a consumer's need and wants for reliance on remembrance with an interactive explore process; an e-retailer may be capable to enhance the perceived value that the consumer places on a business transaction. (Alba et al, 1997) also told that contact interactivity has positive relationship with customer loyalty.

2.4. Care

According to the (Punj & Staelin, 1983) Care is defined as "It is the consideration that an e-retailer give to all the pre- and post purchase customer to assist both direct transactions and long term customer relationships. A research study was conducted by (Poleretzky, 1999) and he told that "In the physical world, if customer gets dissatisfied then he will tell some friend may be five and if customer gets dissatisfied on the Internet then he will tell five thousand people." Dissatisfaction of customer leads to negative impression about company, so there is need to pay more attention to customers in electronic commerce than traditional commerce. According to the (Bolton & Drew, 1994), Service failures have an effect on future business because they weaken customer perceptions of service quality company attachment and lower.

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3. RESEARCH OBJECTIVES

The primary objective of this research study is to examine and determine the perceptions of the customers, engaged in online buying and selling of products, services and information. The basic aims are as follows:

✓   To identify the importance of Electronic Commerce Practices in Pakistan.
✓   To identify the Impact of Electronic Commerce Practices on Customers Loyalty.

4. RESEARCH METHODOLOGY

4.2 Sampling Procedure

The main survey was conducted and collected data from online purchasers or buyers. Data collected from those people who are the customers of Amazon. To assurance that specific sample within a population is sufficiently represented the whole population. Stratified sampling was used to collect data. A structured questionnaire was filled from respondents.

4.2 Sample Size

To study the relationship between the variables, the total respondents for this research were selected 100 online customers of the website. This sample was constructed from the total Amazon customers in the city of Rawalpindi.

4.3 Theoretical Framework

RESEARCH MODEL; IMPACT OF ELECTRONIC COMMERCE PRACTICES ON CUSTOMER E-LOYALTY: A CASE STUDY OF PAKISTAN

4.4   Description of the Model

Customization and Customer E Loyalty: According to (SS Srinivasana et al, 2002) customization of the products increases the chances that customer find that features in a product which he desires to buy the product. (Kahn, 1998) suggested that customization of the products effect the customer e loyalty. Large selection of the products can confuse the customer to take decision of the purchase.

Contact Interactively and Customer E Loyalty: (S.S. Srinivasan et al 2002) suggested that contact interactively affects the customer e loyalty. He told that when a customer purchases a book from tradition book store then there is a limited option available for customers to evaluate the book. In the case of online buying of the book he can read the comments and reviews of the other user of the book that make easy to take decision about the product. Due to these reasons there is required to contact interactively with customers. It helps to tailor the products according to the desires and preferences of the customers. (Lii et al, 2004) revealed that contact interactively is directly linked with customer e loyalty and it increases the e loyalty of the customers.

Care and Customer E Loyalty: According to the findings of (Rummel, 1989) social relationship with customers and communities effect on customers e loyalty. According to the research conducted by (Bolton & Drew, 1994) care have strong relationship with customer e loyalty. The customer care increased the e loyalty of the customers. (SS Srinivasana et al, 2002) pointed out that relationship with community members, providing the advice and information increases the e loyalty of customers.

4.5 Research Questions

This proposed research intends to answers the following research questions:

1.   Do the Electronic Commerce Practices increases the satisfaction and loyalty of customers towards organization?
2.   What types of Electronic Commerce Practices most valued and desired by the customers?

4.6 Hypothesis

Hypothesis 1:   There is positive relationship between customization   and customers' loyalty.
Hypothesis 2:   There is positive relationship between contact interactively   and customer's loyalty.
Hypothesis 3:   There is positive relationship between Care and customer's loyalty.

5. DATA ANALYSIS

Descriptive Statistics

TABLE 1

	Mean	Std. Deviation
E -Loyalty	3.2890	.56620
Customization	4.0260	.59384
Contact Interactively	3.3060	.62050
Care	3.0170	.84913

The table 1 descriptive analysis shows average mean of all variables in which customization have average mean of 4.02. Similar is there the case with contact interactively, care and E. Loyalty. While standard deviation shows degree of variation in care is .85 which is very high, similar in the case with contact interactively and others variables, while the variation is in customization is .59 which is low variation. The descriptive analysis shows the minimum & maximum value in collected historical data.

TABLE 2

Correlations

		E-Loyalty	Customization	Contact Interactively	Care
Pearson Correlation	E-Loyalty	1.000	.385	.934	-.041
	Customization	.385	1.000	.411	.135
	Contact Interactively	.934	.411	1.000	.008
	Care	-.041	.135	.008	1.000

The table 2 Pearson correlation analyses shows the relationship of E. Loyalty with contact interactively, care and customization. The Pearson correlation analysis shows that the correlation among independent and dependent variables. The value .385 of customization indicates that the rate of change caused by independent variable i.e. customization on dependent variable i.e. E Loyalty. The other independent variables such as Contact interactively and care shows the values .934 and -.041 respectively.

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TABLE 3

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.935	.874	.870	.20380

The regression table 3 represents that multiple regression analysis is used because there are three independent variables and one is dependent variable. Value of R represents the relationship between Contact interactively, customization, care and E Loyalty. R square represents that overall 87.4% relationship exists among all variables (Contact interactively, customization, care and E Loyalty). Adjusted R square represents that there is 87.0% exact relationship exists between Contact interactively, care, care & E. Loyalty.

TABLE 4

ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	27.750	3	9.250	222.700	.000[a]
Residual	3.987	96	.042		
Total	31.738	99			

Table of ANOVA basically tells about variance, and also describe to what extent data is fit (i.e. check fitness of data).The ANOVA table represents in the column of degree of freedom (DF), the total number of independent variables in regression analysis that is 3 & the next is error term which calculated by the formula N-k-1, where as N is total number of observations (that is 100) & K means number of independent variables in regression analysis (that is 3), In the next column it shows the sum of squares (SS) in regression & residuals (error).

Mean square (MS) is calculated by dividing the value of sum of squares by the values of degree of freedom, it will also give mean but in square form. Further value of F represents the fitness (goodness) of model by showing value of 222.700, where as P (sig) shows high level of significance representing fitness of data acceptability of null hypothesis which is 0.000.

6. DISCUSSION AND CONCLUSION

The basic purpose of research study was to find out the answers of following questions, such as do the Electronic Commerce Practices increases the satisfaction and loyalty of customers towards organization? And what types of Electronic Commerce Practices most valued and desired by the customers? This research study proves that the use of electronic commerce practices such as care, contact interactively and customization increases the satisfaction and loyalty of the customers. This research study also suggested that contact interactively is most desirable by the Amazon customers. Anyhow some cultural factors may also effect on customization, contact interactively, care and customer e loyalty.

Different researchers have recommended that initiatives such as improving the look of the storefront and the positive appearance of service employees will enhance the loyalty of customers in the traditional retail system. However, there are number of variables distinctive to e-retailing that have not been assessed in the previous customer loyalty literature. This research study has identified three factors that affect e-loyalty of customers. Three factors considered, customization, contact interactivity and care were found to have a significant impact on e-loyalty. E-loyalty demonstrated the highest elasticity with respect to contact interactively and care. If the companies use these variables such as care, customization and contact interactivity then the customers will be more satisfied and loyal to the company.

7. MANAGERIAL IMPLICATIONS

Our findings have both managerial and research implications. From a managerial perspective, e-retailers can launch early warning systems based on continuously measuring customer perceptions. So that management can take appropriate remedial action when any of these dimensions is perceived as falling below an acceptable level.

8. LIMITATIONS

There are some limitations of this research study. We considered three factors i.e. care, contact interactively and customization while measuring the loyalty of customers of Amazon. There could be some other factors such as trust, Community, Convenience and choice used to explore the more accurate results.

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APPENDIX

Scale	Items
E Loyalty	1. I like this website 2. I am considering switching to another website for online buying. 3. I could switch website to purchase products. 4. Whenever I need to make a purchase, I would use this website. 5. Whenever I made online purchase, I preferred this website to purchase the products. 6. This website is the best online buying website. 7. This is my favorite website for online purchasing.
Customization	8. This website offers that products which match my needs. 9. This website offers unique products for me. 10. This website offers customized products. 11. The advertisement of this website makes sense that it offers tailored products according to my needs.
Contact Interactively	12. There is a search tools which helps me to search a desired product from website. 13. This website provides enough information about the products. 14. I believed that this website is user friendly. 15. This website helps me to take purchase decision. 16. This website is not an engaging website.
Care	17. This website delivers the products in time. 18. I feel uncomfortable during the process of busying the product. 19. I feel that this website does not solve customers query in time. 20. Customers can provide their feedback on this website about the products. 21. I face online payment problem last time when I made a purchase from this website.

*5-point Likert scale (from strongly agree to strongly disagree) is used to measure the association between dependent and independent variables.

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SOCIAL NETWORKING IN VIRTUAL COMMUNITY CENTRES: USES AND PERCEPTION AMONG SELECTED NIGERIAN STUDENTS

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ABSTRACT

Social media culture has become one of the dominant cultures in 21st century. While there are divergent views about the significance of this technology, one thing is most definite – the youths, especially university students have incorporated the use of social media into their daily routine. This study evaluates the manner of interaction within the virtual community centres (social networking sites) and examines students' perception of this emerging technology. The study, conducted in Ahmadu Bello University, Zaria, a metropolitan university in Nigeria, surveyed 262 students out of which 120 (45.8%) and 110 (42%) were first and final year students respectively. The study, conducted within the theoretical ambience of mediamorphosis, found that most students use social media more to connect with their existing relationships than using it to create new relationships. In this regard, social networking could be described as an extension of face-to-face communication, a situation where old and new media live in mutual coexistence without abolishing the old ones. The study also revealed that mobile phone constitutes the most popular means through which the students access social media. Perceived negative effects of social networking as revealed by the study are time wastage, invasion of privacy, addiction and promotion of social vices.

KEYWORDS
Social networking, mediamorphosis, virtual community centre, Internet, social media.

INTRODUCTION

Internet revolution has brought about a new form of communication, a development that is drawing the attention of scholars worldwide. This form of communication, otherwise known as social networking has become one of the most important products of Internet technology. With its ubiquity and high rate of prevalence, social networking has become one of the most convenient ways of sharing ideas with distant relations and friends and an avenue of 'meeting' those we have never met before or may never meet for life. Hempel (2005:89) describes these social networking sites as "virtual community centres", what most adults see "as supplements to their daily lives" where they can "tap into information, buy book or send flowers."

Despite the high level of diffusion of social networking sites, few studies have been conducted on this emerging and phenomenal technology. From the various studies, while some individuals perceive social networking site as a form of distraction or a platform where the youths share some ephemeral issues about life when they are supposed to be engaged with more serious issues like their academics, career, and trade, others argue that social networking is a social phenomenon and must be approached from multiple perspectives. Hence, social networking has both good and bad sides.

This study provides descriptive information about how university students (fresh and final year) use the various social networking platforms. Critical questions for understanding the pattern of utilization of such applications address the time spent on it, motivations behind the use of such sites, and their perceived benefits and danger.

SOCIAL NETWORKING

The Internet revolution has brought about a new form of relationship that is gradually eclipsing the face-to-face communication. This new form of social interaction has not only brought about the expansion of one's social networks, it also affords individuals to have 'access' to an array of people that would have not been possible in the 'real' world. This form of relationship, popularly known as social networking, allows people to relate and connect with one another in the virtual realm through wired social networking sites. One good thing about social networking is that everyone within the network can participate in an ongoing debate, share contents, photographs, opinion, create and join groups of interest. Popular among the social networking sites are Facebook, MySpace, Twitter, YouTube; all these have attracted millions of users all over the world and have become a common language among the present generation especially the youths and teenagers who have integrated them into their daily routines.

By definition, social networking sites are those web sites that allow users create connection through the Internet to share and exchange content, chat or leave message (Vivar and Aguilar, 2010). For Ellison, Lampe and Steinfield (2007), social networking sites allow users to engage in virtual representation, articulate connections, view their own networks and the networks of others and fundamentally, allow individuals share both serious and ephemeral changes about life. However, which ever way one may define social networking the 'human' factor is always important as those sites become useless without the presence of human being in them as the various connections in them are driven by humans.

The first social networking sites, SixDegrees.com, was launched in 1997 and it "allowed users to create profiles, list their friends" (Boyd and Ellison, 2008:214). Since then, many other social network sites are burgeoning in the virtual domain but it has been observed that MySpace and Facebook have dwarfed the other social networking sites due to the large traffic they attract (Kent, 2008). In fact, social networking became more popular between 2004 and 2006 with the launch of MySpace and Facebook (Stollak, Vanderberg, Burklund, Weiss, 2011). While Facebook and MySpace are the most popular social network sites, the popularity and adoption of any social networking site may vary from country to country and from time to time. For instance, Japanese embraced Mixi, LunarStorm took off in Sweden, Dutch users embraced Hyves, Grono captured Poland, Hi5 was adopted more in smaller countries in Latin America, South America, and Europe, and Bebo became very popular in the United Kingdom, New Zealand, and Australia (Boyd and Ellison, 2008).

CURRENT USE OF SOCIAL NETWORKING SITES

Social networking in Africa, though a relatively recent phenomenon but it is gradually becoming pervasive to the extent that in some quarters if you are not using it you may be labelled a resident of another generation. According to Boyd and Ellison (2007), in Africa, social networking becomes more popular as a result of the improvement in mobile communication that allows the owners to get connected to the virtual world.

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Though there is so much noise about social networking sites but little is known about how and why the youths use them (Pempek,Yermolayeva and Calvert, 2009). Some argue that users, by displaying their personal information, may be putting themselves at risk both online and offline. However, the high level of diffusion among people shows that there are certain needs that social networking sites gratify.

Nyland (2007) explored the motivations for use of Internet social networking in comparison with other communication alternatives (email and face-to-face communication) and found that users tend to find it (social networking) more convenient than face-to-face communication. The result of the research on the uses and gratifications of Myspace and Facebook by Raacke and Bonds-Raacke (2008) reveal that significant proportion of students use the social networking sites for making new friends and locating old friends. This finding also lend credence to an earlier survey of college students in the United States which reveals that social networking sites are used for social interaction with offline acquaintants in order to maintain friendships rather than to make new friends (Ellison, Lampe and Steinfield, 2007).

Nyland and Near (2007) conducted an exploratory factor analysis on the relationship between the use of social networking and the religiosity of the individual and the result reveals five main uses of social networking sites which are: meeting new people, entertainment, maintaining relationships, learning about social events, and sharing media. However, the result shows no relationship between exposure to social networking sites and religiosity.

While Internet has a lot of social and educational relevance, most of the literatures about online social networking sites are tilted toward their negative dimensions (Ahmad, 2011). However, studies show that social networking sites have potentials to become valuable resources to support teaching and learning though it is still unclear how this can be done (Roblyer, McDaniel, Webb, Herman and Witty, 2010). Ismail (2010) evaluates the international students' acceptance on using the social networking sites to support their learning activities and found that performance expectancy, effort expectancy, social influence, and facilitating conditions will affect their behavioural intentions of using the sites for learning purposes. Also, in an academic environment, there may a wide social gap between the students and their lecturers and social networking can help in closing this gap and provide support and expand students' learning activities by linking them to a group, relevant articles, websites, social bookmarks, videos and blogs (Ramirez, 2007).

AFRICAN INTERNET PENETRATION AND SOCIAL NETWORKING STATUS

Social media has been identified as an important trend that has driven Internet access over the last few years. But does it mean that high social media penetration is tantamount to high Internet penetration? According to the 2011 report of the United Nations body, International Telecommunications Union (ITU), a comparison of data from Facebook, which is arguably the world most popular social networking site, reveals that in some developing countries the number of Facebook users are as many as Internet users. However, the report added that such comparison should be done with caution since Internet users are individuals while Facebook accounts may belong to individuals and corporate organisations.

Some social networking sites are designed to cater for the interest of some groups, individuals, continent, region or country. In Nigeria for instance, social networking sites like Nairaland, Naijapals, onlineNigeria, LagosMeet, LagBook, Nigerianbestforum, 9jabook are popular among the youths especially those seeking for platform to get latest information about job opportunities, politics, gossips and those who want to chat, flirt and date. Social networking sites like Facebook, Twitter, YouTube, MySpace can however be described as the mainstream social networking sites due to their global pervasiveness.

In 2011, the report released by the Worldinternetstats revealed that social media is growing tremendously and in the leading position is Facebook with 799 million users at the end of 2011 and as at March 31, the "Burson-Marsteller's Global Social Media Check-Up 2012", reported that Facebook had 901 million active users while 340 million tweets in a day. Internetworldstats also revealed that as at March 31, 2012, of all the world 835.5 million Facebook users, only 40.2 million (6.2%) come from African continent whose population estimate stands at 1.5 billion (that is, 15.0% of the world's population). According to the internetworldstats, as at 2011 in Africa, Nigeria maintains third position in terms of the number of Facebook users, coming behind Egypt and South Africa whose figure stood at 9.4 million and 4.8 million respectively. The tables below provide the latest information on African Internet Status, Population statistics and social networking (Facebook) figure.

INTERNET USERS AND POPULATION STATISTICS FOR AFRICA						
AFRICA REGION	**Population (2011 Est.)**	**Pop. % of World**	**Internet Users, 31-Dec-11**	**Penetration (% Population)**	**Users % World**	**Facebook 31-March-12**
Total for Africa	1,037,524,058	15.0 %	139,875,242	13.5 %	6.2 %	40,205,580
Rest of World	5,892,531,096	85.0 %	2,127,358,500	36.1 %	93.8 %	795,319,700
WORLD TOTAL	6,930,055,154	100.0 %	2,267,233,742	32.7 %	100.0 %	835,525,280
NOTES: (1) Internet Usage and Population Statistics for Africa are for December 31, 2011. (2) Facebook subscriber data has been updated for March 31, 2012.						

Source: www.internetworldstats.com

FACEBOOK SUBSCRIBER GROWTH BETWEEN 2011 AND 2012						
Geographic Regions in order by size	**FB Users 31-Mar-2011**	**FB Users 30-Jun-2011**	**FB Users 31-Sept-2011**	**FB Users 31-Dec-2011**	**FB Users 31-Mar-2012**	
Europe	200,260,360	208,907,040	214,988,320	223,376,640	232,835,740	
Asia	131,556,800	152,957,480	169,392,060	183,963,780	195,034,380	
North America	173,640,240	167,999,540	172,636,960	174,586,680	173,284,940	
South America	69,594,760	82,207,800	92,049,480	103,294,940	112,531,100	
Central America	28,090,240	33,081,140	36,333,060	38,317,280	41,332,940	
Africa	27,414,240	30,665,460	34,798,940	37,739,380	40,205,580	
Middle East	15,779,440	16,125,180	17,326,520	18,241,080	20,247,900	
Oceania / Australia	12,333,780	12,881,560	13,177,360	13,353,420	13,597,380	
Caribbean	5,362,600	5,903,520	6,182,080	6,218,960	6,355,320	
World Total	664,032,460	710,728,720	756,884,780	799,092,160	835,525,280	

Source: www.internetworldstats.com

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MEDIAMORPHOSIS THEORY AND THE EMERGING CULTURE OF SOCIAL NETWORKING

No doubt, the emergence of Internet technology has altered the manner of interaction and relationships among people; it has brought about a new culture where relationship is built within virtual territory. Thus, social relationship through face-to-face communication is metamorphosing with the insurgence of social networking sites. With a gradual shift from face-to-face communication and the swift integration of social networking to the daily routines of people, mediamorphosis theory can be used to explain these changes.

Mediamorphosis was first used by Kurt Blaukopt, an Austrian music sociologist (Sperlich, 2006) to signify the metamorphosis of music in relation to the dominant role of the electronic media in contemporary music life (Blaukopt, 1992). For Fidler (1997), mediamorphosis involves the changes of communication media that are brought about by the interplay of multiple factors such as perceived needs, competitive and political pressures and social and technological innovation. Hence, the changes in the communication technology should not only be seen as a mere technological transformation but should also be considered as an interdependent relationship between the past and the present. By this, we mean that this new means of communication (social networking) did not emerge independently or spontaneously but it is a product or an extension of old means of communication (face-to-face). Hence, even though social networking sites have brought about tremendous changes in human relationship, such changes are done within the context of the existing patterns of relationships. For instance, social networking does not only allow us to connect with those we have never met before, it has also further boosted face-to-face communication by providing avalanche of possibilities and serving as platform to reconnect with those we have shared close affinity, those we have in the past, met face-to-face.

Findler (1997) identifies six fundamental principles that provide insight into our understanding of the emerging computer-mediated communication; coevolution and coexistence (that is, as newer media emerge and become part and parcel of the communication system without necessarily abolishing the older media); metamorphosis (that is, new media emerging out of the existing ones); propagation (that is, the new media propagate the dominant traits of the old media); survival (that is, both the new and the old media are forced to adopt to the changes for their own survival); opportunity and need (these media must meet the political, social and economic needs of their adopters in order to survive); delayed adoption (it takes a long time for the new media to become a success commercially). The above six principles can be used to explain the face-to-face communication and the emerging culture of social networking where distance no longer stand as barrier among people. Social networking sites represent a new domain of social interaction and as a new phase of communication platform, it infuses new technologies into the existing possibilities, and now coexists with the face-to-face social interaction.

METHODOLOGY

To find out the manner of interaction within the virtual community centres otherwise known as social networking sites, two hundred and sixty two students of the Department of Mass Communication, Ahmadu Bello University, Zaria, were sampled. Being a metropolitan and federal university, the school can boast of people from every part of the country and may as well represent a typical Nigerian university. Only students who came for lectures the day questionnaires were administered filled them. Copies of the Questionnaire were administered to those in the final year of their study and those in their first year (freshers) to see if there is a difference in the manner SNS is used. Of the total number of students sampled, 120 students representing 45.8% of the sample size were first year students while 110 (42.0%) were in their final year and 32 (12.2%) failed to indicate their level of study. The questionnaire has two sections; one section handled the demographic profile of the students while the other parts handled the students' uses and perception of Internet social networking. The questionnaire had both closed and open ended questions.

DATA PRESENTATION AND DISCUSSION OF FINDINGS

The data from this survey is limited to the number of copies of questionnaire administered but it revealed an interesting picture of how university students make use of the Social Networking Sites (SNS) with special emphasis on freshers (first year students) and final year students.

a. PROFILE OF SNS USERS AND PATTERNS OF USAGE

Table 1 presents the quick profile of SNS users in terms of the sex, level, when they joined SNS – whether while they are in the university or before coming to the university. Also, time spent which is measured by the number of minutes or hours spent on the sites was measured in terms of minutes and hours while frequency of usage was measured in terms of whether it is 'daily', 'sometimes', and 'rarely'. The study found that while 35.5% spend 30 minutes to 1 hour daily on social networking, 29.4% spend 2 hours and above. It was also found that while 44.3% of the students use social networking sites on daily basis, 19.1% and 36.6% use it rarely and sometimes respectively. This is an indication that social networking has become part and parcel of the students as many of them have incorporated it into their daily routine. The cross-tabulated data reveals that while female students spend more time on social networking sites than their male counterparts, students in their first year spend more time on networking in the virtual environment than those in their final year, an indication that the time spent on the social networking sites changes as the students continue their degrees (See Table 2). The data also revealed that majority of the students (53%) started using SNS before coming to the university while 37.8% started using while in the university. This data therefore is an indication that there are also many secondary (high) school students who use SNS, many even join before coming to the university.

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TABLE 1: PROFILE OF USERS AND PATTERN OF USAGE

Sex of the Respondents	Frequency	Percentage
Male	104	39.7
Female	143	54.6
No Response	15	5.7
Total	262	100.0
Level of the Respondents		
100	120	45.8
400	110	42.0
No Response	32	12.2
Total	262	100.0
When the Respondents joined SNS		
Before coming to school	141	53.8
While in school	99	37.8
No response	18	6.9
Total	262	100.0
How Often Respondents Use SNS		
Daily	116	44.3
Rarely	50	19.1
Sometimes	96	36.6
Total	262	100.0
Amount of Time Spent on SNS		
30 minutes to 1 hour	93	35.5
1 hour to 2hours	70	26.7
2 hours and above	77	29.4
No response	19	7.3
Total	262	100.0

TABLE 2: CROSS TABULATION OF TIME SPENT ON SNS

How much time do you spend on SNS				Level of respondents		Total
				100	400	
30 mins. to1 hour	Gender of respondents	No response	0	2	6	8
		Male	3	16	18	37
		Female	4	19	25	48
		Total	7	37	49	93
1hour to 2hours	Gender of respondents	No response	1	1	1	3
		Male	4	10	13	27
		Female	4	20	16	40
		Total	9	31	30	70
2hours and above	Gender of respondents	Male	6	20	6	32
		Female	6	28	11	45
		Total	12	48	17	77

TABLE 3: FREQUENCY OF USAGE OF SNS

Level of Respondents.	How often do you access your networking site			Total
	Daily	Sometimes	Rarely	
No Response	14	10	4	32
100 level	62	23	32	120
400 level	40	46	14	110
Total	116	79	50	262

b.   WHICH SNS IS USED?

No doubt, the use of social networking sites has become pervasive among Nigerian students. From the data gathered, 77.9% make use of one social networking site or the other (See table 1). However, the most popular social networking sites among the students is facebook with 50.8% users. This shows that among 10 university undergraduate students who use SNS, 5 will likely be facebook users. Though worldwide, facebook and MySpace compete in terms of number of users but this study revealed that facebook is far more popular than MySpace in the study area. In fact, 2go which is hardly mentioned in the list of popular SNS even has larger users (18.7%) than MySpace.

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TABLE 4: SNS USED

SNS Used	Frequency	Percentage
Facebook	133	50.8
Twitter	23	8.8
2go	49	18.7
YouTube	22	8.4
MySpace	3	1.1
BB Messenger	18	6.9
Others	24	9.2

c.   SNS ACCESS POINTS

In developing countries, combination of factors has made it difficult for individuals to have access to the Internet facilities. In order to surmount the difficulties of access, Internet users resort to different Internet access points depending on their needs, their economic strength, intended privacy and comfort. Hence, this study evaluates the possible SNS access points. From the study, the data revealed that mobile phones provide the greatest access to social networking users. Though Sairosse and Mutula (2004) assert that cybercafés are becoming the most preferred Internet access point because they are open for long hours, are more economical, provide technical assistance to users, and their flexibility but Internet connectivity in Nigeria according to Kolawole (2008), has been greatly boosted by mobile phone service providers through the use of General Packet Radio Service (GPRS). This may explain why majority of students (59.5%) access the SNS through their mobile phones while 25.2% access SNS through cybercafé. Other Internet access points identified were personal computer (modem), the School Wireless Network, and MTN *Universities Connect* (an electronic library provided by the MTN Foundation, a social responsibility arm of MTN Nigeria, one of the leading telecommunication company).

TABLE 5: STUDENTS' SNS ACCESS POINTS

SNS Access Points	Frequency	Percentage
Mobile Phone	156	59.5
Cybercafé	66	25.2
Personal Modem	39	14.9
School Wireless Network	27	10.3
MTN Universities Connect	17	6.5

d.   REASONS FOR USING SOCIAL NETWORKING SITES

From the Uses and Gratification perspective, students may not use social networking sites if such does not gratify certain needs. While most of the media uses are categorized into information, education, surveillance, entertainment, this study found that the most important uses of social networking sites is 'social connection' which is pronged into two – 'connect with existing friends' and 'connect to new friends.' This finding is in congruence with previous studies. For instance, Golder, Wilkinson and Huberman (2007) found that messaging within online networks is done to maintain and build social ties across distances. Also, Lampe, Ellison, Steinfield (2006) and Ellison, Steinfield and Lampe (2006) all found that SNS is used to learn about old friends and reconnect with relations, and this use was rated higher than other uses. Through social connection, students create and develop social identity, develop intimacy and tackle some social problems like boredom, isolation, loneliness and other social and psychological issues. Other uses that command great attention of the sampled students is social escapism (25.6%), academic purpose (15.3%), being in tune with trend (11.5%) and online dating (4.5%). Recent studies reveal that Social Networking Sites have not reached their full potential in terms of academics and intellectual purpose but this current study reveals that if SNS is well developed and intellectually-inclined applications are integrated into the virtual environment, it can, to a large extent, enhance the engagement levels of students. It is also believed that by using SNS for social connection, students can build intimacy and self-identity, after all self-disclosure enhances personal identity and intimacy (Buhrmester and Prager, 1995). Students, through social networking, can therefore build self-confidence, discuss personal, emotional and academic issues with those they share close ties.

TABLE 6: STUDENTS' REASONS FOR USING SNS

Reasons for using SNS	Frequency	Percentage
Connect with existing friends	103	39.3
Connect to new friends	78	29.8
Social escapism	67	25.6
Academic purpose	40	15.3
Communication (sharing and getting information	3	1.1
Economic purpose	9	3.4
To be in tune with trend	30	11.5
Online dating	12	4.5

e.   PERCEIVED NEGATIVE EFFECTS

From the open-ended question asked about students' perceived negative effect of social networking, most respondents (37.4%) mentioned time wastage as one of the dangers of social networking. Though Gross and Acquisti (2005), in their study of information revelation and disclosure within the virtual environment, it was found that only 1.2% of users change the default privacy setting, and less than 0.5% of users change but the current study found that 13.4% considered privacy as an issue. Other issues mentioned were addiction which could equally lead to time wastage. Health implications like having few hours sleep and visual impairment were also mentioned by 3.1% of respondents (See table 6).

TABLE 6: STUDENTS' PERCEIVED NEGATIVE EFFECTS OF SNS

Variables	Frequency	Percentage
Invasion of Privacy	35	13.4
Time wastage	98	37.4
Addiction	32	12.2
Social Vices	32	12.2
Meeting bad friends	17	6.5
Health implications	8	3.1

CONCLUSION

There is no doubt social networking has become an integral part of daily routine of an average student. Considering the quantum of time spent by students each day on social networking sites, school administrators and educational institutions should be more creative by using the right applications for the advancement of education instead of treating it as a platform where trivial issues are discussed. Many students now belong to one virtual community, an avenue where an individual can garner outrageous number of friends – those they have ever met, those they may one day meet face-to-face and those they may never meet for life. Thus, most students use social networking sites as a means of connecting with those they have met before and those they have not met or may never meet. Thus, it can be argued that social networking is an extension of face-to-face communication, a very important tenet of mediamorphosis which stresses the coexistence of the new and old media without necessarily abolishing the old patterns of relationship. Another important use of SNS is to ease and chase away

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boredom or what can be more aptly described as social escapism. Though this study does not compare social networking with face-to-face communication, but it nonetheless provides useful insights about how the face-to-face communication is metamorphosing or reinventing itself by coexisting with interactions and relationships within the virtual domain. Hence, while social networking does not only allow us to connect with those we have never met before, it has also further boosted face-to-face communication by providing avalanche of possibilities and serving as platform to reconnect with those we have shared close affinity, those we have in the past, met face-to-face.

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EXPOSURE TO CLIMATE CHANGE RISKS: CROP INSURANCE

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ABSTRACT

This paper analyses the broadly used concepts of risk and exposure as they relate to climate and weather threats, re-conceptualizes these terms in the context of climate change and explains this development using crop insurance as example. Government subsidization of insurance against risks related with contrary climatic situations and weather events, such as flood impairment and crop loss, may lead to discrete decisions that really raise the exposure of people, property and economic events to those risks. The methods that give rise to this phenomenon are important in accepting the exposure of social populations to climate change. In many areas, existing conditions that give rise to flooding or crop failure are likely to be intensified by climate change over coming eras. In the climate change field, susceptibility has been abstracted as a function of disclosure to risk and as a skill to adapt to the effects. In this context, crop insurance is possible adaptive measures. This treatment of exposure compares with similar ideas in insurance and risk management whereby actions that cause damage are known as threats, and physical conditions, such as climate change, that increase the outlook of a threat occurring, are known as physical threats.

KEYWORDS
climate change, susceptibility, physical hazards, adaptive response.

1. INTRODUCTION

It is widely accepted that growths of carbon dioxide and other greenhouse gases, in huge part, are an effect of social activity and are causing substantial changes to the Earth's climate, especially rises in average temperatures. However, the most recent report of the Intergovernmental Panel on Climate Change (IPCC) also summaries changes in the occurrence, spatial dissemination and degree of a number of climatic conditions, extremes and weather events possible to occur in coming decades. Many of these variations, if revealed, pose significant risks to social well-being. The panel notes that much social disbursement can be expected to face an amplified potential of flooding because of heavy rain events and sea-level rise. Higher temperatures and more hot days are expected to occur over closely all land areas, and increased summer continental drying and allied risk of summer drought is likely to occur over mid-latitude interior areas. Such variations in climatic conditions may be expected to pose distresses for areas of agricultural production. Many social settlements in such environments have long been open to the risks of flooding or drought. Such indexes of climate change can therefore be defined as existing risks to which such societies are already unprotected. In other words, the climatic conditions recorded above represent impending increases in frequency, degree or magnitude of existing climatic or weather correlated risks. Because the likely signs of climate change comprise of hazards for which insurance may be available, use of insurance can be considered as one the many promising options for climate change. The objectives of this paper are; first, we set forth the ideas of risk and susceptibility from the research literature, which have become central to evaluating the potential effects of climate change on social populations. Second, we expose that though coverage and adaptive capability are often treated separately, in climate change works, they are not equally independent variables and that they are consistently unified, and we thus propose a re-conceptualized model of climate-related risk to exemplify more closely these connections. This model is relevant to those seeking to reduce social exposure to climate change risks, because actions taken to reduce disclosure may cause changes in adaptive capacity- or vice versa. Third, we demonstrate these ideas with examples of insurance for crop- and flood-related risks. In many western countries, governments aids such insurance, which serves to make the assurance more widely available; thus, more people who experience these types of victims are compensated.

2. SOCIAL VULNERABILITY TO CLIMATE VARIATION

Many descriptions have been offered to describe social vulnerability to natural conditions that may have contrary consequences. Most describe susceptibility as the potential to experience harm or loss from some event or condition, and this prospective is related to factors that distress the prospect of the incident or situation occurring and the capacity to cope with or adjust to the effects of the event, and when it occurs. Social vulnerability to the broad range of risks related with climate change can be denoted with the model (1)

V, i=/ (Ejllt1Csllt)   (1)

Where V = susceptibility, E = disclosure, AC = volume, s = a given structure or community, 1 = a given locality, i = a given climatic inducement and t = a given period of time. This model recognizes that the liability of a given community or system to climate change is specific to particular pressures or stimuli at particular

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locations and periods of time. There are two major elements of liability notable in the model. E refers to the possibility or occurrence of hazardous conditions relative to the presence of socials at a particular location at a particular time. AC refers to the capability of those exposed to cope with the potential risky conditions to which it is exposed. No particular scale is quantified in this model, allowing for vulnerability to be characterized at levels from individual families to communities, regions and beyond.

The exact form of the relationship {f} is not specified, as it would vary by s, 1, i and t; however, the general form as it is set forth denotes that E is completely related to V, while AC is adversely or inversely related to V. This model offers a very broad conceptualization of liability. It does not specify the particular interconnections. It is anticipated that these relationships are likely to be system-, place- and time-specific, and will vary with the explicit types of climate change-related hazards and potential ways of adjusting to such risks. We next reformulate this general liability model to reveal how risk is assumed in the fields of insurance and risk management. Doing so will provide perceptions into how insurance may influence adaptive capacity and may inform strategy regarding promoted insurance in particular applications.

3. RISK AND HAZARD AS DEFINED IN THE INSURANCE INDUSTRY

The following portrayals of risk and hazard as they are used in the fields of insurance and risk management are derived from Trieschmann et al. and are reliable with those in standard insurer's .In the field of insurance, risk is identical with ambiguity about the existence of a given outcome, and an event that is the index of a given risk is known as a threat. Risk may be classified as follows:

Pure risk vs. Hypothetical Risk

A pure risk is one where, if the threat arises, the only probable outcome is a loss to the person facing it. For example, a house fire is suspect to result in any benefit to the owner of the house. A hypothetical risk is one where, if the threat occurs, the chance of experiencing either a loss or a benefit exists. Note that the risk itself is not the source of speculation, but the nature of the impact of its occurrence is. A gamble placed on a racehorse is an example of a hypothetical risk.

Static risk vs. Dynamic Risk

A static risk occurs in an atmosphere that is in a steady state. For example, the probability of death is 100 percent and unlikely to change. A dynamic risk is one where the environment may be substance to change. Starting a new business in a unpredictable economic environment is an example of dynamic risk.

Subjective risk vs. Objective Risk

A subjective risk is one where an individual forms a view regarding the possibility of a threat occurring. An objective risk is one where the probabilities of a threat occurring can be enumerated. For example, distress of flying is a subjective risk; the frequency of airplane crashes as restrained per number of airplane flights is an objective risk. Using these accounts of risk, liability as it is generally labeled in climate change literature becomes pure, dynamic risk using the language of the insurance industry. The climatic provocations that give rise to such risk become climatic threats. Whether the dangers are objective or subjective in the context of climate change is in large part associated to the view of the observer; Slovic et al. have shown how observation of what creates risk of harm from environmental threats is subjective by a range of factors and may differ considerably among individuals and institutions.

For the purposes of this paper, it is adequate to identify the prominence of perception in the formation of risk. The reality of crop and flood insurance implies that such risks are generally observed to exist in the controls where insurance is made accessible; whether an individual chooses to contribute in such insurance plans may certainly be subjective by the awareness of those conditions that increase the possibility of a given threat occurring or that increase the severity of the loss when a threat occurs are known in the insurance industry as hazards. Hazards can be categorized as follows:

Physical Hazards

A physical hazard is a substantial condition that increases the chances of a threat occurring, or, in our case, a geophysical, biophysical, atmospheric or hydrological condition. For example, a sudden and passionate burst of rain is a physical hazard in a floodplain, because it raises the possibility that a channel may runoff its banks, thereby increasing the likelihood of property damage occurring.

Morale Hazards

The action of a discrete disregards or is careless of a given threat is a morale hazard. An example of this is a specific who builds a house in an area that is normally flooded and does so with the hypothesis that a third party will reimburse him or her for any losses he or she might experience. It will be shown that sustained insurance can cause this form of hazard to occur.

4. RE-CONCEPTUALIZING THE SUSCEPTIBILITY MODEL

On the basis of the influences presented so far in this paper, the abstract model of liability introduced above may be reformulated as follows:

$$R_{sipt} = f(H_{slpt}, A_{sipt}) \quad (2)$$

Where R = pure, dynamic risk, H = hazard, A = adaptive response, s = a given community, 1 = a given location, p = a given threat and t = a given period of time In this reformulation (2), liability of a given system or community to a given climatic incentive occurring at a given place and time has been exchanged by the risk of loss in a given community, in a dynamic environment, due to a given climatic threat occurring at a given place and time. In doing so, we move from a general conceptualization of the potential for loss or harm due to climate change to a conceptualization that, although still generic in nature, describes the outcomes of particular adaptive measures taken in the context of specific climate- or weather-related events or conditions. The terms exposure (E) and adaptive capacity (AC) have been replaced by H and A, respectively. A, in this model, defines the influence of a particular response or set of actions, such as insurance, against a particular threat (p) and is therefore more measure-specific than adaptive capacity.

The term threat (p), which defines the physical display of the risk (R) in question, is significantly narrower than the term climatic stimulus (i) that it has swapped. In other words, the re-conceptualized model seeks to relate specific types or forms of adaptation to specific types of climate- or weather-related risks. The term hazard includes physical, morale and moral hazards as described above, and its use in this reformulation makes clear what is implied in the term exposure used in the more general susceptibility model: that both environmental and social progressions influence the level of risk. For instance, different types of threat might increase the prospect of flood-related threats in a given location. Climate change, should it lead to more common extreme precipitation events, would present a physical hazard. Where the resident of a building situated in a floodplain uses the basement to store valuable items, not recognizing that the building has been flooded in the past, this presents a morale hazard. A builder, who intentionally constructs for re-sale, to an unsuspecting buyer, a non-flood-proof building on a piece of land known to be drowned regularly, creates a moral hazard.

5. EXPERIMENTAL APPLICATIONS

This conceptualization may be used to help structure other empirical inquiries or analyses of the susceptibility of a range of social systems to climate change, as well as prevailing climate-related risks. For example, Bryant et al. define the adaptation of farmers to climatic inconsistency and change as involving "resolute positive or reactive response[s] to variations or risks". This depiction is similar to that of adaptive responses (A) in the conceptualization of risk described above. The authors go on to show that the capacity of agricultural systems to adjust to climatic risks is subjective by a range of social procedures, such as government policies, economic situations and consumer preferences operating at larger scales, and farm size, crop varieties and family financial well-being at the specific farm level. A task in estimating the size to adapt to future climatic conditions is thus in the analysis of how such processes limit or enhance the adoption of adaptive responses. An empirical study of the relationship between opinions and actions might seek to interpret these in the framework of physical, morale and moral hazards using the abstract model introduced here.

This conceptualization of risk has helped guide the progress of an empirical study of social migration performance in rural areas in the period of repetitive crop failures in the mid-1930s caused by irregular years of scarcities and floods. The model was useful in distinguishing that migration could be abstracted as one of a range of potential adaptive responses to hostile climate conditions or weather events and not simply as a threats faced by farmers and the social practices that placed them in differential positions of disclosure, leading to particular groups of farmers using migration as an adaptive response.

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6. CONCLUSION

Although susceptibility is presented as being a purpose of exposure and adaptive capacity, the courses that form exposure and adaptive capacity do not act in segregation from one another. They are not independent variables. Both reflect the fundamental social, political, economic, cultural and institutional situations that guide the nature of social tenure and resource use. Furthermore, programs that are proposed to improve people's ability to cope with environmental risks-that is, to improve adaptive capacity-may result in behavior that raises disclosure to those very same risks. Exposure to climate change is not simply a measure of the possibility of changes in biophysical conditions of a given location over time. Rather, both biophysical and social procedures regulate exposure.

This paper has abstracted how social behavior, with respect to procedures that might be taken to condense climate change-related risks, may worsen both exposure and adaptive capacity, using example of existing adaptive measures, such as crop insurance, developed in response to existing exposures to climatic conditions. Understanding these relationships as they presently reveal with respect to climate conditions and weather-related events may progress our capability to develop alternative measures that more properly support adaptive capacity in coping with future indexes of climate change. Care must be taken when evolving adaptation policies to prevent unplanned significances increasing exposure to the very risks they are planned to avoid.

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SCENARIO OF ENTERPRISE RESOURCE PLANNING IMPLEMENTATION IN SMALL AND MEDIUM SCALE ENTERPRISES

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ABSTRACT
The study focuses on the application of ERP in the corporate organizations, particularly Small and Medium Enterprises. The research finds its interest on identifying the organizations which are already implemented ERP and its future course of plan. In this paper, we have been drawn the 100 companies for the sample, which are located the major parts of Tamil nadu. This paper emphasis that ERP implementation in Indian SMEs should extend its scope beyond the configuration to the process, enterprise, technology, vendor, end-user, performance, and quality. From this study, we found that the trend in ERP is attractive among SMEs; as the economy emerges from the recession and the organizations expect customized ERP applications in the affordability cost. Affordability is the first and foremost concern when it comes to ERP implementation in small and mid-size companies.

KEYWORDS
ERP, SMEs, Scenario of ERP

1. INTRODUCTION

Information Technology (IT) industry in India is one of the fastest growing industries. Indian IT industry has built up valuable brand equity for itself in the global markets. Enterprise resource planning (ERP) systems integrate internal and external management information across an entire organization, embracing finance/accounting, manufacturing, sales and service, customer relationship management, etc. ERP systems automate this activity with an integrated software application. Now, with the bigger firms in their net, the future growth of ERP vendors will depend on the Small Medium Enterprises (SMEs). In any country, SMEs are the largest contributors to the economy. This year, in India, the SMEs have made a huge contribution to the IT industry. The study focuses on the application of ERP in the corporate organizations, particularly Small and Medium Enterprises. The research finds its interest on identifying the organizations which are already implemented ERP and its future course of plan. This gives an overall picture about the impact of ERP in SMEs. It also gives an idea about the pain areas / difficulties the organizations are facing after implementing ERP. On contrast, it also observes the reasons for not implementing the software. Hence, the utilization of ERP in organizations can be found out. The research study also gives inputs to the organizations in terms of pain areas / issues the SMEs in the industry come across. From the information gathered from the C-level executives, the major issues organizations face in ERP are highlighted below,

- Security issues being the prime concern, while organizations switching ERP applications because of the security factor
- Poor support from the vendors

SMEs due to their specific characteristic and functioning, as suggested by some scholars, cannot be considered scaled-down larger ones, and theories applied and proved in large enterprises.

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ERP IMPLEMENTATION PROCESS IN SME's

Pre-Implementation	Implementation	Post - Implementation
Reasons for ERP Implementation	Top Management Support	Testing
	Project Management	
Selection of vendor	Balanced Team	Benefits
	Inter department co-operation	
	Good Communication	Training
Implementation Strategy	Vendor Support	
	Data Integrity	Vendor's after implementation Support
	User's Support	
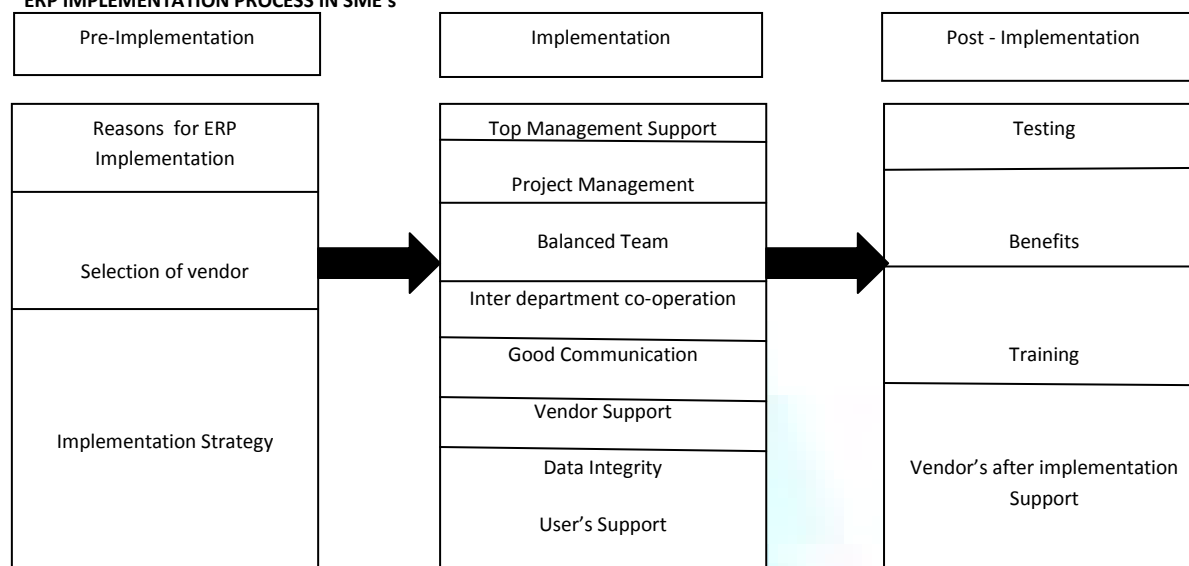
2. REVIEW OF LITERATURE

The following summarizes the review literature of ERP implementation issues of SMEs in the context of developing countries.

Van Hillegersberg et al (2000) has analyzed ERP systems as configurable information system packages that integrate information and information based process within and across functional areas in organizations, however, ERP implementation is an broad, precise and a costly process. The complexity and high cost of these systems have meant that their implementation have been restricted to larger companies as the smaller SME's are unable to invest in these systems.

Nau and Lau (2001) identified certain factors by analyzing selective articles for successful implementation of ERP which are as: ERP team composition, support from top management, business plan and vision, proper communication, project management, business and legacy systems, S/W development, testing and troubleshooting, effective decision making, effective training.

Muscatello (2002) has surveyed the essential factors for the implementation of ERP: Business-oriented ERP strategy, leaders' support, complete ERP plans, clear and stable project range, restructuring business process before ERP taking effect, and training, proper ERP module, assessment of current Sub-system and hardware facilities, definite project target, performance evaluation system, and Full-time project manager. Organizations of any magnitude select a package that is user friendly having adequate scope for scalability and covering wide array of business processes.

The selections of ERP package always need to have proper and careful attention (Kraemmergaard and Rose, 2002; Yusuf et al., 2004; Al-Mashari, 2003; Somers and Nelson, 2001, 2004). Several researchers and practitioners analyzed and focused on the issues that contribute to successful implementation of ERP (Ewusi-Mensah, 1997; Stapleton & Rezak, 2004; Weightman 2004; Anexinet, 2006; Kimberling, 2006; Ibrahim et al., 2008; Jafari et al., 2006).

Jafari et al. (2006) have analyzed in ERP implementation in SMEs and identified ten important issues for the success of ERP implementation. These issues are commitment and support from higher management, proper and clearly defined goals and objectives, effective communication, proper project management, business process reengineering, data accuracy, suitability of hardware and software, vendor support, user education and training and involvement of user in the process.

Upadhyay and Dan (2008), carried out research study for Indian SME organizations where the researchers empirically assessed and, on the basis of responses received from the respondents, identified certain issues that actually would lead to the success of ERP implementation. The issues include properly defined goals and objectives, adequate user training and education, competency in project implementation team, acceptance of change brought about by implementation, proper assistance from vendor and role of external consultant.

Noudoostbeni et al. (2009) assessed important success factors and failure factors in Malaysian SME companies and tried to recognize the most effective ones. From the research, the critical issues identified for successful implementation are proper team composition and effective training of users. In addition, two issues identified responsible for the failure of the implementation are poor project planning and inappropriate training method.

Poonam Garg (2010) has detailed the discuss about the critical success factors empirically for ensuring successful implementation of ERP packages in the context of retail industry in India. The identified top management commitment, product selection, project management, team composition and training and education as the most important issues.

3. RESEARCH METHODOLOGY

Research Design:

The research design implemented in the study is "Descriptive Research". As such, the parameters for the analysis are clearly defined and the study focuses on deriving the factors and considerations associated to those parameters.

Types of data collection:

Primary data were used for this study. The respondents are surveyed in both Phone and Email based on the convenience of their availability. About 100 responses are gathered, of which the majority (99 out of 100) of responses are from phone survey. For the purpose of collecting Email questionnaire, the web portal 'www.surveymonkey.com' has been used.

Population:

The research has been focused on southern part of Tamil Nadu, and the significance is given to cities like Coimbatore and Chennai. While Tier-II cities like Trichy and Hosur are also under the purview. Hence the small and medium size organizations situated in these places will come under the sampling population for the study. As the organization focuses on selected industry verticals like Automobile, Foundry, Pumps & Motor manufacturers, these regions have abundant mid-size companies.

Sample Size:

The sample size here implies the selected Small and Medium Enterprises across Tamil Nadu. As such, 100 organizations are covered in the areas of Chennai, Coimbatore, Tirupur, Hosur and Trichy, for the research study within the stipulated time period.

Sampling Technique:

The 'Judgment Sampling' technique has been used for the research purpose. As the organizations are chosen based on the category of SMEs, target annual turnover generated and also having sound presence in the industry, the sampling technique implemented was' Judgment' basis.

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4. OBJECTIVE OF THE STUDY

The prime objective of the study is to analyze the scenario of ERP being implemented in the selected Small and Medium Business organizations across Tamil Nadu. Moreover, the research gives rise to secondary objectives which are listed as below,

- To observe the trends and patterns in the implementation of ERP
- To find out the pain areas / difficulties in the ERP implementation and usage from the Organizations.

5. RESULTS AND DISCUSSIONS

1. Companies in the annual turnover below Rs.25 Cr, tops the chart with majority of respondents such that 46 organizations fall in that cadre. Also 41 companies are surveyed from the annual turnover range of Rs.50 – 250 Cr. Hence there is motley of responses from wide range of organizations.
2. In the category of annual sales turnover lies below Rs.50 Cr, nearly three – fifth of the organizations do not have implemented ERP. Of the few organizations which have ERP enterprise applications, SAP and Oracle are the popular.
3. 7 of 8 companies in the industry of Pump and Motor manufacturers have implemented ERP business solutions. This shows the significance of enterprise applications in the pump manufacturing organizations.
4. Focusing the organizations with turnover Rs. 50 – 250 crore 43 companies out of the survey falls in this category. In which, 29 are using ERP applications which is a sound figure. Moreover, 48% of organizations in this category have their own tailor made in-house ERP solutions. Hence there is greater scope for customized applications. Also 15 companies have implemented ERP from major vendors in the market, like SAP, Oracle, Microsoft and Ramco ERP.
5. Security, cost and vendor support are the primary reasons, the most of SMEs is not coming forward to implement the ERP system in their organisation.

6. CONCLUSIONS

India is an Information Technology hub where leading IT organizations compete to provide Enterprise Resource Planning (ERP) software which is a niche segment in the market. From this study, we found that the trend in ERP is attractive among SMEs; as the economy emerges from the recession and the organizations expect customized ERP applications in the affordability cost. Affordability is the first and foremost concern when it comes to ERP implementation in small and mid-size companies.

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TABLES

TABLE NO. 01: SIZE OF THE ORGANIZATION: BASED ON ANNUAL SALES TURNOVER

Organization Annual turnover (in Cr.)	No of Companies surveyed
Less than Rs.25	47
25 – 50	10
50 – 100	19
100 – 250	24

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TABLE NO. 02: COMPANIES SURVEYED BASED ON THE INDUSTRIES

Industries	No of Companies surveyed
Automobile	13
Chemical	2
Foundry	11
Granites	2
Industrial Engineering	46
Paper Mills	1
Pumps & Motors	15
Textile Mills	10

TABLE NO. 03: ERP SOFTWARE IN THE ORGANIZATIONS

ERP Software	No of Users
Oracle	11
SAP	12
Microsoft	4
Ramco ERP	3
BAAN	2
Own/ In-house	29
No ERP	**39**

TABLE NO. 04: ERP SOFTWARE USERS BASED IN THE ORGANIZATIONS TURNOVER

Description	No. of Organizations			
	Less than25Crores	25-50 crores	50 -100crores	100-250 crores
Own ERP / Software	11	5	4	8
Using Trial version / Evaluation	3	-	1	1
Using ERP	12		11	13
No ERP	21	13	3	2
Total	**47**	**10**	**19**	**24**

TABLE NO. 05: ERP SOFTWARE USERS BASED ON ANNUAL TURN OVER

Organization	Annual Turn over				NO ERP
	Less than 25crores	25-50 crores	50-100 crores	100-250 crores	
Auto Mobile	3	1	3	3	3
Chemical	-	-	-	-	2
Foundries and Casting	5	2	3	1	0
Granities	-	-	-	-	2
Industrial Engineering	8	4	5	9	22
Paper Mills	-	-	-	-	
Pumps and Motor Manufacture	6	1	3	5	0
No ERP	21	13	3	2	39
Total	**47**	**10**	**19**	**24**	

TABLE NO. 06: IMPORTANT FACTORS FOR ERP

S.No	Critical Factors	Mean	Ranking
1	Security Factors	4.77	1
2	Vendor Support	4.68	2
3	Cost	4.68	2
4	Understanding system of ERP	4.55	4
5	Quality of Testing	4.53	5
6	Knowledge Transfer	4.50	6
7	Strategy	3.68	7
8	Internal Communication	3.56	8

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BRAIN TUMOR SEGMENTATION USING ALGORITHMIC AND NON ALGORITHMIC APPROACH

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ABSTRACT

Tumor segmentation from Magnetic Resonance image (MRI) data is an important but time consuming manual task performed by medical experts. The aim of our research is to develop an effective algorithm for the segmentation of brain MR images and the ultimate goal to assist radiologists in the diagnosis of brain tumors. This paper describes two parallel approaches for brain tumor detection namely algorithmic and non algorithmic approaches. The performance of the paper is divided in to three phases, such as preprocessing & enhancement, segmentation and performance evaluation of two parallel approaches. In first phase, film artifacts and unwanted portions of MRI Brain image are removed, the noise and high frequency components of the MR images are removed using weighted median filter (WM). Second one is segmentation phase. It has two different approaches namely block based (BB) non algorithmic approach and algorithmic approach using meta heuristic algorithms such as Ant Colony Optimization (ACO) and Particle Swarm Optimization(PSO), Finally the performance of the above two algorithms and two approaches are evaluated. The results of our analysis are similar to the original radiologist findings. The original study is based on 50 real patients brain MRI in which an expert identified the brain tissue classes as well as the superior temporal gyros, amygdale, and hippocampus.

KEYWORDS

Ant colony optimization (ACO), Brain tumor, Block Based Technique (BB), Enhancement, Weighted Median Filter (WF), Magnetic Resonance Image (MRI), Particle swarm optimization (PSO), Preprocessing and Segmentation.

1. INTRODUCTION

The incidence of brain tumors is increasing rapidly, particularly in the older population than compared with younger population. Brain tumor is a group of abnormal cells that grows inside of the brain or around the brain. Tumors can directly destroy all healthy brain cells. It can also indirectly damage healthy cells by crowding other parts of the brain and causing inflammation, brain swelling and pressure within the skull. Over the last 20 years, the overall incidence of cancer, including brain cancer, has increased by more than10%, as reported in the National Cancer Institute statistics (NCIS), with an average annual percentage change of approximately 1%.2-6 between 1973 and 1985, there has been a dramatic age-specific increase in the incidence of brain tumors. Death rate extrapolations for USA for Brain cancer: 12,764 per year, 1,063 per month, 245 per week, 34 per day, 1 per hour, 0 per minute, 0 per second. Now days, Magnetic resonance imaging (MRI) is a noninvasive medical test that helps physicians diagnose and treat medical conditions.MR imaging uses a powerful magnetic field, radio Frequency pulses and a computer to produce detailed pictures of organs, soft tissues, bone and virtually all other internal body structures. It does not use ionizing radiation (X-rays) and MRI provides detailed pictures of brain and nerve tissues in multiple planes without obstruction by overlying bones.

The proposed system focuses the brain MRI segmentation using metaheuristics algorithms. Recently, many researchers have focused their attention on a new class of algorithms, called metaheuristics. A metaheuristic is a set of algorithmic concepts that can be used to define heuristic methods applicable to a wide set of different problems. In other words, a metaheuristic is a general algorithmic framework, which can be applied to different optimization problems with relatively few modifications to make them, adapted to a specific problem. The use of metaheuristics has significantly increased the ability of finding very high-quality solutions to hard, practically relevant combinatorial optimization problems in a reasonable time. This is particularly true for large and poorly understood problems. The remainder of the paper is organized as follows: section (3) focuses on the process of preprocessing and enhancement. Section (4) describes the segmentation, Section (5) displays the segmentation using algorithmic approach, Section (6) denotes the non algorithmic approach, section (7) displays experiments and results of the segmentation finally Section (8) tells conclusion of the paper. The following figure 1 displays the overall structure of the proposed system.

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FIG 1: THE STRUCTURE OF BRAIN TUMOR MR IMAGE SEGMENTATION
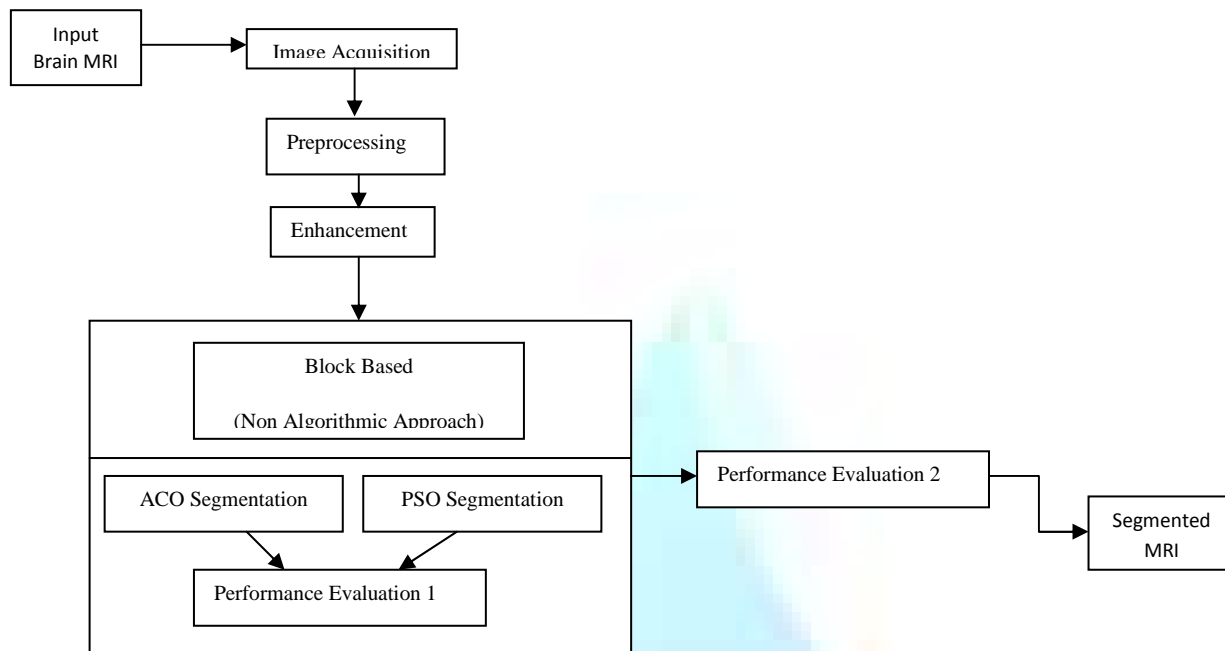
This intelligent system uses medical images as a input to analyses tumor tissue from MRI brain images. The images were acquired on a Siemens MAGNETOM1 1.0 tesla MRI system. The images were digital and 256 X 256 pixels in size. The gray scale was quantized into 12 bits, which allowed 4096 different pixel intensities. A 3D FLASH technique was used to generate 64 or 128 contiguous thin slices. The MR images were transferred to a KONTRON MIPRON2 image processing workstation, and existing enhancement techniques were applied. The workstation used eight bits for each pixel, or 256 intensity levels. A software program compressed the 12 bit magnetic resonance images linearly to a maximum intensity of 255.

2.   REVIEW OF LITERATURE

The initial objective of MRI brain image segmentation is to partition the given MRI brain image into non-intersecting regions describing real anatomical structures. Over the last decade, many methods have been proposed to tackle this problem. A partial list includes surface model, Deformable and dynamic Contour model, Iterative growing model. One of the earliest approaches to segmentation of brain MRI was presented by Ahmed et al [1]. demonstrate the qualitatively and quantitatively that the physiologically based algorithm outperforms two classical segmentation techniques. Angela et al[2]. Developed a gamma camera based on a multi-wire proportional chamber equipped with a high rate, digital electronic read-out system for imaging applications in nuclear medicine. Azadeh [3] presents our proposed methods and results for the analysis of the brain spectra of patients with three tumor types. Benedicte et al[4] report describes initial use of an accumulating healthy database currently comprising 50 subjects aged 20–72. Bricq[5] presents a unifying framework for unsupervised segmentation of multimodal brain MR images including partial volume effect, bias field correction, and information given by a probabilistic atlas. Chunyan et al[6] presents deformable model-based method is adapted in the system. And by the graphic user interface, the segmentation can be intervened by user interactively at real time. Corina et al[7] focuses on the automated extraction of the cerebrospinal fluid-tissue boundary, particularly around the ventricular surface, from serial structural MRI of the brain acquired in imaging studies of aging and dementia.Elizabeth et al[8]reports to detect and quantify tortuosity abnormalities on high-resolution MRA images offers a new approach to the noninvasive diagnosis of malignancy. Erik et al[9] integrates automatic segmentation based on supervised learning with an interactive multi-scale watershed segmentation method. The combined method automatically provides an initial segmentation that applies the building blocks that the user can use in the interactive method. Guido et al[10] uses an EM-type algorithm that includes tissue classification, inhomogeneity correction and brain stripping into an iterative optimization scheme using a mixture distribution model. Hideki et al[11] used region segmentation techniques to extract boundaries of the brain tumor and edematous regions. Iftekharuddin et al[12]presents Two novel fractal-based texture features are exploited for pediatric brain tumor segmentation and classification in MRI. One of the two texture features uses piecewise-triangular-prism-surface-area (PTPSA) algorithm for fractal feature extraction. Jason[13]focused formulation for incorporating soft model assignments into the calculation of affinities, which are traditionally model free. Jeffreyet al[14] introduced an automated method using probabilistic reasoning over both space and time to segment brain tumors from 4D spatio-temporal MRI data. Kabir etal[15] addressed in this paper is the automatic segmentation of stroke lesions on MR multi-sequences. Lesions enhance differently depending on the MR modality and there is an obvious gain in trying to account for various sources of information in a single procedure.

3.   PREPROCESSING AND ENHANCEMENT

This proposed system for pre-processing and enhancement through Magnetic Resonance Image (MRI) is a gradient based image enhancement method and is based on the first derivative, local statistics. In Preprocessing and Enhancement stage, medical Image is converted into standard format with contrast manipulation; noise reduction by background removal, edge sharpening, filtering process and removal of film artifacts. Preprocessing functions involve those operations that are normally required prior to the main data analysis and extraction of information, and are generally grouped as radiometric or geometric corrections. Radiometric corrections include correcting the data for sensor irregularities and unwanted sensor or atmospheric noise, removal of non-brain voxels and converting the data so they accurately represent the reflected or emitted radiation measured by the sensor. This Automatic system proposes a gradient-based image enhancement method in order to improve the image quality and visibility of low-contrast features while suppressing the noises. Image enhancement is the improvement of image quality without knowledge about the source of degradation.

3.1   REMOVAL OF FILM ARTIFACTS

This paper presents an integrated method of the adaptive enhancement for an unsupervised global-to-local segmentation of brain tissues in three-dimensional (3-D) MRI (Magnetic Resonance Imaging) images. The MRI brain image consists of film artifacts or label on the MRI such as patient name, age and marks. Film artifacts that are removed using tracking algorithm .It is based on image intensity .In this algorithm, starting from the first row and first column, the intensity value of the pixels are analyzed and the threshold value of the film artifacts are found. The threshold value, greater than that of the threshold value is removed from MRI. The high intensity value of film artifacts are removed from MRI brain image. During the removal of film artifacts, the image consists of salt and pepper noise .The above image is given to enhancement stage for removing high intensity components and the above noise. The following figure 2 displays that the input and output of preprocessing stage.

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FIG 2: REMOVAL OF FILM ARTIFACTS

Before Preprocessing   (a)   (b)After Preprocessing
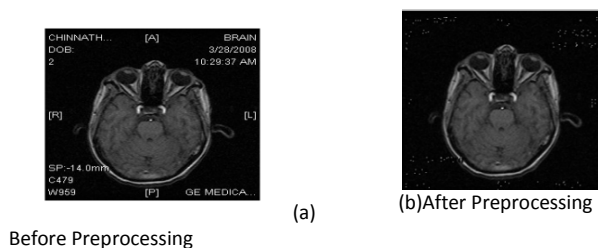
The above figure (a) displays the natural brain MRI, it contains number of film artifacts and labels. After the preprocessing the output of the brain MRI is displayed (Fig 2: b) without artifacts and labels.

3.2 WEIGHTED MEDIAN FILTER

Weighted Median (WM) filters have attracted a growing number of interests in the past few years. In this paper, a weighted median (WM) filter is proposed for improving the performance of brain MRI with out high frequency noise. The merit of using weighted median filter is, it can remove salt and pepper noise from MRI without disturbing of the edges. In this enhancement stage, It adjusts the size of filtering window adaptively according to number of noise points in window, the pixel points in the filtering window are grouped adaptively by certain rules and gives corresponding weight to each group of pixel points according to similarity, finally the noise detected are filtering-treated. The evaluation criteria for weighted Median filtering is considered as follows:

FIG 3: PERFORMANCE ANALYSIS OF WEIGHTED MEDIAN FILTER
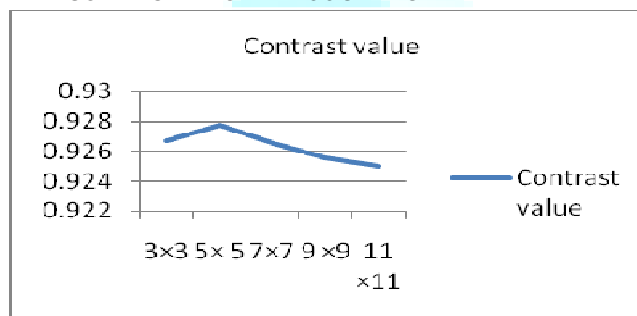
the weighted median filtering is applied for each pixel of an 3 ×3, 5 ×5, 7 ×7, 9 ×9, 11 ×11 sliding window of neighborhood pixels are extracted and analyzed the mean gray value of foreground , mean value of background and contrast value.

4. SEGMENTATION

Medical image segmentation refers to the segmentation of known anatomic structures from medical images. Structures of interest include organs or parts thereof, such as cardiac ventricles or kidneys, abnormalities such as tumors and cysts, as well as other structures such as bones, vessels, brain structures etc. This Segmentation is the partitioning of image data into related sections or regions. This paper has led to the development of a wide range of segmentation methods addressing specific problems in medical applications. Some methods proposed in the literature are extensions of methods originally proposed for generic image segmentation.

4.1   REMOVAL OF SKULL AREAS FROM BRAIN MRI

First stage of the segmentation is removal of skull portion from MR brain images. The human skull is a bony structure, part of the skeleton that is in the human head, the brain is enclosed by skulls, these are provides the fundamental security to brain which supports the structures of the face and forms a cavity for the brain. The third section of this automatic system explains the removal of skull portions from MR brain images. These skull portions are divided in to left, right and bottom of skull. The following table shows the tracking algorithm is used to remove unwanted portion of MRI that means left, right and top skull portions that are not required for further processing.

FIG 4: BRAIN MRI WITHOUT UNWANTED LEFT, TOP AND RIGHT SKULL PORTIONS

(a)   (b)   (c)
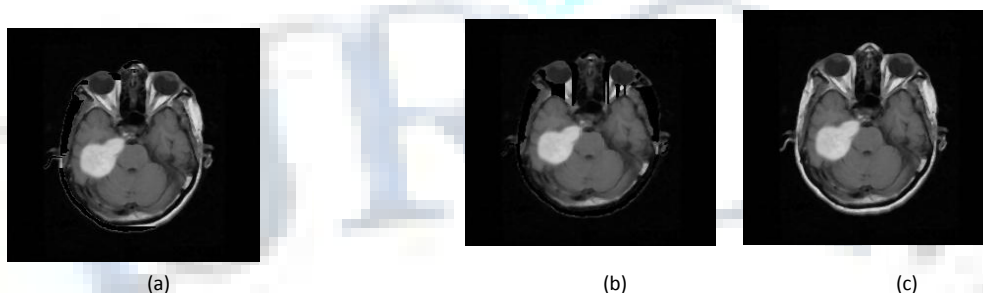
The below figure 4 displays the segmented brain MRI without skull areas like left, right and top of the brain image.

5. ALGORITHMIC APPROACH

The proposed intelligent technique based on histogram thresholding used to produce a binary image to segment tumor region from background brain MRI. In segmentation the threshold value is used to find the suspicious region from brain MRI .The local optimum in the histogram is selected as the threshold value. Starting from the first row and first column of the MRI brain image, the intensity values are analyzed. The intensity values smaller than this threshold are changed to zero(black)and the intensity values greater than the threshold are changed to one(white) in order to perform the morphological operation to remove the four and eight connected pixels in the MRI binary image. Once the connected components are removed the MRI binary image contains only the brain tumor tissue. The special coordinates of the tissue points are mapped and suspicious regions are enhanced using ACO and PSO.

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5.1 ANT COLONY OPTIMIZATION

Ant colony optimization (ACO) is a population-based meta heuristic that can be used to find approximate solutions to difficult optimization problems. In ACO, a set of software agents called artificial ants search for good solutions to a given optimization problem. To apply ACO, the optimization problem is transformed into the problem of finding the best path on a weighted graph. The artificial ants (hereafter ants) incrementally build solutions by moving on the graph. The solution construction process is stochastic and is biased by a pheromone model, that is, a set of parameters associated with graph components (either nodes or edges) whose values are modified at runtime by the ants. The ant colony optimization algorithm (ACO), is a probabilistic technique for solving computational problems which can be reduced to finding good paths through graphs.This algorithm is a member of ant colony algorithms family, in swarm intelligence methods, and it constitutes some metaheuristic optimizations.In our implementation, we are using 20 numbers of iterations. Select the image pixels, which are having optimim level, are stored as a separate image. This segmented image is used for the next step, to extract the textural features for classification microcalcifications. The ACO algorithm for our implementation is as follows:

Step 1: Read the MRI image or the ROI image and stored in a two dimensional matrix.

Step 2: Pixels with same gray value are labeled with same number.

Step 3: For each kernel in the image, calculate the posterior energy U (x) value.

Step 4: The posterior energy values of all the kernels are stored in a separate matrix.

Step 5: Ant Colony System is used to minimize the posterior energy function. The procedure is as follows:

Step 6: Initialize the values of number of iterations (N), number of ants (K), initial pheromone value (T_0), a constant value for pheromone update (ρ).[here,we are using N=20,K=10, T_0=0.001 and ρ =0.9]

Step 7: Create a solution matrix (S) to store the labels of all the pixels, posterior energy values of all the pixels, initial pheromone values for all the ants at each pixels, and a flag column to mention whether the pixels is selected by the ant or not.

Step 8: Store the labels and the energy function values in S.

Step 9: Initialize the pheromone values, T_0=0.001.

Step 10: Initialize all the flag values for all the ants with 0,it means that pixels is not selected yet,if it is set to 1 means selected.

Step 11: Select a random pixel for each ant, which is not selected previously.

Step 12: Update the pheromone values for the selected pixels by all the ants.

Step 13: Using GA, select the minimum value from the set, assign as local minimum (Lmin).

Step 14: Compare this local minimum (Lmin) with the global minimum (Gmin), if Lmin is less than Gmin,assign Gmin = Lmin.

Step 15: Select the ant, whose solution is equal to local minimum, to update its pheromone globally.

Step 16: Perform the steps (13) to (15) till all the image pixels have been selected.

Step 17: Perform the steps (7) to (16) for M times.

Step 18: The Gmin has the optimum label which minimizes the posterior energy function.

Step 19: Store the pixels has the optimum label in a separate image that is the segmented image.

The above algorithm is used to segment brain tumor tissue from brain MRI.The following figure displays the tumor tissue from brain MRI.

FIG 5: BRAIN IMAGE SEGMENTATION USING ACO
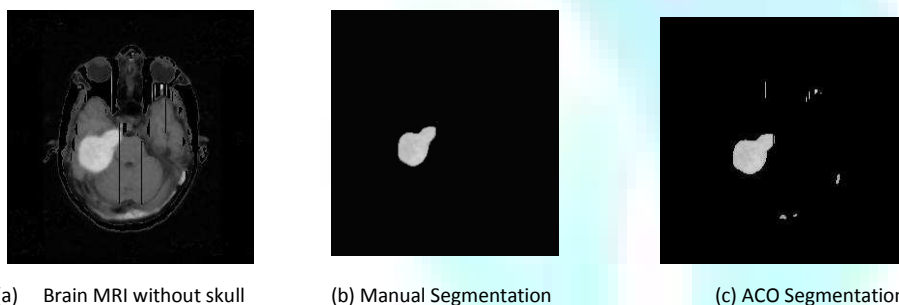
| (a)   Brain MRI without skull | (b) Manual Segmentation | (c) ACO Segmentation |

TABLE 1: COMPARISON OF MANUAL AND ACO SEGMENTATION

Results	Number of segmented Pixels		Adaptive Threshold		Average Intensity	
	Manual	ACO	Manual	ACO	Manual	ACO
Patient1	1172	1304	-	155	186.7159	188.4747
Patient2	818	837	-	150	211.1149	213.8566
Patient3	457	746	-	189	197.4661	180.1099
Patient4	317	365	-	184	198.1009	202.8247

5.2 PARTICLE SWARM OPTIMIZATION

Particle swarm optimization (pso) is one of the modern heuristic algorithms that can be applied to non linear and non continuous optimization problems. It is a population-based stochastic optimization technique for continuous nonlinear functions.PSO learned from the scenario and used it to solve the optimization problems. Particle Swarm Optimization is an optimization technique which provides an evolutionary based search. This search algorithm was introduced by Dr Russ Eberhart and Dr James Kennedy in 1995. The term PSO refers to a relatively new family of algorithms that may be used to find optimal or near to optimal solutions to numerical and qualitative problems. The PSO algorithm for our implementation is as follows:

Step 1: Load the image the size is 256x256 (each element corresponds to a gray value Between 0 to 256 and their classes are determined.

Step 2: Divide the image to 3x3(or) 5 x5(or)7 x7 labels etc.

Step 3: Initialize all particles inside the labels.

Step 4: Calculate the fitness value for all pixels in the label.

Step 5: Select the best optimum (pBest) value for the label.

If (fitness value<best fitness value (pBest) in history update current value =new pBest else current value= fitness value

After selection of current value elements are put in their respective labels.

Step 6: Repeat Step 4 and 5 for all elements until end of the label.

Step 7: Choose the particle with the best fitness value of all the particles as the gBest.

Step 8: Calculate particle velocity for each particle.

v [cp] = v[cp] + c1 * rand() * (pbest[p] - present[p]) + c2 * rand() * (gbest[p] - present[]) v [cp] = current particle velocity, pbest[cp] =best fitness value, gbest[] = fitness values of the all particles, rand()= random number between (0,1), c1, c2 are learning factors. Usually c1 = c2 = 2.

Step 9: Update particle position for each particle according the given solution.

present[] = present[] + v[]

present[] is the current particle

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After updation of velocity and position of each particle

Step 10: Go to step 2 for further labels.

TABLE 2: COMPARISON OF MANUAL AND PSO SEGMENTATION

Results	Number of segmented Pixels		Adaptive Threshold		Average Intensity	
	Manual	PSO	Manual	PSO	Manual	PSO
Patient1	1172	1372	-	245	186.7159	188.5767
Patient2	818	987	-	240	211.1149	217.1015
Patient3	457	845	-	220	197.4661	183.4333
Patient4	317	456	-	222	198.1009	210.6767

6.   NON ALGORITHMIC APPROACH

6.1 BLOCK BASED APPROACH

This paper consists of an efficient registration framework which has features of block based technique. Here normal patient image is compared with reference images. The following table shows normal image and reference image taken for comparison. In Block based technique, both the given reference MR brain image (256 × 265) and the normal image (256 × 265) has been divided into several blocks. Each and every block of both the images is 64 ×64. After blocking, subtraction has been done between the two images. This subtracted value is then checked with the threshold value, in our method. Then first block from both the images were subtracted and the average value of all the pixels in that block were calculated. This average value is then compared our threshold value of 80,000 and if any of which is found to cross this limit, those patient details will be stored in the database as a doubtful case. This method based on Average intensity measure for blocks of both normal and target image was calculated and compared. If there is any abnormality found in the normal image then it is stored in segmented database. Otherwise it is stored in normal database. In the following table, block 1 to block 4 of both source and target image does not have difference in average intensity but in block5 to block 8 has different values. Those values are stored in segmented database. The below figure 5 shows block based method with brain MRI.

FIG. 6: BRAIN MRI SEGMENTATION USING BLOCK BASED METHOD
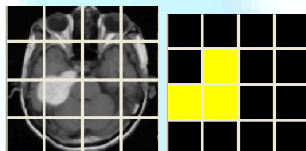
6.2 AVERAGE INTENSITY MEASURE

Average intensity measure for blocks of both normal and target image was calculated and compared. If there is any abnormality found in the normal image then it is stored in segmented database. Otherwise it is stored in normal database. In the following table, block 1 to block 4 of both source and target image does not have difference in average intensity but in block5 to block 8 has different values. Those values are stored in segmented database.

TABLE 3: AVERAGE INTENSITY VALUE BASED ON BLOCKS

Image	Block 9	Block 10	Block 11	Block 12	Block 13	Block 14	Block 15	Block 16
Source	49	87	62	4	8	38	14	2
target 1	57	97	62	4	8	38	14	2
target 2	75	105	62	4	8	38	14	2
target 3	49	90	62	4	8	38	14	2
Image	Block 1	Block 2	Block 3	Block 4	Block 5	Block 6	Block 7	Block 8
Source	31	67	51	2	68	71	86	5
target 1	31	67	51	2	77	91	86	5
target 2	31	67	51	2	68	71	86	5
target 3	31	67	51	2	68	101	91	5

7. RESULTS AND EXPERIMENTS

FIG. 7: BRAIN IMAGE SEGMENTATION USING PSO
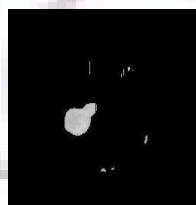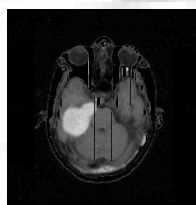
The performance evaluation of the algorithmic approaches are evaluated .This evaluation is use to compare Haralick feature of the brain MRI images are through ACO and PSO algorithms .the following table displays the feature comparison of ACO and PSO algorithms. In this result, performance of the PSO algorithm is better than ACO. PSO gives more accuracy and it is use to segment tumor area from brain MRI is well and efficient than ACO.

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TABLE 4: COMPARISON OF MRI HARALIC FEATURES

Haralick Features	Normal Image	Manual	ACO	PSO
Angular Secend moment	0.1762	0.1002	0.1225	0.1225
Contrast	0.0476	0.0439	0.0440	0.0440
Correlation	0.0667	0.0577	0.0575	0.0575
Som of square (Variance)	0.0628	0.0579	0.0590	0.0596
Invers distant moment	0.3575	0.1734	0.1927	0.1927
Som average	0.0938	0.0780	0.0776	0.0776
Sum Variance	0.0556	0.0416	0.0424	0.0425
Sum entropy	0.1734	0.1202	0.1235	0.1245
Entropy	0.2828	0.1295	0.1473	0.1478
Difference variance	0.5211	0.1550	0.1729	0.1735
Difference entropy	0.1660	0.1178	0.1190	0.1197
Information measures of correlation	0.2784	0.1295	0.1472	0.1477
Information measures of correlation	0.0000	0.0000	0.0000	0.0000
Maximal Correlation Coefficient	0.0000	0.0000	0.0000	0.0000

8. CONCLUSION

The Intelligent segmentation of brain tumor from Magnetic Resonance Images (MRI) described a gradient-based brain image segmentation using Ant colony optimization (ACO) Particle Swarm Optimization (PSO) and block based technique (BB). Initially the preprocessing stages are finished through tracking algorithms. Next the processed brain MRI is segmented using Ant colony optimization algorithm, particle optimization and Block based technique.The merit of this intelligent segmentation is detecting and evaluating the two Meta heuristic algorithms and their performance for the segmentation of brain tumor tissue from brain MRI. We are generalizing PSO algorithm to suit for the brain MRI from any database and the statistical result shows the proposed PSO algorithm can perform better than ACO and Block based technique for tumor detection.

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EMERGING TRENDS AND OPPORTUNITIES OF GREEN MARKETING AMONG THE CORPORATE WORLD

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ABSTRACT

Environmental issues have gained importance in business as well as in public life throughout the world. The term green or eco has a growing concern at all levels. The destruction of forest, the appearance of holes in the ozone layer are widely published and creates a wave of concern about the destruction of our natural environment. Therefore many consumers are in favor of eco friendly products. This has created some impact on marketing. Green marketing involves developing and promoting products and services that satisfy customers want and need for Quality, Performance, Affordable Pricing and Convenience without having a detrimental input on the environment. This paper discusses the characteristics of green products, green marketing Mix , strategies ,Certified eco friendly labels, benefits and problems of green marketing. It concludes that Green Marketing is the urgent need of the hour to save the environment and companies also gain competitive advantage through Green Marketing and by having certified eco friendly labels.

KEYWORDS
Competitive advantage, Eco Friendly, Environmentally safe, Green Product, Recyclable.

INTRODUCTION

According to the American Marketing Association, green marketing is the marketing of products that are presumed to be environmentally safe.It refers to the process of selling products or services based on their environmental benefit.Such a product or service may be environmentally friendly in itself or produced or packaged in an environmentally friendly way. Green marketing incorporates a broad range of activities, including product modification, changes to the production process, packaging changes, as well as modifying advertising. . Thus "Green Marketing" refers to holistic marketing concept wherein the production, marketing consumption an disposal of products and services happen in a manner that is less detrimental to the environment with growing awareness. Other similar terms used are Environmental Marketing and Ecological Marketing.

REVIEW OF LITERATURE

Pride and Ferrell (1993) Green marketing, also alternatively known as environmental marketing and sustainable marketing, refers to an organization's efforts at designing, promoting, pricing and distributing products that will not harm the environment.
Polonsky (1994) defines green marketing as all activities designed to generate and facilitate any exchanges intended to satisfy human needs or wants, such that the satisfaction of these needs and wants occurs, with minimal detrimental impact on the natural environment.
Elkington (1994) defines green consumer as one who avoids products that are likely to endanger the health of the consumer or others; cause significant damage to the environment during manufacture, use or disposal; consume a disproportionate amount of energy; cause unnecessary waste; use materials derived from threatened species or environments; involve unnecessary use of, or cruelty to animals; adversely affect other countries.
American Marketing Association, (Green Markets International, Accessed 2008) "The marketing of products that are presumed to be environmentally safe"
Businessdictionary.com, (accessed 2010) "Promotional activities aimed at taking advantage of the changing consumer attitudes toward a brand.
These changes are increasingly being influenced by a firm's policies and practices that affect the quality of the environment, and reflect the level of its concern for the community"
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WHY GREEN MARKETING?

Resources are limited and human wants are unlimited, it is important for the marketers to utilize the resources efficiently without waste as well as to achieve the organization's objective. So green marketing is inevitable. There is growing interest among the consumers all over the world regarding protection of environment. Worldwide evidence indicates people are concerned about the environment and are changing their behavior. As a result of this, green marketing has emerged which speaks for growing market for sustainable and socially responsible products and services. Thus there is growing awareness among the consumers all over the world regarding protection of environment.

GREEN PRODUCTS AND ITS CHARACTERISTICS

The products those are manufactured through green technology and that caused no environmental hazards are allied green products. Promotion of green technology and green products is necessary for conservation of natural resources and sustainable development. We can define green products by following measures:

• Products those are originally grown,
• Products those are recyclable, reusable and biodegrade.
• Products with natural ingredients,
• Products containing recycled contents, non-toxic chemical,
• Products contents under approved chemical,
• Products that do not harm or pollute the environment,
• Products that will not be tested on animals,
• Products that have eco-friendly packaging i.e. reusable, refillable containers etc.

GREEN PRODUCTS AND ITS CHARACTERS
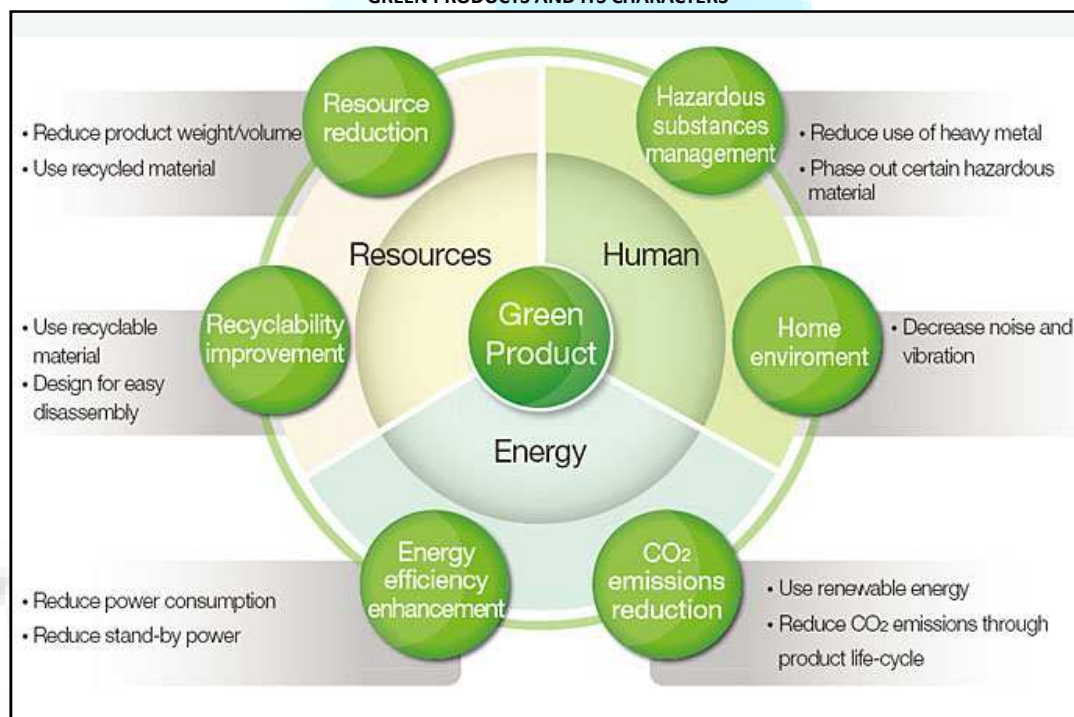
THE GREEN MARKETING MIX

A model of a green marketing-mix should, of course, contain all 4P's:

Green Product: A producer should offer ecological products which not only must not contaminate the environment but should protect it and even liquidate existing environmental damages. The ecological objectives in planning products are to reduce resource consumption and pollution and to increase conservation of scarce resources (Keller man, 1978)

The products have to be developed depending on the needs of the customers who prefer environment friendly products. Products can be made from recycled materials or from used goods. Efficient products not only save water, energy and money, but also reduce harmful effects on the environment. Green chemistry forms the growing focus of product development. The marketer's role in product management includes providing product designers with market-driven trends and customer requests for green product attributes such as energy saving, organic, green chemicals, local sourcing, etc., For example

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- Nike is the first among the shoe companies to market itself as green. It is marketing its Air Jordan shoes as environment-friendly, as it has significantly reduced the usage of harmful glue adhesives. It has designed this variety of shoes to emphasize that it has reduced wastage and used environment-friendly materials.

Green Price: Prices for such products may be a little higher than conventional alternatives

Price is a critical and important factor of green marketing mix. Most consumers will only be prepared to pay additional value if there is a perception of extra product value. This value may be improved performance, function, design, visual appeal, or taste. Green marketing should take all these facts into consideration while charging a premium price

Green pricing takes into consideration the people, planet and profit in a way that takes care of the health of employees and communities and ensures efficient productivity. Value can be added to it by changing its appearance, functionality and through customization, etc.

- Wal Mart unveiled its first recyclable cloth shopping bag. IKEA started charging consumers when they opted for plastic bags and encouraged people to shop using its "Big Blue Bag".

Green Place: A distribution logistics is of crucial importance; main focus is on ecological packaging. Marketing local and seasonal products e.g. vegetables from regional farms is more easy to be marketed "green" than products imported. The choice of where and when to make a product available, will have significant impact on the customers. Very few customers will go out of their way to buy green products

Green place is about managing logistics to cut down on transportation emissions, thereby in effect aiming at reducing the carbon footprint. For example, instead of marketing an imported mango juice in India it can be licensed for local production. This avoids shipping of the product from far away, thus reducing shipping cost and more importantly, the consequent carbon emission by the ships and other modes of transport.

Green Promotion: A communication with the market should put stress on environmental aspects, for example that the company possesses a CP certificate or is ISO 14000 certified. This may be publicized to improve a firm's image. Furthermore, the fact that a company spends expenditures on environmental protection should be advertised. Sponsoring the natural environment is also very important. Ecological products also require special sales promotions.

Green marketer can attract customers on the basis of performance, money savings, health and convenience, or just plain environmental friendliness, so as to target a wide range of green consumers.

Consumer awareness can be created by spreading the message among consumers about the benefits of environmental-friendly products. Positing of profiles related to green marketing on social networks creates awareness within and across online peer groups. Marketing can also directly target the consumers through advertisements for product such as energy saving compact fluorescent lamps, the battery –powered Reva car, etc.

Green promotion involves configuring the tools of promotion, such as advertising, marketing materials, signage, white papers, web sites, videos and presentations by keeping people, planet and profits in mind.

- British petroleum (BP) displays gas station which its sunflower motif and boasts of putting money into solar power.
- Indian Tobacco Company has introduced environmental-friendly papers and boards, which are free of elemental chlorine.
- Toyota is trying to push gas/electric hybrid technology into much of its product line. It is also making the single largest R&D investment in the every-elusive hydrogen car and promoting itself as the first eco-friendly car company.
- International business machines Corporation (IBM) has revealed a portfolio of green retail store technologies and services to help retailers improve energy efficiency in their IT operations. The center piece of this portfolio is the IBM SurePOS 700, a point-of-sale system that, according to IBM, reduces power consumption by 36% or more.
- Retail outlets like "Reliance Fresh", Fresh@Namdhari Fresh and Desi, which while selling fresh vegetables and fruits, transmit an innate communication of green marketing.

There are three types of green advertising: -

ü Ads that address a relationship between a product/service and the biophysical environment

ü Those that promote a green lifestyle by highlighting a product or service

ü Ads that present a corporate image of environmental responsibility

ECOLABEL

It's 33 years since eco-labels appeared they raise awareness and create trust.

eco-label: An independently verified, on-pack label that tells the consumer a product was produced (organic) or can be consumed (nutritional labels or Energy Star) in a more sustainable way. It's a powerful idea that combines sustainability standards-setting and branding, underpinned by the credibility of an independent body.

But 33 years after Germany's Blue Angel, the world's first eco-label appeared, Certainly, many eco-labels have done a great deal to raise awareness and to create trust, to change what we expect from certain product categories, and to build capacity and create a common framework around sustainability.

ECOLABELS AN ESSENTIAL

Most companies pursue ecolabeling and certification for one of four reasons:

-Many companies use them to maintain market share.

-Others achieve them so they can win large institutional contracts.

-Some use them as a way to raise their sustainability profile and green their supply chains.

-Others pursue labels that align with their brand and promote the company's image.

Currently the greatest demand for certification is in the B2B space, where companies are more aware of the advantages of greening their organization. However B2C space is increasing as consumers gradually shift their preferences towards sustainable products.

Eco-labels strive to accelerate sustainable behaviour. Neither consumers nor producers can be expected to do the right thing unless they know what that is, and eco-labels are to be commended for focusing on this need – as are the global companies who are pushing to make effective use of them.

OEKO-TEX LABELS FOR TEXTILES

Oeko-Tex Standard 100

The Oeko-Tex Standard 100 is a globally uniform testing and certification system for textile raw materials, intermediate and end products at all stages of production.

The certification covers multiple human-ecological attributes, including harmful substances which are prohibited or regulated by law, chemicals which are known to be harmful to health.

Oeko-Tex Standard 1000

To complement the product-related Oeko-Tex Standard 100, the Oeko-TexStandard 1000 is a testing, auditing and certification system for environmentally-friendly production sites throughout the textile processing chain.

REASON FOR INTRODUCTION

The Oeko-Tex® Standard 100 was introduced at the beginning of the 1990s as a response to the needs of the general public for textiles which posed no risk to health. "Poison in textiles" and other negative headlines were widespread at this time and indiscriminately branded all chemical across the board used in textile manufacturing as negative and dangerous to health.

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The demands we make of modern textile products cannot be realised without the use of specific chemical substances, however. Fashionable colours, easy-care properties, a long life span and many other functional properties are now demanded of textiles, and are essential in some cases, depending on the intended use (e.g. for workwear).

OBJECTIVES

The testing and certification system of the Oeko-Tex® Standard 100 satisfies the many and varied requirements consumers make of modern textile products and at the same time takes into account the complex production conditions in the textile industry: global organisation, a strong tendency towards the international division of labour, different mentalities with respect to the use of potentially harmful substances.

- Manufacturing textile products of all types, ecologically harmless for humans.
- Simplifying and accelerating terms of delivery for manufacturers and retailers who wish to offer their customers textile products which pose no risk whatsoever to health.
- A reliable product label for consumers who specifically aim to buy textiles which are harmless to health.

OTHER ECO LABELS

Ecomark: India

A government operated seal of approval program for environmentally preferable consumer products.

To increase consumer awareness, the Government of India launched the eco-labelling scheme known as `Ecomark' in 1991 for easy identification of environment-friendly products.

The criteria follow a cradle-to-grave approach, i.e. from raw material extraction, to manufacturing, and to disposal. The Ecomark label is awarded to consumer goods that meet the specified environmental criteria and the quality requirements of Indian Standards.

INDIA ORGANIC - NATIONAL PROGRAMME FOR ORGANIC PRODUCTION (NPOP)

The national programme involves the accreditation programme for certification bodies, norms for organic production, promotion of organic farming. The NPOP standards for production and accreditation system have been recognized by European Commission and Switzerland as equivalent to their country standards. Similarly, USDA has recognized NPOP conformity assessment procedures of accreditation as equivalent to that of US.

NATRUE-LABEL

The Natrue-Label is a guarantee for cosmetic products. Their goal is to promote and protect natural beauty and skin care products. Any product with the Natrue label is intended to be as natural as possible, using natural and organic ingredients, soft manufacturing processes and environmentally friendly practices.

ENERGY STAR

ENERGY STAR is a voluntary government-backed program dedicated to helping individuals protect the environment through energy efficiency. The ENERGY STAR mark is the national symbol for energy efficiency, making it easy for consumers and businesses to identify high-quality, energy-efficient products, homes, and commercial and industrial buildings.

RECYCLED CONTENT

Generic symbol used to show recycled content; also sometimes used to indicate that the product can be recycled. Does not mean that the product has been certified.

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BENEFITS OF GREEN MARKETING

Today's consumers are becoming more and more conscious about the environment and are also becoming socially responsible. Therefore, more companies are responsible to consumers' aspirations for environmentally less damaging or neutral products. Many companies want to have an early-mover advantage as they have to eventually move towards becoming green. Some of the advantages of green marketing are,

- It ensures sustained long-term growth along with profitability.
- It saves money in the long run, thought initially the cost is more.
- It helps companies market their products and services keeping the environment aspects in mind.
- It helps in accessing the new markets and enjoying competitive advantage.
- Most of the employees also feel proud and responsible to be working for an environmentally responsible company.

BENEFITS OF GREEN PRODUCT
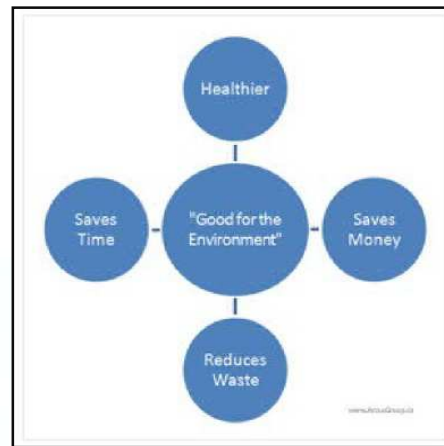
PROBLEMS OF GREEN MARKETING

Many organizations want to turn green, as an increasing number of consumers associate themselves with environmental-friendly products. Alongside, one also witnesses confusion among the consumers regarding the products. In particular, one often finds distrust regarding the credibility of green products. Therefore, to ensure consumer confidence, marketers of green products need to be much more transparent, and refrain from breaching any law or standards relating to products or business practices.

The report, titled 2011 Global Online Environment & Sustainability survey, polled 25,000 internet respondents in 51 countries and was released by Nielsen on August 31. While the majority of respondents - 83 percent - thought that it was "important for companies to have environmental programs ," only 22 percent, less than a quarter, indicated that they would "pay more for eco-friendly products". This is also one important problem in Green Marketing.

PATHS TO GREENNESS

Green marketing involves focusing on promoting the consumption of green products. Therefore, it becomes the responsibility of the companies to adopt creativity and insight, and be committed to the development of environment-friendly products. This will help the society in the long run. Companies which embark on green marketing should adopt the following principles in their path towards greenness.

- Adopt new technology/ Process or modify existing technology/ Process so as to reduce environmental impact.
- Establish a management control system that will lead to adherence of stringent environmental safety norms.
- Explore possibilities of recycling of the used products so that it can be used to offer similar or other benefits with less wastage.
- Using more environment-friendly raw materials at the production stage itself.

GOLDEN RULES OF GREEN MARKETING

1. **Know you're Customer:** Make sure that the consumer is aware of and concerned about the issues that your product attempts to address, (Whirlpool learned the hard way that consumers wouldn't pay a premium for a CFC-free refrigerator because consumers dint know what CFCs were.).

2. **Educating your customers:** isn't just a matter of letting people know you're doing whatever you're doing to protect the environment, but also a matter of letting them know why it matters. Otherwise, for a significant portion of your target market, it's a case of "So what?" and your green marketing campaign goes nowhere.

3. **Being Genuine & Transparent**: means

a) You should do what you claim to be doing in your green marketing campaign

b) The rest of your business policies are consistent with whatever you are doing that's environmentally friendly.

Both these conditions have to be met for your business to establish the kind of environmental credentials that will allow a green marketing campaign to succeed.

4. **Reassure the Buyer**: Consumers must be made to believe that the product performs the job it's supposed to do-they won't forego product quality in the name of the environment.

5. **Consider Your Pricing**: If you're charging a premium for your product-and many environmentally preferable products cost more due to economies of scale and use of higher-quality ingredients-make sure those consumers can afford the premium and feel it's worth it.

6. **Giving your customers an opportunity to participate**:

Personalizing the benefits of your environ- mentally friendly actions, normally through letting the customer take part in positive environmental action.

7. **Thus leading brands should recognize that consumer expectations have changed**: It is not enough for a company to green its products; consumers expect the products that they purchase pocket friendly and also to help reduce the environmental impact in their own lives too.

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EXAMPLES OF GREEN MARKETING: INDIAN CONTEXT

EXAMPLE 1: BEST GREEN IT PROJECT: STATE BANK OF INDIA: GREEN IT@SBI

By using eco and power friendly equipment in its 10,000 new ATMs, the banking giant has not only saved power costs and earned carbon credits, but also set the right example for others to follow.

SBI also entered into green service known as "Green Channel Counter". SBI is providing many services like; paper less banking, no deposit slip, no withdrawal form, no checks, no money transactions form all these transaction are done through SBI shopping & ATM cards. State Bank of India turns to wind energy to reduce emissions: The State Bank of India became the first Indian bank to harness wind energy through a 15-megawatt wind farm developed by Suzlon Energy. The wind farm located in Coimbatore uses 10 Suzlon wind turbines, each with a capacity of 1.5 MW. The wind farm is spread across three states – Tamil Nadu, with 4.5 MW of wind capacity; Maharashtra, with 9 MW; and Gujarat, with 1.5 MW. The wind project is the first step in the State Bank of India's green banking program dedicated to the reduction of its carbon footprint and promotion of energy efficient processes, especially among the bank's clients.

EXAMPLE 2: LEAD FREE PAINTS FROM KANSAI NEROLAC

Kansai Nerolac Paints Ltd. has always been committed to the welfare of society and environment and as a responsible corporate has always taken initiatives in the areas of health, education, community development and environment preservation.

Kansai Nerolac has worked on removing hazardous heavy metals from their paints. The hazardous heavy metals like lead, mercury, chromium, arsenic and antimony can have adverse effects on humans. Lead in paints especially poses danger to human health where it can cause damage to Central Nervous System, kidney and reproductive system. Children are more prone to lead poisoning leading to lower intelligence levels and memory loss.

EXAMPLE 3: INDIA'S 1ST GREEN STADIUM

The Thyagaraja Stadium stands tall in the quiet residential colony behind the Capital's famous INA Market. It was jointly dedicated by Union Sports Minister MS Gill and Chief Minister Sheila Dikshit. Dikshit said that the stadium is the first green stadium in India, which has taken a series of steps to ensure energy conservation and this stadium has been constructed as per the green building concept with eco-friendly materials.

EXAMPLE 4: ECO-FRIENDLY RICKSHAWS

Before CWG Chief Minister Shiela Dikshit launched a battery- operated rickshaw, "E-rick", sponsored by a cellular services provider, to promote eco-friendly transportation in the city ahead of the Commonwealth Games.

EXAMPLE 5: WIPRO GREEN IT

Wipro Infotech was India's first company to launch environment friendly computer peripherals. For the Indian market, Wipro has launched a new range of desktops and laptops called Wipro Greenware. These products are RoHS (Restriction of Hazardous Substances) compliant thus reducing e-waste in the environment.

EXAMPLE 6

Agartala to be India's first Green City announced plans to make all public and private vehicles in Agartala run on compressed natural gas (CNG) by 2013, thus making the capital "India's first green city".

Tripura Natural Gas Co Ltd (TNGCL), a joint venture of the Gas Authority of India Ltd (GAIL) and the Tripura and Assam governments, has undertaken a project to supply CNG to all private and government vehicles.CNG will also be available to those now using electricity, petrol and diesel to run various machineries. TNGCL chairman Pabitra Kar told reporters that "The Company will soon provide PNG connections to 10,000 new domestic consumers in the city and outskirts. Agartala will be the first city in India within the next year to become a green city.

EXAMPLE 7: GOING GREEN: TATA'S NEW MANTRA

Tata Motors is setting up an eco-friendly showroom using natural building material for its flooring and energy efficient lights. The Indian Hotels Company, which runs the Taj chain, is in the process of creating eco rooms which will have energy- efficient mini bars, organic bed linen and napkins made from recycled paper. But there won't be any carpets since chemicals are used to clean those. And when it comes to illumination, the rooms will have CFLs or LEDs. About 5% of the total rooms at a Taj hotel would sport a chic eco-room design. One of the most interesting innovations has come in the form of a biogas-based power plant at Taj Green Cove in Kovalam, which uses the waste generated at the hotel to meet its cooking requirements.

CONCLUSION

It's the right time to adopt "Green Marketing". It is essential to save the world from pollution. Recycling of paper, metals, plastics, energy-efficient lamps etc., in a safe and environmentally harmless manner should be followed universally. Marketers also have the responsibility to make the consumers understand the need for and benefits of green products as compared to non-green ones.

The need for customer relationship, trust, confidence and loyalty as a result of satisfaction are important in green marketing. Competitive advantage can be achieved by environment-related activities and by having certified eco labels; it motivates companies to go green to promote ecologically sustainable practices.

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DIFFUSION OF INNOVATIONS IN THE COLOUR TELEVISION INDUSTRY: A CASE STUDY OF LG INDIA

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ABSTRACT

Economic reforms in India have paved the way for entry of multinational corporations (MNCs) into the consumer durables market. LG Electronics India is the classic case of an MNC which captured the Indian market with wide range of consumer durables such as colour televisions, refrigerators, air conditioners, washing machines, microwave ovens, computers, vacuum cleaners, optical storage devices, and GSM mobile phones with its effective marketing strategies. LG's basic strategy was to quickly and effectively adapt its products and promotions to the Indian market environment. LG's success lies in offering technologically advanced products at an affordable price both in urban and rural India. This study analyses the impact of LG's effective marketing strategies on its position and growth in the Indian CRT colour television market using the Bass model for diffusion of innovations. The analysis has identified the sales potential for LG's CRT colour televisions, and has indicated the peak point and the subsequent decline in sales forecast for the same. It also suggested that LG should change its marketing strategies in order to improve its sales potential in the coming years.

KEYWORDS
LG Electronics, consumer durables, diffusion of innovations, Bass model.

INTRODUCTION
Emerging markets are newly formed or reformed markets, created by factors such as a new technology, the changing needs of buyers, and the identification of unmet needs by suppliers. Porter (1980) suggested that the industrial environment in emerging markets is influenced by the extent of concentration of its firms, the stage of its maturity, and its exposure to international competition. Lambkin and Day (1989) proposed that the most pervasive feature of emerging markets is the uncertainty about customer acceptance and the eventual size of the market, which process and product technology will be dominant, whether cost declines will be realized and the identity, structure and actions of competitors. They also argued that buyers have similar preferences and buying behaviour in emerging markets. This ultimately limits market segmentation and gives limited options in terms of market segmentation strategy. Product usage can be used as a basis to segment the market. Hence, industry development is influenced by the factors such as acceptance of product by buyers, entry barriers, the performance of firms serving the market, and future expectations.

The Indian colour television industry has witnessed a rapid growth during the post-liberalisation period. The sales growth of colour televisions increased from 16.8% in 1992-93 to about 21.6% in 1993-94 to 27.9% in 1996-97,and 32.5% in 1999-2000[1]. Some factors contributing to this growth included the increase in popularity of cable television, the significant reduction in prices of colour televisions[2], the entry of international brands (such as LG, Samsung, Sony, Panasonic, and Akai, among others), the increase in advertising expenditure, and various sporting extravaganzas (such as the cricket and football World Cups). However, more recently, the sales growth of CRT colour televisions has stagnated to around 5.2% in the period 2008-11, perhaps as a result of the economic slowdown and the advent of high-end colour televisions.

The diffusion of innovations[3] in the case of colour televisions was much faster in the post-liberalisation era in comparison with the pre-liberalisation period (Gupta, 2010). The entry of MNCs has made the Indian market highly competitive and consumer-driven. In terms of economic and technical substitutability, the colour television industry is also facing intense competition, and in the process, new innovations in the form of additional technological features are taking place. Further, the Indian consumer has become more demanding, seeking not only superior quality at a reasonable price, but also an excellent after-sales service. Also, consumers have become increasingly indifferent towards particular brands due to availability of reasonably close substitutes in the market, and decreased differentiation between brands, in terms of features and prices, though locally-manufactured products tend to be lower-priced (Gupta, 2010). Moreover, the market has become more consumer-centric than product-centric, forcing marketers to adapt their marketing strategies to changing consumer preferences and needs. Consumers now-a-days have become trend-setters and price-setters. Further, the need to access news, information, and entertainment has transformed television into almost a necessity good, in both urban and rural India. Finally, there is an increased need for transparency on the part of producers, so as to allow consumers to match their needs with what they are buying more effectively.

In this backdrop, the present paper investigates the diffusion of innovations in the case of LG Electronics India, a major MNC entrant in the Indian colour television industry using the Bass model. The study takes into consideration the influence of diffusion of innovations on the consumer adoption process and sales performance. The results of the analysis would provide insights into the total sales potential for LG in the Indian colour television market as a consequence of LG's marketing strategy.

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[1]http://www.icmrindia.org/casestudies/catalogue/BusinessReports/A Note on the Colour Television Industry in India.htm
2 Colour televisions refer to cathode ray tube (CRT) colour televisions.
3 The theory of diffusion of innovations is a framework for exploring the spread of consumer acceptance of new products throughout the economy. It explains how innovations are taken up by a population.

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The rest of the paper is organised as follows. The next section gives an overview of LG Electronics India, with special emphasis on its marketing strategies adopted in the Indian colour television market. The subsequent section explains the theory of diffusion of innovations and the Bass model. This is followed by a section presenting the analysis of the data. The next section discusses the findings of the study and its implications for LG's innovations and marketing strategies, followed by the conclusion.

LG ELECTRONICS IN THE INDIAN COLOUR TELEVISIONS MARKET

South Korea-based LG Electronics established its wholly-owned subsidiary LG Electronics India Pvt. Ltd. in India in January 1997. LG is one of the youngest consumer durable brands in the country today. The following paragraphs discuss the marketing strategies adopted by LG Electronics India, with respect to the 4Ps (product, price, place, promotion).

LG's product portfolio includes consumer durables like colour televisions, washing machines, air-conditioners, microwave ovens, refrigerators (direct-cool and frost free), computers, vacuum cleaners, optical storage device, personal computers, and mobile phones. LG enjoys the patent for Golden Eye Technology in CRT colour televisions. It consists of a light sensitive natural algorithm Eye and an advanced circuit which automatically adjusts colour, brightness, contrast, sharpness, tint and white balance in response to any change in ambient light conditions. This ensures unmatched picture quality without straining the viewer's eyes[4].

LG adopted low pricing in all product categories, which yielded higher volumes. For example, in the initial years LG offered the Sampoorna range of colour televisions, with a price tag of only Rs. 8200, which was targeted at the rural and semi-urban areas. This segment is extremely important for LG as it contributes 60% of its sales. Subsequently, it introduced a premium sub-brand called X-Canvas, targeting the urban affluent segment. LG has priced its 29" flat X-Canvas television at Rs.36,000 against a regular 29" LG flat television of around Rs.29,000, both of which are highly competitive prices, in comparison to those of competitors such as Sony and Samsung. The basic strategy LG offered was technologically-advanced products at an affordable price (Kumar, 2005).

LG's wide distribution network has helped the company in reaching a large customer base spread across different parts of India. LG covers India with 72 regional offices, 61 central area offices and 43 branches, with over 112 area offices at district level. It also helped the company in providing effective after sales service to the consumers. LG follows single-level consumer marketing channel for consumer durables, i.e. Manufacturer-Dealer-Consumer[5].

LG adopted very aggressive sales promotion and advertising strategy in India, through its media partner Mudra Advertising. The media mix includes print, electronic and outdoor. On an average, LG spends about 5% of its annual sales turnover on advertising (Kumar, 2005).

Brand LG had a CAGR of 23.7%, from a turnover of Rs 1,903 crore in 2000 to Rs 16,000 crore in 2010, of which two product verticals, home appliances and home entertainment, contributed 35% each, and remaining came from three other product verticals, viz. air conditioners (15%), mobile communication (10%), and business solutions (5%). According to estimates by GFK-Nielsen, its market shares in different segments in 2011 were: 30.0% for refrigerators, 27.7% for washing machines, 35.2% for microwave ovens, 27.3% for colour televisions, 28.0% for air-conditioners, and 7.0% for mobile phones[6].

LG's success can be attributed to several factors: (a) quick understanding of the local needs and reaching the semi-urban and rural markets, often before its Indian competitors; (b) technological supremacy by introducing innovative products; (c) an appropriate combination of products at all levels; (d) a steady and updated pipeline with high-decibel marketing and advertising; (e) impetus on R&D and new product development, helping the company to launch all products within five months of conception of idea; (f) competitive pricing; and (g) sponsorship of major events such as cricket, football, music concerts, fests, among others.

LG changed its business strategy in 2007, reinventing itself as a brand that gives happiness and enriches life, with a new punchline "Life's Good". This was implemented through a series of advertising campaigns, focusing on new features and benefits in its products. For example, the Golden Eye campaign for colour televisions highlighted eye protection. Similarly, the refrigerator was positioned as a machine that not only prevented food from decaying but also preserved its nutritional value. The air-conditioners focused on healthy air, washing machines on fabric care, and microwave ovens on healthy cooking[7].

DIFFUSION OF INNOVATIONS AND APPLICATION OF THE BASS MODEL

The theory of diffusion of innovations is a framework for exploring the spread of consumer acceptance of new products throughout the social system. It explains how innovations are taken up in a population. An innovation is an idea, behaviour, or object that is perceived as new by its audience. The theory of diffusion of innovations provides three valuable insights into the process of social change: which qualities make an innovation spread successfully, the importance of peer-peer conversations and peer networks, and understanding the needs of different user segments (Schiffman and Kanuk, 2010).

The theory of diffusion of innovations takes a radically different approach to most other theories of change. Instead of focusing on persuading individuals to change, it sees change as being primarily about the evolution or "reinvention" of products and behaviours so that they become better fits for the needs of individuals and groups. In the theory of diffusion of innovations, it is not people who change, but the innovations themselves. Diffusion theorists recognise five qualities that determine the success of an innovation: relative advantage; compatibility with existing values and practices; simplicity and ease of use; trialability; and observable results. Reinvention is a key principle in the theory of diffusion of innovations. The success of an innovation depends on how well it evolves to meet the needs of more and more demanding and risk-averse individuals in a population (Wright and Charlett, 1995).

The Bass model (1969) of diffusion of innovations suggests that the rate of adoption of an innovation depends on three parameters: p, the coefficient of innovation (i.e. the percentage of initial triers); q, the coefficient of imitation (i.e. the percentage of imitators); and M, the total market potential. Bass model proposed a quadratic relationship between the rate of adoption (x_t) of an innovation and the cumulative rate of adoption (y_t), i.e.

$$x_t = p(M - y_t) + (q\,y_t/M).(M - y_t) = pM + (q - p).y_t - (q/M).y_t^2$$

Estimation of the Bass model involves a quadratic regression $x_t = a + by_t + cy_t^2$. The Bass model parameters are estimated from the regression coefficients using the relationships:

$a = pM, b = q - p$, and $c = -q/M$.

In the subsequent section, the Bass model is applied to analyse LG's diffusion in the Indian colour television market. However, instead of sales volume and cumulative sales volume, the Bass model is applied with sales revenue and cumulative sales revenue, assuming a fixed product portfolio and fixed prices over the relevant period.

ANALYSIS

The data considered for the study was LG's sales revenue in the colour television segment for the period 2001-08. The sales revenue figures are presented in Table 1 below.

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[4] http://www.lg.com/in/about-lg/corporate-information/business-domains/tv-audio-video.jsp
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TABLE 1: LG SALES REVENUE IN THE COLOUR TELEVISION SEGMENT

	Sales revenue (Rs. Crore)
2001-02	812.30
2002-03	1095.70
2003-04	1447.10
2004-05	1932.60
2005-06	2018.60
2006-07	2195.60
2007-08	2118.00
	11,619.90

(Source: Indiastat.com)

LG's sales revenue in the colour television segment grew at rates of 34.9%, 32.1%, and 33.6% respectively between 2001-02 and 2004-05. However, it levelled off to 4.5% and 8.8% between 2005-06 and 2006-07, and declined by 3.5% in 2007-08. The high growth rates in the first three years indicate that LG's initial penetration strategy was highly successful in launching LG's growth trajectory. However, the levelling-off of LG colour television sales revenue in the years 2005-07 suggests that LG's initially-successful penetration strategy may be losing edge against competitors. This dip in sales in 2007-08 may have been partially due to the global financial crisis and the subsequent 'demand crunch.' The Bass model was used to provide deeper insight into LG's growth trajectory.

The results of the quadratic regression of LG's colour television sales revenue on cumulative sales revenue are given in Table 2 below:

TABLE 2: QUADRATIC REGRESSION OF LG SALES REVENUE ON CUMULATIVE SALES REVENUE (IN THE COLOUR TELEVISION SEGMENT)

Model Fit					
Multiple R	0.9928				
R Square	0.9857				
Adj R Square	0.9786				
ANOVA					
	df	SS	MS	F-stat	p-value
Regression	2	1756471	878235.6	138.1897	0.000204
Residual	4	25421.16	6355.291		
Total	6	1781892			
	Coefficients	t-stat	p-value		
Intercept	824.217951	13.47436	0.000176		
yt	0.380026	11.12838	0.000371		
yt2	-0.000026	-7.35371	0.001821		

The quadratic regression of LG's colour television sales revenue on cumulative sales revenue was found to be statistically significant, explaining 98.57% of the variation in LG colour television sales revenue. From the results of the quadratic regression above, the Bass model parameter values were estimated as follows:

TABLE 3: BASS MODEL PARAMETERS

P	0.04975
q	0.42977
M	16,568.38

The coefficient of innovation (p) was found to be 0.04975, which is relatively high compared to usual empirical results (Chandrasekaran and Tellis, 2007). The coefficient of imitation (q) was found to be 0.42977, which is moderate. Finally, the total sales potential (M) was found to be Rs. 16,568.38 crore. Thus, between the years 2001-02 and 2007-08, LG had already tapped 70.1% of its total market potential in colour televisions.

Using the estimated Bass model, the diffusion trajectory of LG's colour televisions was projected for the period between 2008-09 and 2019-20. The projections are shown in Table 4 followed by a graphical representation in Figure 1.

TABLE 4: LG COLOUR TELEVISION SALES REVENUE PROJECTIONS

Year	Sales revenue (Rs. Crore)	Year	Sales revenue (Rs. Crore)
2001-02	812.30	2010-11	832.1
2002-03	1095.70	2011-12	498.81
2003-04	1447.10	2012-13	281.80
2004-05	1932.60	2013-14	153.5
2005-06	2018.60	2014-15	81.88
2006-07	2195.60	2015-16	43.17
2007-08	2118.00	2016-17	22.62
2008-09	1737.70	2017-18	11.82
2009-10	1272.22	2018-19	6.16
2010-11	832.10	20019-20	3.21
			16,564.89

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FIGURE 1: LG COLOUR TELEVISION SALES REVENUE PROJECTIONS
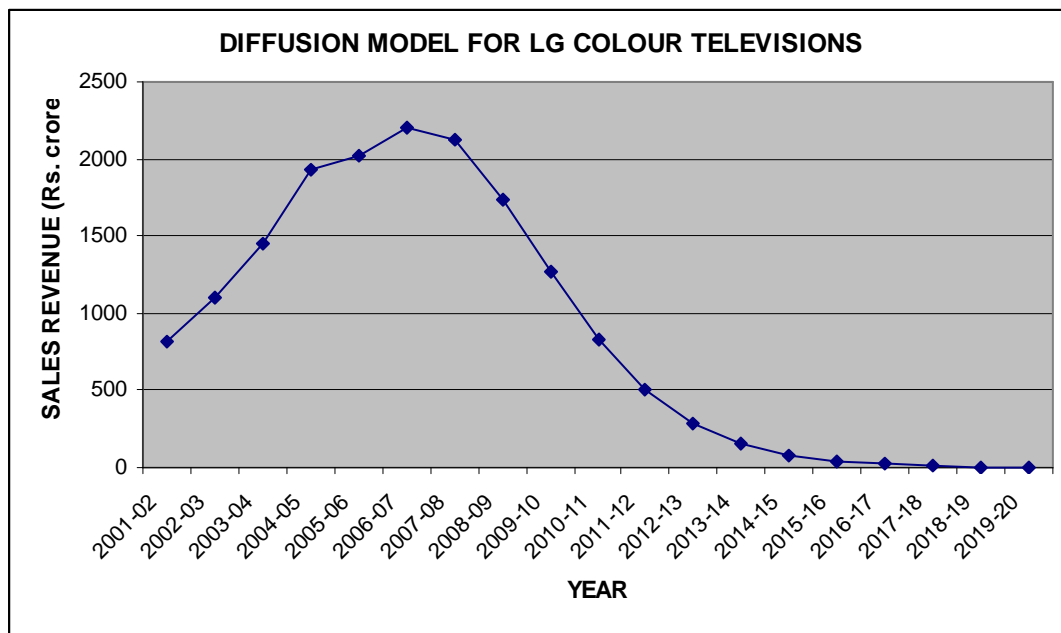
The projections of LG's CRT colour television sales revenue using the Bass model indicate that peak sales revenue was reached in 2006-07; compensating for the effect of the global financial crisis in 2007-08, the peak shifts at most to 2007-08. This indicates that LG's initial strategies do not offer much potential for further growth. More generally, pre-global financial crisis markets had started to stagnate, and factors such as price erosion, stiff competition, spiraling input costs, and tight profit margins may have contributed to low value growth across all consumer durables firms, leaving them no option but to look for profits and value growth from the premium segment. This is perhaps why LG has undertaken a change in strategy in 2007. This coincided with proliferation of the high-end colour televisions[8] which cannibalised the market for CRT colour televisions.

Thus, it may be suggested that LG should adopt a two-pronged strategy. For urban markets, LG should focus on marketing high-end colour televisions at an affordable price to increase its profit. On the other hand, for rural markets, LG should continue to focus on marketing CRT colour televisions.

CURRENT SCENARIO- CHALLENGES FOR LG ELECTRONICS IN INDIAN MARKET

LG is planning to change its price warrior image to a premium image. It has understood the need to cater to an emerging up-market demographic profile of consumers. Since it has already achieved market leadership across product categories, the only way forward is to grow the size of the market.

In more recent years, post-global financial crisis, the colour television industry has seen a revival. The changing consumer life styles and preferences, coupled with the convergence of information, communication and entertainment have given momentum to the Indian colour television industry. While the demand for high-end colour televisions is increasing in the urban market, the demand for low-end colour televisions is also continuously increasing in rural India. This increase in demand in both urban and rural markets may be due to a significant increase in the per capita income and a substantial growth in purchasing power of the people.

LG is looking for an investment between Rs 1,351 crore and Rs 2,252 crore in the next five years in India. The Indian operation is doing well, currently contributing 6% to LG's global turnover, and expected to contribute twice as much by 2015. LG India is looking at maintaining the momentum and the high growth. LG is optimistic of a huge demand arising for smart appliances as consumers look for products that enhance their lifestyle[9].

LG is also all set to expand its base in rural markets in the next one-and a half years on the back of aggressive R&D activities. Rural India currently contributes to about 20% of LG India's annual revenue. The company has formed a special team, which will undertake an extensive study to introduce "the right products for rural markets." Interestingly, this is in line with other consumer durable companies such as Godrej and Samsung, which have recently come out with products for rural markets[10].

LG India has recently announced its entry into the business solutions segment, from which it aims to garner Rs.1,000 crore revenue by 2014. LG estimated that the total size of the business-to-business (B2B) solution for integrated display market is around Rs. 2,500 crore and growing at the rate of 20-25% per annum. The company, under its new business segment, will offer digital devices and solutions for quick service restaurants, education, retail, hotel, office and banking businesses[11].

CONCLUSION

The paper attempts to throw new insights into the consumer durables/electronics industry through the perspective of diffusion of innovations. The case presented highlights the impact of marketing strategies on the diffusion of innovations for LG Electronics India. In particular, the application of the Bass model identified the sales potential for LG's CRT colour televisions, and indicated that sales have reached a peak in 2006-07, and is subsequently expected to decline. The results also suggested that LG should change its marketing strategies in order to improve its market potential. Thus, the Bass model can be used as a tool for effective marketing strategy.

However, there are several limitations of the application of the Bass model of diffusion of innovations. The most severe limitation is that the Bass model does not take into consideration changes in technology and changes in consumer buying preferences. In particular, post-global financial meltdown, there was a steep rise in the demand for high-end colour televisions in urban areas, and increase in demand for CRT colour televisions in semi-urban and rural areas.

Another factor that the Bass model overlooks is the effect of changing economic conditions, such as business cycles. The business cycle can perhaps be incorporated into the Bass model. More generally, other relevant parameters such as market structure and product life cycle stage can be introduced as determinant factors.

Furthermore, there is a vast scope for study in the area of diffusion of innovations and consumer adoption process. In particular, the same methodology can be used to compare the trends for other players in the colour television industry with that of LG India. Also, the relation between marketing strategies and diffusion

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8 High-end colour televisions refer to liquid crystal display (LCD), light-emitting diode (LED), and plasma colour televisions, as opposed to CRT colour televisions.
9 "Taking life's good to the masses," Financial Chronicle, Delhi, March 27, 2011.
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parameters (i.e. the innovation rate p and the imitation rate q) should be systematically analysed. Similarly, the impact of macroeconomic factors on the diffusion and consumer adoption processes should also be systematically studied.

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TOOLS OF CUSTOMER RELATIONSHIP MANAGEMENT – A GENERAL IDEA

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ABSTRACT

Customer satisfaction is an antecedent to customer loyalty. A company with a large number of loyal customers gains advantage over its competitors. However, achieving sustained customer satisfaction and retention are becoming more challenging as the expectations of customers are increasing day by day. Companies are therefore using innovative tools to satisfy customers, which helps in retaining their loyalty. This article focuses on innovative Customer Relationship Management (CRM) tools used by various companies, which lead towards improved customer satisfaction and loyalty. The CRM tools thus help in strengthening the firms' competitive advantage.

KEYWORDS

CRM, marketing.

INTRODUCTION

Long-term relationship with customers is the key to sustainable development of any business enterprise. There are various tools and techniques for managing customer relationships. The present scenario demands more customer-centric approach from the marketers, leading towards nurturing and building a favorable relationship with customers. Innovation in CRM practices definitely provides a competitive edge to any firm. It is important for companies to focus on CRM because it is much easier and less expensive to retain existing customers than to acquire new ones in their place. Liberalization and globalization have increased the level of competition, which in turn has enhanced the importance of CRM as a means to respond to the situation.

LITERATURE REVIEW

Oliver (1980)[12] developed a cognitive model of antecedents and consequences of satisfaction decisions. He viewed satisfaction as a transaction-specific evaluation of a service encounter, which eventually transforms into the customer's overall attitude towards the firm.

Berry (1983)[13] focused on five major strategies for the relationship marketer in the context of services:
1. Developing a core service around which to build a customer relationship.
2. Customizing the relationship to individual customers.
3. Augmenting the core service with extra benefits.
4. Pricing services to encourage customer loyalty.
5. Marketing to the employees so that they will perform well for customers.

Dwyer et al (1987)[14] defined relationship marketing as all marketing activities directed towards establishing, developing, and maintaining a successful relationship. Bickert (1992)[15] highlighted a specific dimension of customer relationship management and said that is\t is database marketing which emphasizes the promotional aspect of marketing, linked to database efforts.

Ganesan (1994)[16] emphasized long-term orientation for mutual gains and cooperation. Seth and Parvatiyar (1995)[17] said that relationship marketing is a company's effort to develop and sustain a long range, cost-effective link with individual customers for mutual benefits.

Newell (1997)[18] pointed out that customer loyalty cannot be bought-it can only be given to you if you really deserve it. CRM is vital for building long-term relations which ultimately convert customers into loyal customers of a company.

Oliver (1997)[19] said that everyone knows what satisfaction is until asked to give a definition; then it seems nobody knows. Bowen and Shoemaker (1998)[20] said that consumer loyalty is reflected by repeat purchase and willingness to associate with a particular company.

CRM has the potential to improve productivity through enhanced marketing activity under a highly competitive environment. It can be concluded that CRM is a strategy in which the marketer tries to attract, satisfy, retain and maintain long-term collaboration with the customer. Companies extensively run CRM programs to improve efficiency in terms of relationship with customers. A marketer can introduce innovative products, efficient customer handling processes, innovative ways of addressing customer needs and wants, to achieve an efficient CRM program. Studies also show that it costs as much as five times to acquire a new customer than to retain one. Therefore, the marketer tries to identity existing customers with different backgrounds according to their ability and capacity, and then targets them with customized products and services.

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There is a sense of satisfaction when a customer receives a product or service according to his expectation. Whenever a customer buys any product or service, he has some expectation related to the value of money spent. He is satisfied when he feels that he received his money's worth. He is delighted when he feels he got more value for his money than what he had expected. Customers have diverse expectations, and some have more and higher expectations than others. For example, one railway passenger may be mainly concerned with punctuality, while another might be expecting hospitality in addition to punctuality. This is where marketers may have to treat different segments of customers differently, and offer each segment what it expects at the price that it would be willing to pay. In this way, companies can achieve customer satisfaction and loyalty of different types of customer by meeting their specific expectations. CRM tools come in handy in addressing such requirements.

However, researchers have not reached a consensus as to whether satisfaction is a process or an outcome. Some researchers say that it is a process wherein a customer uses a product and gives a response, whereas some others say that it is the outcome after using a product or service.

INNOVATIVE CRM TOOLS

Innovative CRM tools help companies to increase their revenue and customer satisfaction. Every business activity is conducted to satisfy customer needs and expectations, whatever be the product portfolio, as this would decide the long-term success of the company. Therefore companies are bound to construct their business model to build long-term collaboration with their customers, in order to achieve competitive advantage over their rivals.

Companies have been using CRM business solutions software to address this requirement. In 1990, Oracle introduced a CRM solution for small and mid-sized companies, while Seibel Systems, which was founded in 1999, launched its CRM solution aggressively and has been able to capture significant market share. In 2002, SAP also launched its CRM software and now, Microsoft with its CRM Dynamics, is also in this market.

These companies are providing CRM solutions to numerous business organizations, thus enabling them to serve their customers more efficiently. The CRM solutions create a system for interacting with customers through call centers, interactive websites, services centers, sales representatives and field technicians. CRM systems are backed by CRM software solutions, such as SAP. SAP is the most comprehensive and flexible CRM support tool, which enhances relationships with customers, improves front line efficiency and effectiveness and enables quick response to customers changing needs and wants. CRM tools enable organizations to become truly customer-centric and empower employees to provide best services to customers. Companies are also integrating CRM solutions with other applications like Enterprise Resource Planning (ERP) to add value to customers.

Manufacturing companies are using CRM solutions to become more efficient in sales and marketing. Many manufacturing organizations have opted for Microsoft Dynamics CRM business solution, which helps manufacturing firms to reduce time for accessing customer data and increase efficiency in customer handling, which results in better productivity, sales and customer satisfaction.

Tata Motors uses a Customer Relationship Management and Dealer Management System (CRM-DMS) which integrates one of the largest applications in the automobile industry, linking more than 1200 dealers across India. CRM-DMS has helped Tata Motors to enhance its business. This platform enables Tat Motors to improve its inventory management; tax calculation and pricing. CRM-DMS is backed by Siebel. This system has also proved to be beneficial to dealers because it has also proved to be beneficial to dealers because it has reduced their working capital cost, which was higher in the absence of this system.

Hero Honda Motors Ltd., is running a program called "Good life Passport to Relationship Reward." The objective of this program is to create an innovative environment for interaction between Hero Honda and its customers, which ultimately provides an opportunity to reach a larger customer base. Membership of this program ensures special privileges, benefits and rewards to the customers. Members of this program are given a magnetic card in which all information is stored; and this card is swiped when using any service at a showroom or workshop. Thus, it also works like a loyalty benefit card.

The banking sector has witnessed a sea change in customer retention management after liberalization, which was earlier lacking as there was no competition. After the entry of private players, customers have benefited from numerous innovations in banking services. The banking sector has developed a well-oiled service model to help customers, which includes Internet banking, ATMs, call centers, kiosks, mobile banking, etc. The public sector banks too were compelled to focus on CRM practices after facing stiff competition from the private players. Personal banking branch, retail banking branch and retail boutique are examples of the concentration on CRM practices.

ICICI Bank was the first to offer e-lobby service, which included self-service banking, i.e., online banking, video conferencing with bank representative and cash withdrawal without any assistance from the bank branch. ICICI Bank uses Siebel's CRM software, which provides a common platform to serve consumers across product lines and channels. This software generates individual customer reports and induces cross-selling. Siebel also provides complaint management facility, wherein it automatically sends mails to a higher authority, if a complaint is not resolved within a stipulated timeframe.

The healthcare industry benefits by using CRM Dynamics especially for referrals management, patient information management, physician and nursing recruitment, payment processing, clinical trials, etc.

Fast Moving Consumer Goods (FMCG) companies use CRM solutions extensively. FMCG products are sold soon after production. CRM solution provides a platform for efficient distributor interaction management, call center management, automation of regional and area offices operations, and management of field representatives.

CONCLUSION

Many people term CRM as a technology based initiative, but the fact is that it is an enterprise-wide activity which uses technology to facilitate various functions-sales, marketing, services, etc. CRM initiative starts with identification of customers with the objective of differentiating from customer to customer. Companies can dovetail their offers by building a strong customer database, which would help in coming up with viable offerings to meet different customer needs. The next step would be a loyalty program to reward frequent buyers, in order to make them permanent customer of the company.

It is not the products or services, not even the technology that pleases the customer, but the right attitude of handling them, and building a closer relationship with them. A company with a large number of customers with close bonding would enjoy higher revenues and profitability. Companies must therefore handle their customers in such a way that they do not even think about considering other alternatives. For this purpose, a dedicated CRM team should be employed to monitor all the operations which affect customer relationship, and this team should be empowered to take effective decisions.

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LOGISTIC REGRESSION MODEL FOR PREDICTION OF BANKRUPTCY

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ABSTRACT

One of the most significant threats of a national economy is the bankruptcy of its banks. Estimation of bankruptcy provides invaluable information on which governments, investors and shareholders can base their financial decisions in order to prevent possible losses. In this paper model was developed using stepwise logistic regression with financial ratios to make bankruptcy predictions. Descriptive statistics, correlations and independent T-test are used for testing to see the characteristics of each variable on both failed and non-failed banks. Samples were developed by using financial ratios from 16 nationalised banks in India. The result from empirical study reveals that the financial ratios related to one year prior model are better than two year prior model for the purpose of prediction . The result of statistical test has pointed out that owners fund as percentage of total source, long term debt/equity and quick ratio are the significant in predicting bankruptcy. The Nagelkerke R^2 indicated 84.4% of the variation in the outcome variable. The predictability accuracy of the model with owners fund as percentage of total source is 87.5 % which is under 95%confidence level.

KEYWORDS

Financial Ratios, Logistic Regression.

I INTRODUCTION

The use of the logistic regression model has exploded during the past decade. From its original acceptance in epidemiologic research, the methods is now commonly used in many fields like biomedical research, business and finance, criminology, ecology, engineering, health policy, wildlife biology.

Logistic regression can be used to predict a dependent variable on the basis of continuous and/or categorical independents and to determine the percent of variance in the dependent variable explained by the independents.

Unlike OLS regression, however, logistic regression does not assume linearity of relationship between the independent variables and the dependent, does not require normally distributed variables, does not assume homoscedasticity, and in general has less stringent requirements.

The predictive success of the logistic regression can be assessed by looking at the classification table, showing correct and incorrect classifications of the dichotomous, ordinal or polytomous dependent. Goodness-of-fit tests such as the likelihood ratio test are available as indicators of model appropriateness, as is the Wald statistic to test the significance of individual independent variables.

Since Altman's Z model, some studies have been carried out on failure classification. Altman and Narayan conducted a survey called "An International Survey of Business Failure Classification Models"(1997). Meyer and Pifer (1970) in their paper, Prediction of Bank Failures, matched failed and non-failed banks and analyzed them with both Multivariate Discriminant analysis and Multivariate Regression analysis, and then compared the classification results. The Logistic Regression approach was first proposed for bank failure prediction by Martin (1997) and for the prediction of business failure by Ohlson.

Tam and Kiang (1992) made a Neural Network application in the case of bank failure prediction and compared the results with some other methods such as Discriminant Analysis and Logistic Regression.

In this work, Logistic Regression was used to find models and make predictions in order to determine the Banks in India which were financially in bad condition.

II LOGISTIC REGRESSION MODEL

Regression method for data analysis is concerned with describing the relationship between a response variable and one or more explanatory variables. The general regression model is of the form

$$Y = m(x) + \varepsilon \qquad (1)$$

The logistic regression model is standard method of analysis when the outcome variable is discrete, taking on two or more possible values. We use the quantity

$$\Pi(x) = E(Y/x) \qquad (2)$$

In linear regression we assume that mean value be represented by

$$E(Y/X=x) = \beta_0 + \beta_1 x \qquad (3)$$

In case of Logistic regression , the conditional mean of the respected variable Y gives X=x being dichotomous is expressed by the quantity

$$E(Y/X=x) = \pi(x) \qquad (4)$$

where

$$\pi(x) = \frac{e^{\beta_0 + \beta_1 x}}{1 + e^{\beta_0 + \beta_1 x}}$$

A transformation of $\pi(x)$ that is central to our study of logistic regression is the logit transformation .This transformation is defined, in terms of $\pi(x)$ as

$$g(x) = \ln\left[\frac{\pi(x)}{1 - \pi(x)}\right] \qquad (5)$$

$$= \beta_0 + \beta_1 x .$$

The importance of this transformation is that g(x) has many of the desirable properties of a linear regression model. The logit g(x) is linear in its parameters , may be continuous and may range from -∞ to +∞, depending on the range of x.

In case of a dichotomous outcome variable, we may express the value of the outcome variable given x as $y = \pi(x) + \varepsilon$.

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If y=1 then $\varepsilon = 1 - \pi(x)$ with probability $\pi(x)$, and if y=0 then $\varepsilon = -\pi(x)$ with probability $1 - \pi(x)$. Thus ε has a distribution with mean zero and variance equal to $\pi(x)[1 - \pi(x)]$. That is conditional distribution of the outcome variable follows a binomial distribution with probability given by the conditional mean $\pi(x)$.

A. FITTING THE LOGISTIC REGRESSION MODEL

Suppose we have a sample of n independent observations of the pair (x_i, y_i), i =1,2.................n, where y_i denotes the value of a dichotomous outcome variable and x_i is the value of the independent variable for the ith subject. Assume that the outcome variable has been coded as zero or one, representing the absence or the presence of the characteristic, respectively.

If Y is coded as 0 or 1 then the expression for $\Pi(x)$ given in the equation (3) provides the conditional probability that Y is equal to 1 given x. this will be denoted as $P(Y = 1|x)$. It follows that the quantity $1 - \Pi(x)$ gives the conditional probability that Y is equal to zero given x, $P(Y = 0|x)$. Thus for those pairs (x_i, y_i), where $y_i = 1$, the contribution of likelihood function is $\Pi(x_i)$ and for those pairs where $y_i = 0$, contribution of likelihood function is $1 - \Pi(x_i)$, where the quantity $\Pi(x_i)$ denotes the value of $\Pi(x)$ computed at x_i.

Then the likelihood function for the pairs (x_i, y_i) is given by

$$\Pi(x_i)^{y_i}\left[1 - \Pi(x_i)\right]^{1 - y_i}$$

(6)

Since observations are assumed to be independent, the likelihood function is obtained as product of the terms given in the expression (5) as follows:

$$l(B) = \prod_{i=1}^{n} \Pi(x_i)^{y_i} \left[1 - \Pi(x_i)\right]^{1 - y_i}$$

(7)

The function is

$$l(\beta) = \ln[l(\beta)]$$

$$= \sum_{i=1}^{n} \left\{ y_i \ln[\Pi(x_i)] + (1 - y_i)\ln[1 - \Pi(x_i)] \right\}$$

(8)

To find the value of β that maximizes $L(\beta)$ we differentiate $L(\beta)$ with respect to $\beta 0$ and $\beta 1$ and set the resulting expressions equals to zero. These equations, known as likelihood equations, are:

$$\sum \left[y_i - \Pi(x_i) \right] = 0$$

(9)

$$\sum x_i \left[y_i - \Pi(x_i) \right] = 0$$

(10)

In linear regressions, the likelihood equations obtained by differentiating the sum of squared deviations function with respect to β are linear in the unknown parameters and thus are easily solved.

For logistic regression the expressions in equation (9) and(10) are nonlinear in $\beta 0$ and $\beta 1$ and thus require special methods for their solution . These methods are iterative in nature and have been programmed into available logistic regression software.
As, such it represents the fitted or predicted value for the logistic regression model. An interesting consequence of equation (9) is that

$$\sum_{i=1}^{n} y_i = \sum_{i=1}^{n} \hat{\Pi}(x_i)$$

(11)

ie the sum of the observed values of y is equal to the sum of the predicted (expected) value. This property is useful in fitting the model.

The Statistic G follows a Chi -square distribution with 1 d.f , under the hypothesis that $\beta_1 = 0$ is given by

$$G = 2\left\{ \sum_{i=1}^{n} \left[y_i \ln(\hat{\pi}_i) + (1 - y_i)\ln(1 - \hat{\pi}_i) \right] - \left[n_1 \ln(n_1) + n_0 \ln(n_0) - n\ln(n) \right] \right\}$$

(12)

An important object to testing for significance of the model is calculation and interpretation of confidence intervals for parameters of interest. As is the case in linear regression we can obtain these for the slope, intercept and the "line".

The confidence interval estimators for the slope and intercept are based on their respective Wald tests. The $100(1 - \alpha)\%$ confidence interval for the slope coefficient are

$$\hat{\beta}_1 \pm z_{1 - \alpha / 2} S\hat{E}\left(\hat{\beta}_1\right)$$

(13)

and for the intercept they are

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$$\hat{\beta}_0 \pm z_{1-\alpha/2} S\hat{E}\left(\hat{\beta}_0\right) \tag{14}$$

where $z_{1-\alpha/2}$ is the upper $100(1-\alpha/2)\%$ point from the standard normal distribution and $S\hat{E}(.)$ denotes a model-based estimator of the standard error of the respective parameter.

The logit is the linear part of the logistic regression model and, is most like the fitted line in a linear regression model. The estimator of the logit is

$$\hat{g}(x) = \hat{\beta}_0 + \hat{\beta}_1 x \tag{15}$$

the estimator of the variance of the estimator of the logit requires obtaining the variance of a sum, and it is given by

$$\hat{Var}[\hat{g}(x)] = \hat{Var}\left(\hat{\beta}_0\right) + x^2 \hat{Var}\left(\hat{\beta}_1\right) + 2x\hat{Cov}\left(\hat{\beta}_0, \hat{\beta}_1\right) \tag{16}$$

In general the variance of a sum is equal to the sum of the variance of each term and twice the covariance of each possible pair of terms formed from the components of sum. And a $100(1-\alpha)\%$ Wald-based confidence interval for the logit are

$$\hat{g}(x) \pm z_{1-\alpha/2} S\hat{E}[\hat{g}(x)] \tag{17}$$

where $S\hat{E}[\hat{g}(x)]$ is the positive square root of the variance estimator in (16).

III DATA PRESENTATION AND ANALYSIS

In this paper the ratio's related to the year 2008 is considered as independent variable and corresponding to 2009 is considered as a dependent variable.

For the year 2008, the variables C5, C18, C20, C21, C22, C23, C24, C31, C32, C34 and C37 have the p value less than 0.05. So these variables are considered as significant variable. Similarly for the year 2009 the significant variables are C5, C18, C20, C21, C22, C23, C24, C31, C32, C33, C34.

The logistic regression model involves developing econometric models to identify the factors which are responsible for forecasting the bankruptcy.

In the first step of analysis we computed the p value which is used to identify the significant factors. Then stepwise logistic regression was carried out to identify the factors which are jointly responsible for the successive level of the bank. Stepwise logistic regression was carried out using forward inclusion and backward elimination methods. Likelihood ratio test, wald test and score (conditional) test are also used for selecting best regressors. The regressor included in the logistic regression model is C19.

The logit of the binary regression model for 1 independent variable is

$$g(x) = \beta_0 + \beta_1 x$$

The conditional probability that the outcome is successive bank is denoted by

$$P(Y = 1/x) = \pi(x)$$

where

$$\pi(x) = \frac{e^{g(x)}}{1 + e^{g(x)}}$$

In the analysis based on logistic regression, the predictor variable is the ratio C19=Total debt/equity(x) for the year 2008 and the endogeneous variable isC20= Owners fund as % of total source (Y) for the year 2009.

The fitted model is

$\hat{y} = 19.947 + (-0.906)C_{19}$

This model is used in order to rank and classify the the banks according to their performances. The model was tested with the data set compiled from 2009 and this way exact prediction was made.

The model was transformed using logistic form. Probabilities were calculated using transform model. Banks were ranked by probabilities and they are classified using 0.5 cut-off point. Those under 0.5 were classified as failed and above 0.5 as successful. The result can be seen in Table 2

In binary logistic regression the maximum likelihood estimate of $\beta 0$ and $\beta 1$ are $\hat{\beta}_0$ =19.947, $\hat{\beta}_1$ =(-0.906) .

The estimated logit is given by the equation

$\hat{g}(x) = 19.947 + (-0.906)C_{19}$

and the fitted value are given by the equation

$$\pi(x) = \frac{\exp(g(x))}{1 + \exp(g(x))}$$

-2log likelihood is 0.000

CONCLUSION

The classification rule applied to the ratios for the year 2009 gives 4 banks at failure level. The prediction using logistic regression model for the year 2010 gives 5 banks at failure level which includes the four banks classified under classification rule. That is Canara Bank (B5), Corporation Bank (B7), Karnataka Bank (B9), Union Bank of India (B14), Vijaya Bank (B16). And it was seen that even if cut-off point had been chosen as 0.8 or higher in order to classify a bank as successful, we get the same list of failed banks.

Since the model was constructed using 2008 predictors and 2009 dependent variables(one year priori model),it made a prediction for the year 2010.

In summary, the validation of the result of this study indicates that a logistic regression model provides reasonably good results in financial distress and it has a good predictive power of bankruptcy failures.

IV. TWO YEAR PRIORI MODEL

A.   CHOICE OF DEPENDENT AND INDEPENDENT VARIABLE :

In this section the ratio's related to the year 2006 is considered as independent variable and corresponding to 2008 is considered as a dependent variable.

For the year 2006, the variables C5, C19, C20, C21, C22, C23, C30, C31, C32, C34 and C37 have the p value less than 0.05. So these variables are considered as significant variable. Similarly for the year 2008, the significant variables are C5, C18, C20, C21, C22, C23, C24, C31, C32, C34 and C37.

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Now from the significant ratios corresponding to the year 2008, one particular ratio is chosen as dependent variable. For this each of these variable is regressed on the significant ratios corresponding to the year 2006. In each case we used forward inclusion using likelihood ratio test, Wald test, and score test, to choose the best subset among the regressors. This procedure gives C20 (for the year 2008) as the dependent variable in which one ratio namely C13 as significant.

In the first step of analysis we computed the p value which is used to identify the significant factors. Then stepwise logistic regression was carried out to identify the factors which are jointly responsible for the successive level of the bank. Stepwise logistic regression was carried out using forward inclusion and backward elimination methods . Likelihood ratio test, Wald test and score(conditional) test are also used for selecting best regressors. The regressor included in the logistic regression model is C13.

The logit of the binary regression model for 1 independent variable is

$$g(x) = \beta_0 + \beta_1 x$$

The conditional probability that the outcome is successive bank is denoted by

$$P(Y = 1/x) = \pi(x)$$

where

$$\pi(x) = \frac{e^{g(x)}}{1 + e^{g(x)}}$$

In the analysis based on logistic regression, the predictor variable is the ratio C13=Net Profit Margin (x) for the year 2006 and the endogeneous variable is C20= Owners fund as % of total source (Y) for the year 2008.

The fitted model is

$$\hat{y} = -70.893 + (10.205)C_{13}$$

This model is used in order to rank and classify the banks according to their performances. The model was tested with the data set compiled from 2008.

The model was transformed using logistic form. Probabilities were calculated using transform model. Banks were ranked by probabilities and they are classified using 0.5 cut-off point. Those under 0.5 were classified as failed and above 0.5 as successful. The result can be seen in Table 4.

In binary logistic regression the maximum likelihood estimate of $\beta 0$ and $\beta 1$ are $\hat{\beta}_0$ = (- 70.893) and $\hat{\beta}_1$ =(10.205) .

The estimated logit is given by the equation

$\hat{g}$ (x) =$-70.893 + (10.205)C_{13}$

and the fitted value are given by the equation

$$\pi(x) = \frac{\exp(g(x))}{1 + \exp(g(x))}$$

-2log likelihood is 0.000

B. CONCLUSION :

The classification rule applied to the ratios for the year 2008 gives 5 banks at failure level. The prediction using logistic regression model for the year 2010 gives 2 banks at failure level which excludes 3 banks classified under classification rule.

For the year 2008 , the banks which are at failure level are Canara Bank (B5), Karnataka Bank (B14), Union Bank (B14), Vijaya Bank (B16). And for the year 2010, the banks which are at failure level are Canara Bank (B5) and Karnataka Bank (B9).

Since the model was constructed using 2006 predictors and 2008 dependent variables (Two years priori model), it made a prediction for the year 2010.

V. COMPARISON OF ONE YEAR PRIORI MODEL AND 2 YEARS PRIORI MODEL

For both the one year priori model and 2year priori model the dependent variable is C20= owners fund as %of source and independent variable is C19 and C13 respctively.

Two year priori model gives only two banks at failure level that is B5 and B9. But one year priori model gives 5 banks at failure level including those two banks. That is B5, B7, B14, B16.

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VI. APPENDIX

TABLES:
- Financial Ratios
- Banks are ranked using the 1 year priori model
- Banks and their codes(1 year priori model)
- Banks are ranked using the 2 years priori model
- Banks and their codes (2 year priori model)
- Out put: Logistic Regression tables for Binary logistic regression model.

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TABLE 1: FINANCIAL RATIOS

	Per share ratios
C1	Adjusted EPS (Rs)
C2	Adjusted cash EPS (Rs)
C3	Reported EPS (Rs)
C4	Reported cash EPS (Rs)
C5	Dividend per share
C6	Operating profit per share (Rs)
C7	Book value (excl rev res) per share (Rs)
C8	Book value (incl rev res) per share (Rs.)
C9	Net operating income per share (Rs)
C10	Free reserves per share (Rs)
	Profitability ratios
C11	Operating margin (%)
C12	Gross profit margin (%)
C13	Net profit margin (%)
C14	Adjusted cash margin (%)
C15	Adjusted return on net worth (%)
C16	Reported return on net worth (%)
C17	Return on long term funds (%)
	Leverage ratios
C18	Long term debt / Equity
C19	Total debt/equity
C20	Owners fund as % of total source
C21	Fixed assets turnover ratio
	Liquidity ratios
C22	Current ratio
C23	Current ratio (inc. st loans)
C24	Quick ratio
C25	Inventory turnover ratio
	Payout ratios
C26	Dividend payout ratio (net profit)
C27	Dividend payout ratio (cash profit)
C28	Earning retention ratio
C29	Cash earnings retention ratio
	Coverage ratios
C30	Adjusted cash flow time total debt
C31	Financial charges coverage ratio
C32	Fin. charges cov.ratio (post tax)
	Component ratios
C33	Material cost component (% earnings)
C34	Selling cost Component
C35	Exports as percent of total sales
C36	Import comp. in raw mat. consumed
C37	Long term assets / total Assets
C38	Bonus component in equity capital (%)

TABLE 2: BANKS ARE RANKED USING THE MODEL (SEE COUNTED XB VALUES AND THEIR PROBABILITIES)

Banks Used in Analysis	XB	Prob(Y=1)	Predicted
Allahabad Bank	7.1031	0.99917812	1
Andra Bank	5.68974	0.99663092	1
Bank of Baroda	6.99438	0.99908382	1
Bank of India	4.068	0.9831763	1
Canara Bank	-1.9569	0.12380293	0
Central Bank of India	2.64558	0.93373804	1
Corporation Bank	-12.9648	2.3413E-06	0
Dena Bank	7.59234	0.99949595	1
Karnataka Bank	-0.16302	0.45933502	0
Oriental Bank of Commerce	7.35678	0.99936216	1
Punjab National Bank	7.35678	0.99936216	1
Syndicate Bank	7.25712	0.99929536	1
Uco Bank	5.48136	0.9958536	1
Union Bank Of India	-9.66696	6.3338E-05	0
United Bank Of India	2.73618	0.93912809	1
Vijaya Bank	-1.15056	0.24038681	0

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TABLE 3: BANKS AND THEIR CODES (1 YEAR PRIORI MODEL)

	Banks Used in Analysis	2009	2010
B1	Allahabad Bank	1	1
B2	Andra Bank	1	1
B3	Bank of Baroda	1	1
B4	Bank of India	1	1
B5	Canara Bank	0	0
B6	Central Bank of India	1	1
B7	Corporation Bank	0	0
B8	Dena Bank	1	1
B9	Karnataka Bank	0	0
B10	Oriental Bank of Commerce	1	1
B11	Punjab National Bank	1	1
B12	Syndicate Bank	1	1
B13	Uco Bank	1	1
B14	Union Bank Of India	0	0
B15	United Bank Of India	1	1
B16	Vijaya Bank	1	0
The banks are sorted alfabetically. 0=Failed, 1=Successful			

TABLE 4: BANKS ARE RANKED USING THE 2 YEARS PRIORI MODEL

Banks Used in Analysis	XB	Prob(Y=1)	Predicted
Allahabad Bank	79.3246	1	1
Andra Bank	99.63255	1	1
Bank of Baroda	26.15655	1	1
Bank of India	22.07455	1	1
Canara Bank	-50.483	1.19E-22	0
Central Bank of India	39.7292	1	1
Corporation Bank	21.9725	1	1
Dena Bank	107.4904	1	1
Karnataka Bank	-133.756	8.14E-59	0
Oriental Bank of Commerce	44.8317	1	1
Punjab National Bank	44.8317	1	1
Syndicate Bank	136.0644	1	1
Uco Bank	96.8772	1	1
Union Bank Of India	6.8691	0.998962	1
United Bank Of India	126.5738	1	1
Vijaya Bank	17.38025	1	1

TABLE 5: BANKS AND THEIR CODES (2 YEARS PRIORI MODEL) (2 YEARS PRIORI MODEL)

	Banks Used in Analysis (2 years priori model)	2008	2010
B1	Allahabad Bank	1	1
B2	Andra Bank	1	1
B3	Bank of Baroda	1	1
B4	Bank of India	1	1
B5	Canara Bank	0	0
B6	Central Bank of India	1	1
B7	Corporation Bank	0	1
B8	Dena Bank	1	1
B9	Karnataka Bank	0	0
B10	Oriental Bank of Commerce	1	1
B11	Punjab National Bank	1	1
B12	Syndicate Bank	1	1
B13	Uco Bank	1	1
B14	Union Bank Of India	0	1
B15	United Bank Of India	1	1
B16	Vijaya Bank	0	1
The banks are sorted alphabetically. 0= Failed, 1= Successful			

OUTPUT LOGISTIC REGRESSION TABLES FOR BINARY LOGISTIC REGRESSION MODEL

DEPENDENT VARIABLE ENCODING

Original Value	Internal Value
0	0
1	1

FORWARD STEPWISE (CONDITIONAL):

OMNIBUS TESTS OF MODEL COEFFICIENTS

		Chi-Square	Df	Sig.
Step1	Step	13.487	1	.000
	Block	13.487	1	.000
	Model	13.487	1	.000

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MODEL SUMMARY

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	4.507[a]	.570	.844

HOSMER AND LEMSHOW TEST

Step	Chi-square	df	Sig.
1	1.452	6	.963

CLASSIFICATION TABLE

Observed		Predicted		
		Y20		Percentage correct
		0	1	
Step1 Y20 0		3	1	75.0
1		1	11	91.7
Overall Percentage				87.5

VARIABLES IN THE EQUATION

	B	S.E	Wald(Z)	df	Sig.	Exp(B)
Step 1[a] C19	-.906	.678	1.785	1	.181	.404
Constant	19.947	14.931	1.785	1	.182	4.600E8

LOGISTIC REGRESSION (2 YEAR PRIORI MODEL)

OMNIBUS TESTS OF MODEL COEFFICIENTS:

		Chi-Square	Df	Sig.
Step1	Step	19.875	1	.000
	Block	19.875	1	.000
	Model	19.875	1	.000

FORWARD STEPWISE (WALD)

Observed		Predicted		
		Y20		Percentage correct
		0	1	
Step1 Y20 0		5	0	100.0
1		0	11	100.0
Overall Percentage				100.0

VARIABLES IN THE EQUATION

	B	S.E	Wald(Z)	df	Sig.	Exp(B)
Step 1[a] C13	10.205	2.413E3	.000	1	.997	2.705E4
Constant	-70.893	1.779E4	.000	1	.997	.0000

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INCLUSIVE GROWTH: REALTY OR MYTH IN INDIA

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ABSTRACT

An empirical analysis of contemporary developed and developing economies shows more or less similar kind of pattern of economic evolution, which represents a natural shift from preindustrial to industrial and finally to post industrial societies. Thus, an underdeveloped economy is characterised by a predominant share of agriculture, with development the share of industry increases and that of agriculture declines and subsequently after reaching high level of development the services sector increases in importance becoming a major component of the economy. In a highly developed economy, services sector is the highest contributor to the Gross Domestic Product (GDP). This model of evolution has proved to be true in relation to all the developed nations. In a way, it means that growth of service sector leads to inclusive growth of the economy wherein the benefits of economic growth are distributed among all the sections of the economy equally and not restricted to only selected few. Analyzing the growth of Indian economy, on these lines policy makers claim that India has successfully climbed the ladder of development following the same pattern where, in 1990 according to the Central Statistical Organization (CSO) the sectoral shares in India's GDP for Agricultural, Secondary and Tertiary sectors in terms of percentage were 58, 15 and 28 respectively whereas in the year 2006 the sectoral distribution was 19%, 27% and 55% respectively. This data proves that India today is in the third stage of development which is associated with dominant "Service Sector". The author of this paper does not doubt the credibility of the claim on the part of the policymakers but in a country where 5000 cases of farmers suicide has been registered, nearly 10% of the population is doing earthwork on Rs 50/- per day with the tools invented in 18th century, 25% of the population is below poverty line and another 25% in clinging tangentially to the poverty line, can we actually call this development.

KEYWORDS
growth, India.

INTRODUCTION

The term Economic Development is a very broad concept. Various economists have tried to explain and define this term. In simple words, **Economic development** is the increase in the standard of living of a nation's population with sustained growth from a simple, low-income economy to a modern, high-income economy. Its scope includes the process and policies by which a nation improves the economic, political, and social well-being of its people.[1] Economic development has always been associated with the structural composition of the economies worldwide. An understanding of the economic activity of a society is very important because it determines the way in which the people lead the life, the level of development and the standard of living of the individuals. Economic activities are broadly classified into three categories viz, Primary, Secondary and Tertiary.

The primary sector of the economy extracts or harvests products from the earth. The primary sector includes the production of raw material and basic foods. Activities associated with the primary sector include agriculture (both subsistence and commercial), mining, forestry, farming, grazing, hunting and gathering, fishing, and quarrying. The packaging and processing of the raw material associated with this sector is also considered to be part of this sector.

The secondary sector of the economy manufactures finished goods. All of manufacturing, processing, and construction lies within the secondary sector. Activities associated with the secondary sector include metal working and smelting, automobile production, textile production, chemical and engineering industries, aerospace manufacturing, energy utilities, engineering, breweries and bottlers, construction, and shipbuilding.[2]

The Tertiary Sector is also known as the Service Sector. It involves the provision of services to businesses as well as final consumers. Service may involve the transport, distribution and sale of goods from producer to a consumer as may happen in wholesaling and retailing, or may involve the provision of a service, such as pest control or entertainment. Goods may be transformed in the process of providing a service as happens in the restaurant industry or in equipment repair. The service sector consists of the '*soft*' parts of the economy.

Economist argues that as nations industrialized, there is an inevitable shift of employment from one sector of the economy to another. Empirical evidence shows that as any country moves on the path of development, they experience structural shift from agricultural sector to industrial sector and from industrial sector to the tertiary sector in the ultimate stage of development. Thus, in a highly developed economy, 'Services sector' is the most dominant sector in terms of contribution to Gross Domestic Development (GDP) and employment of the workforce in the country. Or these economies become what can be called as '*Service Economy'.* The Service Economy is a relatively new coinage arising out of the popularity of the service sector. In this kind of economy as much as possible economic activities are treated as a service. The service sector has gained a lot of importance in the world economy. Most of the developed countries are earning millions from the services sector alone.

PURPOSE OF STUDY
This paper is an attempt to analyze the reliability of this index of economic progress.

RESEARCH METHODOLOGY
The data is collected using secondary sources.
SERVICE SECTOR ROUTED PATH TO DEVELOPMENT
The relationship between Economic development and Structural changes has been proved long back. Numerous economists like Colin Clark, Kuznets, Bhagwati etc have supported this view. According to the *'Theory of Progression',* economies tend to follow a path that takes them from a heavy reliance on agriculture and mining, towards the development of manufacturing (e.g automobiles, textiles, shipbuilding, steel) and finally towards a more service based structure. United Kingdom was the first country to follow this path. French economist Jean Fourastie, who formulated Three-Sector hypothesis along with Colin Clark categorises the path towards development of any economy into three phases, these paths are as follows:
First phase: Traditional civilizations
Workforce quotas:
- Primary sector: 70%
- Secondary sector: 20%
- Tertiary sector: 10%

This phase represents a society which is scientifically not yet very developed, with a negligible use of machinery. The state of development corresponds to that of European countries in the early middle Ages, or that of a modern-day developing economy.
Second phase: Transitional period
Workforce quotas:
- Primary sector: 20%

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- Secondary sector: 50%
- Tertiary sector: 30%

More machinery is deployed in the primary sector, which reduces the number of workers needed. As a result the demand for machinery production in the second sector increases. The transitional phase begins with an event which can be identified with industrialization far-reaching mechanization (and therefore atomization) of manufacture, such as the use of conveyor belts.

The tertiary sector begins to develop, as do the financial sector and the power of the state.

Third phase: Tertiary civilization

Workforce quotas:

- Primary sector: 10%
- Secondary sector: 20%
- Tertiary sector: 70%

The primary and secondary sectors are increasingly dominated by atomization, and the demand for workforce numbers falls in these sectors. It is replaced by the growing demands of the tertiary sector. The situation now corresponds to modern-day industrial societies and the society of the future, the service or post-industrial society. Today the tertiary sector has grown to such an enormous size that it is sometimes further divided into an information-based quaternary sector and even a quinary sector based on non-profit service.

GROWTH PERFORMANCE OF THE INDIAN ECONOMY

India is one of the fastest growing economies of the world. From a steady slow moving agrarian economy at the time of independence it has transformed into a vibrant rapidly growing economy. The rate of growth of India's Gross Domestic Product (GDP) has shown continuous improvement over the years till 2007. Gross Domestic Product means the total value of all the services and goods that are manufactured within the territory of the nation within the specified period of time. The table given below portrays an exact picture of the growth performance of the Indian economy:

TABLE NO 1: GROSS DOMESTIC PRODUCT (GDP) GROWTH RATE IN INDIA (In % terms)

Sr No	Fiscal Year	Growth Rate (%)
1	1996	7.8
2	1997	4.8
3	1998	6.5
4	1999	6.1
5	2000	4.4
6	2001	5.8
7	2002	4.0
8	2003	8.5
9	2004	7.3
10	2005	9.0
11	2006	9.2
12	2007	9.4

Source: Ministry of Finance, India.

Thus from the above table it is clear that the growth performance of Indian economy has been remarkable over the years. Since the beginning of this decade the economic growth of the country has gained rapid momentum. In fact in the year 2007 economy of India stood at twelfth position in the global scenario with the GDP of US $ 1.09 trillion and the growth rate of 9.4%.

SECTORAL SHARES IN GROSS DOMESTIC PRODUCT OF INDIA

The composition of Indian GDP includes many sectors like industry, infrastructure, agriculture, and services. The percentage of the share of these sectors in the composition of India GDP differs and has undergone drastic change over the last few decades. The table given, shows the sectoral share in India GDP,

TABLE 2: INDIA, SECTORAL SHARES IN GDP, 1950-2006 (Per cent of GDP)

	Agriculture	Industry	Service
1950	58	15	28
1980	38	24	38
1990	33	27	41
2000	24	27	49
2003-04	22	26	53
2004-05(P)	20	26	54
2005-06(Q)	20	26	54
2006-07(R)	19	27	55

Source: Central Statistical Organisation

The agriculture sector contributed the most to India GDP after the independence of the country. But in the four decade period, 1950-1990, agriculture's share in GDP declined by about 25 percentage points, while industry and services gained equally. The share of industry has stabilised since 1990, and the entire subsequent decline in the share of agriculture has been picked up by the services sector.

SECTOR-WISE PERFORMANCE ANALYSED

India GDP Composition Sector Wise consists of many sectors such as agriculture, industry, services. The contribution of these sectors in India GDP differs with one sector contributing more than the other and also the growth of these sectors differ form one another, as one sector growing fast than the other, which is evident from the table representation given below;

TABLE 3: SECTORAL GROWTH RATES

	Average growth (In per cent per annum)		
	1951-1980	1981-1990	1991-2000
Agriculture	2.1	4.4	3.1
Industry	5.3	6.8	5.8
Services	4.5	6.6	7.5

Source: Gordon and Gupta, 2003

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In India growth of services picked up in the 1980's and accelerated in the 1990's, when it averaged 7.5 per cent per annum, thus providing an impetus to industry and agriculture, which grew on average by 5.8 per cent and 3.1 per cent respectively. Growth in the services sector has also been less cyclical and more stable than growth of industry and agriculture.[3]

SERVICES SECTOR GROWTH IN INDIA

Services Sector in India has been very rapid in the last few years. The Services Sector contributes the most to the Indian GDP. The Growth Rate of the Services Sector in India GDP has risen due to several reasons and it has also given a major boost to the Indian economy.

India ranks fifteenth in the services output and it provides employment to around 23% of the total workforce in the country. The various sectors under the Services Sector in India are construction, trade, hotels, transport, restaurant, communication and storage, social and personal services, community, insurance, financing, business services, and real estate.

The Services Sector contributes the most to the Indian GDP. The Sector of Services in India has the biggest share in the country's GDP for it accounts for around 53.8% in 2005. The contribution of the Services Sector in India GDP has increased a lot in the last few years. The Services Sector contributed only 15% to the Indian GDP in 1950. Further the Indian Services Sector's share in the country's GDP has increased from 43.695 in 1990- 1991 to around 51.16% in 1998- 1999. This shows that the Services Sector in India accounts for over half of the country's GDP.

The Reasons for the growth of the Services Sector contribution to the India GDP

The contribution of the Services Sector has increased very rapidly in the India GDP for many foreign consumers have shown interest in the country's service exports. This is due to the fact that India has a large pool of highly skilled, low cost, and educated workers in the country. This has made sure that the services that are available in the country are of the best quality. The foreign companies seeing this have started outsourcing their work to India especially in the area of business services which includes business process outsourcing and information technology services. This has given a major boost to the Services Sector in India, which in its turn has made the sector contribute more to the India GDP.

SHARE OF SERVICES IN EMPLOYMENT

The present occupational structure of the Indian economy reflects the backwardness of the country. There are huge disparities in the proportion of the people working in different sectors of the country; this aspect is evident from the table given below.

1. Firstly, since 1951 until now agriculture has remained the main occupation of the Indian economy. No doubt, the percentage of work force working in the agriculture sector has declined over the years but still it gives employment to majority of the population in the country.
2. Secondly, in case of Secondary sector, it can be concluded that no considerable improvement has taken place during 1951 to 1991. In 1951 10.0 percent working population was employed in this sector and by 1991 it improved marginally to 12.1 percent.
3. Thirdly, the proportion of workers employed in the tertiary sector has increased over the 50 years period i.e. 1951 to 2001 from 17.3 percent to 25.2 percent.

All this is evident from the given table.

TABLE 4: OCCUPATIONAL DISTRIBUTION OF WORKING POPULATION IN INDIA

	Occupation	1951	1961	1971	1981	1991	2001
	Primary Sector(1+2)	72.1	72.3	72.6	69.3	67.4	57.3
1	Agriculture and Allied activities	72.1	71.8	72.1	68.7	66.9	56.7
2	Mining and quarrying	0.6	0.5	0.5	0.6	0.6	0.6
	Secondary Sector(3+4)	10.0	11.7	10.7	12.9	12.1	17.6
3	Household and other than household industry	9.0	10.6	9.5	11.3	9.4	13.4
4	Construction	1.0	1.1	1.2	1.6	1.9	3.7
	Tertiary Sector	17.3	16.0	16.7	17.8	20.4	25.2
5	Trade and Commerce	5.3	4.0	5.6	6.3	7.1	9.4
6	Transport, storage and communications	1.5	1.6	2.4	2.7	2.8	4.0
7	Other services	10.5	10.4	8.7	8.8	10.5	11.8
	Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Indian Economy, Mishra and Puri, 2008.

CONCLUSION

INCLUSIVE GROWTH IN INDIA?

From the above discussion, we can conclude that Indian Economy is growing rapidly. And the tremendous growth of the economy truly follows the theory of progression. Thanks to the industries like Information Technology, Software, Telecommunications and others that we have achieved the average growth rate target of 7% in this decade. But the dominancy of the Services Sector is only in the composition of Gross Domestic Product (GDP) of the country whereas the shift in the occupational structure of the country is very marginal. And we cannot call this growth as Inclusive Growth. Inclusive growth implies an equitable allocation of resources with benefits accruing to every section of the society. In our case, with the reforms taking place, the disparities are also increasing. The gap between the rich and poor is widening. Growth is not uniform across all sectors, regions and sections of the society. The policy makers of the country had very strongly believed in the phenomenon of trickle down growth and framed the policies accordingly. Unfortunately the experience is completely opposite. More than one third of the population in the country are still illiterate. Majority of the hungry people live in India according to the United Nations Report. 40% of the world's poor live in India and approximately 30% of the population in the country lives below poverty line. We are rich in human resources, but nearly 7% of the workforce is unemployed. There is no social security and stability in the country as 92% of the workforce is employed in the unorganized sector. Maharashtra and Andhra Pradesh are the well developed states of the country with cities like Mumbai, Hyderabad, Pune, Nagpur etc showing western pattern of development and urbanization. But it is also equally true that these are the two states of the country where thousands of farmers have committed suicides in distress. Thus, it is not Inclusion but Exclusion which continues in India.

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A PRACTICAL TOKENIZER FOR PART-OF SPEECH TAGGING OF ENGLISH TEXT

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ABSTRACT

Tokenization is an important task in part of speech tagging. A token is a tiny part of a sentence with individual meaning. In part-of-speech tagging, all taggers must tokenize each input sentence into smaller parts before classified. The performance of a tagger is based on how accurately its tokenizer tokenizes it's given input sentence. Depending on grammatical and inflectional rules, different approaches are used for different languages in taggers. In this paper we present a practical approach of English text tokenization. Although English is comparatively less morphologically inflected language, there are some special issues that should be considering in POS tagging. We develop a process with some special consideration which tokenizes sentences in multiple succession, so that maximum accuracy could be expected. We excluded formatted texts, graphics, tables and images from our consideration. Here a user can upload a text file written in English and the model separates each component into an array and taking each part into special consideration given in the sequence of token that consist in the file. The output of this model can input to the analyser for lexical analysis and tagged with proper tags.

KEYWORDS
inflectional rule, POST, tagger, tokenizer, WSD.

INTRODUCTION

The objective of Natural Language Processing (NLP) is to application of natural languages in computer applications. Under NLP paradigm there are many tasks used for machine translation. Part-of-speech tagging is one of the activities that assign proper symbols to each word from a written text of natural language. A language is composed of sentences which composed of words. Apart from word it may consist of numbers, punctuation marker and grouping word which represent one unique meaning. In statistical tagger[1], tagging is done based on contextual probability of word meaning. To retrieve the proper meaning from the context, it is very much important to tokenize the group of words and its associated symbols. S. Kulick in[2] explained a successive method for tokenization of Arabic text. In his approach, named entities were not considered separately in terms of token.

In linguistics, there are at least two types of token classes: sentence boundary and words are considered. However in the context of tagging, other classes of token needed to be considered that may include numbers, paragraph boundaries and various sorts of punctuation symbols etc. Aho et al. (1986) specify a sentence boundary with the period followed by a white space, followed by an uppercase letter. For example in *www.rediffmail.com*, although three periods are present in this sample word, only one token should be identified, although there are three word separated by three period but due to the absence of white space. Moreover during tagging the entire line is classed as a single part as Foreign word [FW]. In our approach we tokenize each word through successive tokenization method where in first, we separate each word by a white space. If two or more continuous words begin with capital letter without any separator, we consider them under single token. For example "Veenit Chaitanya, Akshar Bharti & Rajeev Segal" when tokenize with our model, we get three tokens as three different names separated by comma and ampersand. Kupiec (1992) developed a practical tagger using HMM approach using regular expression for tokenizing string[3]. In [2], using regular expression, a substring is extracted and assign in a new string with an internal name and a list is maintained for core POS tags. This list is returned for assigning tags.

OUR APPROACH

In our approach we tokenize a given sentence in different succession. The processes adopted here are explained below. Our model is enabling to take a sentence input directly from user or can upload a file from hard disk of the client machine. Here the type of the uploaded file should be in text format either .txt or .doc. If the file is processed in .docx format, before uploading it should be manually saved as .doc format. We consider here only simple text, not the formatted text or any other style like word art or rich document. A document consists of tables, images and graphics will show garbage. The task of formatted text processing is left for future research. The process sequence is given figure 1 below:

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FIGURE 2: PROCESS OUTLINE

EXPERIMENT

We experimenting our approach in various ways. A simple sentence is uploaded directly from the client machine and tokenize successively for words, separated by white spaces. Next we look through for word having punctuation marker (period, comma, question marker). We used a temporary string to store the component string and consider for further analysis. We achieve 90% accuracy for plain text. Rest 10% errors for ambiguity with named entity and abbreviation word present in sentences. For example, in the sentence: "Mr. Ravishankar Nair is a man of moral". During tokenization through our model, we the get the output as [Mr][.][Ravishankar Nair][is][a][man][of][moral] due to ambiguity with period after Mr. However for the name, we are enabled to properly identify its expandability. After properly tagging, we get following output (using Penn treebank tagset).

FIGURE 3: A SAMPLE OUTPUT OF THE MODEL

Output without Correction	Corrected Output
[Mr]/[FW]	[Mr. Ravishankar Nair]/[NNP]
[.]/[.]	[is]/[MD]
[Ravishankar Nair]/[NNP]	[a]/[DT]
[is]/[MD]	[man]/[NN]
[a]/[DT]	[of]/[IN]
[man]/[NN]	[moral]/[JJ]
[of]/[IN]	
[moral]/[JJ]	

Here the achieve accuracy level is approximately 87.5%. Now we test with another sentence. Let the input sentence to be tokenize is "LIFER by Hendrix (1978) and INTELLECT by Harris (1977) were some of the early systems of automated machine translation. (Akshar Bharati, 1985)"
In the given sentence if we tokenize each word separated by while space the output array will be

0	1	2	3	4	5	6	7	8
LIFFER	by	Hendrix	(1987)	and	INTELLECT	by	Harris	(1977)
9	10	11	12	13	14	15	16	17
were	some	of	the	early	systems	of	automated	machine
18	19	20	21					
translation.	(Akshar	Bharti,	1985)					

In the sample array the difficulties are, in token 3(1987), 8(1977), 19, 20 &21 due to the present of parenthesis. Here the two parentheses are individual token falls under punctuation. From the POST point of view, token 19 & 20 should be assign by one tag because these two word (Akshar and Bharti) represent one name, category proper noun, singular number and assign tag is [NNP]. However in first iteration, 'Akshar' and 'Bharti' comes in two separate token. Secondly, in token 18 and 20, two punctuation mark period '.' and comma ',' comes together in a single token. In our approach we check each case by case separately and tokenize accordingly. To examine our model online, user can test by link (http://www. apostane/data_input.php).

ALGORITHM USED

Input: S - *the input string to be tokenize*
         F - *a temporary file created on disk*
         A- Array of words
Output: Q- *sequence of tags*
1. Upload the file to the server
2. Read the strings from the file and save into temporary file
3. Separate the words with white spaces
4. While not eof()
5. W= Reads a word from the list and check each character (C) in W
6. If C is punctuation marker
7. Split the word in two classes
8. A=splitted word 1
9. B=punctuation symbol
10. Store A & B into the list
11. If List[i] & List[i+1] have begin with Capital Mark // for name entity recognition

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12.   Marge(List[i],List[i+1]) and stored in list
13.   End while
14.   Return List(Q)

Now the output of this model is input to the morphological analyzer where the inflectional information of the word is extracted. The root word is steamed to categorize the word for tagging. Now the new list to be tagged is the list of root word coming after morphological analyzer.

CONCLUSION

We test our model with different text and uploaded file in text format and we achieve 87.5% accuracy with plain text irrespective morphological inflection. Presently we are applying this model for word sense disambiguation, separating nouns with other part-of-speech and punctuation mark identification. This approach can also be used to separate inflectional component of an inflected word with little modification. This task we left for future work during morphological analysis. Tokenization does not consider the inflected word separately. In this model we do not pay more attention for tokenize for local word grouping. For LWG, separate algorithms have to use based on sense of thee words or more using Markov Model.

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KEY ANTECEDENTS OF FEMALE CONSUMER BUYING BEHAVIOR WITH SPECIAL REFERENCE TO COSMETICS PRODUCT

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ABSTRACT

The basic purpose of this study is to gain a better understanding of the determinants of female consumer buying behavior with special reference to cosmetics products. A shopping mall administration survey was conducted to collect primary data. An exploratory factory analysis was run to identify key determinants of the female consumer buying behaviour. Various statistical tests like Chi-square, Regression and ANOVA were conducted to test the stated hypothesis. Results of the study indicate that utilitarian/functional benefits, perceived brand value and perceived credibility of communication play a significant role in shaping the female consumer buying behavior among both the age group under study. The study found a significant relationship between marital status and spending on cosmetics. The study suffers from three major limitations of small sample size, requirement of a cross cultural analysis and use of multivariate data analysis techniques like SEM for estimating relationships among variables simultaneously. The paper is an empirical document that can be used to frame creative marketing strategies and suggest various antecedents to marketers, policy- makers and all those who are looking to enhance customer value and satisfaction and making their offering more convenient, better and economic.

KEYWORDS

Consumer buying behavior, Factor analysis, Perceived brand value, Utilitarian benefits.

INTRODUCTION

In today's society, every individual likes to look more beautiful and physically attractive. A beautiful and attractive human being always gets good admirations and recognition in the society. It is the attractive and good human faces that get preference over the unattractive ones. This particular personality trait has been used by marketers to promote their products. Various psychological studies have also found a positive relationship between the attractiveness and the behavioral dimensions of that individual. We hardly find any culture throughout the world that does not appreciate the attractive human faces and body in various ways

When we look at the evolution and acceptance of various cosmetics products in its present form, its origin and history spans over thousand of years. The cosmetics were in use in various civilizations of the earth and almost every society and culture has used cosmetics in one or other ways. Khraim (2011) observed that cosmetics, as they are known, originated in the Far-East first. It was used in different ways i.e. tattooing and body scarification in America, use of colors and sketches by Africans .Gradually it has been modified into numerous ways in the form that we include in cosmetics today.

According to the definition of Food and Drug Adulteration department of USA, cosmetics refers to any product- intended to be applied to the human body for cleansing, beautifying, promoting attractiveness or altering the appearance without affecting the body's structure or functions. Nair and Pillai (2007) defined cosmetics as articles intended to be rubbed, poured, sprinkled or sprayed on introduced into or otherwise applied to the human body or any part thereof, for cleansing, beautifying, promoting attractiveness or altering the appearance or various articles intended for use as a component of such articles. The cosmetics products are mainly used for making skin, eyes, lips, hair and nail more soft, younger, attractive and beautiful.

Getting a fair look and physical attractiveness is undoubtedly one of the inherent desires of most of the human being today. However, female community happens to be more cautious and concern to improve and modify their grooming, personality, physical appearance and attractiveness. As a result this community constitutes the most attractive and sizeable market for various cosmetics products like fairness cream, gel, anti aging/wrinkle free cream, nail paint, lipstick and certain other variety of products.

The desire to get good feel and look is growing with the growth of materialism culture throughout the world. Consumers, especially the females are becoming more beauty conscious. They are ready to pay a premium over various cosmetics products that thy feel will satisfy their need more effectively. However, the consumer behavior patterns in this regard, vary markedly, according to demographic and socio-cultural background of the segment under study. Several other factors like cultural transformation, changing lifestyle, growing media penetration and desire to become financially independent have been considered significant in shaping consumer buying behavior across the world.

In the backdrop of above discussion, this paper is an attempt to identify, analyze and empirically test various factors,, that influence the consumer buying behavior so that marketers can offer and redesign their marketing strategies to enhance customer value by improving customer satisfaction and integrating all the benefits consumer look in the brand they patronage.

OBJECTIVES OF THE STUDY

- To identify various factors that determine female buying behavior with respect to cosmetics products
- To analyze relationship among socio-demographic variables and cosmetics purchase behavior.

LITERATURE REVIEW AND CONCEPTUAL FOUNDATION OF STUDY

A significant per cent of the spending on the beauty and other cosmetics products is attributed by female consumers worldwide. India is not an exception to this fact. Nair et al (2007) projected the sales of cosmetics product in India in 2010 at INR 195.6 billion. However, in comparison to other markets of the world, it is still at a nascent stage. Shukla et al (2009) estimated that per capita spending on cosmetics products in India is as low as INR 30, which is INR 1500 in major Asian countries.

Guthrie et al (2008) conducted a similar study in USA with special reference to female consumer's perception of a brand in relation to their facial image and cosmetic usage. The study observed a significant relationship between a women's facial image and her perception towards a brand. Malhotra (2003) attributed growing fashion and beauty consciousness, growing focus on health and fitness along with rising disposable income as the reason for witnessing a good growth rate in times to come.

In this background, marketers are coming out with more innovative and creative marketing strategies to deal with growing needs and aspirations of the female consumers who are perceived to be tough buyer than their male counterpart. As a result Indian market is experiencing different kinds of applied marketing strategies like product launch and re-launch, re-positioning of the products, modifications through changes in the ingredients, improvement in the quality, brand extension, multiple price points and by revamping the traditional distribution system that makes them more competitive to deliver customer value.

Practically, it has always been a challenge for the marketers to understand the consumer buying behavior from acquisition to disposing off the products. It is especially true in case of Indian female consumers who are perceived to be highly price sensitive. Voss et al (2003) observed that price play an important role in shaping the consumer behavior of the people in early stages of the buying behavior. The complexity of the consumer buying behavior gets more complicated

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markedly by socio-economic class, purchasing power and certain other demographic factors. Sinha (2003) observed that Indian consumers, especially female lay more emphasis on entertainment value rather than functional benefits of the product.

Ibanz et al (2011) found that the benefits sought after in the purchase of cosmetics in general as well as in deciding on a specific cosmetic brand are not limited to instrumental or functional benefits but may also be related to hedonistic or emotional consumer buying behaviour.Marketers use social–comparison theories to influence the buying behavior in which celebrities and models are being used in promotional campaigns.

Most of the literature which is available on this subject has focused only on one or two dimensions of the consumer behavior. However, Indian consumers have their own characteristics which have little resemblance to Western consumers in terms of buying behavior. As a result, various theories and models which have been developed in Europe and America has little relevance in Indian market. This research study intends to overcome all these limitations by identifying, analyzing and testing different constructs that encompass various facets of female consumer buying behavior with special reference to cosmetics products in developing country like India. It also tests relationships among various demographic and socio-cultural factors and their impact on shaping buying behavior in this regard.

RESEARCH METHODOLOGY

The study is a cross sectional descriptive research design which was carried out in two distinct phases. In first phase, a content analysis study was performed primarily to become familiar with various dimensions of the cosmetics industry and consumer behavior in this regard. A sample of 20 respondents, consisting of beauty consultants, cosmetics retail shop-keepers, female customers and brand executives of leading cosmetics brands was taken. This phase helped in developing a precise and formal research instrument in the form of a structured questionnaire to collect primary data for the second phase of the study.

In the second phase, a shopping mall administration survey was carried out over 120 female customers who were making an exit from the respective shopping mall. The questionnaire was designed into two major parts. Part a consisted of questions on demographic and other relevant socio-cultural factors. Part two of the questionnaire dealt with questions that determine the consumer buying behavior including 27 different constructs.

H1 A customer's age and her spending on cosmetics has no significant relationship.

H2 A customer's marital status and her spending on cosmetics has no significant relationship.

H3 A customer's attitude towards ac cosmetics w brand is independent of utilitarian/functional, perceived brand value, perceived credibility of communication, packaging and location/physical evidence benefits.

DATA INTREPRETATION

One hundred seventeen questionnaires were found usable. The respondents were divided into two major age categories of below and above 28 years. In Indian social system, by this particular age, females usually get married and witness a significant change in cosmetics product buying behavior.

About 60 per cent respondents were below 28 years of age. Out of it, 64 per cent were married and 36 per cent were unmarried. The educational profile revealed that almost 51 per cent respondent were graduate/ post-graduate, 34 per cent have earned professional degree. Only 9 per cent respondents reported their educational qualification below high school.

The housewife constituted the largest occupational category with almost 39 per cent respondents. It was followed by salaried class and self- employed professionals with 27 per cent and 23 per cent contribution in occupational cohort of the respondents. Only 4 per cent respondents were into their own business in the form of entrepreneurs/ traders.

TABLE 1: SELECTED DEMOGRAPHIC PROFILE OF RESPONDENTS

Variables	Characteristics	N	Percent
Age	Below 28	69	60
	Above 29	48	40
Marital Status	Married	75	64
	Unmarried	42	36
Education	Up to Senior Second.	11	9
	Graduation/Post Grad. Grad.	59	51
	Professionals i.e. CA,B-Tech,LLB etc:;	40	34
	Others	7	6
Monthly household income(MHI)	Below 50,000	34	29
	50,001-100,000	54	46
	100,001-200,000	24	21
	Above-200,001	5	4
Profession	Salary employed	31	27
	Own business	5	4
	Self-Employed Prof.	27	23
	Housewife	46	39
	Other	8	7

The Average Monthly Family Income (AMFI) data revealed that 46 per cent respondents belonged to INR 50,001 to 100,000.Only 4 per cent respondents were reportedly earning more than INR 2 00,000.

The data analysis further revealed that almost half of the respondents spend less than INR 250 per month on purchase of various cosmetics products. Only 27 per cent respondents spend between INR. 251-500 and a little less than 10 per cent spend more than INR 1001 per month on purchase of various cosmetics products. The results of the Chi-square test (at 5 per cent level of significance) substantiates significant relationship between respondent's age and their spending on cosmetics as calculated chi-square value at 0.05 per cent alpha level and 3 d.f. were found statistically significant.

TABLE 2: CHI-SQUARE TEST ON AGE & SPENDING ON COSMETICS

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.63	3	.037

The study found a positive relationship between the marital status and respondent's spending on cosmetics as the alpha value is statistically significant therefore, reject the H3.

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TABLE 3:CHI-SQUARE TESTS ON MARITAL STATUS & SPENDING ON COSMETICS

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.511	3	.001

The data analysis regarding shop preference revealed some surprising results. Almost 62 per cent respondents always preferred to purchase cosmetics products from a certain specific shop. Around 52 per cent respondents preferred their family members to accompany them while going to purchase cosmetics products. About 27 per cent respondents preferred their friends and only 21 per cent preferred no one to accompany them while going to purchase cosmetics products.

In 53 per cent cases, friends played a critical role in influencing the purchase decision of the respondents. It was followed by spouse with 21 per cent cases. The children were reportedly played little role in affecting the purchase decision of the respondents.

Promotional campaign on television and other electronic media was considered as the preferred source of information by 44 per cent respondents. Word of Mouth communication was found to be another important source of information. Only 4 per cent respondents reportedly used internet to search information related with the purchase of cosmetics products.

VALIDITY AND RELIABILITY

The goodness of the data is measured to test the consistency of the constructs taken to analyze the customer's psychology on use of various cosmetics products. Consistency indicates the degree to which a set of constructs collectively measures what it intends to measure. The reliability of each construct was first measured with Cronbach's alpha. It is computed in terms of the average inter-correlations among the items measuring the concept. A construct is considered reliable if the value of alpha ranges from 0.5-0.95 (Peterson, 1994). The results confirms the suitability and validity of the data as the alpha value ranges between the acceptable limits and thus indicate the goodness of the items in the survey.

TABLE 4: VALIDITY AND RELIABILITY OF FACTORS

Factors	Items	Croanbach's Alpha
Utilitarian/ Functional benefits	I always look at the ingredients/composition of the products	.841
	Prefer to purchase products made-up of natural/ herbal ingredients	
	I prefer to purchase a product that offer more color choice	
	I purchase a brand that keep my skin soft and glowing	
	A good cosmetics brand has more life	
	I prefer a product that give me good scent and fragrance	
Perceived Packaging Benefits	I prefer a trendy and fashionable packaging	.701
	Good products always come with creative and innovative packaging	
	Packaging offering play a critical role in my decision making	
Perceived Brand value	I am attracted towards a specific brand	.792
	I am ready to pay a premium for my brand	
	A good cosmetics brand is in congruence with my image	
	Good brand provides more variety and choice	
	Good cosmetics brands offer better results	
	A good cosmetic brand offer good value for money	
	A good cosmetics brand has certain distinctive features	
	Using a good brand improves my social interaction	
Perceived Credibility of Communication	Advt. influence my decision to purchase a product	.753
	Creative and innovative advt. induce trial purchase	
	I enjoy looking window display while visiting in the market	
	WoM communication are more reliable than other methods	
	I always look for sales promotion schemes before I purchase cosmetics products	
Location Physical evidence benefits	Location of shop influence my purchase decision	. 713
	Nature of shop influence my purchase decision	
	I get attracted towards well designed cosmetics retail shop	
	A good cosmetic shop must have attractive scent and fragrance all around	
	I prefer to visit a shop which have female beauty consultants	
	I prefer to visit that shop where staff is trained and well behaved	

RESULT OF FACTOR ANALYSIS

A factor analysis, which was confirmatory in nature, was performed on the different variables which have been developed to understand the consumer psychology behind purchase of cosmetics products. These factors are: utilitarian/functional benefits, perceived brand value, perceived credibility of communication, physical evidence and packaging benefits. The factor analysis was conducted using principal axis factoring with varimax rotation as an extraction method. Only those factors have been selected whose eigen values are greater than 1.0. The result of the factor analysis using low value deletion procedure has been presented in the table below.

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TABLE 5: FACTOR ANALYSIS

Factors	Components				
	1	2	3	4	5
I always look at the ingredients/composition of the products	.887				
Prefer to purchase products made-up of natural/ herbal ingredients	.861				
I prefer to purchase a product that offer more color choice	.803				
I purchase a brand that keep my skin soft and glowing	.782				
A good cosmetics brand has more life	.754				
I prefer a product that give me good scent and fragrance	.746				
I prefer a trendy and fashionable packaging				.652	
Good products always come with creative and innovative packaging				.644	
Packaging offering play a critical role in my decision making				.548	
I am attracted towards a specific brand		.788			
I am ready to pay a premium for my brand		.759			
A good cosmetics brand is in congruence with my image		.715			
Good brand provides more variety and choice		.742			
Good cosmetics brands offer better results		.736			
A good cosmetic brand offer good value for money		.767			
A good cosmetics brand has certain distinctive features		.698			
A good cosmetics brand has certain distinctive features		.763			
Using a good brand improves my social interaction		.659			
Advt. influence my decision to purchase a product			.712		
Creative and innovative advt. induce trial purchase			.730		
I enjoy looking window display while visiting in the market			.658		
WoM communication are more reliable than other methods			.741		
I always look for sales promotion schemes before I purchase cosmetics products			.754		
Location of shop influence my purchase decision					.601
Nature of shop influence my purchase decision					.524
I get attracted towards well designed cosmetics retail shop					.587
A good cosmetic shop offers attractive aura all around					.543
I prefer to visit a shop which have female beauty consultants					.602
I prefer to visit a shop where staff is trained and well behaved					.537

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations

These variables within factors are correlated, is confirmed by the Bartlett's test of sphericity. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy indicated a practical level of common variance (KMO = 0.643), which implies that the results obtained from factor analysis are appropriate. The factors identified are given in table 5, exhibits 59.66 percent of the variance of the variables. The first factor, utilitarian/functional benefit, consists of six variables (alpha = 0.841). Peterson (1994) points that acceptable value of Cronbach's alpha can vary between 0.5 and 0.95 depending on the type of research. For basic research Cronbach's alpha should be greater than 0.6. The second factor, packaging benefits, was loaded with three variables (alpha = 0.701). The third factor, perceived brand value, contained the maximum eight variables (alpha =0.782). The fourth factor, perceived credibility of communication was loaded for five variables (alpha = 0.753). The fifth variable was loaded over six variables (alpha = 0.713). The overall reliability of the factor developed to understand the buying behaviour was 0.740.

RESULT OF REGRESSION ANALYSIS

The appropriateness of the factor analysis results was verified by conducting regression analysis and ANOVA. For this purpose, respondents were asked to rate their level of satisfaction for their favorite cosmetic brand on a scale of 1-5..It was treated as dependent variable and its relationship was established with various factor items which have been treated as independent variables by conducting these tests. The preliminary descriptive analysis of the data produced 0.832 as value of standard error. However, the actual value of standard deviation of the dependent variable was found 2.01.Therefore, the proposed model was appropriate for conduct of ANOVA.

TABLE 6: REGRESSION MODEL SUMMARY

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.511[a]	.401	.384	.832

a. Predictors: (Constant), Utilitarian/Functional benefits, Packaging benefits, Brand equity benefits, Communication benefits, Location & physical evidence

TABLE 7: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	38.98	5	9.35	10.214	.000[a]
	Residual	84.02	95	.798		
	Total	122.990	99			

a. Predictors: (Constant), Utilitarian/Functional benefits, Packaging benefits, Brand equity benefits, Communication benefits, Location & physical evidence
b. Dependent Variable: Satisfaction level of favorite cosmetics brand on a scale of 1-5

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TABLE 8: STANDARDIZED REGRESSION COEFFICIENT STATISTICS

Model	Un-standardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	2.19	.756	2.69	2.66	0.05
Utilitarian/Functional benefits	.232	1.01	.435	5.211	.002
Packaging benefits	.621	1.31	.119	1.787	.048
Brand equity benefits	.186	1.11	.329	2.534	.013
Communication benefits	.141	1.29	.228	1.64	.022
Location & physical evidence	.034.	1.36	-.185	-.235	0.63

The model explains approximately 40 per cent of the total variance in respondent's satisfaction level towards brand of cosmetics they use (as the value of R square is 0.401). According to the standardized regression coefficients, the relative order of preference of the predictive factors over the satisfaction level towards cosmetics brand can be summarized as follows: Utilitarian/Functional benefits(B=0.435),Perceived Brand value benefits(B=0.329),Perceived Credibility of Communication benefits(B=0.228), Perceived Packaging benefits(B=.0.119) and Location and physical evidence(B=-.185).The t – test result, pertaining to the significance of regression coefficient observed that except location and physical evidence (p > 0.05), all other factors are statistically significant. As a result, the H3 is rejected and proved that respondent's attitude towards cosmetics brand is significantly affected by utilitarian/functional benefits, perceived brand value, perceived credibility of communication and perceived packaging benefits of the brand that they use.

CONCLUSION AND MANAGERIAL IMPLICATIONS

The research study provides a deep insight in decoding and understanding one of the most complex processes of female consumer buying behavior especially for the class of products which is targeted to the worldwide. The study found that utilitarian/functional benefits, perceived brand value and perceived credibility of communication significantly determine the female consumer buying behavior of the people. The study found the value of perceived packaging benefits of the brand, statistically less significant in comparison to previous three. The value of location and physical evidence was found statistically insignificant. The results obtained from the research study are found similar to such other studies which have used certain common variables to understand consumer buying behavior in this regard (Burn et al,2006, Ibanez et al,2011).

From a managerial standpoint, the study postulates that marketing managers are required to redesign their marketing mix to enhance customer satisfaction by focusing on utilitarian/functional benefits, perceived brand value and credibility of marketing communication. They are required to modify their offering that evoke a feeling of improved appearance and look in the mind of consumers which is attributed to the use of a particular brand that they use for this purpose

The study suffers from three major limitations. First limitation is the sample size which is less in view of the size of universe and sample size used in similar other studies. Secondly, there are perceived cultural influences in the consumer behavior of such products. Therefore, it provides a scope for a cross cultural analysis. Finally, multivariate data analysis techniques like Structural Equation Modeling provides more rigorous tool for estimating relationships among a number of independent variables simultaneously.

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MANAGING HUMAN ENCOUNTERS AT CLASSROOMS - A STUDY WITH SPECIAL REFERENCE TO ENGINEERING PROGRAMME, CHENNAI

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ABSTRACT

One of the toughest challenges faced by engineering colleges today is how to drive success by effectively managing the moments where teachers interact with students. Faculty and Students are the very important stakeholders of engineering colleges. The students are considered as customers and the faculties are considered as employees of the organization. Therefore it is very important to manage the experiences of these two entities, as true value and profit comes from the teacher and student encounters in the classroom. This exploratory research paper is the summary of a survey conducted on 200 faculties and students of engineering colleges across Chennai. The research questions of the study are :(1)1 Is there any human error during the encounter between the faculties and students?(2)What would be the impact of human (faculty) errors on the satisfaction levels of the students? (3)What are the different human encounters which lead in affecting student's interest towards the classes (4) How does one analyse the impact of human encounters towards the overall performance of the college? Further the study focuses on reducing variability and improving performance during the encounters between faculties and students through exploring possible training methodologies to keep both engaged.

KEYWORDS

Encounters, Human error, Performance.

INTRODUCTION

Today's engineering colleges which are trying to create the *organization fit* candidates try to follow the rules of learning organizations. The basic components in the class are ability to learn techno knowledge, people's skills, emotional literacy and personal management. Developing an attitude also necessitates creation of an empowering environment in the classrooms. All this depends on the transactions which takes place on a regular basis. These transactions are called as **Human Encounters.** These encounters in classrooms are the transactions that happen between the students and the faculties. John Fleming and Jim Asplund (2007) stringly feels that one cannot measure and manage the employee and customer experiences as separate entities. They add that one must manage these human systems in tandem, one may need to reorganize. True value and profit comes from the employee-customer encounter in the service sector, and by measuring and managing this interaction properly.

IMPORTANCE OF THE STUDY

One of the toughest challenges faced by engineering colleges today is how to drive success by effectively managing the moments where teachers interact with students. Faculty and Students are the very important stakeholders of engineering colleges. The students are considered as customers and the faculties are considered as employees of the organization. Therefore it is very important to manage the experiences of these two entities, as true value and profit comes from the teacher and student encounters in the classroom.

OBJECTIVES OF THE STUDY

The objectives of the study are:
1. To study and the various types of encounters between faculties and students.
2. To identify the variables those are critical to human encounter errors at classrooms.
3. To analyse and investigate the influence human errors on the students satisfaction.
4. To investigate the influence human errors on the overall performance of the classes.
5. To suggest ways to reduce variability of errors and to improve the performance at classrooms.

RESEARCH METHODOLOGY

The study is both **Exploratory** and **Descriptive Research**. An attempt is made in this paper to identify the variables, which are critical and mostly are the causes for the problems associated with Human errors of faculties which lead to unengaged encounters with students. The study can be further regarded as descriptive as it would involve the evaluation of various alternatives in the direction of identifying various prospects.

DATA COLLECTION

Sources of Secondary data include the various research papers, books and other publications like journals, articles and newsletters in the field of transactional analysis and organizational behaviour.
- Journals of Education Department and HRM
- Research Articles on human errors, effective classroom maintenance and Student and Faculty relationships.

Primary data was collected using a structured questionnaire. This questionnaire was administered to the respondents and the responses were subjected to analysis.

SAMPLING METHODOLOGY

POPULATION

The population for the purpose of the study includes the entire faculty who are working in various management colleges and all those students who study in these Engineering colleges in Chennai

SAMPLING METHOD

The sampling method for the research is a combination of quota sampling and judgment sampling with the basis of quota being the colleges considered from various areas divided according to geographical areas.

SAMPLE SIZE

Sample size is 200 faculties and 200 students who teach and study at the selected engineering colleges in Chennai

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VARIABLES TO MEASURE

Few variables are been identified and measured by both the responses by the students and the faculties. Faculties responses will be considered as their retrospective responses and the students' responses on the statements will be taken as the feedback on their faculties. Such few variables which will be measured by the questionnaire are as follows:

Supportive style: Faculties providing support when required by the students. They not only encourage their students to do things by themselves, but also let their students know that they are available if help is needed. They cheer their students on, and facilitate their continuous improvement. Teachers with this style motivate their students.

Rescuing style: Here the Teacher sees students as being incapable of solving problems on their own, and instead thinks they need to be "rescued". In return, the teachers often expect the students to comply unquestioningly with instructions. The general attitude is of superiority of the teacher. Teachers with this style encourage dependence and this does not help people to become independent or to take initiatives and act on their own.

Normative style: Teachers with this style are interested in developing appropriate standards or norms of behaviour for their students and consider that some are more important than others. They may also raise questions about the appropriateness of some aspects of conduct at work. The normative style encourages students to develop certain standards of work behavior.

Prescriptive style: Teachers with this style are critical of others' behavior, and develop rules and regulations, and impose them on others. Teachers with this style make quick judgments, and insist that their students should also follow their own standards. This style uses control and does not encourage independent thinking or action.

Problem-solving style: Here, a Teacher is concerned about solving problems by looking at them from various dimensions or angles since most often the problem is not merely confined to a specific task. The Teacher deals with and finds solutions to problems by involving students or other appropriate people.

Task-obsessive style: Teachers adopting this style are most concerned with tasks. Matters not directly related to the task are ignored. They are not concerned with feelings, and in fact, fail to recognize them, since they do not see them as being related to the task. They are insensitive to the emotional needs and personal problems of students.

Innovative style: Innovative Teachers are enthusiastic about new approaches, and carry others along with them. They stick to and nurture an idea so that it results in concrete action, and is integrated into the system.

RESULTS AND DISCUSSIONS

The scoring of the scales was done according to the respective manuals. The weighted average mean was used to analyze the obtained data. Basic statistics like regression and correlation analysis and skewness was used to find the correlation between the responses of the students and the faculties.

a. The average deviation of the responses from students to a set of question range is 13.16 and the faculties is from 15.03, which shows that the responses of the students is more consistent and can be generalized for the total population, but where as it is not the same for the faculties.

b. The composite response score of the 200 faculties and the corresponding response of 200 students for the questionnaire, where "X "is the score of the teachers and "Y" the composite score of the corresponding responses by the students. The correlations is   -0.271 which means that the responses of the respondents does not correlate, and that there are a lot of transactional errors which takes place at the classroom level between the faculties and the students. The formulae used for calculation is

$$r = \frac{n\sum XY - (\sum X)(\sum Y)}{\sqrt{n\sum X^2 - (\sum X)^2} \sqrt{n\sum Y^2 - (\sum Y)^2}}$$

TABLE SHOWING CORRELATION BETWEEN FACULTIES AND STUDENTS

$\sum x$(200)	$\sum x^2$	$\sum xy$	$n\sum x^2$	$\sum x \sum y$
30.24	19.58	17.48	939.844	842.86
$\sum y$(200)	$\sum y^2$	$n\sum xy$	$n\sum y^2$	$n\sum xy - \sum x \sum y$
27.70	27.70	839.22	780.113	-3.63987
$(\sum x)2$	$n\sum x^2 - (\sum x)^2$	$\sqrt{n\sum X^2 - (\sum X)^2} \sqrt{n\sum Y^2 - (\sum Y)^2}$		r
925.709	14.1355			
$(\sum y)2$	$n\sum Y^2 - (\sum Y)^2$	13.39005		-0.271
767.429	12,6838			

Source: Primary data

c. The average responses of the faculties for the statement "**I give high priority to completion of a topic, even if I have to rush through it**" is 2.12, which is found occasionally and the corresponding response of the students is 3.52 which ranges between occasionally and often, states that the faculties do rush to finish the topics which is not a suggestible practice.

d. The average response of the faculties to the statement "**Faculties show their resentment to those students whose behavior in class is not according to their instructions**" is 3.47 which ranges between sometimes and often, And the corresponding response of the students is 2.53 occasionally and sometimes, which means that the students find the faculties express the resentment towards the students which is found to be one of the errors at the classroom interaction.

e. The average responses for the statement "**If I am not able to answer my students' questions, I try to divert them to some other issues**", both the responses from the students and the faculties range from 4.6 and 4.7 respectively. This means that the faculties divert the students to some other topic, which shows lack of interest for thorough preparation for the class.

f. The average responses for the statement "**I avoid meeting my students if I cannot satisfy them in my session**" from the faculties is 3.87 and the corresponding response from the students is 2.15 which states that the when students queries are not answered the faculties are not available to meet students.

SUGGESTIONS

From the study it is found that there is lot of difference in the what is been taught and what is been perceived by the students. Therefore it is suggested to all the faculties that they should ensure what is been communicated to the students in class, has not misunderstood. (Communication Error).

Faculties tend to postpone or delay sessions on the topics that they do not like. Such practices are found to be not an acceptable by the college management and also student. Students are smart enough to understand the excuses to be given by the faculties.

Lack of initiation is taken by the faculties to set an example to students by their own behavior. Such error can be reduced in by practicing what they preach. As students tend follow their faculties and learn many habits and behaviours.

There are a variety of teaching strategies to appeal to a wide range of learning styles, and being informed about them might prove useful, but when actively courting your students' engaged attention in the classroom, it pays to start with the basics.

Many faculties argue with the students very rudely when they have to clear their point. Such behavior is not accepted by the students, as the students are more favorable to the supportive style of transactions of their teachers.

Some faculties do not express their negative feelings to the students (then and there) during sessions, but continue to be bothered by them. This is also one of the errors found during the classroom interactions.

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Narcissists make better teachers because narcissism – means the tendency to be self absorbed, to be exploitive of others, and to have grandiose self – regard which means that sometimes been argued to a necessary condition for the effective teachers. This is because the engineering students understand that teachers effectiveness lies in their independence and confidence of their deliverables.

CONCLUSION

Educational institutes being one of the noblest sectors and the concept of faculties hopping is been increased. An attempt is made in the study to analyse the problems and prospects associated with the various factors leading to Human encounters at classrooms. Once the problems and prospects of the Human errors are understood properly then the Human errors management, variable reduction and performance optimisation can be achieved easily. This study is unique, significant and novel because it addresses one of the critical success factors of the people who serve and being served and still is not happy.

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THE IMPACT OF E-BANKING ON PERFORMANCE – A STUDY OF INDIAN NATIONALISED BANKS

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ABSTRACT

Banks all over the world make significant investments in information and communication technologies (ICT) aiming to increase their efficiency. It is of critical importance to investigate the impact of these investments on banks performance. The role of information and communication technology and its effect on the productivity both at micro and the macro level has been a subject of recent debate in economics. World over the contribution of information technology to the efficiency of a system, especially in the service sector, is being questioned. Still this relation is an unresolved paradox. This paper presents the results of an empirical investigation of the effect of ICT investments on performance of banks measured through comprehensive index of performance. The study is based on a research dataset of eleven nationalised banks which has been collected from head offices and websites of banks. . Using the time series database of Reserve Bank of India, covering the period 1998 to 2010, an information technology index and a performance index is derived. Empirical prognostication of the relation has been done using the correlation, regression and other techniques. Study confirms that contribution of technology to bank's performance has a differential behaviour. It contributes positively only to those banks where some preconditions conducive to performance are existing, e.g., trained manpower, size and scale of business. It shows that bank's performance is related not just to its technological stance but to other areas of competencies.

KEYWORDS

Information Technology, Performance, Productivity, Profitability.

INTRODUCTION

T he two most powerful forces affecting each sector of the economy today are the increasing rate of globalisation and advances in information and communication technologies. It causes companies to use their input resources as much as possible in an effective way. Information technology is a powerful force and perhaps the single massive drive, impacting global society during past decade. Under the saga of information technology, world economy has witnessed a massive technological change in the recent past. Technological change brings about an increase in per capita income, either by reducing the amount of inputs per unit of output or by yielding more output for a given amount of input. In the last decade, almost all the sectors have gone in for a massive investment in information technology. One of the major areas of economy that has received renewed focus in recent times has been the financial sector and within the broad ambit of the financial sector, it is the banking sector that has been the cynosure of academia and policy makers alike. The role of information technology in performance of an organization is still a paradox. As technology is not a panacea, it is a tool for efficiency, to make it work it requires planning, organizational capabilities, managerial skills, and entrepreneurship. In the age of competition, the contribution of information technology to the performance of an organization is being questioned. In this context, the study is an attempt to analyse the effect of information technology on performance of Indian banking industry. Hence the study deals with the research question how information technology is going to have its impact on performance of Indian banking industry.

MAIN OBJECTIVES

In the present study it is broadly hypothesized that the increasing use of information technology has improved the intellectual capital and has made the banks to be more efficient. The main objective of the study is to: (a) review the theory and empirics on the relation of technology and performance with special reference to service sector; and (b) analyse the relation of information technology and performance in nationalised banks

DATA

The data comes from the publicly available data source on bank's financial statements and income expenses reports sent to banking associations. The secondary data and information have been collected from the publications of the Reserve Bank of India, Annual Reports of Respective banks and other valuable publications of banks in India. Various websites have also been used for the collection of data and information.

SIGNIFICANCE OF THE STUDY

The studies that examined the association between information technology spending and performance in developed countries and many developing countries may not apply directly to Indian banking industry. The current research study fills the gap in existing information about the relationship between information technology and performance. The study adds to the existing pool of knowledge on technology-productivity paradox. It also has a social significance. Over budgeting for information technology spending would leave fewer resources for other activities with transparent financial profitability. Further since information technology managers and senior executives of organization often face pressure to justify rising information technology expenditure to shareholders; the current study provides new knowledge and perspectives on how information technology investment affects performance.

REVIEW OF LITERATURE

The enduring magnitudes of investment in information technology have drawn attention of many researches and policy makers to the impact of IT on growth and productivity. The expectation was that increased investment in IT would naturally lead to increase in performance of organization but despite massive investment in IT, its impact on performance continued to be questioned (Willock et. al 1998). Despite hundreds of studies carried out, opinion of the experts is solidly divided on the IT-productivity debate. The debate is divided into two groups: (a) productivity Paradox, i.e., the IT has no impacts on productivity; and (b) productivity pays off, i.e., IT does improve the productivity. Some literature defence the idea of Solow paradox in concluding that information technology may affect negatively on bank's efficiency and may reduce productivity. Similar conclusions of productivity paradox have been reached by many studies (Loveman,

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1994); Roach, 1998; Dasgupta, 1999; Barua et al., 1995; Onliner and Sichel, 1994; Egland et al., 1998; Diwert and Fox, 1999; and Beccalli, 2003). Some of the studies have drawn on statistical correlation between IT spending and performance measures (Das Santos et al., 1996; Prattipati, 1997; and Strassman, 1995). They have found an insignificant correlation, implying thereby that IT spending is unproductive.

Conversely there are many works, approving the positive impact of information technology to business value. Such studies have used firm level evidence and have concluded that productivity paradox has disappeared (Bender, 1986; Brynjolfsson and Hitt, 1995 & 1996; Lichtenberg, 1999; Mody and Dahlman, 1992; Karemer et al., 1994; Dewan Karemer, 1998; Weill, 1992; and Holden Ken, 1999). Work by Jorgenson and Stiroh (1995) reported the productivity paradox but however in their recent works in the year 2004, they concluded that the impact of IT on aggregate economic performance has increased overtime. Some of the recent studies have shown a strong empirical evidence in support of the benefit of further investment in IT (Battery, 2003; Vincent, 2005; Hernando and Nieto, 2006; Agboola, 2007; Mashhour, 2008; and Parsad, 2008). These findings raise several questions about mismeasurement of output by not accounting for improved variety and quality. However, some studies could not show a clear cut pay off of information technology (Gera, 2004); Shu and Westley, 2005; Albert, 2005, Altinkemer, 2005; Howells; 2005; and Shobhani, 2008). The difficulty in measuring and evaluating the benefits of information technology has generated an extensive literature both quantitative and qualitative. There are very few studies to appropriately index both the information technology and the performance of a service organization. This work is step ahead to fill this gap.

METHODOLOGY

As already mentioned, the main objective of the study is to analyse the effect of information technology on performance of nationalized banks. Study draws its database from RBI and IBA publications and databases. To make the work manageable and effective, it is confined to 11 nationalised banks only. They are Canara Bank, Bank of Baroda, Bank of India, Punjab National Bank, Dena Bank, Punjab and Sind Bank, Union Bank of India, Allahabad Bank, Indian Overseas Bank, Oriental Bank of Commerce and Central Bank of India. It covers the period from the year 1998 to 2010. To derive the overall technology parameter, a *technology index* has been derived using the discrete technology parameters. They are: (a) number of ATM per one lakh customers (b) number of credit card per one lakh customers; (c) number of computerized branches as percentage to total branches; (d) number of internet banking branches as percentage to total branches; (e) number of mobile banking branches as percentage to total branches; and (f) number of tele-banking branches as percentage to total branches**.** Performance analysis has been done by computing a *performance index* which takes into consideration different variables like profitability, efficiency and productivity. Six performance indicators have been taken to generate the performance index. The selected indicators are credit-deposit ratio, business per branch, profit per branch, profit per employee, spread per branch and spread per employee. The relation of technology index and performance index has been analysed by using correlation and regression on time series and panel data. Wherever needed, appropriate price adjustments have been made.

ANALYSIS

Using the methodology outlined above, technology and performance indices have been computed for 11 sampled banks of India. The straight forward way to analyze the relation is by using simple Karl Pearson's correlation coefficient. Correlation between technology and performance has been analyzed using the cross-section data and time series data, first separately then by pooling the two and forming a panel data. Karl Pearson's correlation coefficient between the technology index and performance index, for cross section data, for different years is shown in table no: 1 The statistical significance of correlation has been tested at 5 percent and 1 percent level of significance using t-test. It reveals that during the entire period under consideration, there has been a positive correlation between technology and performance. It is further learnt that for the initial years, from 1998-99 to 2008-09, correlation is consistently positive and is statistically significant at 1 percent level of significance. In the recent years, i.e., 2009 onwards, the value of coefficient is positive but is statistically insignificant. A clear conclusion that emerges from this analysis is that performance is a positive function of information technology in the Indian banking. That is to say, information technology is a driving force behind efficiency and performance in the Indian banking.

TABLE- 1: CORRELATION BETWEEN TECHNOLOGY INDEX AND PERFORMANCE INDEX AMONG NATIONALISED BANKS

Years	Karl Pearson's Correlation Coefficient	t-statistics
1998-99	0.716**	5.529
1999-00	0.831**	8.053
2000-01	0.818**	7.649
2001-02	0.819**	7.696
2002-03	0.839**	8.308
2003-04	0.798**	7.131
2004-05	0.762**	6.341
2005-06	0.676**	4.822
2006-07	0.623**	4.287
2007-08	0.490**	3.028
2008-09	0.539**	3.447
2009-10	0.374^{NS}	2.172
2010-11	0.179^{NS}	0.979

**** Correlation is significant at the 0.01 level; NS means, not significant

Using the temporal data, table 2 shows the correlation between technology index and performance index of all the 11 nationalized banks, It is learnt from the table that there is a close relationship of technology index and performance index for Canara Bank, Bank of Baroda,   Bank of India, Punjab National Bank, Dena Bank, Union Bank of India, Allahabad Bank, Indian Overseas Bank.The relation is significant at 1 percent level of significance. A close look at the table also leads us to conclude that for Central Bank of India, , correlation is significant at 5 percent level of significance. It is further observed from table that for Punjab and Sind Bank, Oriental bank of commerce, Correlation is positive but not statistically significant.

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TABLE 2: BANK-WISE CORRELATION BETWEEN TECHNOLOGY AND PERFORMANCE INDEX

Code	Name of the bank	Correlation	t -statistics	Significance
1.	Canara Bank	0.777	4.10	**
2.	Bank of Baroda	0.925	8.09	**
3.	Bank of India	0.907	7.13	**
4.	Panjab National Bank	0.883	6.23	**
5.	Dena Bank	0.676	3.05	**
6.	Punjab & Sind Bank	0.343	1.21	NS
7.	Union bank of India	0.760	3.87	**
8.	Allahabad Bank	0.834	5.02	**
9.	Indian Overseas Bank	0.898	6.76	**
10.	Oriental Bank of Commerce	0.516	2.00	NS
11.	Central Bank of India	0.607	2.53	*

**Significant at 0.01 level;   * Significant at 0.05 level;   NS Not significant

On the whole, the table shows that value of correlation coefficient is positive for all the banks, this correlation is much stronger and significant for some nationalized banks .The logic is that public sector banks have a scale and size advantage. They stand at advantage so far as market share, size of bank and experience of the bank is concerned. Their market share in the total business is large. Their branch network and customer base is large. These public sector banks are maintaining their performance (with exception of few banks) and information technology has undoubtedly contributed to large banks having greater flexibility to adapt to changes,

To better investigate the above preliminary evidences and to gain a deeper insight into the relationship between technology index and performance index, a set of regressions has been analyzed. Technology index has been treated as independent (exogenous) variable and performance index has been treated as dependent (endogenous) variable. The mathematical representation of regression equation is written as follows:

$Y = a + bX$

Where Y is the performance Index; 'a' is the intercept; 'b' is the regression coefficient and X is the technology index. Regression coefficient represents the estimated change in the value of dependent variable, for each unit change in independent variable values. Following analysis deals with regression analysis at banking group and individual banks' level.

NATIONALISED BANKS

At the bank level, the regression results as shown in table no.3 indicate that performance index is a positive function of technology index as all the nationalized banks under study have positive regression coefficients indicating the contribution of technology towards performance but for Dena Bank, Oriental Bank of Commerce and Central Bank of India, R^2 turns out to be very poor, indicating weak explanatory power (45 percent, 26 percent and 36 percent respectively). For Punjab and Sind Bank, regression results are what may be called damped, as the regression coefficient are statistically insignificant. Moreover low explanatory power of R^2 (12 percent) indicates that IT investment explains a relatively low portion of performance measure. Overall the results indicate that technology has improved the performance of nationalized banks but some nationalized banks like Dena Bank, Punjab and Sind Bank and Oriental Bank of Commerce have not been successful in leveraging their technologies to raise their performance.

POOLED DATA REGRESSION RESULTS

Pooled data regression analysis has been done for 11 Indian nationalised banks, for all the years under study (1998-99 to 2010-11). The regression model is as follows:

Performance Index = f(Technology Index)

Regression results are indicative of the fact that regression coefficient of performance as a function of technology is positive. At the nationalized bank group level, the regression results show that performance index is a positive function of technology index and the regression results are statistically significant (p=0.01 level). Further the coefficient of determination comes out to be 0.43 percent. It shows that although this new technology regime is shaping the performance of the nationalized banks, yet the coefficient of determination shows that technology is a poor determinant in case of nationalized banks. Study confirms that contribution of technology to bank's performance has a differential behaviour. It varies with size, scale, ownership and phase of technology adoption.

TABLE 3: REGRESSION RESULTS FOR PERFORMANCE AND INFORMATION TECHNOLOGY RELATIONSHIP IN NATIONALIZED BANKS AND BANK GROUP IN INDIA

Bank/ Group	Constant (a)	Coefficient (b)	Standard Error	t for coefficient	R^2	F for Regression
Canara Bank	0.047	0.402**	0.098	4.097	0.604	16.787**
Bank of Baroda	0.028	0.225**	0.028	8.092	0.856	65.488**
Bank of India	0.096	0.216**	0.030	7.126	0.822	50.780**
Panjab National Bank	0.073	0.227**	0.036	6.227	0.779	38.776**
Dena Bank	0.079	0.193**	0.063	3.046	0.458	9.281**
Punjab & Sind Bank	0.078	0.110^{NS}	0.091	1.209	0.117	1.462^{NS}
Union Bank of India	0.074	0.260**	0.067	3.873	0.577	14.996**
Allahabad Bank	0.099	0.107**	0.021	5.016	0.696	25.160**
Indian Overseas Bank	0.085	0.200**	0.030	6.757	0.806	45.651**
OBC	0.135	0.066^{NS}	0.033	1.996	0.266	3.982^{NS}
Central Bank of India	0.092	0.087*	0.034	2.534	0.369	6.421*
Nationalized Banks Group	**0.089**	**0.151****	**0.014**	**10.463**	**0.437**	**109.472****

Note: Marking * indicates significant at 5% and ** indicates significant at 1%

Source: Calculated

MULTIVARIATE REGRESSION RESULTS

So far, the performance has been taken as a sole function of technology and assuming the effect of other inputs to be constant. This is an unrealistic assumption and hence the inferences are indicative of the broad relation. To refine the technology and performance relationship, technology is taken in conjunction with other inputs: capital and labour. Now the modified performance function appears as follows:

Performance = f (Capital, Labour, Technology)

For arriving at the coefficients, multiple regression model has been fitted to the panel data. The analysis has been carried at the banking group level only. Following is explicit form of regression model fitted.

$Y_i = a + b_1 x_1 + b_2 x_2 + b_3 x_3$

Where Y_i is the performance of Bank Group i; a is the constant intercept; X_1 is capital; X_2 is labour; X_3 is technology; and b_1, b_2 and b_3 are regression coefficients of capital, labour and technology respectively.

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The regression results are presented in table 4. Regression results are indicative of the fact that in case of nationalized banks group, performance is positively determined by labour and technology and negatively by the capital. But the regression coefficient for labour is significant at 1 percent level of significance and for other two variables, it is statistically insignificant. Coefficient of determination is 0.952 which show that model is statistically a sound model. Hence in case of nationalized banks labour out-performs the capital and technology.

TABLE 4: REGRESSION RESULTS FOR DIFFERENT BANKING GROUPS IN INDIA

Bank Group	a	B1 (S.E) (t-value)	B2 (S.E) (t-value)	B3 (S.E.) (t-value)	R2	F	N
Nationalized Banks	-0.0019	-0.0015 (0.044) (0.033)	0.744** (0.048) (15.634)	0.236 (0.048) (4.966)	0.952 (0.746)	140.213** (3, 139)	142

Note: Marking ** Indicates significant at 1 percent level of significance and NS, not significant

Overall, multivariate regression explains that out of three variables namely capital, labour and technology, capital impact is negative in case of nationalized banks. It indicates that these banks have gone for a highly capital intensive mode of production. However the performance has not grown to that extent at which the capital has accelerated. Labour is contributing significantly for all the banks. It is because of better human resource management practices in all banks which include performance based pay, flexible job design, improving employee's skill and institutional structure affecting the labour management relations. So far as technology is concerned, it is contributing positively to public sector banks. Overall it implies that every investment decision relating to technology must be evaluated in the light of its interaction with other inputs and its contribution to performance.

CONCLUSION AND POLICY IMPLICATION

The complex nature of this relationship has been stylized and modelled empirically. In general, this study does not show a clear link between IT investment and performance. Study confirms that contribution of technology to bank's performance has a differential behaviour. It contributes positively only to those banks where some preconditions conducive to performance are existing, e.g., trained manpower, size and scale of business. It shows that bank's performance is related not just to its technological stance but to other areas of competencies. Banks those give greater stress both to use of advance IT and human resource strategies, experience superior performance gains; whereas, in some other banks, higher IT investments are not associated with higher performance. The technology is a poor determinant in case of nationalized banks. This implies that every investment decision relating to technology must be evaluated in the light of its interaction with other inputs and its contribution to performance. Still, this relation is a sort of paradox which needs to be analyzed with larger data base. Above results are what may be called preliminary in nature for policy and planning issues, an exercise, fortified with a bigger data base is called for.

LIMITATIONS

1. Since financial performance data analysed is obtained from bank's annual reports published on the websites of commerce banks and central bank of India (RBI). In some cases, the two sources contained discrepancies.
2. There was non availability of some requisite data. Although plethora of information and data are available with the bank, most of the bankers even today are very conservative and are reluctant to part with the information treating it as confidential. This non response further narrowed the coverage of the study.
3. In addition to the parameters studied some other parameters may exist which may not have been included in the study.

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UTILIZING FRACTAL STRUCTURES FOR THE INFORMATION ENCRYPTING PROCESS

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ABSTRACT

Information security is the process which describes all measures taken to prevent unauthorized use of electronic data, whether this unauthorized use takes the form of destruction, disclosure, modification, or disruption. Information security and Cryptography are interconnected and share the common services of protecting the confidentiality, integrity and availability of the information. In the encryption process, information security uses Cryptography to shift the information into the cipher form which does not allow it to be used by unauthorized personnel. Cryptography is one of the most important fields in computer security. It is a method of transferring private information and data through open network communication, so only the receiver who has the secret key can read the encrypted messages which might be documents, phone conversations, images or other form of data. To implement privacy simply by encrypting the information intended to remain secret can be achieved by using methods of Cryptography. The information must be scrambled, so that other users will not be able to access the actual information. In this paper we propose new public-key primitives based on Mandelbrot and Julia Fractal sets. The Fractal based key exchange protocol is possible because of the intrinsic connection between the Mandelbrot and Julia Fractal sets. In the proposed protocol, Mandelbrot Fractal function takes the chosen private key as the input parameter and generates the corresponding public key. Julia Fractal function is then used to calculate the shared key based on the existing private key and the received public key.

KEYWORDS
fractal structures, information encrypting process.

I.   INTRODUCTION

.1) MANDELBROT SETS
In mathematics the Mandelbrot set, named after Benoit Mandelbrot. The Mandelbrot Fractal (see Figure 1(a)) can be defined as the set of complex values of *c (Parameter Space)* for which the orbit of 0 under iteration of the complex quadratic polynomial equation (1)

$$Z_n = Z_{n-1}^2 + c \; ; Z_0 = 0; \; c, Z_{n-1} \in C; n \in Z .$$ remains bounded.

1.2) JULIA SETS
French mathematician Gaston Julia [12] investigated the iteration process of a complex function intensively, and attained the Julia set, Similar to Mandelbrot Fractal set, Julia Fractal set (see Figure 1(b)) is a set of points on a complex plane(state space) defined recursively by Equation 2.

$$Z_n = Z_{n-1}^2 + c \; ; \; c, Z_n \in C; n \in Z . \qquad (2)$$

The Julia set for parameter is defined as the boundary between those of that remain bounded after repeated iterations and those escape to infinity. The Julia set on the real axis are reflection symmetric, while those with complex parameter show rotation symmetry with an exception to c= (0, 0) see Rani and Kumar [11]. The difference between the Mandelbrot set and the Julia set is that the Mandelbrot set iterates Z^2+c with Z starting at 0 and varying c with every iteration, while Julia set iterates Z^2+c for fixed c and starting with non-zero value of Z [6, 10]. The connection between the Mandelbrot set and the Julia set is that each point c in the Mandelbrot set specifies the geometric structure of the corresponding Julia set [9].
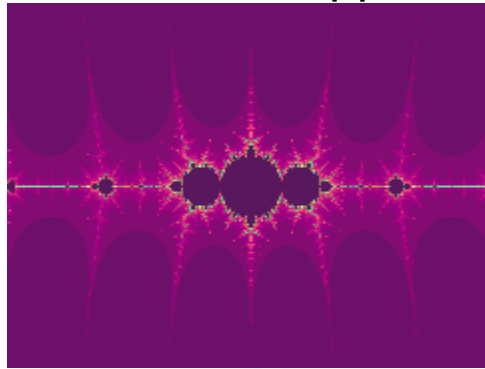
FIGURE 1: MANDELBROT AND JULIA FRACTAL SETS; (A) MANDELBROT IMAGE, (B) JULIA IMAGE [11]
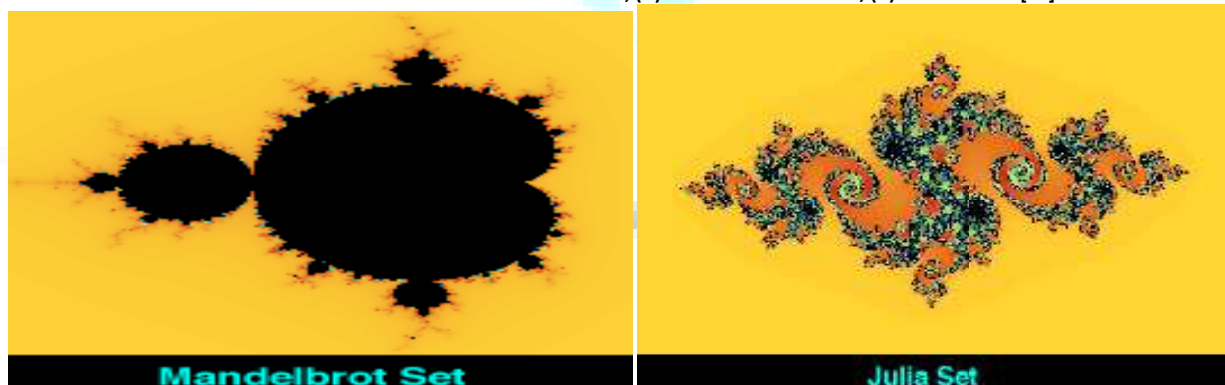
II) MANDELBROT AND JULIA FRACTAL SETS KEY-EXCHANGE PROTOCOL
In this section we will describe the proposed key exchange algorithm in detail. The first step in this protocol is to generate the public key and the private key by using Mandelbrot and Julia functions. The equation used in our proposed protocol is the Mandelbrot function, "*Mandelfn*" (see Equation 4) and Julia function, "*Juliafn*" (see Equation 5). *Mandelfn* is one of the many Mandelbrot functions, and similarly *Juliafn* is a specific form of Julia functions. An image generated from the *Mandelfn* function is shown in Figure 2.

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FIGURE 2: MANDELFN [10]

Z (0) = c;   c,Z ε C.   (3)

Z (n + 1) = c × f (Z (n)); c,Z ε C;n ε Z.   (4)

It is easy to generate variation of Fractal images based on *Mandelfn* and *Juliafn* functions. For example, we can substitute the function $f ( )$ in Equation 5 and 6 with some known functions such as *sin ( ), cos ( ), exp ( ),* etc., to generate different variation of the functions. However, the generated values from *Mandelfn* must always reside within the Mandelbrot set, and similarly, the values generated by the *Juliafn* must reside within the Julia set [10].

Z (n + 1) = c* f (z (n))   `   (5)

Z (n + 1) = c × f(Z (n)) ; Z,c ε C; n ε Z.   (6)

As shown by Figure 3, Fractal key exchange protocol involves two parties, Alice and Bob. Alice must generate the public key based on her private key as describe earlier. The generated public key is then send to Bob. Bob on the other hand will do the same and send his public key to Alice. To produce the public key, we use Mandelbrot function, *Mandelfn*. For Alice, the generated public key is $Z_n e$, as describes by Equation 7 .

$$Z_n e = Z_{n-1} \times c^2 \times e; Z,c,e \in \mathbf{C}; n \in \mathbf{Z}. \qquad (7)$$

Similarly for Bob, the generated public key, $Z_k d$, is calculated by using *Madelfn* equation as shown by Equation 8.

$$Z_k d = Z_{k-1} \times c^2 \times d; Z,c,d \in \mathbf{C}; k \in \mathbf{Z}. \qquad (8)$$

Note that, it is impossible to find the private values from the published public keys, since the iteration, *n*, and the variation constant *e*, are unknown to the public. Hence, we can identify that the hard problem for the proposed Fractal key exchange is through its key selection. This is true since the complex value produces by *Mandelfn* depends on the number of iterations, *n*, as well as the variation constant, *e*, which makes the *Mandelfn* values jump path chaotically. This will prevent attack on the private values, given that *e* is being represented appropriately. We are suggesting *e* to be represented by a 128-bit value which should give 2128 possibilities for every values of *n* that are being brute force. After exchanging the public keys and executing the *Juliafn* function, both Alice and Bob will arrived at the same secret value, $(Z_n e)_k d = (Z_k d)_n e$. Both $(Z_n e)_k d$ and $(Z_k d)_n e$ are equals [1], based on a known Fractal property as shown by Equation 9.

$$c^{n-x} \times (Zkd)_n e = c^{k-x} \times (Z_n e)_k d; \qquad (9)$$

$$Z,c,e,d \in \mathbf{C}; n,x,k \in \mathbf{Z}.$$

III) THE SIERPINSKI TRIANGLE FOR ENCRYPTION PURPOSE

The Sierpinski triangle **S** may also be constructed using a deterministic rather than a random algorithm. To see this, we begin with any triangle. Then we use the midpoints of each side as the vertices of a new triangle, which we then remove from the original. This leaves us with three triangles, each of which has area exactly one-fourth of the original area. Also, each remaining triangle is similar to the original.

Now we continue (or iterate) this process. From each remaining triangle we remove the "middle" leaving behind three smaller triangles each of which has dimensions one-half of those of the parent triangle (and one-fourth of the original triangle). Clearly, 9 triangles remain at this stage. At the next iteration, 27 small triangles, then 81, and, at the Nth stage, 3^N small triangles remain. (See Figure 3.)

FIGURE 3: THE SIERPINSKI TRIANGLE FOR N=1, 2, 3, 4, AND 5

The algorithm of generation of Sierpinski Triangle

Void SierTriangle(an equilateral triangle)

If (the triangle is too small)

Stop.

Else

Connect the mid point of the sides with line segments. Color the middle triangle with different color.
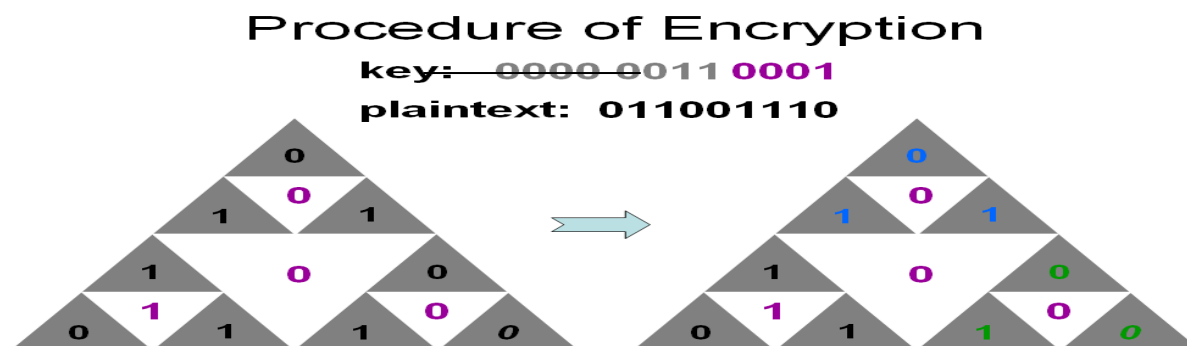
SierTriangle(top triangle)

SierTriangle(bottom left triangle)

SierTriangle(bottom right triangle)   //**Figure 4: Algorithm to generate Sierpinski Triangle**

The figure 5 shows I step of encryption by using Sierpinski Triangle. To show the process let us take key as 0001 and plaintext 011001110. The dimension of Sierpinski Triangle should match the key size. The key should arrange in white portion of triangle in CENTER, TOP, LEFT and RIGHT order. The plain text should be arranged in order of generation of Sierpinski Triangle by algorithm shown in figure 4(in black portion triangle) i.e. SierTriangle (top triangle), SierTriangle (bottom left triangle), and SierTriangle (bottom right triangle). The order of arrangement of plaintext with in sub triangle should be TOP, LEFT and RIGHT [7].

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FIGURE 5

In the II step plaintext content of LEFT triangle should be replace by respective content of TOP triangle, plaintext content of RIGHT triangle should be replace by respective content of LEFT triangle , plaintext content of TOP triangle should be replace by respective content of RIGHT triangle.
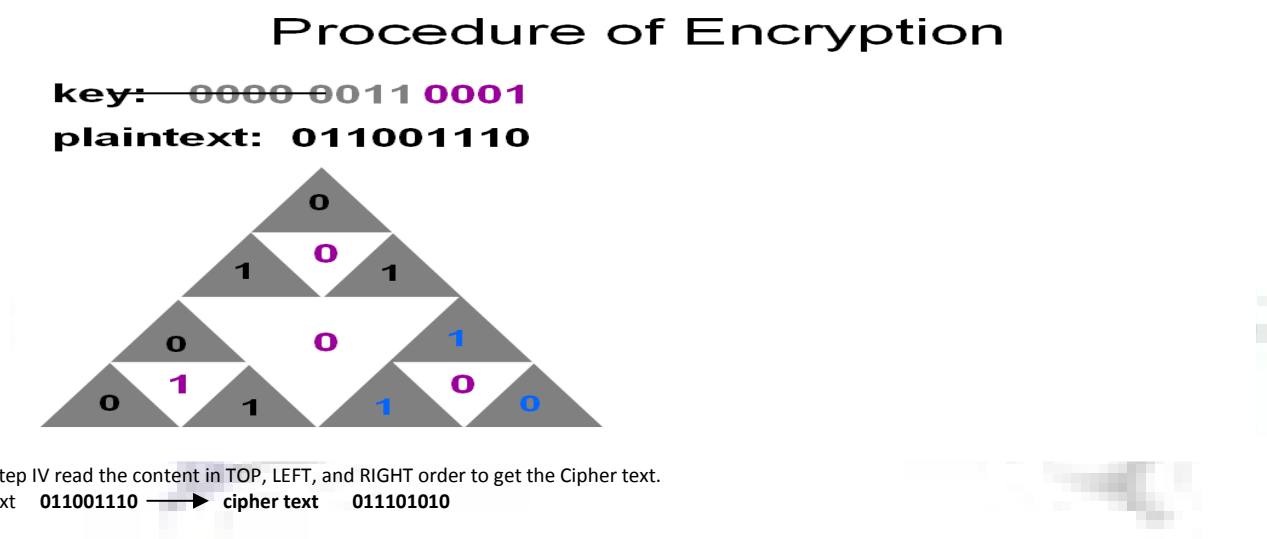Figure 6 shows the value of Sierpinski Triangle after the second step.

FIGURE 6
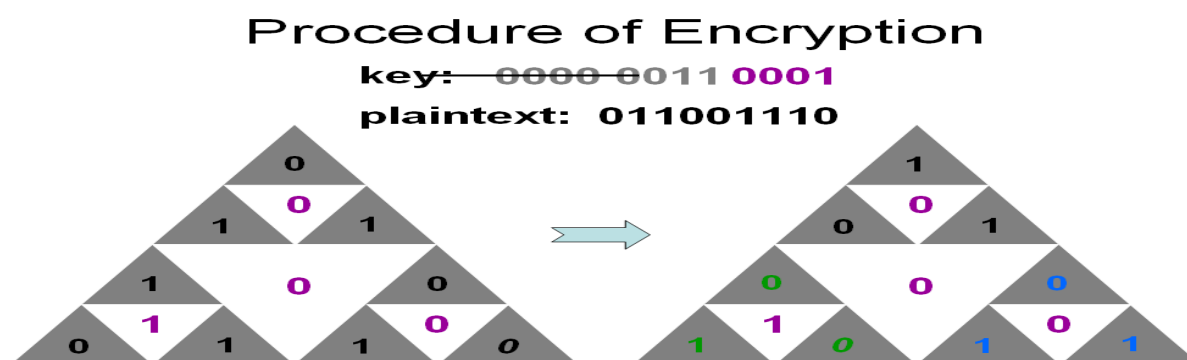
In the step III The content of TOP, LEFT and RIGHT triangle should rotate by one position in clock wise direction if the corresponding member of key field is 0 (White triangle element) else content of TOP, LEFT and RIGHT triangle should rotate by two position in clock wise direction if the corresponding member of key field is 1 (White triangle element).

FIGURE 6

In the step IV read the content in TOP, LEFT, and RIGHT order to get the Cipher text.
Plain text   **011001110** ⟶ **cipher text   011101010**

IV) CONCLUSION

This paper has focus on the how the Mandelbrot and Julia sets can be utilize for the key exchange procedure between sender and receiver. The Fractal based key exchange protocol is made possible because of the intrinsic connection between the Mandelbrot and Julia Fractal sets.
The second half of the paper focus on how, Sierpinski Triangle Fractals can be used for converting Plaintext into cipher text. So, together these two concepts can facilitate the key exchange as well as message encryption.

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IMPACT OF LIBERALISATION ON PRACTICES OF PUBLIC SECTOR BANKS IN INDIA

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ABSTRACT

Knowing the importance of strengthen financial system for mobilizing of financial savings, putting them to productive use and transforming various risks many developing economies adopted a series of financial sector liberalization measures in the late 1980s and early 1990s. The measures included interest rate liberalization, entry deregulations for foreign banks, reduction of reserve requirements and removal of credit allocation. Domestic banks were also given access to cheap loans across the globe and allocate those resources to different sector of domestic economy. This paper focuses on public sector bank in India's banking sector, which has been attracting increasing attention since 1991 when a financial reform programme was launched. It assesses whether the reform programme has been successful so far in bringing welcoming change in practices of public-sector banks and if so, what elements of the practices have changed significantly.

KEYWORDS

Liberalisation, Public Sector Banks, Banking Practices, Banking Services, Banking Products.

1.   INTRODUCTION

The Indian government in 1991 chose a gradual approach toward restructuring the banks by enhancing competition. Liberalization i.e., entry deregulation of foreign and domestic banks was chosen as a tool for this purpose. Narasimham Committee also held a view that the public sector banks could improve profitability and efficiency without changing their ownership if competition were enhanced.

However, some researchers and scholars are of the view that financial liberalization has severely affected the practices of banks. The problem of non-performing assets has emerged as a big challenge today, which has changed the practices of the banks to greater extent. Moreover, tough competition from the newly entered private and foreign banks has also forced the public sector banks to change their practices with a view to maintain their standing and share in banking industry. The employees are also affected in post liberalization era.

This study attempts to identify the effects of liberalization on the effectiveness and efficiency of banks which ultimately are the indicators of their performance and profitability. This paper is an attempt to find out whether there has been a significant change in the practices of public sector banks in post liberalization era.

2.   RESEARCH METHODOLOGY

Research design: Exploratory Research
Research Type: Quantitative Research
Sampling: Non - probability sampling (Judgment)
Sample Profile: Five public sector banks viz. State Bank of India, Bank of Baroda, Punjab National Bank, Oriental Bank of Commerce and Union Bank of India constitutes the sample of this paper.
Sample Size: Ten officials of five nationalized banks

OBJECTIVES OF THE STUDY

➤   To find out whether there has been a significant change in the practices and performance of banks due to liberalization.
➤   To find out whether the products offered by the banks in post liberalization era have helped them to increase their profitability.
➤   To find out whether the services offered by the various public sector banks in post liberalization era have positively influenced the bank's operation and efficiency.
➤   To find out the impact of third party products introduced by banks in post liberalization era on the performance and practice of banking sector.
➤   To find our whether there has been a significant change in the human resource policy adopted by the banks in pre and post liberalization era.
➤   To find out whether liberalization has brought with it an increase in the level of performance incentives of employees working in public sector banks.
➤   To find our whether or not the compulsory credit allocation to priority sector after liberalization has turmoil the profitability and performance of banks.
➤   To determine the effect of liberalization on the methodology of business review of banks.
➤   To determine the effect of liberalization on the number of assignments taken up by banks just after the implementation of liberalization.
➤   To determine the change in expenditure of banks on promotional activities after implementation of banking sector reforms in post liberalization era.

HYPOTHESIS

There is no significant difference in the practices of public sector banks in post liberalization era.

TESTING OF HYPOTHESIS

To test the laid down hypothesis,'t-test' the test to find out the significance of difference between the mean of a sample has been used. Statistically, it is used to find out whether there has been a significant difference between the arithmetic mean of the sample taken for the study and the mean of the parent population. The One-Sample T-Test compares the mean score of a sample to a known value, normally population mean. The population mean, looking at the null hypothesis, has been taken as mean scale.

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3. MAJOR FINDINGS

In order to find out the impact of liberalization on the practices of public sector banks, the response from the respondents were analyzed with a view to reach at a conclusion regarding the facts raised in the questionnaire designed. The classification of the data collected through questionnaire reveal the following picture:-

Factor	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)	Mean Scale
The products offered by banks in post liberalization era have helped them to increase their profitability	2	7	0	1	0	**4.0**
The products offered by banks in post liberalization era have helped them to increase customer satisfaction	6	4	0	0	0	**4.6**
Services like ATM services, status of debit and credit cards, on line fund transfer, RTGS have been a major factor influencing positively the banks operations and efficiency.	8	2	0	0	0	**4.8**
Third party products offered by your bank are contributing to maximize profitability?	1	5	0	4	0	**3.3**
Third party products offered by banks are contributing to maximize customer base.	0	4	1	4	1	**2.8**
There has been a significant change in human resource recruitment policy of the banks.	2	7	1	0	0	**4.1**
HR policy is now more employees friendly.	0	5	1	4	0	**3.1**
The level of performance incentives has increased substantially increased after liberalization in banking sector	1	3	2	4	0	**3.1**
Compulsory credit allocation to priority sector brought the profitability of banks under severe condition.	3	4	1	2	0	**3.8**
The practice of allocation of funds to various assets has changed substantially in the post liberalization era.	1	7	2	0	0	**3.9**
The priorities of investments in various assets have changed in post liberalization era.	3	4	2	1	0	**3.9**
There has been a significant change in methodology of the business review of banks.	3	6	1	0	0	**4.2**
There has been a considerable increase in the number of assignments taken by banks under corporate social responsibility.	2	4	2	2	0	**3.6**
Publicity of CSR projects by the banks have increased in post liberalization era.	0	5	3	2	0	**3.3**
Heavy investment are now being made by banks on promotional activities	2	3	4	1	0	**3.6**
TOTAL	35	69	18	27	1	**3.7**

4. RESULTS

The computed value of *t* has been compared with the table value at 95 per cent confidence level and degree of freedom at '*n-1*'. The findings on every factor to assess the impact of liberalization on practices of public sector banks have been concluded based on such comparison.

Factors	Computed Value	Inference
The products offered by banks in post liberalization era have helped them to increase their profitability	2.162	Low evidence of positive impact of products offered by banks in post liberalization on their profitability.
The products offered by banks in post liberalization era have helped them to increase customer satisfaction	3.738	Satisfaction of the customers has definitely improved by the various products offered by banks
Services like ATM services, status of debit and credit cards, on line fund transfer, RTGS have been a major factor influencing positively the banks operations and efficiency.	3.282	The operations and efficiency of the banks has increased many folds because of liberalization.
Third party products offered by banks are contributing to maximize profitability.	1.152	No positive impact inclusion of the third party products in the product portfolio of banks is visible on their profitability.
Third party products offered by banks are contributing to maximize customer base.	-0.961	No contribution of the third party products in maximizing customer base of banks.
There has been a significant change in human resource recruitment policy of the banks.	2.948	HR policy of the banks has significantly changed due to liberalization.
HR policy is now more employees friendly.	0.377	There is no change in the level of friendliness in HR policy adopted by the banks in post liberalization era.
The level of performance incentives has increased substantially increased after liberalization in banking sector	0.722	The liberal outlook in the banking sector has not changed the grades of performance incentives.
Compulsory credit allocation to priority sector brought the profitability of banks under severe condition.	3.433	The compulsory allocation to priority sectors like agriculture has shattered the profitability of banks.
The practice of allocation of funds to various assets has changed substantially in the post liberalization era.	2.448	Fund allocation plans and practices to various assets show a significant shift.
The priorities of investments in various assets have changed in post liberalization era.	3.866	The priorities of investments have significantly changed in post liberalization era.
There has been a significant change in methodology of the business review of banks.	3.549	Post liberalization reforms have significantly influenced the methodology of business review of banks.
There has been a considerable increase in the number of assignments taken by banks under corporate social responsibility.	3.111	The assignments taken under the head of corporate social responsibility by banks have increased substantially in post liberalization era.
Publicity of CSR projects by the banks have increased in post liberalization era.	1.136	No Substantial change in the publicity of CSR projects taken by banks in the post liberalization era
Heavy investment are now being made by banks on promotional activities	3.293	The amount of investments on promotional activities by the banks has increased many folds after liberalization reforms.
Overall	3.114	In general, the practices of public sector banks have changed substantially in the post liberalization period.

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5.   CONCLUSION

Banks being an important channel partner in the economy cannot remain aloof of the developments therein. Liberalisation has been one of the major developments in Indian economy since independence. This process has brought substantial changes in the practices of all segments of financial system. The mean and standard deviation of the sample on the rated scale are 3.7 and 1.03 respectively. The calculated value (3.114) of t is more than the critical value of t at 95% confidence level. These findings evidence the fact that the liberalization of the economy influences the banking practices in the country to very large extent. Some of the facets of banking may remain under-influenced but broadly the major practices are forced to be substantially changed over a period of time.

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THE EFFECTIVENESS OF PERFORMANCE APPRAISAL ON ITES INDUSTRY AND ITS OUTCOME

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ABSTRACT
Using establishment data from the ITES (Information Technology Enabling Service) Industry appraisal, this paper estimates the determinants of performance appraisal systems. On the basis of performance appraisal by their higher authorities, superior, peer group, self evaluation and customers the individual performance has been evaluated. The results indicate that performance appraisal is associated with employees required more transparency among the evaluation part in the existing performance appraisal system. As a observation from these survey the providing guidance at a appropriate time to satisfied the employee with work moral. The results also show that complementary human resource management practices, such as formal training and incentive pay, are associated with an increased likelihood of performance appraisal, which would increase the productivity, goodwill and quality standards of the company.

KEYWORDS
Performance Appraisal, Characteristics, Effectiveness, Outcomes, Determinants, in Chennai ITES.

INTRODUCTION

The history of performance appraisal is quite brief. Its roots in the early 20th century can be traced to Taylor's pioneering time and motion studies. But this is not very helpful, for the same may be said about almost everything in the field of modern human resources organizations. As a distinct and formal management procedure used in the evaluation of work performance, appraisal really dates from the time of the second world war not more than 60 years ago. Performance appraisal is a method of evaluating the behavior of employees in the work spot, normally including both the quantitative and qualitative aspects of job performance. Performance here refers to the degree of accomplishment of the task that makes up an individual job. Always the term is confused with effort, which means, performance is always measure in terms of result. Most of the organizations are focusing on human resources development with an eye towards improving employee performance. In this project work, it is intended to study and analyze the current performance appraisal system among the employees of ITES industry.

TOPIC DESCRIPTION OF STUDY

Performance Appraisal is the tool used to assess how well a person completes their job – a process which is part of the overall performance management system. In human resources or Industrial psychology, 360-degree feedback, also known as multi-rater feedback, multisource feedback, or multisource assessment, is feedback that comes from all around an employee. "360" refers to the 360 degrees in a circle, with an individual figuratively in the centre of the circle. Feedback is provided by subordinates, peers, and supervisors. It also includes a self-assessment and, in some cases, feedback from external sources such as customers and suppliers or other interested stakeholders. A performance appraisal is a part of guiding and managing career development. It is the process of obtaining, analyzing, and recording information about the relative worth of an employee to the organization. Performance appraisal is an analysis of an employee's recent successes and failures 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.

REVIEW OF LITERATURE

A performance appraisal, employee appraisal, performance review or (career) development discussion is a method by which the job performance of an employee is evaluated typically by the corresponding manager or supervisor. This is a technique, not universally accepted, of assessing the performance of employees against agreed targets. The personnel practitioners would be most likely to be involved in designing the procedures, leaving the line managers normally to administer the process. Performance Appraisal is the systematic evaluation of the individual with respect to his or her performance on the job and his or her potential for development.

Performance appraisal, two rather simple words that often arouse a raft of strong reactions, emotions, and opinions when brought together in the organizational context of a formal appraisal procedure (DSP Dev Kumar, 2005). Performance appraisal is a vital component of a broader set of human resource practices; it is the mechanism for evaluating the extent to which each employee's day-to-day performance is linked to the goals established by the organization (Coutts and Schneider, 2004). Yong (1996) defines performance appraisal as "an evaluation and grading exercise undertaken by an organization on all its employees either periodically or annually, on the outcomes of performance based on the job content, job requirement and personal behavior in the position".

ORGANIZATIONAL AND EMPLOYEE OBJECTIVES

One of the first steps in developing an effective performance evaluation system is to determine the organization's objectives. This allows the employee to know "up front" the standards by which his/her performance will be evaluated.(Deborah F. Boice and Brain H. Kleiner, (1997). This process involves clarifying the job role, job description and responsibilities – explaining how the role and responsibilities contribute to wider goals, why individual and team performance is important and just what is expected within the current planning period. (a)Maintaining records, (b)Measurement system, (c) Pay for performance management processes constitute: (1) planning—deliberation of what to do and setting expectations; (2) monitoring—continually checking on performance; (3) developing—improving the capacity to perform; (4) rating—periodically scaling performance in a summary fashion; and (5) rewarding—compensating good performance (Woodridge-Solutions).

The first process, planning, means structuring mindset on how performance should be channeled to achieve objectives considering the goals of the organization. The second process in performance management is monitoring. It pertains to the consistent assessment of performance and providing ongoing remarks to employees and work groups while they are progressing in attaining organizational goals. Developing, the third process can be defined as increasing the capacity to perform. This can be staged through trainings, seminars, and assigning projects that would introduce new skills or higher levels of responsibility, and improve work processes or methods. From time to time, organizations find it useful to summarize employee performance. This requires the fourth process of

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performance management, rating. This enables comparison among a set of employees or individual conduct or productivity over a period of appraisal. The rating of record has a bearing on various other personnel actions, such as granting within-grade pay increases, and promoting or determining additional retention service credit in a reduction in force.

360 DEGREE PERFORMANCE APPRAISALS

In 360-degree performance reviews, many different types of people are consulted about a employee's performance (Farhaan Panagar, 2009). This includes customers, suppliers, peers and direct reports. In the case of a manager, employees are often asked to give "upward feedback" on how well they are being managed. If 360-degree performance reviews are performed, a Human Resources manager should coordinate the process; so that subordinate reviewers (i.e., employees) are assured that their performance reviews are kept anonymous.

FIGURE -1
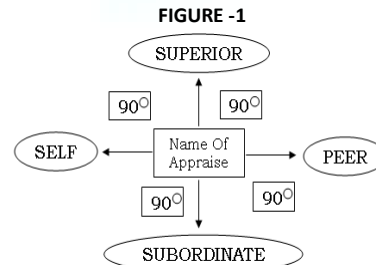
The aim is to find the gap between one's own appraisal and the perceptions of others. This will in turn enable a professional to analyze his strengths and shortcomings and accordingly improve his performance. While it is true that the system serves as an excellent process since it reduces biases, it is not always successful. It is necessary to create the right culture in the company before introducing the system. If many people are unhappy or their morale is low, the situation can turn disastrous as some staffers will become obvious targets. The 360-degree appraisal significantly differs from the traditional supervisor-subordinate performance evaluation. Rather than having a single person play judge, a 360-degree appraisal acts more like a jury. The people who actually deal with the employee each day create a pool of information and perspectives on which the supervisor may act. This group of individuals is made up of both internal and external customers.

NEW PERFORMANCE APPRAISAL SYSTEM

The new system has three stages, the first stage occurs at the beginning of the year when the manager meets with each employee. The second stage is a mid-year, mandatory feedback and discussion session between the manager and the employee. The third stage in the appraisal process is the formal performance review, which takes place at year's end. Both the manager and the employee prepare a written document, stating how well the employee met the preset performance targets. They then meet and discuss the performance of the employee, resolving any discrepancies between the perceptions of the manager and the employee (Arshad Zaheer, Iqbal, Ishaq 2003). The researchers maximized accuracy in the test scores by applying measurement scaling carefully. The research design of the study used five-point Likert scale for all survey questions (Fink, 1995a). This meeting emphasizes feedback and improvement. Efforts are made to stress the positive aspects of the employee's performance as well as the negative. This stage also includes a developmental planning session in which training, education, or development experiences that can help the employees.

CHARACTERISTICS OF PERFORMANCE APPRAISAL

The typical approach to implementing performance appraisal (Todd Grubb, 2007) is to clearly identify what the job entails (i.e., the job duties), and establishing a scheme for measuring "how well" these duties are carried out (i.e., the performance standards). Perhaps the underlying premise of performance management and appraisal is that old saying, "What gets measured gets done." So, "measurement" is essential. In order to develop standards of measurement, organizations typically conduct a job analysis to specifically identify the key tasks, duties and functions of each job. Then for each job task/duty/function, written measurable performance standards (e.g., quantity, quality, timeliness, etc.) are established for "fully satisfactory" performance, usually based on past experience, industry standards, or goals. This sets the base line against which individual employees may either "meet," "exceed," or "fall short" of desired performance. The characteristics are as follows 1. Outside judgment, 2. Specified time period, 3. Standardization, 4.Mandatory, and 5. Documented. The Separate administrative procedures for considered performance appraisal , such as Communication and Feedback, Promotion, Training and development, "Poor performers", Adverse and disciplinary action, Individual special recognition, Base pay, Bonuses, Benefits, Focus on the system, Build a community culture, Train and hold supervisory group reinforcement meetings. More recently, the emphasis has been on worker reactions to appraisal and the social context in which appraisals occur as these are seen as critical in determining the effectiveness of an appraisal system (Keeping and Levy 2000; Levy and Williams 2004). Evaluations of worker performance are used to move a worker between firms, to move a worker between jobs within a firm and as part of eliciting high effort often in conjunction with pay decisions (Lazear 1998: 479). Past theoretical work suggests that the benefits of appraisal are likely to be greatest when the workforce is composed of shorter-tenure workers. Second, longer-tenure workers are likely to have developed substantial human capital specific to the employer, making it less likely that their current pay will be below their value to rival firms.

HRM PRACTICES

There exists research demonstrating that groups of HRM practices occur together (Arthur 1994; Jirjahn 2002; MacDuffie 1995). Internally consistent bundles of HRM practices have been associated with greater firm level performance (Kato and Morishima 2002). While the set of practices that constitute bundles is contested (e.g. Wood 1999), it is common for researchers to consider the role of performance appraisal, training of workers, job redesign, joint consultative committees and individual performance related pay as part of an HRM bundle(Michelle Brown and John S. Heywood, 2005). Performance appraisal is predominantly used as a device to measure the standards set by the management of its employees (Dr. Kulwamt Singh Pathania, Ashish Kumar Nag and Anuradha D. Pathak, 2011) . Performance appraisal is a process of assessing, summarizing and developing the work of an employee on both qualitative as well as quantitative terms. Normally, the performance evaluation of an employee is done by his immediate senior or some expert.

Bars - To try to rectify some of the above problems, Smith and Kendall developed Behaviorally Anchored Rating Scales (Thomas F. Patterson,1987), better known as BARS.3 The BARS format deals with measurable behaviors, not personality, provides raters and ratees with clear statements of performance goals, and is based on a specific, thorough job analysis. Using BARS, raters focus on specific ratee behaviors. **Eabrars** - The BARS format was used to develop the Extension Agent Behaviors and Results Anchored Rating System (EABRARS). Job dimensions and anchors were derived from a 1979 Extension agent job analysis commissioned by USDA and conducted by the American Institutes for Research (AIR).4 Nine job dimensions (5 behaviors and 4 results) were selected from the AIR analysis. Within each of these job dimensions, anchor statements were rewritten and grouped in categories from 1 to 7, according to AIR weightings. Behaviors Program planning, Program promotion and public relations, Program implementation, Program support, Interpersonal and personal behaviors generally related to job. As a Results Program planning, Program promotion and public relations, Program implementation, Program support. Controlling the performance appraisal system requires the coordination of all facets of the system (David C. Martin, Kathryn M. Bartol, 1998) . This function is normally assigned to the personnel staff. Among the many responsibilities are ensuring that rating periods are established, the proper rating techniques (such as management by

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objectives (MBO) and behaviorally anchored rating scales (BARS) are used for each employee's evaluation, performance appraisal training is conducted for raters and rates, the performance appraisal system is operated in a legally defensible manner, performance appraisal reviews are conducted on time and the results of the performance appraisal process are properly linked to the programs dependent on them (merit pay, promotion, employee development and others). That is, operational goals take the organization's strategies and translate them into specific goals (Pachsiry Chompukum). Therefore, it facilities management alignment and buy-in by bringing all levels of management into operational planning process and giving employees a chance to help shape the plan (Aguilar, 2003). It focuses on ways to motivate employees to improve their performance (DeNisi and Pritchard, 2006). Furthermore, it can help organizations to improve financial performance. A study conducted by McDonald and Shield of Hewitt Associates found that companies that used performance management programs had greater profits, better cash flow, stronger stock market performance and greater stock value than companies that did not. Not only performance management improved financial performance, but it also improved productivity; companies with such programs had higher sales per employees (Rheem, 1995)

ONE PAGE MANAGEMENT

To be successful in the long run, an organization strives for organizational fitness (Andre A. de Waal, Vincent Coevert, 2007). Organizational fitness is defined as an organization's ability to adapt and survive in the ever-changing business environment and is achieved through natural evolution, purposeful change and continuous learning (Beer, 2003; Voelpel et al., 2004). To obtain organizational fitness, an organization needs a clear and explicit management concept which is formulated by its most senior management (Bossert, 1993). This management concept is the basis for long-term development of the organizational strategy and the strategic objectives. The strategy has to be translated into business unit plans, budgets and operational action plans at the lower organizational levels. The management concept needs to be supported by an unambiguous and well-organized planning and control cycle. In this cycle, clear feedback is given on the execution of the plans by means of a management control and information system.. The steering on results model is based on the well-known Plan – Do – Check – Act (PDCA) management cycle. The INK management model is the Dutch version of the European Foundation of Quality Management model, which is a framework for conducting total quality management projects (Waal, 2002a). It consists of nine areas of 5 attention four result areas (end results, customer satisfaction, employee satisfaction, appreciation of the society, and end results) and five enabler areas (leadership, strategy & policy, human resource management, resource management, and process management). In an INK diagnose it is determined how the organization is performing in each area of attention and where improvements are needed. The feedback loop indicates that improvements are mainly made in the enabler areas on the basis of the results achieved in the result areas (Ahaus and Diepman, 1999).

In order to obtain accurate PA information, raters must provide objective and unbiased ratings of employees. Due to difficulty in developing an accurate performance checklist, managers' subjective opinions are frequently called for. Many organizations use some combination of subjective and objective assessment (Francis O. B. Mensah, Peter.A.S and Ghana, 2012) for actual PA. Yet, there are numerous problems in actual assessment of employee performance (Corbett & Kenny, 2001). The existence of such problems suggests that PAS may be fraught with biases or errors, resulting in compromised evaluations of employees' accomplishments and capabilities. And the PAS of the institution of study might not be an exception. For a PAS to be perceived as fair, it must be free of bias. It is known that appraisal errors can harm perceptions of pay system fairness by confusing the relationship between true performance differences (Miceli et al., 1991). The importance of effective PA in organizations cannot be overemphasized as appraisals help develop individuals, improve organizational performance and feed into business planning. An understanding of the phenomenon, therefore, in every sector of human endeavor is imperative. This recognition has raised interest in studying people's perceptions of the quality of PA in organizations (educational institutions inclusive). This is linked to the employees – how they take on board the performance management system, and use it in their everyday work to enhance productivity. The PMA needs to highlight nine key elements. These elements have been identified by a wealth of research over the years as being the essential success factors in a performance management system. 1. The responsibility structure, 2. Content, 3. Integrity, 4. Manageability,5. Accountability, 6. Management style, 7. Action orientation, 8. Communication, 9. Alignment.

Performance can be considered an outcome of both organizational and human activities (Andre A de. Waal, 2002). Originally, performance measures were used as surrogates for these outcomes, and a direct link between performance management systems, human nature, and outcomes was not made. This omission was addressed by Argyris (1952) and later on by Simon et al. (1954). They explored the human behavioral side of performance management system use, looking specifically at the budgeting system. Both concluded that budgets and budgeting processes could be associated with important human relation problems. These included worker–management separation, cross-boundary conflict, and job-related tension. Performance appraisal is a formal management system that provides for the evaluation of the quality of an individual's performance in an organization as mentioned by Dessler. G performance appraisal has the means to evaluate an employee's current and past performance relative to the employee's performance standards (C. C. Yee and Y .Y. Chen, 2009). It is a process which involves creating work standards; evaluate employee's actual performance relative to those work standards; and giving feedback to employee so as to motivate him or her to improve the job performance or to eliminate performance deficiency. In addition to that, Terrence, H. M and Joyce, M. stated that, some potential aims of performance appraisal might include identifying particular behavior or job. Various techniques or methods have been used by human resource management experts to evaluate the performance of an employee. As outlined by Vicky G. some of the appraisal methods include ranking; trait scales; critical incident; narrative; and criteria-based. Terrence, H. M. and Joyce, M. mentioned few other methods including management-by-objectives (MBO), work planning and review, 360o appraisal and peer review. With all the available techniques, it is essential to understand that different organization might use different technique in assessing staff performance. Since all the techniques mentioned above has their own advantages and disadvantages, most organizations might mix and match different techniques for their own performance appraisal system that can fulfill their organizational needs. Performance appraisal system has become one of the most valuable management tool in which organization members use to achieve collective goals. In order to ensure that the results of the performance appraisals are useful and reasonable to the superior when evaluating their subordinates, it is important for the performance appraisal system to consistently produce reliable and valid results for the management of an organization.

NEED OF THE STUDY

It states that, to know the level of employee aspiration and the level of job performance towards in ITES Sector and the employees are evaluated generally in terms of quality, quantity, cost, and time. And the employees are satisfied and retained with the facilities offered to them by the organization. This is also an attempt to know the exact expectation of the employees, and also to improve the facilities, employee performance and towards organization growth. The following might be considered when examining a performance appraisal system:
1.   The role of employees in an organization.
2.   If employees understand their roles well, they are likely to be more effective on the job.

OBJECTIVE OF THE STUDY

To evaluate an employee by all the officials whoever connected with him on the job for his Attitude as well as Job Performance, Data relating to performance assessment of employees are recorded, stored and used for several purposes. The main purposes of employee assessment are
1.   To effect promotions based on competence and performance.
2.   To identify the employees awareness and level of satisfaction about the performance appraisal.

RESEARCH METHODOLOGY

SAMPLING AND DESIGN OF QUESTIONNARIE

This method of data collection is quite popular in case of big enquiries. In this method a questionnaire is distributed to a respondent concerned with a request to answer the questions return the questionnaire. Researcher has collected some information through sources like books, magazines and websites. It is the heart of

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survey operation. This is structured questionnaire, which has been framed for conducting the survey. The questionnaire was presented with exactly the same wordings and in the same order to the entire respondent. The questions in the questionnaire must be closed-ended. Sampling is one of the components of a research design. The formulation o f the Research design is one of the important stages in marketing research process. At this stage, the Information needed to address the marketing research problem has been identified and the nature of the research design has been identified and the nature of the research design has been determined.

METHODS OF SAMPLING

In a *random sample* of a given size, all such subsets of the frame are given an equal probability. Each element of the frame thus has an equal probability of selection: the frame is not subdivided or partitioned. Furthermore, any given *pair* of elements has the same chance of selection as any other such pair. This minimizes bias and simplifies analysis of results. In particular, the variance between individual results within the sample is a good indicator of variance in the overall population, which makes it relatively easy to estimate the accuracy of results.

STATISTICAL TOOLS USED AND STAFF EVALUATION

TYPE: I

a) Leadership Skills like Personality, attendance & Punctuality, Team work etc., (Item 1) : This items are evaluate the competency and performance of the level in a working environment.

b) Value Addition by control of Man, Material, Time, and Training (Item 2): This aspect evaluates the Value of the staff for their promotion and in other aspects.

H_0: There is no association between Leadership Skills like Personality, attendance & Punctuality, Team work etc., * Value Addition by control of Man, Material, Time, and Training.

H_1: There is association between Leadership Skills like Personality, attendance & Punctuality, Team work etc., * Value Addition by control of Man, Material, Time, and Training.

When evaluating staff's performance, like their performance and the competency level will use a scale of 1 to 5 to rate each sub criteria for each aspect mentioned above. It indicates that the staff was rated Excellent to Dissatisfaction in that particular sub criteria's highly in a particular and the verbal grade for the scale based on the a) Not assuming the null hypothesis, b) Based on normal approximation . As a result of correlating both the items of the each of the staff members through correlation analysis there is association between the Leadership Skills like Personality, attendance & Punctuality, Team work etc., and with the Value Addition by control of Man, Material, Time, and Training.

TYPE: II

(a) Job Satisfaction with non financial criteria (Aspect 1): This aspect evaluates the Satisfaction level of the staff's working in the sector.

(b) Clear Sense of my future direction in this organization (Aspect 2): This aspect evaluates the staff's sense towards individual as well as organization growth in the working field.

(c) Existing performance appraisal system (Aspect 3): This aspect evaluates whether the staff's are satisfied with the existing performance appraisal system are there is any adaptation towards new performance appraisal system.

When evaluating staff's performance, appraiser will use a scale of 1 to 5 to rate each sub criteria for each aspect mentioned above. It indicates that the staff was rated Excellent to Dissatisfaction in that particular sub criteria's highly in a particular and the verbal grade for the scale is shown in Table I. **Null hypothesis**: There is no significance difference between the mean value ($\mu_1 = \mu_2 = \mu_3$) , **Alternative hypothesis**: There is significance difference between the mean value ($\mu_1 \neq \mu_2 \neq \mu_3$)

TABLE – I

Comparing the Job Satisfaction With the Non Financial Criteria like as follows		Sum of Squares	df	Mean Square	F	Sig.
Clear Sense of my future direction in this organization.	Between Groups	23.697	2	11.848	24.818	.000
	Within Groups	53.469	112	.477		
	Total	77.165	114			
Participation in the professional activity is in the required level.	Between Groups	13.369	2	6.685	9.095	.000
	Within Groups	82.318	112	.735		
	Total	95.687	114			
Existing performance appraisal system is satisfied.	Between Groups	19.773	2	9.886	7.559	.001
	Within Groups	146.488	112	1.308		
	Total	166.261	114			

As a result, according to the calculation of above by referring of Table I, for the Aspect1, 2, &3 related to each other there is significance difference between the mean values ($\mu_1 \neq \mu_2 \neq \mu_3$)

RESULT AND DISCUSSION

In this type of organizations the new employees are not aware of the performance appraisal and the evaluation system. If it is made known to them they may be good transparency in the performance system and in order to have better liaison with inter and intra personal relationship with themselves. To reduce the pressure / stress of the employee the organizations should try to provide adequate level of counseling and motivate the employees through professional activities. The team work should be assigned to employees, which will helpful to maintain the time management. For new employees they need sufficient guidance in Human resource policy and culture of the organization. In the interaction with the respondents, many employees are providing response in the present system. The organizations has improve the style of the leadership and the superiors took interest in providing guidance then the employees are satisfied with work moral and better organization climate. The human resources are important assets of all organizations, so the organizations are retain the employees as for as long period.

CONCLUSION

In every organization, they would increase the productivity, goodwill and quality standards of the company. Performance appraisal system is the most effective managerial tool to evaluating the behavior of the employee in the work spot at a various level. When the organization is able to found the potential of every individual through performance appraisal, it can effectively respond to individual with respect to his performance on the job and his potential for development. It is perhaps because of these that appraisal system is visualized as a source of competitive advantage. The existing performance appraisal system appears to be more effective and systematic. However, there is transparency as dismissed in the analysis part.

SCOPE FOR FUTHER RESEARCH

Further research possibilities consist of evaluating the effects of the performance system on a wide scale in the Information Technology Enabling Services, evaluating the performance of the employees in a short period, The Appraisal system is accommodating in minimizing grievance among the employees, so the system helps to identify the strength and weakness of the employees in their performance. It improves the productivity of the employee's level of performance. Through rating system of appraisal which is able to consistently produce reliable and valid results for the performance appraisal.

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CUSTOMERS ARE THE KING OF THE MARKET: A PRICING APPROACH BASED ON THEIR OPINION - TARGET COSTING

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ABSTRACT

It is well recognized throughout the world that customers are the kings of the today's market. Their opinions are very vital at the time of designing of the products, features of the products and also at the time of fixing the price of the products. This is more applicable in the case of luxurious products. In target costing customers opinions are first taken to know how much price they are willing to provide for a product and based on this price, costs are determine and final decision are taken for the products. Customer's views play very vital role in decision-making process in target costing. At present the supply of products are more than the actual needs of the consumers in the business world and for this reason gradually manufacturer are going under the control of customers. Target costing is the way to win this situation.

KEYWORDS

Target costing, Pricing, Customers, Products, King of the Market.

I. INTRODUCTION

World market is going to change from producer market to consumer market or from sellers market to buyers market. This drastic change is witnessing through the last two decades and it increasing day by day. Earlier producer produced the products as per his own choice, preference and customers had to depend totally upon producer about new style, new design, price of the products etc. In the era of globalization and with the increasing of number of manufacturer/ producers/sellers, customer's choice gets high priority rather than sellers. Competitions among the sellers are very keen with the increasing of number of sellers for the same product. For example in colours television market there are number of manufacturers, like Samsung, Philips, Videocon, Sansui, Sony, Hyundai, Sanyo, Akai, Panasonic, Panorama, LG, Oscar, Santosh, Salaro, Peacon, etc. Some are of national wide business and some are of international wide business. Everyone wants to reach to the customers. To reach to the customers it is must to know what they want about quality, features, size and the price and they also want to pay for all of these. Hence price is the most considerable marketing mix to reach to the customers. From this view point target costing emerged.

Target costing emerged in Japan in 1960s as the responses of different market situation. Since the 1980s, target costing was widely recognized as a major factor for the superior competitive position of Japanese companies, extensive efforts have been made to convey target costing to Western companies. Many large companies in North America and Europe have tried to adopt target costing to enhance their cost management and, thus, increase their competitiveness. Consequently, many variations of target costing have been developed and are being used in different countries. It became popular when market changed from producer to buyers market, where buyers opinion about the products and obviously the price which they desire to pay for a packet of features of a product.

II. OBJECTIVES OF STUDY

Objectives of study are to provide an overview of the target costing and provide information about how target costing can help the businessman in today's competitive market.

III. TARGET COSTING AND TARGET COST: MEANING

Target costing is a method to decide how much maximum cost can be allowed for a particular product or service by taking market driven various considerations. It is a disciplined process that uses data and information in a logical series of steps to determine and achieve a target cost for the product. Target costing is a structured approach to determine the cost at which a proposed product with specified functionality and quality must be produced in order to generate the desired level of profitability at the product's anticipated sales price [Cooper, (1995)].

In addition, the price and cost are for specified product functionality, which is determined from understanding the needs of the customer and the willingness of the customer to pay for each function. To determine such maximum cost, at first market research is required to know how much maximum price is affordable by the customers. After knowing such price, the required rate of return is deducted from such prices to know target cost. So, it is clear that target cost is set-up by taking customers opinion about the price.

Therefore

Target cost = Target sale price --- Target profit/Required rate of return

For example, if target sale price is Rs.20 and if required rate of return is 20% on sale price then Target cost would be = Rs.20 --- 20% of Rs.20 = Rs.16

But this is not very easy task to know the target sale price, for this purpose a detail market research is required.

"Target cost is a product cost estimate derived by subtracting a desired profit margin from a competitive market price. This may be less than planned initial product cost, but will be expected to be achieved by the time the product reaches the mature production stage" – CIMA-London.

A target price is the estimated price for a product or service that potential customers will pay. The estimate is based on an understanding of customers' perceived value for a product or service and how competitors will price competing products or services [Horngren et al (2009)].

Another interesting aspect of Target Costing is its inherent recognition that there are important variables in the process that are essentially beyond the control of the design group or even the company. For example, the selling price is determined by the market place-- the global collection of customers, competitors and the general economic conditions at the time the product is being sold. The desired profit is another variable that is beyond the control of the organization. It may be set at the corporate level. It is influenced by the expectation of the stockholders and the financial markets. And, the desired profit is benchmarked against others in the same industry and against all businesses. In this complicated environment, it is the role of Target Costing to balance these external

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variables and help to develop a product at a cost that is within the constraints imposed. In short, traditional approaches, such as simple "cost-plus" is a recipe for market failure, and giving the customers more than they are willing to pay for is a recipe for insolvency.

IV. OBJECTIVES OF TARGET COSTING

The main objective of target costing is to help the management to control the production cost, before the production has actually started. Cost control become more critical if production once started, as most of the cost reduction can do in design stages by altering product design and product features. Once product launched in the market, cost control become typically hard. To capture/win the market if price reduced or features changed after marketing the product, a negative impact may arises among the customers. So, it is better to pre-control the cost by taking the customers opinion regarding price, design etc. Furthermore cost reduction is not an easy task, it involves throughout every levels of the organization. It started at design stage and end at after sale services.

V. TARGET COSTING PRINCIPLES

Target costing can be described as a systematic process of cost management and profit planning. The six key principles of target costing are[21]:

1. Price-led costing: Market prices are used to determine allowable or target costs. Target costs are calculated using a formula similar to the following: market price – required profit margin = target cost.

2. Focus on customers: Customer requirements for quality, cost, and time are simultaneously incorporated in product and process decisions and guide cost analysis. The value (to the customer) of any features and functionality built into the product must be greater than the cost of providing those features and functionality.

3. Focus on design: Cost control is emphasized at the product and process design stage. Therefore, engineering changes must occur before production begins, resulting in lower costs and reduced "time-to-market" for new products.

4. Cross-functional involvement: Cross-functional product and process teams are responsible for the entire product from initial concept through final production.

5. Value-chain involvement: All members of the value chain—e.g., suppliers, distributors, service providers, and customers are included in the target costing process.

6. A life-cycle orientation: Total life-cycle costs are minimized for both the producer and the customer. Life-cycle costs include purchase price, operating costs, maintenance, and distribution costs.

VI. IMPLEMENTATION OF TARGET COSTING

The following steps are required to implement target costing:

Step-I Decision about products: At first stage organization / company has to decide about the product, whether a totally new product to be launched or an existing product to be continue by altering its features and price. A right decision is require taking in this stage by considering the market situation and obviously the company's financial background or availability of financial resources for such decision.

Step-II: Market research about products and price: If decision is for new product then company must be cautious about its launching, as launching of new product is more risky than alteration of an existing product. Product may or may not be accepted by the customers, but this is not so in case of an existing product. Research for market demand and price is very vital.

For e.g. a book publisher may plan for production of a calculator based dictionary, i.e. just putting the word in calculator we can know the meaning of the word with the different language option. This dictionary may be named micro-dictionary. For such product plan, demand analysis and price analysis is must by taking demand and price of existing book based dictionary.

For existing product, some alternation is desirable to catch the market. Just for example, a mobile phone manufacturer may plan for adding some extra features in mobile. E.g. a mobile based dictionary or adding a mechanism to inform about the temperature etc. Such additional features will be very attractive to the students. After coming to positive decision, phone manufacturer require to know how much maximum price can be allowable by the customers for such extra features.

Step-III: Decision regarding profit or required rate of return: In this stage company/organization require to take decision regarding rate of return on the fund to be invested for the products. For taking such decision company's financial position, state and country's economic position and obviously the industries position regarding rate of return require to be taken into consideration.

Step-IV: Establishment of target cost: From target price, target profit is required to deduct to find out the target cost. This cost are further broken down in to various cost component like material, labour, overhead, after sales service cost etc or into prime cost, work cost, cost of sales etc to properly analysis and control the cost, so that main object can be achieved i.e. production within the target cost.

Step-V: Analysis of target cost: After getting the target cost, a details analysis is require to know whether such cost is permissible or not for such product. To achieve such target cost a group is required to form by taking the representatives from different departments of the organization. Like representative from purchase department, production department, sales department, market research department, finance department etc.

Product design and engineering department play a very vital role to achieve such target cost. Proper designing is also crucial as cost is varying from one design to another design. Cost determination section of production department regularly reviews the cost and ascertains the different cost sheet for finding out the costs for different design of the product but with the same features. Design, which is able to produce the product within the target cost, is finally selected for production purpose.

Step-VI: Pilot testing or test production: After selection of final design/process a test/samples production is done. That samples are checked mainly from two angle   i) Cost of the product and ii) Features of the product.

If cost is seen within the allowable cost then it selected for mass production but if not then a details cost analysis is require to reduce the cost. Different cost reduction technique like "Kaizen analysis" may be adopted. But here cost reduction should understood as per CIMA's definition of cost reduction ---" cost reduction is to understood as the achievement of real and permanent reduction in the unit costs of goods manufactured or services rendered *without impairing their suitability for the use intended."*

In an organization cost reduction are normally done throughout the different departments of the organization. It involves the following areas – design stage, factory organization and production stage, marketing stage, administration stage, finance stage etc. For this reason, representatives come from different departments. If features of the product are designed as per our requirement, then it becomes acceptable but if not then again redesign is required.

Step-VII: Mass productions and continuous cost analysis to reach far below than the target cost: If target cost is achieved then mass production is started. But continuous cost analysis is must to reduce the price of the product, as at any time new competitors may come with low price. This cost analysis or value engineering normally is done throughout the product life cycle to capture more and more market. But today's customers never compromise with the quality (particularly in developed country) that must be kept in mind at the time of implementing the target costing.

So in very brief the process of target costing requires the following steps:

• Determine the target price that customers are willing to pay for the products/ services for a bundle of features.
• Determine the target profit margin by taking into account the cost of funds and other related factors.
• Determine the target cost by deducting the target profit from the target price.

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[21] These principles are adopted from S. Ansari, J. Bell, and the CAM-I Target Cost Core Group, *Target Costing, The Next Frontier in Strategic Cost Management,* Irwin, Chicago, 1997.

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- Establish a cross functional team by taking persons from various departments that to be involved in every stages of the production, starting from design stage.
- Determine the probable actual cost of the product.
- If the probable actual cost is higher than the target cost then investigate to find out the way to reduce the probable cost within the maximum limit of the target cost.
- Continuously pursue the cost reduction process to reduce further cost to win the market competition.

VII. COMPANIES OR AREAS WHERE TARGET COSTING IS APPLICABLE

- If company desiring to introduced any new product to the market, customers opinion relating to price is must to get success.
- If company go to alter the features of a product i.e. addition or deletion of features of an existing product.
- Where the market is a totally customer oriented.
- Where the number of sellers is relatively higher comparing to the number of customers.
- In case to supply to the wholesale markets or company buyers.
- For export order supply.

The following companies are usually following the target costing pricing: Motorola, General Motors, Ford, Toyota, Nissan, Honda, Mitsubishi and General Electric etc. Most of the cars manufacturing companies are also follow the target costing pricing.

VIII. MAJOR ADVANTAGES OF TARGET COSTING

- Proactive approaches to cost control.
- Customers oriented technique, so customers are benefited.
- Departmental unity increases, as every department work together to achieve target cost or helps to break down the departmental barriers.
- Helps to eliminate non-value added activities.
- Its implementation increases awareness among the employees.
- Leads to improve the relationship between customers and suppliers.
- Easy to achieve financial target if it implemented in proper way.
- Increases the awareness to improve the product features.
- Future product planning became easy.
- Always make awareness about customers, market, and competitors.

IX. MAJOR DRAWBACKS OF TARGET COSTING

- Co-operation among the different departments is must; otherwise it cannot be success.
- To reduce the cost, inferior components may be used. It can reduce the quality of product.
- Details of cost data are require maintaining for properly implementation of target costing.
- Production decision may delay due to not achieving the target cost.
- Once target achieved it cannot be fixed, again new target come.
- It involves lot of research and development cost.
- Success of target costing depends upon proper market information, if information is not proper then target also to be wrong.

X. EXAMPLE OF TARGET COSTING:

Light and Battery India Ltd find a market niche for emergency light with certain new features --- like a mobile charging point and small two blades fan with emergency light. The marketing department believes as per marketing information that a price of Rs. 850 would be right for the emergency light. At that price, marketing department estimates that 5,000 emergency lights could be sold annually. To design, develop and produce this emergency light an investment of Rs. 85,00,000 would be required. The company desire 12.5% return on investment (ROI).
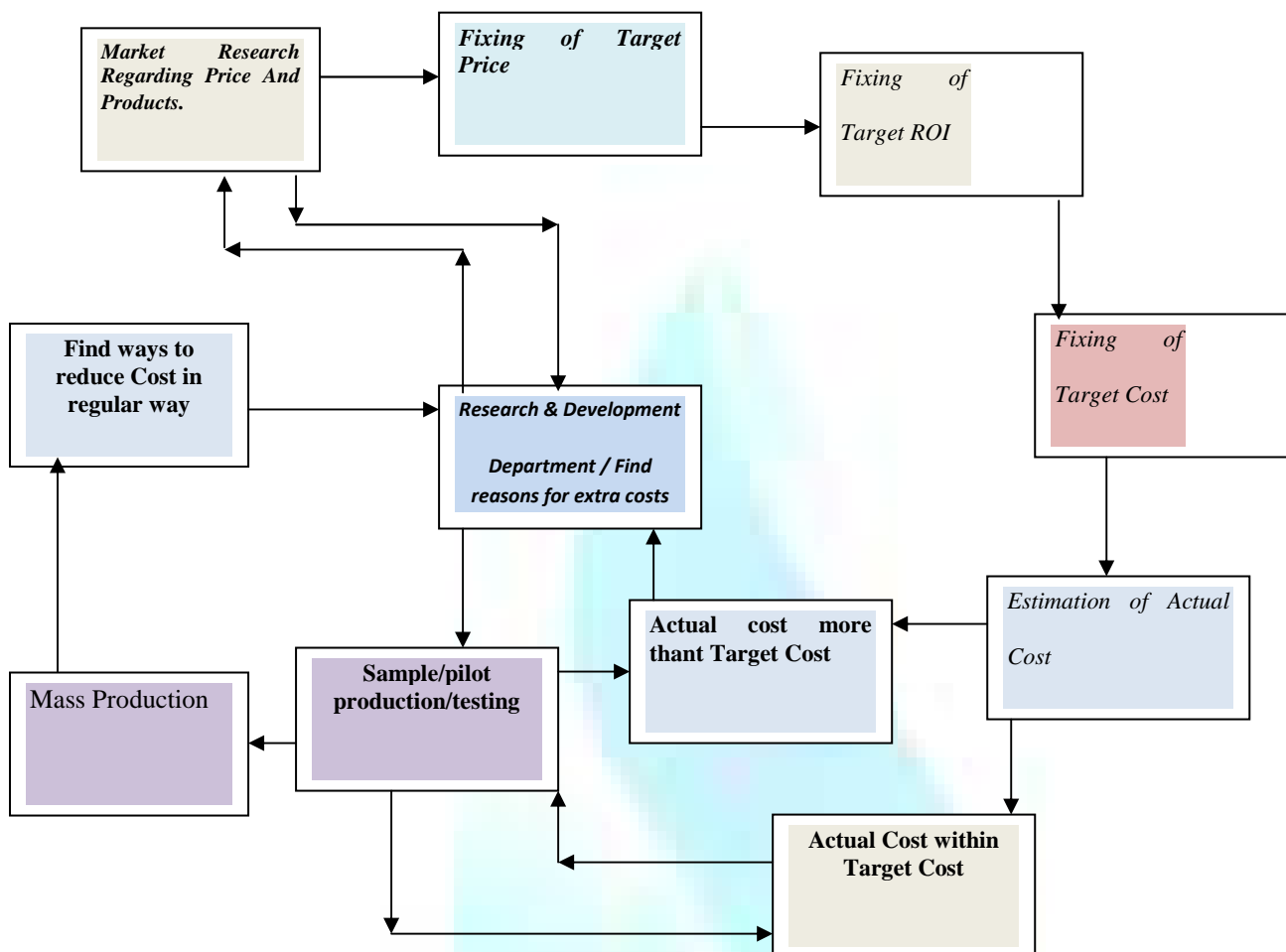
Based on above data the target cost per emergency light would be:

	Rs.
Projected sales (5,000 emergency light @ Rs.850 per light)	42,50,000
Less : desired return (12.5% on Rs.85,00,000)	10,62,500
Target cost	31,87,500
Target cost per emergency light (Rs.31,87,500 / 5,000)	637.50

This target cost of Rs. 637.50 would be broken down into target cost for the various departments like: Manufacturing, Marketing, Distribution, after sale service etc. Each functional department would be responsible for keeping its actual cost within target. The functional cost may be in the ratio of 10:4: 3:1 then the details cost structure would be:

	Rs.
Manufacturing cost	354.17
Marketing cost	141.67
Distribution cost	106.25
After sales service cost	35.41
	637.50

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GRAPHICAL PRESENTATION OF TARGET COSTING

XI. CONCLUSION

Customer's opinion plays a very vital role in modern competitive business world. Competition is very keen among the businessman in a single market to win the market place. Customers are very aware about the price of the products and their quality. To reach more close to consumers it is very necessary to give more importance on what are the needs of customers and what price they want to pay for such needs. Pricing play an important role in selection of products by the consumers and today's consumers are highly price sensitive. Here target costing provides proper root to cover/win the market by taking consumer opinion about the pricing and properly set the price of a product. Naturally organization follow target costing at the time of fixing the price of a product is in more advantageous position than the competitors.

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WHAT DRIVE BSE AND NSE?

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ABSTRACT

In the economic environment of the information age, the performance of the stock market is considered as an important indicator of the health of a nation's economy. Typically, the performance of any stock market is reflected through stock market prices. When the stock Market tumbles, investors and others become nervous about the Weakness of the economy. When the stock market is strong and steady, everyone senses economic prosperity. It can be difficult to predict the price of stocks, because those prices vary constantly based on a variety of factors. There are many sorts of factors contribute to changes in stock market. The purpose of this paper is to explore factors affecting Indian stock market BSE Sensex and NSE Nifty.

KEYWORDS

Sensex, Nifty, Factors, Closing Price.

INTRODUCTION

apital Markets in India are characterized by its vibrant equity and debt markets assuming a fast paced growth. With domestic savings and investments grow at a higher rate every year, capital markets strive to channelise more and more savings into the financial system, thereby increasing the depth of the markets. It also provides the essential attributes of marketability, liquidity and safety of investments to the investors. A well organized and regulated capital market facilitates sustainable development of the economy by providing long-term funds in exchange for financial assets to investors. New vistas have opened up for the domestic players providing them with immense opportunities to gain a foothold in capital markets. As Indian market is moving forward to integrate with the global capital markets, financial stability and resilience assume increased significance.

Stock exchanges play a vital role in the growth of capital markets, with infrastructure platforms like depositories, clearing houses stock exchanges and commodity exchanges standing as the pillars in the financial markets. It is through stock exchanges that capital markets are able to trade with efficiently, adopt adequate risk management measures, establish transparent communication channels to benefit all stakeholders. Dematerializing of shares by depositories and the initiation of online stock exchanges has helped to increase the accessibility of capital markets to the average investor. The adoption of the market-oriented economic policies and online trading facility transformed Indian equity markets from a broker-regulated market to a mass market. This boosted the sentiment of investors in and outside India and elevated the Indian equity markets to the standards of the major global equity markets.

The securities market is divided into two interdependent segments:

- The primary market provides platform for issuance of new securities by governments, companies or public institutions. In the case of new stock issue, the sale is known as Initial Public Offering (IPO).
- The secondary market is the financial market where previously issued securities and financial instruments such as stocks, bonds, options, and futures are traded.

BOMBAY STOCK EXCHANGE (BSE)

There are 23 stock exchanges in India. The first happened to be the Bombay Stock Exchange (BSE), which began formal trading in 1875 Mumbai Stock Exchange popularly known as the BSE is Asia's oldest stock exchange. The Exchange is located at Dalal Street in Mumbai. Originally it was called 'The Native Share & Stock Brokers Association'. In 1956, the BSE happen the first stock exchange to be recognized by the Indian Government under the Securities Contracts Regulation Act (SCRA). The Bombay Stock Exchange developed the BSE SENSEX in 1986. In 2000 the BSE used this index to open its derivatives market, trading SENSEX futures contracts. The development of SENSEX options with equity derivatives followed in 2001 and 2002, expanding the BSE's trading platform. The Bombay Stock Exchange switched to an electronic trading system in 1995. This automated, screen-based trading platform called BSE On-line trading (BOLT) currently has a capacity of 8 million orders per day. The BSE has also brought the world's first centralized exchange-based internet trading system, BSEWEBx.co.in to enable investors anywhere in the world to trade on the BSE platform. The equity stock market capitalization of the companies listed on the BSE was US$1 trillion as of December 2011, making BSE 6th largest stock exchange in Asia and 14th largest in the world. The BSE has the large number of listed companies in the world. As of March 2012, there were over 5,133 listed companies of India and over 8,196 scrips on the stock exchange. The Bombay Stock Exchange has a significant trading volume. The BSE SENSEX, also called "BSE 30" is a widely used market index in India and Asia.

NATIONAL STOCK EXCHANGE (NSE)

The National Stock Exchange of India was set up by Government of India on the recommendation of Pherwani Committee in 1991. In April 1993, it was recognized as a stock exchange under the Securities Contracts (Regulation) Act, 1956. NSE commenced operations in the Wholesale Debt Market (WDM) segment in June 1994. The Capital market (Equities) segment of the NSE commenced operations in November 1994, while operations in the Derivatives segment commenced in June 2000. It is the 16th largest stock exchange in the world by market capitalization and largest in India by daily turnover and number of trades, for both equities and derivative trading. NSE has a market capitalization of around US$985 billion and over 1,646 listings as of December 2011. Though a number of other exchanges exist, NSE and the Bombay Stock Exchange are the two most significant stock exchanges in India. The NSE's key index is the S&P CNX Nifty, known as the NSE **NIFTY** (National Stock Exchange Fifty), an index of fifty major stocks weighted by market capitalization.

LITERATURE REVIEW

A large number of empirical studies have been conducted about the determinants of stock prices that is factors affecting stock market. In this section, some of these studies will be reviewed. However, most of these studies dealt with stock markets of developed countries like USA, UAE, Japan, whereas there have been few such studies carried out about the Indian Stock Market.

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Factors affecting stock markets have been studied from different points of view. Several researchers examined the relationships between stock prices and selected factors which could be either internal or external. The results show a variety of findings depending on the scope of the study. Some of those factors could be common for all stock markets. However, it is difficult to generalize the results due to the various conditions that surround each stock market environment. Each market has, for example, its own rules and regulations, country of location, type of investors, and other factors that provides the basis of its uniqueness.

Some studies concluded that company fundamentals such as earning and valuation multiple are major factors that affect stock prices. Other indicated that economic conditions, inflation, investor behavior, the behavior of the market and liquidity, are the most influencing factors of stock prices. In addition, the effect of interrelated factors has been covered in some other studies. The following of this section deal with different types of studies

Mukherjee and Naka (1995) investigate the relation between Tokyo stock prices and six macroeconomic variables using a vector error correction model with 240 monthly observations for the period of January 1971 to December 1990. The results of this study show that the relationship between Tokyo stock prices, the exchange rate, money supply, and industrial production is positive, whereas the relationship between Tokyo stock prices and inflation and interest rates is mixed.

Zhao (1999) studied the relationships among inflation, output (industrial production) and stock prices in the Chinese economy employing monthly values covering the period from January 1993 to March 1998. The results saw a significant and negative relation between stock prices and inflation. The findings also showed that output growth negatively and significantly affect stock prices.

Maysami and Koh (2000) studied the relationships between the Singapore stock index and selected macroeconomic variables from 1988 to 1995 and they found that there existed a positive relationship between stock returns and changes in money supply but negative relationships between stock returns with changes in price levels, short- and long-term interest rates and exchange rates.

Naka (2001) tested long-term equilibrium relationship among selected macroeconomic variables and the Bombay Stock Exchange index. The results of the study indicate that domestic inflation is the most severe deterrent to Indian stock market performance, and domestic output growth as its predominant driving force.

The empirical study taken up by **Ralph and Eriki (2001)** on the Nigerian Stock Market investigating the relation between stock prices and inflation provides a strong support for the proposition that inflation exerts a significant negative influence on the behavior of the stock prices. The study analyze that stock prices are also strongly driven by GDP, interest rate, money stock, and financial deregulation. On the other hand, the findings of the study explained that oil price volatility has no significant effect on stock prices.

Al-Qenae (2002) made an important contribution by investigating the effect of earning and other macroeconomic variables on the stock prices of Kuwait Stock Exchange during the period 1981-1997. The macroeconomic variables studied are gross national product, interest rate, and inflation. The result found a significant and higher sensitivity of the estimated earning response coefficient with the leading period returns. Besides, both inflation and interest rate have negative and statistically significant coefficients in almost all cases on stock prices while GNP has positive effect but it is only significant in a certain (high) return measure interval.

Dimitrios Tsoukalas (2003) tested the relationships between stock prices and macroeconomic factors in the emerging Cypriot equity market. In this study, the author has used the vector autoregressive model. The macroeconomic factors examined from the period 1975 to 1998, are exchange rate, industrial production, money supply, and consumer prices. The result of the study was a strong relationship between stock prices and those macroeconomic factors.

Ibrahim (2003) applied cointegration and VAR modeling to study the long term relationship and dynamic interactions between Malaysian Equity Market, various economic variables, and major equity markets in the United States and Japan. The study yielded two main results: first, the Malaysian stock price index is positively related to money supply, consumer price index, and industrial production. Second, it is negatively linked to the movement of exchange rates.

Chaudhuri and Smiles (2004) investigated the long run relationship between stock prices and changes in real macroeconomic activity in the Australian stock market for the period from 1960 to 1998. The real macroeconomic activities include real GDP, real private consumption, real money, and real oil price. The results of their study show that long run relationships between stock prices and real macroeconomic activity. The study also found that foreign stock markets such as the American and New Zealand market significantly affect the Australian stock return movement.

Mishra (2004) by using monthly data for the period 1992 to 2002, examined the relationship between stock market and foreign exchange markets using Granger causality test and Vector Auto Regression technique study suggested that there is no Granger causality between the exchange rate return and stock return.

Basher and Sadorsky's (2006) investigated the impact of oil price changes on the stock market returns of 21 emerging economies found strong evidence of the effect of oil prices being positive and statistically significant at the 10% level to stock market returns for most of the countries studied.

Bhattacharya and Mukherjee (2006) studied the relationship between the Indian stock market and seven macroeconomic variables by employing the VAR framework and Toda and Yamamoto non-Granger causality technique for the sample period of April 1992 to March 2001. Their results showed that there was no causal linkage between stock returns and money supply, index of industrial production, GNP, real effective exchange rate, foreign exchange reserve and trade balance

Pal and Mittal (2011) investigated the relationship between the Indian stock markets and macroeconomic variables using quarterly data for the period January 1995 to December 2008 with the Johansen's co-integration framework. Their analysis revealed that there was a long-run relationship exists between the stock market index and set of macroeconomic variables. The results also showed that inflation and exchange rate have a significant impact on BSE Sensex but interest rate and gross domestic saving (GDS) were insignificant.

In the light of review of the literature it can be concluded many authors have tried to show reliable associations between macroeconomic variables and stock returns. They identified several key macroeconomic variables which influenced stock market returns based different model. Most of this study happened in foreign stock market. This paper study factors affecting Indian stock market BSE and NSE.

NEED FOR THE STUDY

As a person develop experience as an equity investor, it becomes increasingly important to keep host of factors in mind since knowing the effects of these factors can make a difference between whether person as equity investor succeed or fail. It is with this in mind that this paper is meant to identify some of the top factors that are responsible for changes in stock market prices

STATEMENT OF THE PROBLEM

Fear in 2008, loved and feared in 2009, loved in 2010, feared in 2011, again loved and little feared in 2012… As the year draws to a close, the question every investor is asking is-will India's stock markets smile in coming year or otherwise. What are the major factors that affect share prices in the stock market? These are the most frequently asked questions by stock market participants. There are many things that equity investor need to consider when they go for investing their hard earned money in the stock market. They should never be in a haste to invest their money in the stock market. The purpose of this paper is to explore factors affecting Indian stock market that is BSE Sensex and NSE Nifty

OBJECTIVES

This paper aims at the following objectives
1)   To explore the various factors affecting the Indian Stock Market (BSE Sensex and NSE Nifty)
2)   To Identify these factors having significant impact on BSE Sensex and NSE Nifty

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DATA COLLECTION – TOOL

A Research is purely and simply the framework of plan for a study that guides the collection and analysis of data. As the study is intended to find and understand the factors affecting Indian stock market, the research is empirical in nature and makes use of secondary source.

FACTORS

Stock market is something where you can never foretell what is going to happen in the market. You might get huge profit or incur losses when the stock market crashes. There are many **factors affecting share prices**. It is very difficult to say just which one or two factors affect the share prices. This paper studied the factors that affect Indian stock market BSE Sensex and NSE Nifty and share prices.

The major factors driving the Indian stock market can be broadly categorized into two (1) Market specific and (2) Stock specific. The market specific factor is influenced by the investor's sentiment towards the stock market as a whole. Theses factors depend on the market rather than the performance of any particular company. Events favourable to an economy, political or regulatory environment like high economic growth, friendly budget, stable government etc. can fuel euphoria in the investors, resulting in a boom in the market. On the other hand, unfavourable events like global crisis, inflation rise etc. depress the market irrespective of certain companies performing well. The stock-specific factor is related to people's expectations about the company, its future earnings numbers, financial health and management, marketing skills and technology. This study proceed to briefly describe and illustrate the relationship between these factors and its effect on Indian stock market that BSE Sensex and NSE Nifty

FISCAL AND TRADE DEFICIT

Fiscal deficit means when a government's total expenditures exceed the revenue that it generates (excluding money from borrowings). Trade deficit means an economic measure of a negative balance of trade in which a country's imports exceeds its exports. A trade deficit represents an outflow of domestic currency to foreign markets.

Marco-economic worries arising from the country's high fiscal and trade deficit weighed on sentiment as the Indian market lost. The BSE Sensex lost 356.26 points or 2.07% in that week ended Friday, 4 May 2012, to settle at 16,831.08, from its close of 17,187.34 on Saturday, 28 April 2012. It was the Sensex's lowest closing level since 23 January 2012. The 50-unit S&P CNX lost 122.15 points or 2.34% during the week to settle at 5,086.85, its lowest closing level since 23 January 2012. The market fell in three out of four trading sessions during the week ended Friday, 4 May 2012.

GROSS DOMESTIC PRODUCT (GDP)

Higher economic growth or better prospects for growth will help firms be more profitable because there will be more demand for goods and services. This will help boost company dividends and therefore share prices. India is transitioning into an open market economy. Reduced controls on foreign trade and investments began in the early 1990s and have served to accelerate the country's growth which has averaged more than 7% since 1997. An industrial slow down nearly in 2008 followed by the global financial crisis led annual GDP growth to slow to 6.1% in 2009, still second highest growth in the world among major economies. Thus growth rate is matter of stock market.

This is important factor as the BSE Sensex and NSE Nifty fell over 1.5% a piece after Q4 GDP slumped to an unprecedented 5.3 percent. At one point, the Sensex was down over 200 points at 16,086 points after official data showed that the gross domestic product (GDP) had slumped to 5.3 percent in the January-March quarter of 2012, the slowest in nine years, due to poor performance of manufacturing and farm sectors. The 30-scrip sensitive index (Sensex) of the Bombay Stock Exchange (BSE), which opened at 16,224.86 points, closed at 16,218.53 points down by 0.57 percent or 93.62 points from its previous close of 16,312.15 points on May 31, 2012. The wider 50-scrip S&P CNX Nifty of the National Stock Exchange closed 0.54 percent lower at 4,924.25 points. The automobile index was down 1.96 percent followed by banking index, down 0.87 percent, and consumer durable index, down 0.81 percent.

IIP NUMBER

IIP stands for Index for Industrial Production. IIP number or IIP data is the measurement which represents the status of production in industrial sector for a given period of time compared to a reference or earlier period of time. IIP index is one of the key tools to measure the level of industrial activity in Indian economy. Strictly speaking IIP is short term indicator measuring industrial growth till the actual result of detailed industrial survey become available from the annual survey of industries (ASI) is published. Stock market in India also reacts very seriously to this number. India's core industries that include crude oil, petroleum refinery products, natural gas, fertilizers, coal, electricity, cement and finished steel. The eight core industries that have a combined weight of 37.90 percent in the Index of Industrial Production (IIP)**.** IIP data provides information about the growth of different sectors of our economy like mining, electricity, Manufacturing & General. The IIP index reflects the growth in India's industrial activity and excludes all kinds of services. The weightage of Indian IIP data is broadly divided into three segments – manufacturing (79.36%), mining & quarrying (10.47%) and electricity (10.17%). Good IIP number tend to lead rally in the market and Poor IIP number tend to move the stock market in bearish mood

This factor can be explained as Indian markets witnessed a fall after the government released poor IIP numbers. The fall was registered because of slow performance of the sectors like manufacturing, mining and capital goods. India's manufacturing sector which contributes 76% of the total industrial production grew by only 1.8% for December 2011, lower than the 5.7% expansion in November 2011. The 30 benchmark Index turned into green and traded positive till the outcome of IIP data. The index hit the intraday high of 17890 in the mid-morning session. As soon as the IIP data was released, the index began to trim gains and then turned negative and 30-share BSE Sensex was ending at 17749.41 down by 81.34 points or 0.46% on 10 February 2012 and NSE Nifty ended at 5,382 down by 30 points or 0.57% on 10 February 2012. Among the 13 sectoral indices, only one managed to remain in green was BSE Metal up by 0.58%. Top losers were BSE Realty down by 0.93%, BSE Oil & Gas down by 0.80% and BSE HC down by 0.71%

Conversely IIP for the month of April stood at 0.1% against -3.5% in the previous month. The manufacturing sector posted growth of only 0.1%, while the mining sector remained at negative zone at (-3.1%). The electricity sector posted higher growth of 4.6%. Capital goods sector drastically plunged to -16.3% and intermediate goods also posted negative growth (-1.4%). Consumer goods sector grew at 5.2%, due to higher growth of consumer durables at 5% and consumer non-durables at 5.4%. The disappointing IIP numbers for April has once again fueled hopes of a repo rate cut by the RBI at its policy meeting on June 18, 2012. There was also speculation that the central bank may even slash the CRR to ease the liquidity crunch. Reacting to this IIP number on 12 June 2012 the Sensex closed at 16,850.98, up 182.97 points or 1.1 percent. It touched an intraday high of 16,897.42 and a low of 16,553.47. The Nifty Index ended at 5,111.75, up 61.80 points or 1.22 percent. It touched an intraday high of 5,128.90 and a low of 5,015.15. In the hope of a rate cut, the Bankex index rose the most, up 1.4%. It was followed by Consumer Durables, Metals, Realty, PSU, Capital Goods and Auto. The BSE Banking Index closed 1.8 percent higher, the BSE Realty Index rose 2.09 percent and the BSE Capital Goods Index closed 1.79 percent higher.

INFLATION

Inflation happens to be a determinant in the functioning of any economy. An unanticipated rapid rise in inflation would probably cause a fall in stock markets. A rise in inflation would probably lead to a greater chance of interest rises. This will reduce growth and profitability. Also higher inflation may encourage investors to move into more inflation proof investments like Gold.

This point can be proved when the March inflation was revised upwards from 6.89% provisional to 7.69% as food inflation rose to 10.74% from 10.49% and fuel group to 11.53% versus 11.03% during the same period. The market reacted negatively to the news and slipped downwards on 14 June 2012 with Market had hopes of a rate cut from the RBI but looking at the inflation numbers, this was difficult. While Inflation number had reduced the chance of a rate cut. Banks stocks caught in bear grip after hopes of rate cut dampened due to rise in WPI and core inflation and Sensex closed at 16677.88 with a fall of 202.63 points or

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1.20 per cent, led by realty stocks which dipped by 2.91 per cent, followed by banks (2.82 per cent), capital goods (2.79 per cent), power (2.16 per cent) and automobile (1.99 per cent). On the National Stock Exchange (NSE) the 50-share Nifty lost 66.70 points or 1.30 per cent to close at 5054.75.

MONETARY POLICY/ CREDIT POLICY

The term monetary policy is also known as the 'credit policy' or called 'RBI's money management policy' in India. How much should be the supply of money in the economy? How much should be the ratio of interest? How much should be the viability of money? Instruments of monetary policy are CRR, Repo rate, Reverse Repo rate. Cash reserve Ratio (CRR) is the amount of funds that the banks have to keep with the RBI. If the central bank decides to increase the CRR, the available amount with the banks comes down. The RBI uses the CRR to drain out excessive money from the system. Reverse Repo rate is the rate at which the RBI borrows money from commercial banks. Banks are always happy to lend money to the RBI since their money are in safe hands with a good interest. An increase in reverse repo rate can prompt banks to park more funds with the RBI to earn higher returns on idle cash. It is also a tool which can be used by the RBI to drain excess money out of the banking system. Repo rate The rate at which the RBI lends money to commercial banks is called repo rate. It is an instrument of monetary policy. Whenever banks have any shortage of funds they can borrow from the RBI. A reduction in the repo rate helps banks get money at a cheaper rate and vice versa. The repo rate in India is similar to the discount rate in the US.

Effect of monetary policy can be seen as on June 18, 2012 the RBI's decision to keep the repo rate as well as the CRR unchanged dealt a huge blow to markets which rallied earlier in the day on hopes of a rate cut. Sentiment turned bearish following the central bank's decision with the benchmark indices beginning a freefall dragged down by rate-sensitive stocks such as banking and realty. Keeping the repo rate (8%) and CRR (4.75%) unchanged; RBI surprised the street negatively which was expecting at least 25bps reduction in both. Following this news the Nifty closed at 5069.40, down 69.65 points or 1.36 percent and the Sensex ended at 16,713.93, down 235.90 points or 1.39 percent in trade on June 18, 2012 led by the BSE Bankex fell 3.16 percent, the BSE Realty Index was 2.80 percent lower and the BSE FMCG Index declined 1.68 percent..

On the flip side on 17 April, 2012 the Sensex ended up 1.2 per cent at 17,357.94 points, its highest close since April 4. The Nifty rose 1.22 per cent at 5,289.70 points after the Reserve Bank of India (RBI) surprised with a bigger-than-expected 50 basis points cut in its policy rate as the repo and reverse repo rates declined to 8% and 7% from earlier 8.5% and 7.5% respectively to ease the liquidity condition in the money markets and Expectation that this rate cut to help banks improve net interest margins and help reduce their bad loan possibilities. Shares in State Bank of India ended 1.73 percent up at 2,304.30 rupees. Private lender ICICI Bank was 1.36 per cent higher at 885.45 rupees.

EXCHANGE RATE

Exchange rate (also known as the foreign-exchange rate, forex rate or FX rate) between two currencies is the rate at which one currency will be exchanged for another. It is also regarded as the value of one country's currency in terms of another currency. The performance of exchange rate markets also plays a role in the determination of the stock market direction. When the Indian rupee increase against the US dollar it lower the country's import prices but it also hit the exporters hard thus driving down their equity. A sharp depreciation of the rupee may be good for India's exports that were adversely affected by the slowdown in global markets; it is not so good for those who have accumulated foreign exchange payment commitments. Moreover, a depreciating rupee doesn't help the Government to rein in inflation.

As the rupee hit a record low at 57.30 to dollar, well below the psychological key level of 57 on global risk aversion, the Sensex fell 1.2 percent, while Nifty fell 1.3 percent. The Sensex was trading down 189.34 points or 1.11% at 16,843.22 with 24 components falling. Meanwhile, the Nifty was trading lower by 48.70 points or 0.94% at 5,116.30 with 46 components falling. The 30-share benchmark index, BSE Sensex opened with a decline of 149.82 points or 0.88% at 16,882.74, while the broad based NSE Nifty started with a fall of 63.25 points or 1.22%, at 5,101.75.

On the other side the assurance from the Government came that it announce policy measures to restore investor confidence in the Indian economy and check the freefall in the Rupee. As News came that the RBI may unveil fresh measures to strengthen the Rupee. At 12:47pm (IST) on Monday 25 June 2012, the BSE Sensex was at 17077, up 105 points over previous close and NSE Nifty was quoting at 5,194, up 32 points over the previous close and the rupee rose nearly 1 per cent against the dollar at 56.59.

BUDGET

A budget is a financial plan and a list of all planned expenses and revenues. It is a plan for saving, borrowing and spending. The annual Budget of India, which is presented by the finance minister in Parliament, is referred to as the annual Financial Statement in Article 112 of the Constitution. It lays down the proposals for estimated income and expenditure of the Union government for the coming financial year, and has to be passed by the Parliament before it can come into effect on April 1.

After the government unveiled a budget for the 2012-13 fiscal year on March 16,2012 that was seen as too modest for a corporate sector looking for more concessions. Investors saw not a reform based Budget due to current political conditions. Experts said, there was no announcement of fuel subsidy, fertilizer subsidy, even no FDI and food subsidy. The BSE benchmark fell 209.65 points to end at 17,466.20, weighed down by 21 components. Meanwhile, the NSE benchmark fell 62.60 points or 1.16%, to close at 5,317.90 on March 16, 2012. The market was hugely disappointed as the Budget note was muted on most of the key factors like reforms and FDI.

Cigarette major ITC rose 3.65% after excise duty hiked by 10-15% in the budge, which was as per expected by the industry. State-owned and country's largest lender SBI fell over 3% as sector analysts feel the recapitalization amount proposed by the government is not enough. Government proposed Rs 15,888 crore for recapitalization of public sector banks in FY13. PNB and Bank of Baroda tanked 3-3.7%. Private sector lender ICICI Bank was down 1.4% while rival HDFC Bank fell 0.6%. State-owned ONGC and Oil India were down 4-4.7% after cess on crude oil increased to Rs 4,500 per mn tonne from Rs 2,500. Private sector companies Cairn India was down 6% and Reliance Industries slipped 3%. The government has now implemented Alternative Minimum Tax (AMT) for partnership firms as well. This would impact stocks like Cadila (down 5.3%) and Sun Pharma (down 7%) as they would have to pay 18.5% MAT on book profits earned for the fiscal year. This would increase their tax outgo. State-run BHEL tumbled 3.5% as industry analysts were expecting import duty on power equipment, which did not happen. Engineering and construction major L&T dropped over 3%. Aviation stocks too were under pressure as there no announcement on FDI. Jet Airways was down 3% and SpiceJet lost 6.6% while Kingfisher was down 0.7%. Pantaloon Retail slipped 3% as there was no clarity on FDI in multi brand retail. Educomp Solutions and Edserv Softsystems tanked 4-6%.

GLOBAL CUES

In this world of globalization various economies are interdependent and interconnected. An event in one part of the world is bound to affect other parts of the world; however the magnitude and intensity of effect would vary. Thus stock market in India is also affected by developments in other parts of the world i.e. U.S., China, Japan, Europe, Hong Kong etc.

On Jan 21, 2008 when the Market had opened, the Sensex crashed by more than 1744 points and Nifty losses 497 points. Actually on that day Sensex had crashed by almost 2000 points intra day. During the later half of trade, it managed to regain some pride. But in the end Sensex lost 1744 points and Nifty by 497 points and Sensex closed the day at 17605 and Nifty at 5208. This was the greatest or largest one day crash of the Indian stock market for the last 20 years. Reasons for this crashes of Indian stock market on Jan 21, 2008 was high volatility as investors panicked following weak global cues amid fears of the US & global recession.

Second example of the global cues is on September 15, 2008 Indian equity markets opened in red on Monday morning on the back of news that Lehman Bros of the US had decided to file for bankruptcy as the 30-share benchmark sensitive index of the Bombay Stock Exchange, the Sensex, was down by 582 points or 4.16 percent from its previous close one hour into trading. The Sensex was at 13,418.10 points at 14:45 hrs. The National Stock Exchange index Nifty in the early trade

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dipped to a two-month low of 3993.85 points at 12.10 hrs due to heavy selling by funds in financial and realty sector stocks after the collapse of US investment bank Lehman Brothers. The NSE-50 dropped by -5.81 percent to 3985.20 after a terror strike in the national capital over the weekend also contributed to the downslide. Brokers said the collapse of Lehman Brothers and worries of a severe economic recession in the United States shook financial markets globally. Among the prominent losers were ICICI Bank, HDFC Bank, State Bank of India, BHEL, RIL, Bharti Airtel, DLF, HDFC, Infosys Technologies, ONGC, Unitech, Satyam, Sterlite and Reliance Infra.

Positive global cues and a turnaround in domestic sentiments drove equities to a two-month high Friday on June 29, 2012. The 30-share BSE Sensex jumped 439 points or 2.6% to end at 17,430, a level seen for the first time since May 2, 2012. The 50-share Nifty index advanced 130 points to close at 5,279 on June 29, 2012.

POLITICAL STABILITY AND GOVERNMENT POLICIES

For any economy to achieve and sustain growth it has to have political stability and pro- growth government policies. This is because when there is political stability there is stability and consistency in government's attitude which is communicated through various government policies. The vice- versa is the case when there is no political stability .So stock market also reacts to the nature of government, attitude of government, and various policies of the government.

The above statement can be substantiated by the fact the Indian Stock Markets celebrated the winning of Congress led UPA in the 2009 Parliamentary election, by breaking all past records and forcing the regulator to halt the trading for the day. It is being considered that the main reason for such a bounce was the expectations of stable economy after the UPA is coming in the center. The expectations were so high that it created a world-wide record and made BSE SENSEX as the index with highest one-day percentage gainer across the world. Many didn't agree, but this was the time when all analysis whether fundamental or technical failed. While Fundamental analysis include analyzing annual reports, growth patterns etc., Technical analysis is all about looking at various graphs and understanding the trend of the market. This was the time when the expectations and speculations of the people drive the market, which cannot be estimated by the any such analysis.

The clear win for the UPA government (lead by 262 seats) in the 15th Lok Sabha election brought great cheers for the markets in early trade on May 18, 2009. At the beginning of trade, 9:55 am, the markets were locked at 15% upper circuit and exchanges halted the trade for two hours. Trading on both the BSE and the NSE was halted for the day as markets hit a 20% upper circuit, after re-opening for trade. Sensex closed 2,110.79 points or 17.3% higher at 14,284.21. Nifty surged 651.50 points or 17.7%, to settle at 4,323.15. BSE Midcap was up 11.8%. Smallcap rose 9.1 to 4,666.74. BSE 500 was up 15.7%. Advancers: 833; Decliners 11; Unchanged 2. BHEL +32.7% and L&T +29.5%. DLF, ICICI Bank, HDFC, Reliance Communication, Bharti Airtel, Reliance Infrastructure, SBI, Jaiprakash Associates and Reliance Industries went up 20.6-to-25.9%. Sterlite, HDFC Bank, Tata Steel, Tata Motors, Grasim, Wipro, Hindalco, Tata Power, ONGC, TCS, M&M, NTPC, ACC and Ranbaxy Labs gained 11-to-16.5%. Infosys, Maruti Suzuki, Sun Pharma, ITC and HUL surged 6.3-to-9.8%.

FOREIGN INSTITUTIONAL INVESTORS

FII stands for foreign institutional investor. It refers to a company or an institution established outside India who makes an investment in the financial markets of India in the form of securities. FII is allowed to enter into India only through stock exchanges either in the form of equity or debt. Thus it makes an impact on the rise or fall of Sensex, since FII is allowed to be purchased or sold daily. The daily transaction of FII is the reason behind the volatility in the stock markets and has strong impact on the various macro-economic variables and the economy as a whole. Foreign Institutional Investors (FIIs), Non-Resident Indians (NRIs), and Persons of Indian Origin (PIOs) are allowed to invest in the primary and secondary capital markets in India through the portfolio investment scheme (PIS). Under this scheme, FIIs/NRIs can acquire shares/debentures of Indian companies through the stock exchanges in India.

Under this scheme, FIIs can acquire shares/debentures of Indian companies through the stock exchanges in India. The ceiling for overall investment for FIIs is 24 percent of the paid up capital of the Indian company. The limit is 20 per cent of the paid up capital in the case of public sector banks, including the State Bank of India. The ceiling of 24 per cent for FII investment can be raised up to sectoral cap/statutory ceiling, subject to the approval of the board and the general body of the company passing a special resolution to that effect. And the ceiling of 10 per cent for NRIs/PIOs can be raised to 24 per cent subject to the approval of the general body of the company passing a resolution to that effect. The ceiling for FIIs is independent of the ceiling of 10/24 per cent for NRIs/PIOs.

On May 18, 2006 the Sensex registered a fall of 826 points (6.76 percent) to close at 11,391, it"s biggest ever, following heavy selling by FIIs, retail investors and a weakness in global markets

On Oct 24, 2008: Sensex opened with a negative gap of 237 points at 9,535 and closed with the lower limit of 10.96% at 8,702. Since the 10% ciruit break is hit after 2:30pm sensex was not closed down. (As per the rule - Circuit Breaker System)Nitfy touched the low of 13.90% at 2,584. Given reason by FM were RBI"s Credit Policy announcement, FII Outflow's, FIIs to reverse short positions.

As foreign institutional investors continued to pump in dollars in the Indian markets as per the provisional data, FIIs bought equities worth Rs 184.31 crore on Thursday. They have made purchases worth Rs 11611.84 crore so far this month surpassing the investments of Rs 10357.70 crore in January 2012. The National Stock Exchange's Nifty hit 7-month high as foreign institutional investors continued with their buying. At 12:45 pm; the Nifty was at 5590.30, up 68.35 points or 1.24 per cent. The broader index touched a high of 5606.70 and low of 5567.20 in trade so far.The Bombay Stock Exchange's Sensex was at 18383.82, up 229.83 points or 1.27 per cent. It touched intraday high of 18423.06 and low of 18302.97.

FOREIGN DIRECT INVESTMENT

Foreign direct investment (FDI) is investment directly into production in a country by a company located in another country, either by buying a company in the target country or by expanding operations of an existing business in that country. Foreign direct investment is done for many reasons including to take advantage of cheaper wages in the country, special investment privileges such as tax exemptions offered by the country as an incentive to gain tariff-free access to the markets of the country or the region. Foreign direct investment is in contrast to portfolio investment which is a passive investment in the securities of another country such as stocks and bonds. Foreign direct investment (FDI) is the movement of capital across national frontiers in a manner that grants the investor control over the acquired asset.

Foreign direct investment (FDI) in India has played an important role in the development of the Indian economy. India has continually sought to attract FDI from the world's major investors. In 1998 and 1999, the Indian national government announced a number of reforms designed to encourage and promote a favorable business environment for investors.

This factor can be stated as on April12, 2012 Aviation stocks were traded with strong gains on hopes that the government would allow foreign airlines to invest up to 49% in Indian carriers. Debt laden Kingfisher Airlines (4%) was the biggest gainer followed by SpiceJet (2.2%) and Jet (1.7%). Sensex remained shut at 17,333 by gaining 0.78 % from the previous close of 17,199 and Nifty closed at 5277 gaining of 0.96% from the previous day closing of 5227

SHOCK

Shocking news can drive the stock market in any direction depending upon whether news are in favour of stock market. Shocking news can lead stock market drastically upward or downward. Some of the shocking news news are like

On April 28, 1992 the Sensex registered a fall of 570 points (12.77 percent) to close at 3,870, it was second-largest, following the coming to light of the Harshad Mehta securities scam.

On January 7, 2009 the market barometer dropped by 749.05 points when the Satyam fraud came to light. The Bombay Stock Exchange benchmark Sensex on Wednesday Jan 7, 2012 suffered the most by losing 749 points on panic selling by funds after Satyam Computer said profit had been inflated for years, raising concerns of dim third-quarter earnings by blue-chip companies. The Sensex, which had gained over 688 points in the last four sessions of 2009, tumbled below the crucial 10,000 point level, losing 749.05 points to reach 9,586.88. It touched the day's low of 9,510.15 and a high of 10,469.72 points, showing a wide

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fluctuation of nearly 960 points. The 50-share National Stock Exchange index Nifty tumbled by 192.40 points at 2,920.40, after hitting the day's low of 2,888.20 points during the day. Satyam Computer crashed by Rs 139.15 or 77.69 per cent to close at Rs 39.95, after the Chairman announced the company had falsified accounts and assets for several years

CRUDE OIL PRICE

Changes in the price of crude oil are often considered an important factor for understanding fluctuations in stock prices. When Crude oil prices rise suddenly, there is more pressure on the government to raise domestic petrol/diesel prices. If the government does that, stock prices of oil majors like IOC, BPCL, HPCL and other related oil and gas companies like Reliance petrol, Essar oil stocks go up. However, such a step increases inflation & more importantly food inflation which has further implications on the economy.

The 30-share Sensex lost 478 points or 2.67 per cent to close the day at 17,445 thereby taking its aggregate fall over the last four days at 982 points or 5.3 per cent. The broader Nifty at National Stock Exchange fell by 148 points or 2.7 per cent to close at 5,281 on February 28, 2012. It was biggest intra-day fall in five months as macroeconomic concerns related to rising crude oil prices as in the month of February of 2012 Brent crude price has gone up by almost 14 per cent from $110 per barrel to over $125 per barrel thereby putting pressure on the Indian stock market since oil accounts for a large part of the Indian import.

The 30-scrip sensitive index (Sensex) of the Bombay Stock Exchange (BSE) closed Friday June 25, 2012 at 18,240.68 points, up 2.07 percent or 370.15 points, compared to its previous weekly close of 17,870.53 points. At the National Stock Exchange, the 50-scrip S&P CNX Nifty too closed in the green at 5,516.75 points, up 1.95 percent or 104.85 points compared to the previous Friday close of 5,476.1 points. The rally was mainly in response to the fall in crude prices by almost 4 percent as Crude oil price fell from USD 94.7 a barrel to USD 89.69 a barrel.

MONSOONS

In India, agriculture provides around 70% of employment either directly or indirectly. This is the major reason for the economic growth of India to depend on Monsoon season. Monsoon season in India starts from June and continue till September. If the monsoon is good, it boosts up the economy of the country and helps in maintaining GDP growth. But if monsoon rains get delayed even by 15 days as was the case last year in 2009, it becomes a cause of worry for the government. Good rainfall means government can ease restrictions on the export of wheat and rice, and good rainfall will boost output of grain and oil seeds, and help calm inflation. Less rainfall implies prices of agricultural products will go up and affect the consumers drastically. It might lead to a condition of drought in several states of India which forces the government to drop import tax on a number of commodities, including sugar. It also causes shortage of water supply for production of power and electricity. Electricity shortage has a strong effect on almost all sectors, which also causes delay in productions or increase in costing of products. Less rain affects the purchasing power in the rural areas and contract demand for products and services. This is not good news for FMCG companies which depend on agricultural and rural market.

Bombay Stock Exchange benchmark Sensex opened 192 points up Wednesday, extending its gains from Tuesday on continued buying by funds, supported by a normal monsoon forecast. The 30-share index rose by 192.14 points or 1 percent to 19,313.97 points in opening trade. It had gained 30.66 points in yesterday's volatile session. Similarly, broad-based National Stock Exchange index Nifty rose by 60.05 points, or 1.05 percent, to 5,800.80 levels on 20 April, 2012. Brokers said sentiments turned better following a normal monsoon forecast for this year and firming trend on other Asian bourses following overnight gains in the US market

Remarks from Indian weather bureau IMD that the monsoon will cover the whole country in the next 24 hours also lifted sentiment. The Sensex gained 226.36 points, or 1.3%, to close at 17618.35 while the broader Nifty index gained 70 points, or 1.33%, to end at 5345.35, above a key technical resistance of 5340 on 11 July 2012

STOCK SPECIFIC NEWS

Stock Specific News are news or information or events which are directly relevant to specific stocks. If this news is in favour of stocks, then the same stock is likely to move up or unfavourable news push the stock down. Not only specific stock is affected but other companies which are in the same business and industry are going to be affected. Benchmark index also taking this news into notice and reacted accordingly. Stock specific news includes profit announcement, dividend declaration, appointment of chair person or managing director, receiving or losing large order, bonus share or stock split announcement, merger & acquisition, government announcement which is related to specific stocks prices

Amidst reports that production would be halted at the Tata Motors 's block in Jamshedpur for three days because of 'prevailing economic condition', the company's shares fell over 1 per cent in early trade on Thursday June 28, 2012 as Tata motor share was down 1.46 per cent to Rs.235.10 on the BSE. At the NSE, it was down 1.65 per cent at Rs. 235.25.

As the company reported a net profit of Rs 6,741.41 crore in the third quarter ending December 2011 against Rs 7,083.23 crore in the corresponding quarter of last fiscal. Net sales declined 2.5% to Rs 18,123.84 crore against Rs 18,586.41 CR (YOY), Shares of ONGC reacted to the earnings announcement and slipped around 1.5% to Rs 282 on Feb 8, 2012

Better-than-expected results by IT Infosys (which posted an 11 per cent increase in net profit to touch Rs 1,906 crore in Q2 FY12), overshadowed disappointing IIP numbers and took the Indian benchmark indices, the Sensex and the Nifty, over 2.5 per cent up on Wednesday, Oct 12, 2012. The Sensex was up 2.55 per cent or 421.92 points and closed at 16,958.39 while the Nifty was also up 2.51 per cent or 125.05 points and closed at 5,099.40. Infosys also saw a strong opening in the stock markets. On the BSE, the Infosys stock opened up by 3.6 per cent per share (or Rs 91 per share) at Rs 2,601. On the NSE as well, the stock opened up by 3.6 per cent per share at Rs 2,595. Infosys is the second biggest stock in the Sensex 30 after Reliance Industries, with a weightage of 9.04 per cent. The Infosys scrip ended the day at Rs 2680.50 per share on the BSE. It had closed on Tuesday at Rs 2509.20. On the NSE, the scrip rose by seven per cent to end the day at Rs. 2681 per share. The previous close for the scrip was Rs 2,504.55.

On June 22, 2012 Shares of cement companies caught in bear grip after Competition Commission of India slammed with a fine of Rs 6,200 crore on 11 cement companies. JP Associates crashed 4%. Ambuja Cements and ACC were down 3% each. Among others, Grasim, India Cements, Ultratech Cement and JK Cement slipped 1.5-3%.

On January 19, 2012 these was news that the board of the company was to meet on January 2012 to consider and clear the buy-back plan, according to a company notification filed with the Bombay Stock Exchange (BSE) on Wednesday. Post-announcement, the share price of Reliance Industries moved up to Rs.786.80 intra-day before closing at Rs.776.90 on the Bombay Stock Exchange, registering a 4.94 per cent increase over the previous close.

On March 20, 2012 Mahindra Satyam was trading higher by 2% at Rs 71.95 after Anil Dhirubhai Ambani Group (ADAG) bought 13 million shares of the IT firm for total consideration of Rs 87 crore through bulk deals on Monday 19 March, 2012

On March 9, 2012 Shares of Larsen and Toubro (L&T) surged by over 5 per cent in the morning trade on the bourses, as the company appointed K Venkataraman as its CEO and MD and said that A M Naik would remain Chairman for next five years. The stock gained 5.42 per cent to a high of Rs 1,304 on the BSE this morning. At the NSE also, the stock was up 5.4 per cent to Rs 1,304.50. Shares of the group's another listed company L&T Finance Holdings also gained 1.4 per cent and was trading at Rs 47.60

June 28, 2012 Yes Bank and Axis Bank fell by 0.7% and 3% on news that HSBC Holdings PLC has sold its stakes in the two private sector banks. Tata Power rose 1.3 percent after Delhi Electricity Regulatory Commission approved a steep tariff hike in Delhi.

CONCLUSION

It can be difficult to predict the stock market price because stock prices vary constantly based on a variety of factors. Knowing these factors that affect the market value of a stock can help you better prepare a buying and selling strategy. There are no guarantees in buying and selling stocks. The better educated you

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become about the process, the better your chances of making a profit. Remember that it is very important to make a good market researcher before investing in any stock or company. For many new investors, this is likely to be one of the first questions that they ask. Often, they are unprepared for the complexity of the answer for there are numerous factors involved in price fluctuation. In fact, there are so many that it is difficult to narrow in on one specific reason for the change; it may that it is never as simple as a single factor. Rather, stock market prices are affected by combinations of factors. The success of investors depends on their knowledge and effectiveness in decision-making. Some are effective enough to make a profit from investing in the stock market, while others lose.

The findings of the study recommend that the policy makers, investors, and fund managers should closely watch any sharp movement in the highlighted market factors those are influential for Indian stock market i.e. inflation, industrial output, GDP, exchange rate etc. and stock specific news.

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A CASE APPROACH TOWARDS VERTICAL INTEGRATION: DEVELOPING BUYER-SELLER   RELATIONSHIPS

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ABSTRACT

Vertical integration is a key strategic management decision which requires research support. Existing literature is extensive but is preoccupied with measures of the extent of vertical integration rather than the fundamental effectiveness of the strategy. This paper identifies the key issues relating to vertical integration and the extent to which these are addressed by existing methodologies. The purpose of this paper is to provide examples of how vertical integration can be used to a firm's advantage. Most prior research has focused on vertical integration or strategic outsourcing in isolation to examine their effects on important performance outcomes. In contrast, we focus on the simultaneous pursuit of vertical integration and strategic outsourcing. Using a case study approach, this paper examines four separate business entities that currently use vertical integration as part of their business strategy.
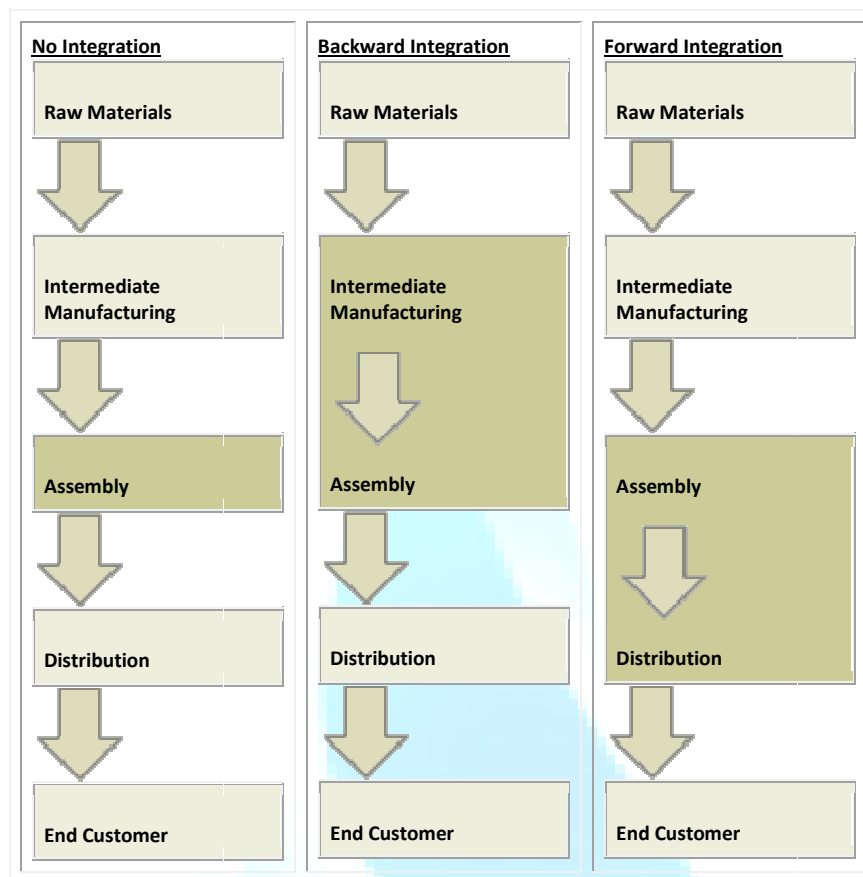
KEYWORDS
Vertical integration, strategic management, buyer-seller relationships, Outsourcing.

INTRODUCTION

Integration is a common term in the enterprise systems literature. Seldom does a meeting occur when the word is not used multiple times and often within quite technical contexts. Unfortunately, our experience is that individuals often have a different understanding of the meaning of the word. Freely speaking, there is a general consensus that integration concerns making applications work together that were never intended to work together by passing information through some form of interface. This is certainly part of the context, but this paper argues that there is more to be said. Since the earliest days of computing, the term "integration" has been used in both the trade and academic literature to describe a process, a condition, a system, and an end-state. Given that these competing labels have very different meanings, their indiscriminate usage is often obscure and invites confusion.

Vertical integration is a process by which an organization owns its upstream supplier or its downstream buyer. When organization goes with vertical integration strategy for expansion in the market, it may impact on industry with respect to cost, differentiation, long term profits, and sustainable competitive advantage. Vertical integration refers to a firm's ownership of vertically related activities. The greater the firm's ownership and control over successive stages of the value chain for its product, the greater its degree of vertical integration. The extent of vertical integration is indicated by the ratio of a firm's value added to its sales revenue. In short term, may be this expansion lead to increase the organization cost, but in long term it will definitely help the organization to earn better profits. Because we assume that the business will work on long term entity principle. According to this concept, the upstream activities is known as backward vertical integration and downstream activities is known as vertical forward integration. It could be better seen with the help of following diagram:-

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No Integration	Backward Integration	Forward Integration
Raw Materials	Raw Materials	Raw Materials
↓	↓	↓
Intermediate Manufacturing	Intermediate Manufacturing	Intermediate Manufacturing
↓	↓	↓
Assembly	Assembly	Assembly
↓	↓	↓
Distribution	Distribution	Distribution
↓	↓	↓
End Customer	End Customer	End Customer

(**Source:** Greaver, Maurice F., Strategic Outsourcing: A Structured Approach to Outsourcing Decisions and Initiatives)

THEORITICAL BACKGROUND

A number of papers have examined the competitive effects of co-operation with either suppliers or buyers, but simultaneous research into both types of co-operation is less frequent. Although many papers recommend supply chain integration, very few empirical studies examine more than one link in the chain. Similarly, recent research suggests that co-operation can be affected by contextual variables, but this line of research has hardly been tested. We believe it is important to

fill this gap by jointly researching the effect of co-operation with suppliers and buyers on company performance in specific contexts, and controlling.

Williamson and Ouchi (1981) have asserted that transaction cost minimizing outcomes result from the working out of competitive forces over an extended period. Thus, it is necessary to weigh the evidence in favor of both arguments, since where market power exists it is not obvious what forces firms to an efficiency outcome. This comparative approach takes a cue from **Joskow (1988),** who has suggested that at least one observationally distinct theory should be set up as a rival to the transaction account.

Most of the research into co-operative relationships between buyers and suppliers examines a single link in the value chain, and many focus on the buyer's point of view and supply management. This perspective originated several terms and concepts with co-operative relationships as a principal component: partnership sourcing **(Ellram, 1990),** comakership **(Bevan, 1987)** and lean supply **(Lamming, 1993). Ellram (1990, p. 8)** defines strategic partnership between a buying and a supplying firm as "a mutual, ongoing relationship involving a commitment over an extended time period, and a sharing of information and the risks and rewards of the relationship". Commitment and shared risks and benefits originate the development of other practices such as supplier development, supplier commitment to design, or the implementation of advanced logistics systems **(Gonza´lez-Benito et al., 2000).** A smaller body of research studies co-operative supply relationships between firms from a supplier perspective, and originated the concepts of reverse marketing **(Leenders and Blenkhorn, 1988),** relationship marketing **(Evans and Laskin, 1994) a**nd customer relationship **(Zablah et al., 2004).** These concepts reflect the increase in numbers of active buyers, who are not willing to wait for suppliers to offer them products **(Blenkhorn and Banting, 1991),** and the increase of companies' interest in establishing lasting co-operative relationships with active buyers **(Dwyer et al., 1987; Heide and John, 1990).** These relationships tend to generate value for the supplier **(Walter et al., 2001)** or offer greater value to customers compared to competitors (**Anderson, 1995; Ravald and Gro¨nroos, 1996; Grand and Schlesinger, 1995; Campbell, 2003).**

A number of scholars point out the advantages of interorganisational co-operation **(Dyer, 1997; Powell et al., 1996; Ireland et al., 2002).** In the specific area of buyer-seller relationships, co-operation can generate benefits for both parties in four different ways **(Dyer and Singh, 1998; Ha¨kansson and Ford, 2002; Wilkinson and Young, 2002; Gadde et al., 2003; Williamson, 1999; Madhok, 2002; Cousins, 2002).**

METHODOLOGY

As vertical integration is vast concept, theoretically it could be explained in many ways. But it could be better explained with the practical example of various organization which have been successfully adopted this strategy to enhance a better relationship among buyer and seller. Here are few examples which will highlight some of the dominating factor which the organization gained after successfully implementing this strategy. The purpose of this paper is to provide examples of how vertical integration can be used to a firm's advantage. Most prior research has focused on vertical integration or strategic outsourcing in isolation to examine their effects on important performance outcomes. In contrast, we focus on the simultaneous pursuit of vertical integration and strategic outsourcing. Using a case study approach, this paper examines four separate business entities that currently use vertical integration as part of their business strategy. The four companies are: Bagrrys India, Videocon, Amul, KPR mills. Each company operates in different field, yet they have successfully implemented this strategy.

This paper is based upon secondary data and this data has been collected through various sources such as: Organization web sites, articles, review papers. The figures that are used in different small case lits, taken from various news that were published in the form of articles in different newspaper. Factors such as

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(synergy, market domination, competitive edge, competitive strategy, strong raw material source) which have been used for identifying strength of four companies in this paper are taken on the basis of conclusion of all four small cases as well as previous studies

BAGRRYS INDIA

Baggrry's is one of the leading brands of health food in India. They generally manufacture wide range of high fibre break-fast cereals and food items. Bagrry's comes from the lineage of food processing group having experience of 50 years in the food industry. Bagrrys India Limited today boasts of pan India presence. Their high fibre health foods include oat bran, porridge, muesli and oat wheat cereals under the Bagrrys brand name.

The main activity of the group is flour milling. Baggrry's is having three flour mills i.e. Rajdhani Roller Flour Mills Ltd in Delhi, Raibareilly Flour Mills in Uttar Pradesh, and Bagrrys India Ltd. Each of the three group companies supply flour to nestle specially for Maggi, Cadbury especially for Perk and Gems, Glaxo SmithKline especially for Horlicks, Parle and Britannia especially for biscuits.

Then they added two new factories in Himachal Pradesh as part of their vertical backward integration. The units had already been set up to manufacture cornflakes and instant oats, the two new health food categories. It was in addition to its existing production unit in Delhi dedicated to high fibre health foods. The company extended its product mix to include other health food segments such as cornflakes and instant oats. Despite having a heavy health food portfolio, Bagrry's absence in the cornflakes segment was conspicuous. The company had been reluctant to enter the cornflakes segment because of its high taxation structure.

VIDEOCON VERTICAL ACQUISITION

Videocon is an Indian multinational with interest in consumer electronics, home appliances, oil and gas. Videocon was founded in 1987 by Nandlal Madhavlal Dhoot. At that time, it used to manufacture T.V and washing machine. In 1989-90, Videocon started manufacturing home entertainment systems, electronic motors and AC's. Videocon entered into refrigerator and coolers segment in 1991. In 2004, Videocon acquired the Color picture tube (CPT) business form Thomson SA having manufacturing facilities in Poland, Italy, Mexico and China. In 2004, Thomson SA was facing drastic fall in demand of television with CPT in developed countries and Videocon realized that there is an opportunity of selling CPT's in developing countries. The basic reason of Thomson to exit consumer and electronic business was to enter into high growth digital media and technology business. And second reason was heavy losses incurred by Thomson SA. At least 5 companies i.e. LG, Philips, Samsung, Daewoo and Matsushita were running to acquire Thomson SA, but finally Videocon acquired it and this deal stood Videocon into third slot in the global pecking order for CPT's.

Correspondingly Videocon acquired Thomson for Two reasons

- At that time Videocon was having sufficient fund to shift the activities to low cost location and also integrate the operation with glass panel facility in India with CPT manufacturing facility acquired from Thomson SA
- This acquisition helped Videocon in vertically integrating its existing glass shell business, where they were enjoying high profits. This acquisition gave Videocon readymade market for its glass business and it was a part of Videocon long term strategy to have global integrated manufacturing facility.

AMUL DIVERSIFICATION STRATEGY

Gujarat cooperative milk marketing federation (GCMMF) is well renowned name in dairy sector. And they are running their business with the brand name of Amul. Till 2001, they had already established their strong distribution network in Indian market. Then they decided to explore the market opportunities in the form of retailing sector. In 2001, GCMMF entered into fast food market in India with the launch of vegetable pizza under the brand name of snowcap in Ahmadabad and Gujarat as a part of their integration strategy. For this GCMMF planned to open 3,000 pizza retail franchise outlets all over the country

They decided to launch this pizza in four flavors plain tomato-onion-capsicum, fruit pizza, mushroom and Jain pizzas. And they decided to launch this pizza in the range of 20-25 rs. But at the same point of time, domino's or some another competitor was selling their pizzas at rs 39. For this they negotiated with bulk suppliers of vegetables to get these at wholesale rates and gave this benefit to the retailers. The main cost component of the pizza was the mozzarella cheese. GCMMF decided to offer the cheese at a bulk rate of Rs.140 per kg, compared to the market price of Rs 146 per kg, thus saving the retailers Rs.6 per kg.

Now the competitor were worried about the move of Amul towards the new market strategy and GCMMF set the punch line for their product is " A Pizza for Rs.20". Similarly the same strategy they adopted for their other products also such as ice-cream with the same motto of creating an ice-cream for mass consumption item. So that they could enhance their market share and competitor could also reduce their prices.

KPR MILLS

KPR's Journey into textiles began in the year 1984. In 1989, the group ventured into garment exports. Today KPR is a leading garment exporter as well as a largest vertically integrated apparel company, engaged in manufacturing and marketing readymade knitted garments, knitted fabrics and cotton yarn. K.P.R Cotton Mills Private Limited, now known as K.P.R Mill Limited, was originally incorporated on March 19, 2003.

Coimbatore-based 800-crore KPR Mills, which opted for backward integration and started four spinning mills alongside its knitwear units, is today comfortable in its raw material position as it produces nearly three times more than its cotton yarn requirement. For industry like textile, there is always advantageous to have vertically integrated operations as the supply chain is complete. They only need to buy cotton and it goes out as a value-added product. Whereas in separate businesses of spinning, dyeing and garmenting, there will always be ups and downs and sometimes they may face difficulties during certain periods.

Backward integration and consolidation have become crucial to the growth of textile industry as uncertainty in raw material availability and cost has been increasing. While assured quality, timely delivery and savings on transportation costs are clearly the top three advantages in having a vertically integrated operation, today the availability of raw material has turned out to be a crucial benefit for such companies.

FUNCTIONAL INTEGRATION OF ALL CASE LITS

The term vertical integration implies to both sides i.e. Upward and Downward. Sometimes organization enjoys strong position in the market due to strong supply of raw material and some time enjoys higher market share in the form of strong distribution. All the above case lits discuss the long term benefits of the organization. But this strategy gives the different competitive advantage to the different organization, which may be treated as core competency in long run

THE COSTS AND BENEFITS OF VERTICAL INTEGRATION

Changing ideas about the efficiency of large corporations as organizers of economic activity have exerted a strong influence on firms' vertical integration strategies. The prevailing wisdom today is that any benefits of vertical integration tend to be outweighed by the greater advantages of specializing in a narrow range of vertical activities. In particular, vertical specialization is conducive to flexibility and the development of core competencies, while most of the benefits of vertical coordination can be achieved through inter-firm collaboration. Strategies towards vertical integration have been subject to shifting fashions. During the past 20 years there has been a profound change of opinion and the emphasis has shifted to the benefits of outsourcing in terms of flexibility and the ability to develop specialized capabilities in particular activities. Moreover, it has been noted that most of the coordination benefits associated with vertical integration can be achieved through inter-firm collaboration.

Growth can be achieved via vertical integration by taking over a function previously provided by supplier (backward integration) or by distributor (forward integration). This is a logical strategy for a corporation or business unit with a strong competitive position in a highly attractive industry. To keep and even improve its competitive position through backward integration, the company may act to minimize resource acquisition costs and inefficient operations, as well as to gain more control over quality and product distribution through forward integration. The firm, in effect, builds on its distinctive competence to gain greater competitive advantage. The amount of vertical integration can range from full integration, in which a firm makes 100% of key supplies and distributors, to taper

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integration, in which the firm internally produces less than half of its key supplies, to no integration, in which the firm uses long term contracts with other firms to provide key supplies and distribution. Outsourcing, the use of long-term contracts to reduce internal administrative costs, has become more popular as large corporations have worked to reduce costs and become more competitive by becoming less vertically integrated.

DISCUSSION AND CONCLUSIONS

No doubt that outsourcing can be treated as safeguard as well as cost saving policy for the organization, but for a short period of time. In contrast to this strategy, Vertical integration is most often justifiable where it leads to either operational efficiencies or some other source of strategic advantage. It also provides so many benefit or edge to the organization in the form of synergy, competitive advantage, attacking strategy, market domination. Firm can integrate with low willingness to pay customer, charging the competitive price, while still charging a high price to the external, high willingness to pay customer Integrated firm would make a single calculation of profit maximizing price and quantity based on true costs, not on costs inflated by above-competitive prices from upstream firms.

With the help of following table, it could be easily understand the actual position of the organization after adopting the vertical integration strategy. The table depicts that the increased strength of the organization on certain parameters:

Factors	Videocon	Amul	Baggrys	KPR Mills
Synergy	Yes	No	No	Yes
Market Domination	Yes	Yes	No	No
Competitive edge	Yes	Yes	NO	Yes
Competitive Strategy	No	Yes	No	No
Strong raw material Source	No	Yes	No	Yes

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ANNEXURE

Question For discussion

1. As a strategist manager of baggrry's, you have to explore the opportunities of different food items in which they can enter (backward as well as forward) as a part of their expansion strategy.
2. In this case lit, Videocon has strengthened its manufacturing by acquiring Thomson group, now you are required to identify the market opportunity for Videocon which would strengthen its forward expansion.
3. You are required to identify that product of Amul, where the organization can adopt vertical as well as forward integration strategy and also identify the situations where they can beat the customers in terms of pricing and distribution
4. As a manager of garment industry, how would you help the KPR mills in forward integration, so that they can easily explore the market opportunity in case of retail sector.

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ANALYSIS OF SOURCES OF FRUIT WASTAGES IN COLD STORAGE UNITS IN TAMILNADU

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ABSTRACT

Inspite of being the second largest producer of fruits, nearly 72 % of fruits is wasted in India. With a high percentage of waste of fruits, the value loss could be imagined. By minimizing wastage of fruits, the return to producer, processors and retail vendors could be increased considerably. Cold storage plays major role to rescue these problems. Since fruits wastage in processing stage and retail outlets already been done by the same researcher, he came to know that cold storage also causing wastage at some extent. Hence analysis of sources for wastage of fruits in cold storage is undertaken to suggest ways out to minimize this loss and improve the return to the producer, processors and retail vendors. Data has been collected from 37 cold storage units in Tamilnadu through in-depth interview with top level management executives. It is found that around 34% of fruits are getting waste from entry to exit in cold storages. This study has found major sources of wastages and prioritizes them based on quantity and value loss. This research is confined to the cold storage units in Tamilnadu, which is one of leading producer of fruits in India.

KEYWORDS

Agriculture, Automation, Cold storage, Fruit wastage, Value loss.

INTRODUCTION

The contribution of agriculture to India's GDP at the time of Independence was 70% and it accounted for 85% of total employment[12]. The share of agriculture in the country's GDP has been gradually declining since then. At present, the contribution of agriculture to GDP is about 25%, but it still engages about 70% of the population[12]. The annual average rate of growth of agricultural GDP has also declined from around 3.5% during mid eighties to mere 1.5 % during 2006-07[12]. It is estimated that if the country has to maintain a GDP growth rate of over 8%, the agricultural sector has to grow at the rate of at least 4%[12]. The country has a huge potential for growth in agriculture with about 160 million hectares of arable land and diverse agro climatic conditions, suitable for cultivation of a wide variety of crops[12].

India is the second largest producer of overall fruits. A fresh estimate from the ministry of food processing says a whopping Rs 58,000 crore (Rs 580 billion) worth of agriculture food items get wasted in the country every year[14]. Officials said only 7% of food in India is processed[18]. Out of that the fruits and vegetable processing level in India is estimated to be around 2% as compared to about 80% in Malaysia, 30% in Thailand, and 60-70% in the UK and USA[19]. The production of vegetables in India is next only to China. The vegetable and fruit production contributes more than 30 percent of the agriculture GDP. The crop diversification has led to rise in horticulture production, which has reached 185.2 billion tonnes in 2007[16]. India produces over 46 million tonnes of fruits accounting for around 10% of the world's production[12]. About 72 percent of the fruit and vegetable production in India goes waste[16]. In spite of being a major producer of fruits, a large quantity is wasted in the absence of storage, logistics and processing support. Since fruits wastage in processing stage and retail outlets already been done by the same researcher, he came to know that cold storage also causing wastage at some extent. This research is confined to the cold storage units in Tamilnadu, which is one of leading producer of fruits in India.

REVIEW OF LITERATURE

M. Fehr and D.C. Romão conducted study on modeling the success of fruit and vegetable marketing. This study develops a scoring guide that can assist commercial establishments and households in evaluating and mitigating the loss potential for fruit and vegetables within their operations. The scoring model separately addresses losses related to products and losses related to establishments. Losses by product are presented as a function of the sum total of points attributed to the various handling stages which shown by following equation. PL = f (C+P+T+S). Where, PL product loss %, C classification stage score, P packaging stage score, T transport stage score, S storage stage score. The individual scores for each stage are average scores obtained upon evaluating all occurrences of the respective stages. Losses by establishment are presented as a function of the sum total of points attributed to the various managerial responsibilities as shown by following equation. EL = f (M+H+Q+V+2A) / 6. Where, EL establishment loss %, M maintenance of premises, H qualification of human talents involved, Q quality of products upon purchase, V physical or virtual purchase strategy, A efficiency of the administration with weighing factor 2. The scores determined for each responsibility are averaged to obtain a single value for the establishment loss. This equation is specific for each type of establishment evaluated. Score sheets have been prepared from the experience of this research for wholesalers, retailers and consumers. The score for the products evaluates the activities of sorting, packaging, transport and storage. The model proposed here addresses the waste figure of 18% determined experimentally by the authors. It is the result of research done in all instances of the marketing and consumption chain of fruit and vegetables. The model is primarily a qualitative evaluation of all the handling and administrative procedures that influence the fitness for consumption of the produce at the end of its trajectory when it appears in the kitchen for meal preparation. The model addresses separately the two basic components of good marketing practice: attention to the general characteristics of each item of produce and specific management methods of each establishment. Hence this study has given an idea about fruit wastages during some of the operations like sorting, packaging, transport and storage[1].

Katinka Weinberger, Christian Genova II, Antonio Acedo studied Quantifying postharvest loss in fruits and vegetables along the supply chain in Vietnam, Cambodia and Laos. This study finds that the average loss of the selected vegetables is about 17%, and that farmers are the most vulnerable group compared to middlemen and retailers who both have more control on product prices. It recommends developing measures to contain disease problems for farmers, and improving marketing efficiency through standardization of product quality for middlemen and retailers. This study investigates the volume and value of vegetable losses upstream along the supply chain, and identifies the main reasons and the preventive measures undertaken at each stage in the supply chain to abate postharvest losses[2].

Pramila Tripath and A.K. Shukla conducted study for the application of essential oils for postharvest control of stem end rot of mango fruits during storage. From this study we could understand that there is a loss due to rot during the storage of mangos. Hence this study facilitates to control the loss through

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technically by using essential oils. But this study has not given any empirical data about loss of mangoes due to rot during the storage, but we could conclude that there may be a loss due to rot during the storage[3].

Rory C. Flemmer and Claire L. Flemmer was made study on Innovations in fruit packing for both kiwi fruit and apples. They were discovered two innovative packing methods. Firstly, a novel packing line for kiwifruit and secondly, an automated apple packing system. Through which they were minimized wastage during packing and transportation. Hence, from this study we could find out that fruit wastages can happen due to packing methods[4].

Bundit Jarimopas, Dolhathai Rachanukroa and Sher Paul Singh conducted study for the development of a new retail packaging for sweet tamarind. From this study, authors were trying to determining post-harvest damage to sweet tamarind that has been packaged for sale and making comparisons in performance between current and new forms of packaging for sweet tamarind. Finally they were developed new packaging system for tamarind which provides additional protection and its cost is equivalent to the cost of plastic bags and about half that of paperboard boxes. This study is also giving idea about importance of packaging system for the fruits for reducing wastage[5].

S.F. AL-Zenki, H.M. AL-Mazeedi, S.N. AL-Hooti, T. AL-Ati, Q. AL-Matawah, H.F. Alomirah and Jiwan S. Sidhu conducted study on Characterization of quality and safety of tomatoes sold in the state of Kuwait. This study determined the microbiological quality and safety of locally produced and imported tomatoes at selected points of the food chain. To accomplish this objective, a survey was conducted to obtain necessary information on the various links in the food chain for tomatoes. The food chain operational links for local and imported tomatoes were then prepared. Microbiological assessment of tomatoes was then carried out by collecting samples from local farms, retail and wholesale outlets. Authors were conducted different micro biological studies and found that there were lots of microorganisms in the tomato samples during supply chain transportation. Hence we could understand that there will be chances of fruit wastages during the supply chain activities and transportation[6].

Suresh Tiwari, D.K. Tandon and Elda B. Esguerra studied Chilling injury as an indicator of critical temperature for cold storage of guava. The critical temperature for cold storage of guava and the changes in physico-chemical attributes during its storage were studied. Fruits were stored at 5, 8 and 15° C with 85–90% relative humidity and withdrawn weekly from cold storage and kept at ambient condition (18–20° C and 65–70% RH) for analysis. Chilling Injury (CI) symptoms, characterized by browning of peel, development of pitting on fruit surface and desiccation of fruit, appeared after 2 weeks in the fruits stored at 5° C. These symptoms became more aggravated when the storage at ambient condition prolonged upto 6 days and when the fruits did not ripen uniformly. The CI symptoms in the fruits stored at 5° C showed membrane damage, i.e. higher electrolyte leakage values and low ethylene levels. However, the fruits stored at 8 and 15° C did not exhibit any symptoms of CI and ripened well until 3 weeks of cold storage. From this study we could identified that, temperature variations can cause the fruits damage and wastage. Hence we can take temperature variations is one of the factor for our study[7].

A. Frank Bollen conducted a study on technological innovations in sensors for assessment of postharvest mechanical handling systems. Produce damage is a major cause of large postharvest losses internationally. The current level of technology that can enable researchers and industry to understand the mechanical reasons for these levels of damage is discussed in this study. A probabilistic description for damage likelihood is introduced that describes the damage in terms of the proportion of a product's population that will sustain some commercially significant bruise size. These two relationships can then be combined to provide an estimate of the level of damage that can be expected from any handling event. Hence we could understand that, there will be chances for fruit wastages due to poor handling systems[8].

Errol W. Hewett had studied pre-harvest factors influencing post-harvest quality of horticultural products. This study concluded that farmers, scientists, extension specialists and market personnel must work together to provide knowledge, best practices and enabling tools for growers to ensure pre-harvest conditions are optimized for production of high quality horticultural crops like fruits and vegetables that titillate, satisfy and reward discerning consumers. From this study we could find out that pre-harvest practices can cause the fruit wastages at farm level itself[9].

Veena A, K. Nagendra Babu and H.R. Venkatesha studied the supply chain in marketing fresh produce. As per the survey conducted for this study, important drawbacks of the current Supply Chain (SC) are number of intermediaries, high level of wastage, quality degradation, poor infrastructural facilities and high cost. Fresh produce market has immense influence on the socioeconomic and even political conditions. Close to 30% of the F&V grown is going waste. All the stakeholders have to join hands to improve SC mechanism to take produce from the farmers to the consumers. This would facilitate the consumers to get quality produce at economical rates. The middlemen and all the stakeholders in the SC benefit from the improved SC infrastructure. Government and private operators have to join hands to improve the physical infrastructure, information sharing, and the service required for quality improvement of the SC. Hence this study clearly gives the views on fruit wastages due to poor supply chain mechanism[10].

Saurabh Singh studied on sustainable supply chain model for strawberry in uttarakhand. The study found a need for sustainable supply chain model to promote distribution of locally grown strawberry in nearby markets. Once the market is developed, the acreage under strawberry can be increased considerably, which is a good alternative source of income, providing net income of about Rs 70,000-80,000/acre/season to the growers. This study is not directly giving any details about fruit wastage, but this study help us to understand about importance of supply chain to increase farmers' income. Objective of our study is also the same concept like; we could increase the farmers' income by minimizing fruit wastages[11].

A study focusing on major issues that exist in the supply chain of fruits and vegetables include the losses during post harvest handling, processing, packaging and transportation was undertaken. The loss of fruits and vegetables during transportation is said to be in the range of 20 - 30% in countries like China and India. In many countries including China and India - two largest producers of fresh fruits and vegetables in the world - the existing cold storage facilities, reefer vehicles, product traceability solutions and other infrastructural facilities are insufficient to counter the problem of high supply chain losses[13].

Ministry of Food Processing Industry (MFPI), Government of India says that inadequate infrastructure has been identified as a major constraint in the growth of fruit and vegetable processing industries. Without a strong and dependable cold chain, a vital sector like F&V processing industry, which is based mostly on perishable products, cannot survive and grow. Even at currents level of production, wastage in F&V is estimated at 35%, major reasons being inadequate storage, transportation, cold chain facilities and other infrastructure support facilities. Government of India has been implementing several schemes for facilitating creation of infrastructure for food processing including the following components relevant for F&V processing sector: Food Parks, Packaging Centers, Integrated Cold Chain Facility, Value Added Centers and Irradiation Facilities[17].

The Hindu News paper dated, Jun 25, 2010, Friday stated that Around 5 to 10 per cent of vegetables and fruits that arrive at the Koyambedu wholesale market in the city are wasted daily for want of proper temperature-controlled storage facilities, according to the traders. The market receives around 3,000 tonnes of vegetables every day. The arrival at the fruits market is anywhere between 1,500 and 2,000 tonnes daily. A government-run cold storage facility is available near the market. But its patronage is low as traders say that maintenance of the facility is inadequate. Wholesale trader K. Ponraj said if maintained properly the facility would help in storing at least some amount of the excess produce that arrives in the market. V. R. Soundararajan, one of the members of the Koyambedu Market Management Committee, said different vegetables and fruits have to be stored at different temperatures. But, it is not being followed properly at the cold storage facility. The cold storage, belonging to the Tamil Nadu Co-operative Marketing Federation Ltd (TANFED), has a capacity to store 2,500 tonnes. Officials of the Federation said only 60 per cent of the facility is being used and about 300 customers patronize it. The produce is stored between two degree Celsius and four degree Celsius according to the requirements of the customers. The officials complained that private cold storage plants are operated by some of the traders in the market, resulting in low patronage for the government-run facility. Traders said that two or three such private facilities were available to store mushrooms[15].

NEED FOR THE STUDY

Though India is the second largest producer of fruits, nearly 72 % of fruits is wasted in India. With a high percentage of waste of fruits, the value loss could be imagined. By minimizing wastage of fruits, the return to producer, processors and retail vendors could be increased considerably. Cold storage plays major role to rescue the wastage problems. Since fruits wastage in processing stage and retail outlets already been done by the same researcher, he came to know that cold storage also causing wastage at some extent. Hence analysis of sources for wastage of fruits in cold storage is undertaken to suggest ways out to minimize this loss and improve the return to the producer, processors and retail vendors.

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STATEMENT OF THE PROBLEM

Since the gap between total fruits production (46 million tonnes)[12] and processing (2%)[14] is very high, Indian government is taking lot of measures and schemes towards increase of cold storage and processing industry in order to minimize the fruit wastages. Hence, this study is focusing to find out whether the cold storages are really minimizing the fruit wastages or not. This could be accomplished by finding out various causes and resources of fruit wastages in cold storages. Moreover this study offers solutions to minimize the fruit wastages in cold storages in order to make them as ultimate destinations for utilization of maximum fruits with minimum wastages.

OBJECTIVES

- To identify different factors determining the fruit wastages in cold storages
- To prioritize the causes of wastages (based on quantity of wastages) so as to indicate their relative importance and also to develop suggestive preventive measures and solutions to minimize the wastages

RESEARCH METHODOLOGY

This study has been designed in descriptive in nature. This study included owners and top management executives of cold storages. Population details were collected from MSME office at Chennai and Tamilnadu. Details about 43 cold storage units in Tamilnadu were collected which constituted the population database for this study. From the population database, a sample of 37 cold storage units, were selected for collecting the data based on their validity of contact information. After a week of pilot study with few executives and experts, and with the help of review of literature, researcher has found different sources of wastages of fruits in cold storage units. Based on this information and researcher's expertise in the food processing field, data was collected through in-depth interview with respondents. After collecting the data, they were edited based on validity and reliability and then tabulated for analysis purpose. Frequency tests, weighted average and factor analysis were utilized for analyzing the data.

DATA ANALYSIS

Following 12 variables were identified with the help of the articles reviewed above and also based on the researcher's experience in the field of food processing industries and pilot study feedback.

TABLE – 1: VARIABLES AS DIFFERENT TYPES OF FRUIT WASTAGES

Sl. No	Variables (Different types of fruit wastages)
1	Wastage due to Improper storage conditions and poor maintenance of cold storages
2	Wastage during handling (Due to Manual handling, bulk handling, labor laziness etc)
3	Wastage during ripening through natural ripening (Due to beaten spots, microbes etc)
4	Wastage due to packaging (Due to Improper packaging, poor packaging materials etc
5	Wastage during transportation (Due to Over load, long drive, poor containers etc)
6	Wastage due to temperature variations (Due to internal temperature of fruits, external temperature of cold storage etc)
7	Pre harvest wastage (Immature harvesting, poor harvesting methods and equipments etc
8	Post harvest wastage (handling, transportation, ripening, storage etc)
9	Wastage due to un sold stock

TOTAL WASTAGES IN COLD STORAGE UNITS

Following table shows the wastages in cold storage units.

TABLE – 2: TOTAL WASTAGE IN COLD STORAGE UNITS

Sl. No	Sources of Wastages	% of Wastages
1	Wastage due to Improper storage conditions and poor maintenance of cold storages	2.7
2	Wastage during handling (Due to Manual handling, bulk handling, labor laziness etc)	3.3
3	Wastage during ripening through natural ripening (Due to beaten spots, microbes etc)	5.78
4	Wastage due to packaging (Due to Improper packaging, poor packaging materials etc	7.4
5	Wastage during transportation (Due to Over load, long drive, poor containers etc)	7.23
6	Wastage due to temperature variations (Due to internal temperature of fruits, external temperature of cold storage etc)	5.78
7	Wastage due to un sold	1.75
	Total Wastages	**33.94**

(Source: Primary data)

(Note: Two variables i.e Pre harvest and post harvest wastage are not taken to the count since they are not belongs to the cold storage units. They have included in variables, since they are creating impact for wastage of fruits in cold storage which is suggested by industry experts)

PRIORITIZING THE WASTAGES RESOURCES IN COLD STORAGE UNITS

Weighted score has been calculated for prioritizing the wastage resources in cold storage units. Following procedure was followed for calculating weighted score.

WEIGHTED SCORE CALCULATION PROCEDURE

- Each variable had 5 different options as frequencies. Each respondent have responded one option among 5 options. [Ex: (1) 1 – 2; (2) 3 – 5; (3) 6 – 10; (4) 11 – 15; (5) 16 – 20]
- All the options were given as range. Hence mean value of range has taken for calculating weighted score. [Ex: (1) 1 to 2; (2) 3 to 5; (3) 6 to 10; (4) 11 to 15; (5) 16 to 20]
- Now median value of each option was multiplied by number of respondents responded for the same option and calculated the summation of values of each option. This value considered as weighted score for the respective variable. [Ex: (1.5 X 5) + (4 X 7) + (8 X 1) + (13 X 1)] = 56.50
- Similarly weighted score was calculated for all the variables.
- Weighted score of all the variables were sorted based on descending order to prioritize the variables.

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TABLE – 3: PRIORITIZING THE WASTAGES RESOURCES FOR COLD STORAGE UNITS

Variables	Frequency					Weighted score	Descending order of weighted score	Respective variable code	Respective variable name (Priority)
1	13	4	3	0	0	59.50	347.00	10	Post harvest wastage (1)
2	10	8	2	0	0	63.00	232.00	9	Pre harvest wastage (2)
3	16	2	0	0	0	106.00	131.00	7	Wastage during transportation (3)
4	9	9	2	0	0	120.50	120.50	6	Wastage due to packaging (4)
5	0	11	6	3	0	131.00	106.00	4	Wastage during ripening through natural ripening (5)
6	2	11	7	0	0	103.00	103.00	8	Wastage due to temperature variations (6)
7	4	8	6	0	0	232.00	63.00	2	Wastage during handling (7)
8	3	5	6	3	3	347.00	59.50	1	Wastage due to poor storage conditions (8)
9	17	1	2	0	0	45.50	45.50	11	Wastage due to un sold (9)

(Source: Primary data weighted score analysis)

FACTOR ANALYSIS
KMO AND BARTLETT'S TEST

TABLE – 4: KMO AND BARTLETT'S TEST

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.329
Bartlett's Test of Sphericity	Approx. Chi-Square	55.773
	df	36
	Sig.	.019

(Source: Primary data SPSS analysis)

EIGEN VALUES AND LOADINGS

TABLE – 5: FACTOR ANALYSIS FOR COLD STORAGE WASTAGE

Total Variance Explained									
Factor Component	Initial Eigen values				Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings	
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.839	31.545	31.545	2.839	31.545	31.545	2.306	25.627	25.627
2	2.068	22.976	54.522	2.068	22.976	54.522	2.266	25.172	50.799
3	1.240	13.774	68.295	1.240	13.774	68.295	1.575	17.496	68.295
4	.790	8.780	77.075						
5	.712	7.917	84.992						
6	.615	6.831	91.823						
7	.400	4.439	96.263						
8	.286	3.179	99.442						
9	.050	.558	100.000						
Extraction Method: Principal Component Analysis.									

(Source: Primary data SPSS analysis)

ROTATED COMPONENT MATRIX

TABLE – 6: FACTOR ANALYSIS FOR STORAGE WASTAGE – ROTATED COMPONENT MATRIX

	Component		
	1	2	3
Wastage during Storage	.715	.176	.085
Wastage during Handling	.624	-.244	.455
Wastage during natural ripening	.742	.157	.067
Wastage during Packaging	.198	.839	.224
Wastage during Transportation	.176	.846	.193
Wastage due to temperature variations	.866	-.069	-.073
Pre harvest wastages	.074	.107	.844
Post harvest wastages	-.168	.831	-.074
Wastage due to unsold	-.027	-.149	-.738
Extraction Method: Principal Component Analysis. **Rotation Method:** Varimax with Kaiser Normalization. Rotation converged in 5 iterations.			

(Source: Primary data SPSS analysis)

RESULTS AND DISCUSSIONS

As we stated in table-2, 33.94% of fruit wastages occur in cold storages. Cold storage respondents are expressing that most of the fruit wastages are happening at farm level in both post harvest and pre harvest stages. These factors are ranked first and second respectively in fruit wastages as per analysis given above. These respondents are quoting poor harvesting methodologies and techniques, post harvest handling, packing and transportation for post harvest wastages. Immature fruit harvesting, loss of flowers, natural calamities like heavy rain and wind, pesticide penetration, ants, birds and rodents are the reasons for pre-harvest wastages. Immature fruit harvesting and penetration of pesticide, ants and rodents are leading to post-harvest spoilages during ripening. Cold storage respondents are suggesting that to avoid all these types of wastes is to educate and create awareness among the farmers.

The third reason for wastage in cold storages is due to transportation. As discussed earlier, Lack of road facilities, poor road conditions and bulk volume (overload) of transportation are considered as major reasons for this wastage. Cold storage units and fruit processors are expecting government to provide good road facilities and concessional rate for transportation of fruits in order to transporting optimal quantity of fruits per load.

Fourth major reason for fruit wastage in cold storages is packing. Poor packing method and packing materials result in more spoilage of fruits. Cold storage respondents are complaining on domestic packing. They reported that import packages are far better than the domestic packages that wastage in domestic packing is higher than the international packing. Though there are some packing standards (Specified by the government) for fruits, suppliers are not followed due to non-monitoring and absence of severe actions to penalize if deviation from the standards. This could be overcome by continuous monitoring of fruit packing by concerned authority and implementation of penalty whenever deviation is noticed from the standards.

The fifth reason for wastages of fruits in cold storage is natural ripening process. Most of the cold storage units are not undertaking ripening process. Very few units undertake ripening process in a limited way. Since it is occasional process, no cold storage units are interested to adapt ripening chamber technique to

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ripen the fruits. Hence, wastage is increasing during natural ripening process. Some of the cold storage units are reduced this type of wastage by sorting and selecting good fruits for ripening and storage process.

Temperature variation in internal fruit pulp and external refrigeration temperature is the sixth source for fruit wastages in cold storages. Cold storage units are purchasing fruits from different regions with different climatic conditions. Hence internal pulp temperature of fruits is varying from fruit to fruit. Moreover, cold storage units are purchasing different types and varieties of fruits. Each and every type or variety of fruit needs different ripening and storage conditions in terms of temperature. These lead to waste of fruits. These kinds of wastages can be overcome by limiting to few varieties of fruits and purchasing from specified regions. Otherwise, fruit processors can segregate their ripening and storage area based on type and variety of fruits.

Wastage during handling is the seventh source for fruits wastage in cold storage units. Reasons and justifications are same as fruit processing industry handling, which has been already discussed.

The eighth reason for fruit wastage in cold storage units is during storage. It is very negligible in case of cold storage units, because most of the cold storage units are storing fruits after the sorting and selecting of good fruits. Hence, wastage during storage in cold storage units is minimized.

The ninth reason for fruit wastage in cold storage is unsold stock. This reason would not be applicable for all cold storages because all cold storages are not dealing with retail sale. Most of the cold storage units are operating based on space rental basis. Whatever the fruits keeping inside the cold storage by the clients, same will be taken again by the client. i.e. input and output quantity of fruits is the same in cold storages for clients. Hence, unsold fruits are at the risk of clients. In this study researcher has collected data with two cold storages, which deals with retail sales. Other cold storages are not dealing with retail market, but wastage is higher for those two cold storages, which deal with retail sales. A more detailed study involving a large number of cold storage units with provision for retail sales, might give a more comprehensive picture, thereby affecting the ranking of the reasons for wastages.

DISCUSSIONS ON FACTOR ANALYSIS

From the table 9, it is clear that first three components are contributed 68% of wastage in cold storage units since eigen values are greater than 1 for all these three components. From the table 10, it is discovered that, out of these three components, first component contains 4 factors with heavy loading viz. Wastage during storage, wastage during handling, wastage during natural ripening and wastage due to temperature variations. Second component contains 3 factors with heavy loading viz. Wastage during packaging, wastage during transportation and wastage due to post harvest activities. Third component contains only one factor with heavy loading i.e. wastage due to pre harvest activities.

By considering all these factors, we could understand that cold storage units are realizing wastage of fruits at two different levels such as in side of the cold storage units and outside of the units. Inside wastage is happening due to poor infrastructure facilities and manual handling. Not all the cold storage units are having infrastructure problems. Most of the private cold storage units are having good infrastructure facilities and maintain the same quality throw out the year, but some of the government running cold storage units and co-operative cold storage units having maintenance problem. Moreover, they are handling the fruits by manual. Hence, they are realizing more wastage during storage. Both private and government cold storage units are facing common technical problem due to internal pulp temperature. They could not maintain separate temperature for separate variety of fruits. This also leads the wastage of fruits in cold storage units. Except these types wastage, cold storage units are blaming all other wastages on the farmers such as pre harvest, post harvest activities, natural ripening, poor packing and poor transportation. Hence, researcher has suggested that, cold storage units are having good infrastructure, but they have to maintain properly and follow the handling procedure as per system in order to minimize fruits wastages. Instead of maintaining separate cold storage units for separate fruits due to temperature variations, they can allocate different zones in same cold storage unit for same temperature fruits groups and they can maintain separate temperature by using temperature regulator for each zone. For minimizing farm level, packaging and supply chain wastages, cold chain units can educate and give training to the farmers about pre harvest, post harvest, ripening and packaging methodologies for minimizing wastages by making them to realize quantity and value loss due to their unawareness and careless.

FINDINGS

Through the data analysis, it is found that around 34% of fruits are going waste in cold storage for various reasons. From the weighted score analysis it is found that, post harvest and pre harvest activities create more impact on wastages which are plays first and second rank respectively for sources of wastages. Transportation and Packaging follows the next third and fourth respectively. Wastage due to unsold stock and poor storage conditions are playing the least role for wastage of fruits in cold storage. From the factor analysis, except unsold stock wastage, all other wastage variables are found to be important.

CONCLUSION

This study discovers the total quantity of wastages in cold storage units is around 34%. It means that, if a cold storage unit purchases the fruits with the cost of Rs. 100, then they realize Rs.34 as wastage. Apart from this wastage quantity, they have to fix up some margin as a profit. For example, if we consider just 10% profit for the cold storage units, around Rs. 44 increasing (Purchasing price Rs.100 and selling price Rs.144) just for storage without any value addition. If they reduce percentage of wastage, then they could sell more due to decreased selling price so as to they could realize more profit and they can create opportunities for producers, processors and retail vendors for more profit making. Moreover, this study reveals the different reasons and causes for fruit wastages in cold storages through weighted score and factor analysis. If they concentrate on those reasons, they could reduce their fruit wastage as well as value loss for all the people those who rely on fruits tremendously.

SCOPE FOR FUTURE RESEARCH

Indian government is providing various schemes and funds to set up cold storage units. Hence, it is worthwhile to explore whether government schemes could be utilized by the cold storages effectively. Cold storage respondents are revealing that farm level wastages are high as pre-harvest and post-harvest losses due to lack of awareness about harvesting stages and methods among farmers and poor logistics and supply chain management links etc. This study has brought to light the need to undertake more research in the area of wastage of fruits so as to enable the producers to realize better returns from their business.

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A NOVEL CONTRAST ENHANCEMENT METHOD BY ARBITRARILY SHAPED WAVELET TRANSFORM THROUGH HISTOGRAM EQUALIZATION

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ABSTRACT

This paper proposes a scheme for arbitrarily shaped wavelet transform based on a generalization of histogram equalization (HE).The proposed method reduces the extreme level changes. This method applies pixel filling to each pixel in non enhanced area of the image by mean levels of surrounding pixels and extract the image using some morphological operations. It decomposes the image with wavelet transform and constructs differential operator using fractional difference equation, then obtains the enhanced image through computing with wavelet coefficients. Apply histogram equalization for the smoothening of an image. And it equalizes the wavelet coefficients. Through the variation of one or two parameters, the resulting process can produce a range of degrees of contrast enhancement.

KEYWORDS

Contrast Enhancement, Histogram Equalization, Wavelet Transform, Fractional differential theory.

I. INTRODUCTION

Contrast enhancement techniques are widely used in image processing. This method is to improve the contrast and visual effects of the image. [1]. This method should make wavelet decomposition of the image and get the coefficients. Then use the appropriate method to adjust the wavelet coefficients in the image and make an inverse wavelet transform to get the enhanced image. This Proposal will deal mainly with the performance study and analysis of image enhancement by arbitrarily shaped wavelet transforms through histogram equalization. In addition with arbitrarily shaped wavelet transform; further applying linear weights for both smooth and edge regions will be tried to improve the performance of images in comparison with the other image enhancement techniques.

Contrast enhancement is one of the useful methods to enhance the features of the images in digital image processing. It is achieved by improving the entire brightness range in the given image. Currently, enhancing the image using this method has a limitation. It stretches the histogram of gray levels. This may occur level changes after applying the image contrasts. That is, the adjacent pixels have a large range of difference, so wavelet coefficients are very large and the level change is large. When the image contrasts are enhanced by this method, an extreme level change may be occurred in the image. This level change grows in the vicinity of the edge .The pixel value contained in the edge changes extremely. Due to this extreme change, the characteristic of the image is lost. That is, the pixel values are scaled-out. Therefore, specialized algorithms have been tried to solve image enhancement problem.

II. CONTRAST ENHANCEMENT BY WAVELET TRANSFORM

Contrast enhancement method by wavelet transform is described below. It may occur level changes after applying the image contrasts. That is, the adjacent pixels have a large range of difference, so wavelet coefficients are very large and the level change is large. The image which is level shifted is resolved eight times by using the wavelet method. Applying this wavelet transform we get high frequency domains and low frequency domains. In this method we apply a linear weight only to high frequency domains, and thereby increasing the image contrasts. Applying inverse transforms eight times to restore the image.
Here, calculating method of weight to enhance the contrast as follows.

$$\alpha(j) = \frac{1}{7}(1 - \alpha_0 j) + (8\alpha_0 - 1)$$

(1)

Contrast enhancement method of wavelet transform is as follows.
A mean level of the image is shifted to the center of the gray scale image. From the ratio of the scale-out, the linear weight is calculated. The minimum value of the weight is always 1 and the maximum value of the weight is calculated value and it changes linearly. The image which is level shifted is resolved eight times by using the wavelet method. Now we get the low frequency domains and high frequency domains. Then enhance high frequency domain of the image by applying the linear weight. Applying inverse transform eight times to restore the image.

III. WAVELET BASED HISTOGRAM EQUALIZATION

Histogram techniques provide many methods for modifying the contrast and dynamic range of an image by reassign the intensity of the pixels through a monotonically increasing function. The output image shows a similar histogram to a given target distribution. One of the popular methods used here is local histogram equalization, in which the mapping function for each pixel is generated by accumulating the histogram of the region surrounding the target pixel.
Suppose a grayscale image has discrete intensity values $I_0, I_1, ...I_{L-1}$ of in the range [0, 1]. Let n_i denote the number of pixels taking the value I_i. The approximate pixel intensity transformation formula g for HE is given by

$$g(I_i) = \frac{1}{n} \sum_{k=0}^{i} n_k$$

(2)

where

$$n = \sum_{k=0}^{L-1} n_k$$

The histogram includes the little information about the pixel characteristics related to contrast gain and informs the probabilistic distribution of intensity levels. It amplifies the contrast for every pixel. From the viewpoint of image enhancement, increasing the occurrence of an intensity level means increasing the contrast gain of that intensity level. Local histogram equalization is used in various fields and it is the most well-known local methods. It uses the histogram of the local region as a contrast gain function.

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IV.CONTRAST ENHANCEMENT BY ASWT THROUGH HISTOGRAM EQUALIZATION

A. Arbitrarily shaped wavelet transform (ASWT)

Figure 1 shows the example of arbitrarily shaped wavelet transform. The procedure of the proposal method is described as follows.

FIGURE 1: INSERTION IN SQUARE AREA
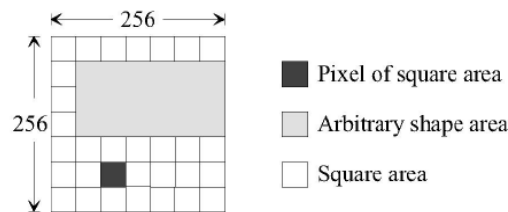
Let us suppose that a square area is 256x256 pixels. Arbitrarily shaped area is inserted in the square area of a certain size. The pixel value of the square area in which the area is not inserted is 0. The wavelet transform is done to the given square area. The transformed area is then extracted from the square area.

FIGURE 2: OUTLINE OF THE MODIFIED METHOD

FIGURE 3: REFERENCE BLOCK

B. Procedure of. Contrast enhancement by ASWT

Figure 2 shows the outline of a modified contrast enhancement method by ASWT through histogram equalization. Non-enhanced area is extracted from the source image, and filled in pixel value X. Mean levels V of the enhanced area is shifted to the center of the gray scale. The image is resolved by using the wavelet transform. Set the minimum threshold value. Based on this minimum threshold value adjust the wavelet coefficients of the high frequency domains. The image is compo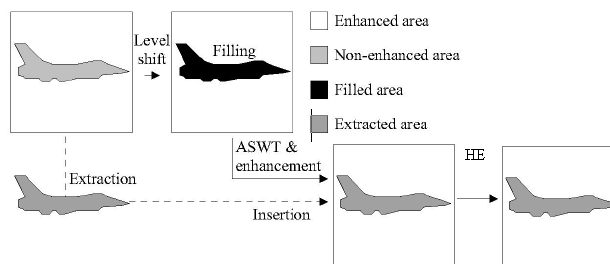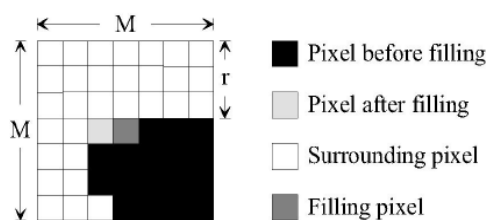sed eight times by using inverse wavelet transform after high frequency domain is enhanced. Then apply the Histogram Equalization to improve the performance of the image. The area that is extracted at the beginning is inserted in non-emphasis area of the image that is composed again.

C. Pixels filling method

Figure 3 shows a reference block when filling in each pixel of non-enhanced area. The method that fills in non-enhanced area is described as follows. All pixels of non-enhanced area are filled at the same value. Pixel filling is set regardless of the surrounding pixel. The pixel in the non-enhanced area is filled by the mean value of level of the filled pixel and the surrounding pixel. The filling order is from the left to the right and from the top to the bottom in non-emphasis area

V.FRACTIONAL DIFFERENTIAL ANALYSIS OF AN IMAGE

A. Differential Operation of Signal

The Fourier transform of s'(t) of any square integrable signal $s(t) \in L2(R)$ is:

$$Ds(t) \overset{FT}{\Leftrightarrow} (\hat{D}s)(w) = (iw) \bullet s(\hat{w}) = d(\hat{w})s(\hat{w})$$

(3)

Similarly available, the Fourier transform of its v order fractional differential is:

$$D^v s(t) = D^v s(t) = \frac{d^v s(t)}{dt^v} \overset{FT}{\Leftrightarrow} (\hat{D}_v s)(w) =$$

$$(iw)^v \bullet \hat{s}(w) = d_v(\hat{w})s(\hat{w}), v \in R^+$$

(4)

And v order differential operator D v = D v is the multiplicative operators of d^ (w) = (iw) v, and its complex exponential form and time domain form are:

$$\hat{d}(w) = (iw)^v = \hat{a}_v(w) \bullet \exp(i\theta_v(w)) = \hat{a}(w) \bullet \hat{p}_v(w)$$

$$\hat{a}_v(w) = |w|^v, \hat{\theta}(w) = \frac{v\pi}{2}\text{sgn}(w)$$

(5)

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$$\hat{d}_v(t) = a_v(t) * p_v(t) = \frac{1}{2\pi} \int_{-\infty}^{+\infty} (iw)^v \bullet e^{iwt} dw$$

(6)

$$a_v(t) = \int_{-\infty}^{+\infty} a(w) \bullet e^{iwt} dw = \frac{1}{\pi} \int_{-\infty}^{+\infty} |w|^v \bullet \cos(iwt) dw$$

(7)

$$p_v(t) = \frac{1}{2\pi} \int_{-\infty}^{+\infty} \hat{p}_v(w) \bullet e^{iwt} dw =$$

$$\cos\frac{v\pi}{2} \bullet \delta(t) - \sin\frac{v\pi}{2} \bullet \frac{1}{\pi t}$$

(8)

From (5), the fractional differential physical sense can be understood as AM and PM, and the amplitude is fractional exponent with frequency changes, and the phase is the Hilbert transform of frequency [11].

From (6) to (8), the filter function of Fractional differential filter is:

$$\hat{d}_v(w) = (iw)^v = |w|^v \bullet \exp(i\theta_v(w))$$

(9)

Its amplitude characteristics are dual function, and phase characteristics are odd function. So we can only study the filter characteristics when w>0 [12].

The conclusion is that integer-order differential enhancement in high frequency components of signals is greater than the fractional differential and weakening in very low frequency components of signals is also stronger than the fractional differential. For fractional differential, when 0<v<1 and w>1, intermediate frequency of signals is also strengthened the same as high frequency, when 0<w<1, very low frequency of signals is non-linear attenuation and the attenuation is obviously smaller than the former. So this is the explanation that fractional differential is more conducive to the image enhancement.

B. Fractional Differential Difference Equations

Fractional calculus G-L equation is defined as a continuous function from the study of classical integer-order derivative definition, and the calculus of order and the dimensional are inferring from the integral extended to the fraction. The equation

$$_a^G D_t^v = \lim_{h \to 0} \frac{1}{h^v} \sum_{m=0}^{\frac{t-1}{h}} (-1)^m \frac{\Gamma(v+1)}{m!\Gamma(v-m+1)} f(t-mh)$$

(10)

And the Gamma function is:

$$\Gamma(n) = \int_0^{\infty} e^{-t} t^{n-1} dt = (n-1)!$$

(11)

Then gets fractional differential difference expression:

$$\frac{d^v f(t)}{dt^v} \approx f(t) + (-v)f(t-1) +$$

$$\frac{(-v)(-v+1)}{2} f(t-2) + \dots +$$

$$\frac{\Gamma(-v+1)}{n!\Gamma(-v+n+1)} f(t-n)$$

(12)

Based on (12), we can write the right side of the equation:

$$a_0 = 1, a_1 = -v, a_2 = \frac{(-v)(-v+1)}{2}$$

$$a_3 = \frac{(-v)(-v+1)(-v+2)}{6} \dots$$

$$a_n = \frac{\Gamma(-v+1)}{n!\Gamma(-v+n+1)}$$

(13)

C. Construction of Fractional Differential Operator

The adjacent coefficients of low frequency keep the regional relevance. The operators of low frequency as in figure 4.

FIGURE 4: OPERATOR OF LOW FREQUENCY

a_1	a_1	a_1
a_1	$8 \times a_0$	a_1
a_1	a_1	a_1

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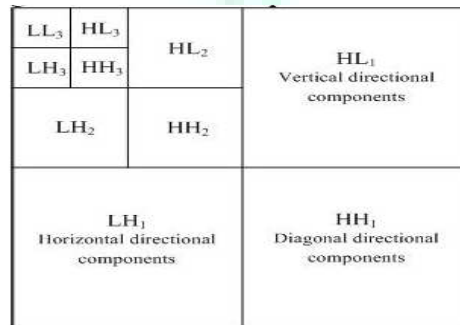
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High frequency sub-band coefficients contain the details of the image and edge components, and high frequency sub-band coefficients distribution has a clearly directional feature. So the vertical sub-band coefficients of the vertical direction generally towards the relevance of the region, and the horizontal sub-band coefficients of the horizontal direction generally towards the relevance of the region, and diagonal sub-band coefficients of the diagonal direction generally towards the region correlation. The operators of high frequency are as in figure 5.

FIGURE 5: OPERATOR OF HIGH FREQUENCY

0	a_0	0		0	0	0		a_0	0	a_0
0	$2a_1$	0		a_0	$2a_1$	a_0		0	$4a_1$	0
0	a_0	0		0	0	0		a_0	0	a_0

VI. WAVELET DECOMPOSITION USING FRACTIONAL DIFFERENTIAL OPERATOR

FIGURE 6: WAVELET DECOMPOSITION OF THE IMAGE

The method of wavelet decomposition is described as follows. The low frequency components and high frequency components can be obtained after the decomposition of the wavelet transform of the image. The different frequency components we obtained through the wavelet decomposition are LL_k and HL_k. LL_k is the low frequency components, HL_k is the vertical high frequency components, LH_k is the horizontal frequency components and HH_k is the diagonal frequency components where k is the wavelet decomposition level.

The high frequency sub-band coefficients contain the details of the image and edge components. The lower sub-band or the low frequency components contain more information about the image. So we decompose the lower sub-band again and again up to the k levels. By doing this, we get the low frequency sub-band coefficients and we set a minimum threshold value. Then adjust the higher sub-band frequency coefficients linearly with the minimum threshold value to enhance the image. When doing the fractional differential operation to the signal, the low frequency components will be also improved. The image texture details will become clearer through the fractional differential operation. After the wavelet decomposition, to construct a differential operator using fractional difference equation, then obtain the enhanced image through computing with wavelet coefficients. Making convolution operation between low frequency sub-band component and the low frequency sub-band differential operator to get the low frequency sub-band component. Then making convolution operation between high frequency sub-band component and the high frequency sub-band differential operator to get the high frequency sub-band component. Then making the inverse transforms to get the enhanced image. Therefore, the higher layers of wavelet decomposition, the more texture and detail obtained by image decomposition, and the better image enhancement obtained by making differential operator.

VII. COMPARATIVE ANALYSIS

For comparison, we have applied the ASWT technique on the Jet test image in Fig. 7. It can be found that image sharpening effect is markedly enhanced, and edge information and local details are also strengthened with the differential order increasing. The image enhancement effect of wavelet transform is obvious, but poor image smoothness whereas the proposed method which is wavelet transforms using fractional differential is good and smooth effect. The different levels of wavelet decomposition, fractional differential image enhancement effect is different. The higher level of image decomposition, image enhancement and texture after the local details more clear, the image brightness significantly increased at the same time.

VIII. RESULT AND DISCUSSION

In this paper, we have proposed a new image enhancement method by arbitrarily shaped wavelet transform through histogram equalization to enhance the features of the image. In brief, our algorithm uniquely applies arbitrarily shaped wavelet transform using fractional differential operator to enhance the image, and subsequently, histogram equalization is used to improve the performance of the image and preserve the edges very well. Both phases contain tunable parameters that can be adjusted to obtain sharp and smooth regions, which may yield good contrast of the image. Experimental results show that image enhancement algorithm based on fractional differential of the regional characteristics of the wavelet coefficients is good.

FIGURE 7: ORIGINAL IMAGE

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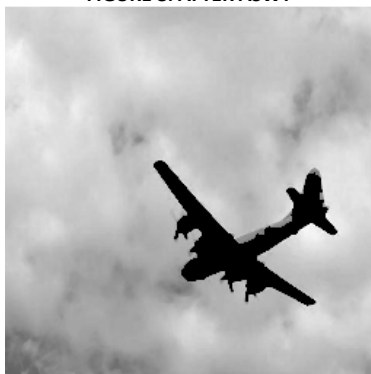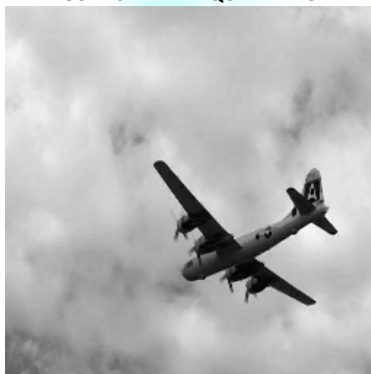
FIGURE 8: AFTER ASWT

FIGURE 9: AFTER EQUALIZATION

IX. CONCLUSION

This paper presents a new proposed algorithm in detail. The performance is found to be better, this new method is easy to implement and has an optimum execution time. Our method provides a more accurate statistical model for analysis, a fast implementation algorithm, and better image enhancement performance. As a result here the noise can be reduced significantly and thus we will obtain an enhanced image.

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SCOURGE OF THE INNOCENTS

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ABSTRACT

It is being recognised now that the children are having a separate legal status and are entitled to various special rights. In reality, the practical implementation and realization of these rights is a debatable issue. Innocents are exposed to all forms of exploitation and blatant violations of their rights. They fall a prey to various forms of abuses and exploitations by the adults. In the real world, their scourge results in child labour, psychological ill-treatment, sexual abuse, physical injury, psychological trauma and even death. The need of the hour is to educate the near and dear ones to stop female infanticide and to bring awareness against the illegal and unlawful action. The paper foregrounds to look back and to review as to how far one has succeeded in the protection of the rights of the children who are the nation's most important asset. A study has been undertaken to show why the children are under bondage and how to make them aware of their rights and to bring them out of their bondage. The main objective of this paper is to make the public aware of the rights of the children, and the denial or violation of such rights implied by child labour. The paper also discusses the area how the Government interferes and takes enough steps for favouring the fullest development of very child. Also it tries to give some practical solutions for the protection of child rights.

KEYWORDS
Awareness, children, education, exploitation, freedom, scourge.

INTRODUCTION
Children are the most beautiful and precious flowers in the garden of life. They are the blessings of God to mankind. They need to grow in an environment that enables them to lead a life of freedom and dignity. They need every care and protection for their healthy development because of their special needs and vulnerability. Provisions are given for protection of child rights, and numerous legislations are there for the prevention of child rights violation. It is being recognised now that the child is having a separate legal status and is entitled to various special rights. In reality, the practical implementation and realization of these rights is a debatable issue.

STATEMENT OF THE PROBLEM
A large proportion of children are deprived of their basic rights. They are found working in various sectors of the economy particularly in the unorganized sectors. Children are exposed to all forms of exploitation and blatant violations of their rights. They fall a prey to various forms of abuses and exploitations by the adults. In the real world, they suffer violence resulting in child labour, psychological ill-treatment, sexual abuse, physical injury, psychological trauma and even death. Millions of children are employed in both hazardous and non-hazardous works. Parents beat their children and cause physical and psychological injuries. Street children are subjected to arbitrary detention and abuse by police. Teachers subject their students to severe beatings. Some of them are confined and reduced to slavery or denied freedom of movement, thus making child labour a human rights issue and a developmental issue. This situation will create many challenges to the future prosperity of any nation, especially the developing countries like India. So special instruments have to be drawn up to safeguard and enforce child rights.

OBJECTIVES
Children need special protection and attention by law. The main objective of this paper is to make the public aware of the rights of the children, and the denial or violation of such rights implied by child labour. A study of this nature is essential to know the rights of children and the impact of such violation and the wellbeing of the future of our nation. It foregrounds to look back and to review as to how far one has succeeded in the protection of the rights of the children who are the nation's most important asset. It points out how opportunities of education and training could be provided for them to grow into worthy citizens.

RIGHTS OF A CHILD
The UN Convention on the Rights of the Child (CRC) which were drawn up in 1989 has been ratified by almost all countries in the world. It lists out four sets of very important rights for every child. They are
I) Right to Survival
ii) Right to Development
iii) Right to Protection
iv) Right to Participation
Right to Survival: It includes right to life, highest attainable standard of health, nutrition, adequate standard of living, a name and a nationality.
Right to Development: It includes right to education, support for early childhood, care and development, social security, right to leisure, recreation and cultural activities.
Right to Protection: This right includes freedom from all forms of exploitation, abuse, inhuman or degrading treatment, neglect, special protection in special circumstances such as situations of emergency and armed conflicts, in case of disability, etc.
Right to Participation: It includes respect for the views of the child, freedom of expression, access to appropriate information, freedom of thought, conscience and religion.
All these rights are dependent on each other and are invisible. Violations of children's rights are not limited to the poor and downtrodden. Withdrawing them from work and ensuring their rehabilitation is a major challenge facing the country. Children in the age group of 6-14 years, who actually be in school but are out of school, are deemed to be actual or potential child labourers. They happen in middleclass and elite homes too.

CHILD RIGHTS VIOLATION
Rights are denied for the children by the elders. Violating the rights is common. Every day in one way or other the rights of a child is violated in the world. They are denied of their rights to survival, development, education, leisure and play, opportunity for developing their physical and mental talents, and protection from abuse and neglect. Child labour is a concrete manifestation of the denial of rights of children. The major forms of child rights violations can be grouped as female infanticide, foeticide, child labour, sale of children, child prostitution and trafficking, and child abuse.

FEMALE INFANTICIDE
It is regrettable that female infanticide is rapidly decreasing the female population throughout India. The main factors that are responsible for the increase in the incidence of female infanticide is the low status of women, son preference, and the practice of dowry across all caste groups. The birth of a female child is hardly

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welcome in a male-dominated society and certain practices like murdering the girlchild either immediately after birth or within a year decrease the rate of girl children. It is a deliberate or intentional act of killing a female child either directly by using poisonous organic or inorganic chemicals or indirectly by neglecting deliberately to feed the infant by either one of the parents or other family members or neighbours or by the midwife. Kolloor (1990) defines infanticide as, "Killing of an elderly dependent child under 'one year of age' who is killed by mother, parents or other in whose care the child is entrusted." It is unfortunate that the parents also view her as a liability. It is to be understood that women are as worthy living as men are. When woman is created, why destroy her so brutally and mercilessly? The need of the hour is to educate the near and dear ones to stop female infanticide and to bring awareness against the illegal and unlawful action.

FOETICIDE

A further more outrageous form of elimination of girlchild is through the technique of foeticide. It is very unfortunate that the advancements in the field of science and medical technology have changed the fate of the unborn child and posed threat to its life, in particular to the life of female child in the womb. The Prohibition Act regarding the determination of sex of the foetus and the stated punishment for the violation of the provisions of the Act are as follows:

o It prohibits misuse and advertisements of prenatal diagnostic techniques for determination of sex of the foetus, leading to female foeticide.
o It regulates the use of prenatal diagnostic techniques for determination of specific genetic abnormalities or disorders and the use of such techniques are only under certain conditions and only by the registered institutions.
o It gives punishment for the violation of the provisions given in the act.
o The complaint made by any person will be taken for proper action within 30 days.
o It also provides for mandatory registration of genetic counselling centres, clinics, hospitals, nursing homes, etc.

CHILD PROSTITUTION AND CHILD TRAFFICKING

Child Prostitution and Child Trafficking are considered as the worst violations of human rights. Child prostitution is a form of commercial sexual exploitation of children in which a child performs the services of prostitution, for financial benefit. The term is often used to describe the prostitution of prepubescent or pubescent children. However, in legal definitions, the term usually refers to prostitution by a minor, or person under the local age of majority. People travel to foreign countries for the purpose of avoiding local laws to engage in child prostitution. Keti Topi is of the view that "A customer may negotiate an exchange directly with a child prostitute in order to receive sexual gratification, or through an intermediary (pimp) who controls the prostitutes' activities for profit. The provision of children for sexual purposes may also be an object of exchange between adults." Also the child is exposed to the dangers of crimes, drugs, anti-social elements and infections like sexually transmitted diseases, HIV and AIDS. They are modern slavery; they damage health, psychological balance and confidence of the children. In many cases, the children are locked up, chained, beaten, raped and burnt with cigarettes.

Kaumudhi Challa says that "They are deprived of early childhood, care, home environment, health, nutrition and education and are subjected to a life of miseries and humiliation. Hence, the elimination of child prostitution is of utmost importance in order to achieve realization of protection of the rights of child and its development."

CHILD ABUSE

Child Abuse is the violation of basic human rights of a child. It is a very complex and dangerous set of problems that includes child neglect, and the physical, emotional and sexual abuse of children. The problem of Child abuse is one of the most critical matters on the International Human Rights agenda. It is meted out to a person below the age of 18 and is a globally prevalent phenomenon. However, in India, as in many other countries, there has been no understanding of the extent, magnitude and trends of the problem. The growing complexities of life and the dramatic changes brought about by socio-economic transitions in the country have played a major role in increasing the vulnerability of children to various and newer forms of abuse. Child abuse has serious physical and psycho-social consequences, which adversely affect the health and overall wellbeing of a child. According to WHO: "Child Abuse or maltreatment constitutes all forms of physical and emotional ill-treatment, sexual abuse, neglect or negligent treatment or commercial or other exploitation, resulting in actual or potential harm to the child's health, survival, development and dignity." In the Indian context, acceptance of child rights as primary inviolable rights, is fairly recent, as is the universal understanding of it. Child Abuse includes different forms of abuses like physical abuse, sexual abuse emotional abuse and neglect.

PHYSICAL ABUSE

Physical abuse is inflicting physical injury upon a child. This may include burning, hitting, pinching, shaking, kicking, beating or otherwise harming a child. The parent or caretaker may not have intended to hurt the child. It may however, be the result of over-discipline or physical punishment that is inappropriate to the child's age.

SEXUAL ABUSE

Sexual abuse is inappropriate sexual behaviour with a child. It includes fondling a child's genitals, making the child fondle the adult's genitals, intercourse, incest, rape and other sexual exploitation.

EMOTIONAL ABUSE

Emotional abuse is known as verbal abuse, mental abuse and psychological maltreatment. It includes acts of the parents or caretakers that have caused or could cause serious behavioural, cognitive, or emotional, or mental trauma. This can include parents/caretakers using extreme forms of punishments, such as confinement in a closet or darkroom or being tied to a chair for longer periods of time or threatening a child.

NEGLECT

Neglect is the failure to provide for the child's basic needs. It can be physical, educational or emotional. Physical neglect can include not providing adequate food or clothing, appropriate medical care, supervision or proper weather protection. It may include abandonment. Educational neglect can include failure to provide appropriate schooling or special educational needs. Psychological neglect includes lack of any emotional support and love, never attending to the child and hence the child allows himself in drugs.

CHILD LABOUR

Child Labour is defined as any work within or outside the family that involves time, energy, commitment, which affect the ability of a child to participate in leisure, play and educational activities. It has existed in one form or the other in all historical periods. It is a social problem and its being a matter of social concern. It is a cruel form of offence perpetuate on countless innocents in the country. A child has the right to a standard of living adequate for the child's physical, mental, spiritual, moral and social development. Childhood is required to be a period of 'evolving capacities,' developing the child's personality, talents and mental and physical abilities to their fullest potential, primarily through education.

PROBLEM OF CHILD LABOUR

Child Labour is a menace and has a far reaching impact on the society. It denies a child the right to childhood. When children start working at a young age, they remain illiterate and are unable to avail better job opportunities and work conditions when they become adults. Such work impairs the health and development

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of a child. They may remain poor and the vicious cycle of poverty, illiteracy and unemployment continues. It also affects their tender health and exposes them to risks of diseases like asthma, tuberculosis, skin disorders and nervous breakdown, and in grave cases, mutilation of body parts and even death.

GLOBAL SCENARIO

It is estimated that there are about 8.5 million children who are engaged in worst forms of Child labour. This includes trafficking—1.2 million, forced bonded labour—5.7 million, armed conflict—0.3 million, prostitution—1.8 million and illicit activities—0.6 million (Source: International Labour Organization, 2002).

CHILD LABOUR IN INDIA

India has the largest number of Child labourers in the world. It constitutes 16 per cent of the world's population, occupying 2.42 per cent of its land area. Child labour is much of a rural phenomenon than urban in India. 90.87 per cent of the working children are found to be in rural areas and 9.13 per cent are in the urban areas. Children face discrimination on the basis of caste, religion, and ethnicity.

CAUSES OF CHILD LABOUR

The major causes of Child labour are
- Ignorance of parents
- Traditions of making children learn family skills
- Absence of primary education, unemployment and low family income
- Migration to urban areas
- Non-availability and non-accessibility of schools
- Children supplement the income of the family
- Large family
- Exploitation of Children

QUALITIES OF CHILDREN

Employers believe that children have the requisite qualities best suited to their industry. They are
- quick learners, and pickup skills in doing minute work. Eg. Carpet weaving industry
- preferred for employment because of their nimble fingers.
- acceptable as they are ignorant about their rights.
- regular for work work.
- gullible and innocent, and they can be easily manipulated.
- unable to bargain or todetermine their appropriate wages.
- inexpensive
- ignorant and they do not realize the hazards of the job they are doing.
- removed when their services are not required.

Because of these reasons children are engaged in various manufacturing processes of different home-based industries such as brassware lock, match and fireworks, glass and bangle industry, carpet making, stone quarries, brick kilns, beedi making, etc. In rural areas, children are engaged in agricultural and allied occupations as a part of their family labour or as individual workers.

HEALTH PROBLEMS

Children tend to develop health problems such as
- Respiratory problems such as asthma, tuberculosis
- General weaknesses such as stunted growth, body ache and joint pains
- Eye problems such as watering, irritation and reddening of eyes
- Loss of appetite
- Tumours and burns
- Disability by working on looms
- Susceptibility to arthritis as they grow older
- Mental disabilities

The National Human Rights Commission is deeply concerned about the employment of child labour in the country. The Commission has observed that even after 65 years of independence, child labour persists in the country. It has been monitoring the child labour situation in the country through the special rapporteurs, visits by Government officials, sensitization programmes and workshops, launching projects to ensure whether adequate steps are taken to eradicate child labour.

FINDING

A study has been undertaken to show that the children are still under bondage and how to make them aware of their rights and to bring them out of their bondage. Public should be aware of the rights of the children, and also the denial or violation of such rights implied by child labour. Government interferes and takes enough steps for favouring the fullest development of every child. It seeks to identify the major forms of child rights violation in India and the legal remedies available. Also it tries to give some practical solutions for the protection of child rights. Despite various constitutional provisions, passing of legislations and policies, the goal of eradicating child labour remains elusive.

SUGGESTIONS

Unless the reality of free and compulsory education for all up to the completion of the age of 14 years is realized, scourge of the innocents shall continue. The NGO sector in the non-formal education of child labourers should involve themselves more. A number of schools and training centres are to be functioned in the districts. There has to be a distinct improvement in the level of awareness among the general public about child labour issues.

CONCLUSION

It is true that the children of today are having a bundle of rights conferred upon them by these legal documents. In reality, enjoying the rights given to the children is beyond limits. Though children scourge due to poverty, illiteracy, unemployment and social and cultural practices, one cannot just ignore the existing rights. So any violation of right should be considered serious, and adequate punishment should be given. The society must also change its attitude towards the child.

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BUILDING & TESTING MODEL IN MEASUREMENT OF INTERNAL SERVICE QUALITY IN TANCEM – A GAP ANALYSIS APPROACH

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ABSTRACT

This research paper reviews internal customer (employees) satisfaction in TANCEM at Alangulam in Virudhunagar district and proposed to investigate the relationship between the perceived and expected service quality among employees. The findings reveals that there is a service gap between internal customer expectations and perceptions, in terms of the quality of the service provided by TANCEM ,meaning that customer's expectations of service quality were not met. The explorative factor analysis showed that "responsiveness and tangibles" were the most influential dimensions (factors) in this study for predicting the internal customer satisfaction. These factors had the service gap scores, suggesting that internal customer's perception fell seriously short of their expectations. In conclusion, delivering quality service will be an essential condition for success of TANCEM. While the future importance of delivering quality service is easy to discern and to agree on, doing so presents some difficult and intriguing management issues.

KEYWORDS
Internal service quality, TANCEM.

1.1 INTRODUCTION OF SERVICE QUALITY

In the marketing thought, the concept of quality service and customer satisfaction has a long history, and since **Cardozo R. (1965)** initial study of customer effort, expectations, and satisfaction, the body of work in this field has expanded greatly, with more than 900 articles focusing on customer satisfaction and dissatisfaction of **Perkins , Debra S. (1991),**. However, since the service quality has been characterized as an important determinant in successfully attracting repeat business, consistently delivering high quality services must be considered as an essential and crucial strategy element for surviving in today's highly competitive environment. "A customer's expectation and perception of service quality survey will provide significant information that can be used by hospitality leaders to develop the service improvement training programs."

1.2 INTERNAL CUSTOMER SATISFACTION

The concept of "customer satisfaction" is different from "perceived service quality", although some studies have found a significant correlation between the two paradigms, and included similar errors of interpretation **(Oh H., & Parks, S.C. (1997)**. Perceived service quality differs from satisfaction in that service quality is the customers' attitude or global judgment of service superiority over time, while satisfaction is connected with a specific transaction (Bitner, 1990; Bolton & Drew, 1991; Parasuraman et al., 1988). Most of the studies into customer satisfaction in the hospitality literature have focused on identifying service attributes, which are treated as customers' needs and wants. From a marketing perspective, customer satisfaction is achieved, when their needs and wants are fulfilled. There is a general widespread agreement in the literature that the provision of service quality is concerned with generating customer satisfaction. Gronoos, Parasuraman et al. and Johnston have defined service quality in terms of customer satisfaction, that is, the degree of fit between customers' expectations and perceptions of service.

1.3 THE SERVICE QUALITY AND SATISFACTION:

Quality improvement has become a vital ingredient in the strategy for making destinations more competitive. Customer satisfaction has its roots in the global quality revolution. The relationship between service and product quality and overall customer satisfaction has been repeatedly demonstrated. The first research involving the measurement of customer satisfaction occurred in the early 1980s. Works by Oliver (1980), Churchill and Surprenant (1982), and Bearden and Teel (1983) tended to focus on the operationalization of customer satisfaction and its antecedents. By the mid-1980s, the focus of both applied and academic research had shifted to construct refinement and the implementation of strategies designed to optimize customer satisfaction, according to Zeithaml, Berry, and Parasuraman (1996). Their discussion of customer satisfaction, service quality, and customer expectations represents one of the first attempts to operationalize satisfaction in a theoretical context. They proposed that, the ratio of perceived performance to customer expectations was key to maintaining satisfied customers. Several years later, Parasuraman, Berry, and Zeithaml (1988) published a second, related discussion that focused more specifically on the psychometric aspects of service quality. Their multi-item SERVQUAL scale is considered as one of the first attempts to operationalize the customer satisfaction construct.The SERVQUAL scale focused on the performance component of the service quality model in which quality was defined as the disparity between expectations and performance. The battery of items used in the SERVQUAL multi-item scale is still used today as a foundation for instrument development. The primary areas considered in the scale involved tangibles, reliability, responsiveness, assurance, and empathy. For many years these dimensions were regarded as the basis for service quality measurement.

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1.4 REVIEW OF LITERATURE

In this literature, there is a number of operational and theoretical framework studies which introduce various methodologies to measure service quality in different hospitality sectors (Ryan & Cliff, 1997; Getty & Thompson, 1994; Saleh &Ryan, 1991; Pizam & Milman, 1993).In the service industry, definitions of service quality focus on meeting customers' needs and requirements, and how well the service delivered meets customers' expectations (Lewis & Booms, 1983). Gronoos (1984) had stated that perceived quality of service was dependent on the comparison of expected service with perceived service, and thus, the outcome of a comparative evaluation process. Parasuraman et al. (1985) had developed the GAP model, and the subsequent SERVQUAL model within the GAPS framework. Parasuraman et al. had defined "service quality" as the degree and direction of discrepancy between customers' perceptions and expectations, and had "perceived service quality" as the gap between customers' perceptions and expectations, as a measurement of service quality. The smaller the gap, the better the service quality provided, and the greater the customer satisfaction.

1.5 OBJECTIVE OF RESEARCH

1. To scrutinize the demographic profile of the employees in TANCEM.
2. To determine the reliability and validity of modified" INTSERVQUAL" instrument for measuring internal service quality.
3. To identify the "Service Gap" between perceived and expected level of the employees in TANCEM.
4. To design a structural model for ISQ measurement in TANCEM.

1.6 INSTRUMENT FOR MEASURING SERVICE QUALITY:

1.6.1. INTSERVQUAL

The internal service quality is measured through the instrument called INTSERVQUAL In this research, GAP Model is adopted, to evaluate the dimensions (RATER such as tangibles, reliability, responsiveness, assurance and empathy) that determine the employee's perception and expectation regarding Service provided in TANCEM. SERVQUAL as the most often used approach for measuring service quality has been to compare customers' expectations before a service encounter and their perceptions of the actual service delivered (Gronroos, 1982; Lewis and Booms, 1983; Parasuraman et al. , 1985). The SERVQUAL instrument has been the predominant method used to measure consumers' perceptions of service quality.

1.6.2. STRUCTURAL MODEL

Structural modeling is a statistical technique for testing and estimating casual relationships using a combination of statistical data and qualitative casual assumption. The casual assumption embedded in the model has falsifiable implications which can be tested against the data. .The model consists of 2 parts. The measurement model and the structural equation model. The measurement model specifies how the latent variables or hypothetical constructs are measured in terms of the observed variables. It also describes the measurement properties, the validities and reliabilities of the observed variables. With an accepted theory or otherwise confirmed model, be tested against the data. SEM In this model we have compare the RATER dimensions of service quality & satisfaction, Level of Income & Satisfaction.

1.7 PROPOSED CONCEPTUAL MODEL

IMPACT OF RATER DIMENSIONS ON SERVICE QUALITY (SQ) AND SATISFACTION (SAT)
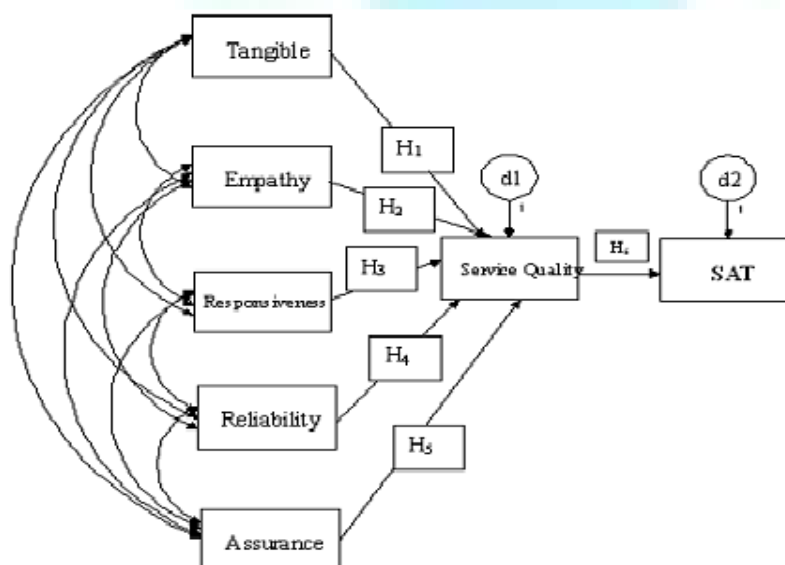
(Dr.S.RAJARAM & Er.R.SHENBAGA SURIYAN)

Where d1 and d2 are endogenous variables.

Sub hypothesis of proposed model:

H1: Tangible dimension having a positive impact on Service Quality.
H2: Empathy dimension having a positive impact on Service Quality
H3: Responsiveness dimension having a positive impact on Service Quality
H4: Reliability dimension having a positive impact on Service Quality
H5: Assurance dimension having a positive impact on Service Quality
H6: Overall service quality leads to positive impact on satisfaction

This structural model helps to determine the linkage between RATER dimensions of service quality and Overall Satisfaction of TANCEM, which influence in the positive or negative direction. With the help of indices value from the output of AMOS software, we determine whether proposed conceptual model will be fit or not for our research paper. RMSEA (Root mean square Approximate) value will infer the proposed model close fit or not. **This model is designed with the mediating dimension of service quality, which leads to satisfaction and also to determine the impact dimensions of service quality on Overall SAT.**

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1.8 RESEARCH METHODOLOGY

The research design adopted is descriptive research. The primary data is collected through Simple Random sampling Method i.e. the data is collected by from the population of 200 employees. Here the employees are taken as unit and the analysis is made based on the feedback given by the employees through customized "INTSERVQUAL" questionnaire. The INTSERVQUAL instrument was constructed with 21 items of RATER dimensions. The primary data is analyzed in the softwares like SPSS 15 & AMOS 7.0. The statistical tools applied are Path analysis, Gap analysis, Reliability analysis and Exploratory Factor Analysis.

1.9 ANALYSIS AND INTERPRETATION:

1.9.1   RELIABILITY ANALYSIS - PRETESTING OF INTSERVQUAL INSTRUMENT

ALPHA method is used for conducting the reliability test for the INTSERVQUAL instrument. It is used to measure the internal consistency between the items (attributes) of INTSERVQUAL instrument. The alpha value varies from Zero to one.

Dimensions	No of Statements	Reliability Coefficient	
		Perception	Expectation
Tangible	4	0.846	0.832
Reliability	5	0.8641	0.8712
Responsiveness	5	0.8554	0.8598
Assurance	4	0.8674	0.8663
Empathy	3	0.8513	0.8578

In the above table, we inferred that the average reliability score of the instrument is 0.854 for perception level & 0.861 for expectation level of the instrument and it is found there is a good internal consistency between the items in the instrument.

1.9.2   VALIDITY OF SERVQUAL INSTRUMENT:

The KMO and Barlett's test of Sphericity are both tests of multivariate normality and sampling adequacy is applied to check the content and construct validity of the data. The KMO value is 0.773 which is greater than 0.8 is meritorious. By applying PCA method, six factors with factor loadings are extracted which and listed below.

a)   The reporting head keeps me informed about the issues affecting my work   ->0.842
b)   Training and development in TANCEM gives me learning and growth opportunities-> 0.872
c)   I am confident that my work on the job, add value for me   ->0.844
d)   In my dept we learn from mistakes& take measures to correct them   ->0.850
e)   The reporting head responds quickly providing services to the employees   - >0.815
f)   The reporting head have the willingness to provide advises *and empolyemt status- >0.874*

1.9.3   GAP analysis:

From the Gap analysis, it is inferred that the customer perception is less than their expectation level in RATER dimensions of service quality offered by TANCEM.

Dimension	Service Gap (P-E)	Priority Rank
Tangible	-1.65	5
Reliability	-1.33	3
Responsiveness	-1.55	4
Assurance	-1.26	2
Empathy	-1.06	1

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Calculation of Gap analysis:

The customer perception is satisfied with the existing systems and their expectation is little bit higher than the existing level. So, the management has to focus on important dimensions like Tangibles and Responsiveness. The other three dimensions have little service gap between the perception & expectation level of the customers towards the company. It might indicate that employees were not motivated to take the initiative in solving customer's problems.

Sl.No	Items in SERVQUAL Instrument	Perception Mean	Expectation Mean	Service Gap
1.	TANCEM provides upto date equipments and Technologies	4.1	5.9	-1.8
2.	Physical facilities (Machineries, Layout)are visually appealed	4.14	5.59	-1.45
3.	The work environment in TANCEM is comfortable and attractive	4.33	5.96	-1.63
4.	Machine movement or process is adequate	4.05	5.78	-1.73
	Gap mean of Tangible			**-1.6525**
5.	The reporting head responds quickly and efficiently in case of providing services to the employees	4.4	5.77	-1.37
6.	I feel convenient to get required information from any department in TANCEM	4.23	5.99	-1.76
7.	The reporting head is kind &polite to the employees even though he/she is busy	4.67	5.77	-1.1
8.	The reporting head instill confidence in employees and make the employees to feel safe to guide the employees	4.36	5.81	-1.45
9.	The reporting head have the willingness to provide advises and suggestions to the employees	4.72	5.74	-1.02
	Gap mean of Reliability			**-1.3325**
10.	In my department we learn from mistakes and take suitable measures to correct them	4.89	5.54	-0.65
11.	I have opportunities to develop an apply skills, I need to enhance the career	4.31	5.77	-1.46
12.	Training &Development in TANCEM gives me learning and growth opportunities	4.36	5.83	-1.47
13.	The policies and procedures followed by TANCEM is always transparent to the employees	4.12	5.9	-1.78
14.	In TANCEM employees are treated equally	4.34	5.84	-1.5
	Gap mean of Responsiveness			**-1.5525**
15.	I received the useful feedback from my reporting head relating to the job performance	4.49	6.57	-2.08
16.	I am encouraged to be innovative in doing my work	4.44	5.7	-1.26
17.	The reporting head keeps me informed about the issues affecting my work	4.58	5.58	-1
18.	I am confident that my work on the job, add value for me	5.16	5.89	-0.73
	Gap mean of Assurance			**-1.2675**
19.	The reporting head provide service in holidays to remove employee problems at work	4.84	5.52	-0.68
20.	When I suggesting ways to improve how we do things, my reporting head would take them seriously	4.55	5.65	-1.1
21.	The reporting head understanding the specific needs of the employees	4.44	5.84	-1.4

1.9.4   RESULT OF PROPOSED MODEL

Impact of RATER dimensions on SQ			Standard Estimates	Hypothesis supported	Hypothesis
Tangible	<-->	Service Quality	0.344	Yes	H1
Reliability	<-->	Service Quality	0.389	Yes	H2
Responsiveness	<-->	Service Quality	0.476	Yes	H3
Assurance	<-->	Service Quality	0.373	Yes	H4
Empathy	**<-->**	**Service Quality**	**0.501**	**Yes**	**H5**
Service Quality	<-->	Satisfaction	0.449	Yes	H6

Fit indices of the model evaluation

CMIN	IFi	CFI	NFI	RFI	RMSEA
6.908	0.996	0.995	0.984	0.912	0.074

From the above table, it inferred that, empathy dimension is having high impact on Service quality offered by TANCEM. The above six hypothesis (H1 to H6) are supported and proved from the analysis. There is a positive impact of service quality offered by TANCEM leads to satisfaction of employees. To assess the structural model fit, CFI, NFI, IFI, RFI values are greater than 0.9. These indices indicate a good fit. The overall fit of the conceptual framework is adequate with RMSEA 0.74 and not exceeding 0.1 and it indicates a close fit. The conceptual framework is examined using software AMOS 7.0.

1.10.1 FINDINGS OF RESEARCH

- The most of the respondent's age group above 50 years with proportionate of 58 %. The educational qualification of the respondents is taken under graduation classification of 32% of the samples. For the experience wise classification, above 15 categories of the respondents were chosen at a rate of 83 percentages. 48 % of the respondents were lies between the category income levels of Rs.10001 to 15000.
- The gap analysis result shows that management has to focus on all dimensions of service quality but particular emphasis on Tangibles, Responsiveness in TANCEM. In the overall results, employee's' perception of quality in is positive and employee's expectation score is little high than perceptions core.
- The Chronpha alpha of the instrument is 0.854 for perception level & 0.861 for expectation level of the instrument and it is found there is a good internal consistency between the items in the instrument.
- By EFA analysis out of 21 items of instrument, six factors are extracted which cause for the overall satisfaction of TANCEM employees. They are reporting head keeps me informed about the issues affecting my work, Training and development in TANCEM gives me learning and growth opportunities, I am confident that my work on the job, add value for me, In my dept we learn from mistakes& take measures to correct them, The reporting head responds quickly providing services to the employees   ,The reporting head have the willingness to provide advises *and empolyemt status.*
- The overall fit of the conceptual framework is adequate with RMSEA is 0.74. According to the general rule, if the RMSEA value lies between the ranges of 0.5 to 0.9 it means the "model is perfect fit". Hence the proposed conceptual model is the BETTER and fit model in determine the linkages between RATER dimension of service quality and satisfaction of TANCEM employees

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1.10.2   CONCLUSION OF RESEARCH

The management should concentrate on Service quality dimensions like Tangibles & Responsiveness to fulfill the employee's requirements. The top-level management motivates the employees for their work. It leads to the employee work in involvement and increase the productivity. From this research Service quality of TANCEM is measured and it could be concluded that perception level of employees of TANCEM is less than their expectation level. Therefore, the company takes efforts to fill the gap of employee's requirements. Service quality is the main factor to improve the employee's satisfaction where by company can improve their business.

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ORGANIZATIONAL CREATIVITY FOR COMPETITIVE EXCELLENCE

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ABSTRACT

Can organizational creativity lead to competitive excellence? The purpose of this paper is to develop a model linking organizational creativity to competitive excellence. Drawing upon existing theoretical evidence the paper develops and presents a conceptual model of the relationship between creativity and competitive excellence. In this era of globalization and competition, creativity is considered to be a key factor for survival, success and excellence of organizations (Peter Cook, 1998). While creativity is generally of three types, viz. individual creativity, group/team creativity and organizational creativity, this study focuses on organizational creativity. The methodology adopted is based on case study. This paper presents a case study to support the Conceptual model and depending on the literature reviews, as well as findings from the case, it is to measure creativity of an organization and to find out the relationship between creativity and competitive excellence.

KEYWORDS

creativity, creative organization, competitive excellence.

INTRODUCTION

In this era of globalization and competition, creativity is considered to be a key factor for survival, success and excellence of organizations (Peter Cook, 1998). More than just a buzzword, creativity is becoming acknowledged as a critical factor in organisational success. Creativity in organizations might be defined as the process by which new ideas that make innovation possible are developed. While creativity is generally of three types, viz. individual creativity, group/team creativity and organizational creativity, this study focuses on organizational creativity.

Creativity comes from the people in the organisation and their ideas or perspective on things. Organisational creativity is where having ideas are promoted, listened to and acted upon. All people have experiences and ideas from outside the work environment, and a way to capture these ideas is essential in allowing this creativity to grow. When boundaries are imposed, such as up-front budget constraints, this will limit the creative flow of ideas and you will lose the ability to harnessing the energy of staff to make break-through advances in the business.

Edward De Bono, considered to be the father of *creativity concept*, feels that one should get rid of one's inhibition to be creative, i.e., learning to use the right brain more.

The case study presented at the end, of a small and medium enterprise (SME) in Kerala which bagged the Rajeev Gandhi National Quality Award in 1999 tries to identify the determinants of creativity that lead to organizational excellence.

LITERATURE SURVEY

DEFINITIONS OF CREATIVITY AND EXCELLENCE

Cook (1998) considered creativity as an element of competitive advantage for organizations. The most profitable new products will be those that meet the customer needs more effectively than the competitor's products, and are therefore preferred by more customers (Mc Adam and McClelland, 2000). Innovation and creativity benefit companies beyond direct sales growth or efficiency improvements. A company that establishes an effective creativity and innovation process is also likely to realize social benefits that arise from team working and employee motivation (Cook, 1998). Creativity is seen as the front end of the innovation process. Amabile (1983, 1997, 1998) defines creativity as the process involved in developing an idea for a new product. Gurteen (1998) defines creativity as generation of ideas whereas innovation is putting these ideas in to actions by sifting, refining and implementing. Hence he believed that creativity required divergent thinking process, while innovation a convergent thinking one. Although the fundamental research on creativity dates back to 1960, by the 90s scholars had started appreciating its value in competitive advantage. The concept of organizational excellence as a topic of academic research and debate originated with Peters and Waterman (1982) in their book "In search of excellence". European Foundation for Quality Models (EFQM) guidelines (1999) defines excellence as outstanding practice in managing the organization and achieving results, all based on a set of eight fundamental concepts, viz, result orientation, customer focus, leadership and constancy of purpose, management by process and facts, people development and involvement, continuous learning, innovation and improvement, partnership development and public responsibility.

NEED/IMPORTANCE OF THE STUDY

Creativity is an important aspect of today's organization. This is particularly important as companies are facing continuous changes in the global economy. Change is a continuously phenomenon which happens to the organizations both internally and externally that organizations need to make creative plans and reactions towards predictable or unpredictable challenges.

The organizational environment has been changing rapidly. It is a set of forces and conditions outside the organization's boundaries that have the potential to affect the way the organization operates. An organization interacts with its immediate task environment and is affected by the general environment. The task environment includes the suppliers, distributors, competitors and customers, while the general environment includes forces that are economic, technological, socio-cultural, demographic, political and legal and global. The external environment has been becoming more turbulent as most companies are now competing in the global market where changes are not only common but substantial. Some changes are catastrophic such as economic depression and introduction of new technology. During poor economic times, managers may need to come up with creative strategy to reduce costs such as reducing the number of employees on the one hand, and to increase the motivation of the remaining employees. Managers may also need to identify ways to acquire and utilize resources more efficiently. Technological forces can have profound implications for organizations that it can make established products obsolete. **Examples** such as typewriters, black-and-white televisions, film cameras. The changes force managers to find new ways to satisfy customer.

STATEMENT OF THE PROBLEM

The rapid growth of competition in business and industry is often quoted as a reason for wanting to understand more about the creativity. Many firms are continually experiencing pressure to enhance old systems and products. Growth and survival can be related directly to an organisation's ability to produce (or adopt) and implement new products or services, and processes. One of the key aspects of any organisation's success or failure is its ability to stay ahead of the competition in a rapidly changing environment. The modern business, with its emphasis on competition, building larger markets, strategic planning, team working, etc., has created the need for new problem solving and decision making strategies. Hence, there is a need to study organizational creativity which in turn helps to achieve corporate excellence.

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OBJECTIVES OF THE STUDY

- To know the importance of organizational creativity.
- To identify the factors that enhances and/or facilitates organisational creativity.
- To identify the barriers to organisational creativity.
- What the organisation is doing to encourage / enhance organisational creativity?
- The role of leadership in creating an environment that enhances organisational creativity.

WHY IS CREATIVITY IMPORTANT?

The rational decision maker needs creativity: the ability to produce novel and useful ideas. The ideas are different from what's been done before but are also appropriate to the problem or opportunity presented. Why is creativity important to decision making? It allows the decision maker to appraise and understand the problem more fully including seeing problems others can't see. However, creativity's most obvious value is in helping the decision maker identify all viable alternatives.

Here are some Creative Cues to develop creativity

- **Cultivating Creativity**: Creativity needs to be enhanced otherwise it dies down. Creativity involves two processes – thinking and producing. Innovation is the production or implementation of an idea. If you have ideas but don't act on them, you are imaginative but not creative. Generative research shows that everyone has creative abilities. The more diverse is the training greater the potential for creative output. An average adult thinks of three to six alternatives for any given situation. The average child thinks of 60. Organizations can conduct creativity testing at workplace firstly to identify the creativity domains in their employees. They can invite experts from various fields to conduct workshops.

So here are few ways to unleash creativity in a workplace.

Organizational Motivation

- Appreciative Inquiry
- Experienced facilitators
- Motivation and reward
- Freedom of expression
- Positive Ambience

A STRATEGIC VIEW OF CREATIVITY

LINKING CREATIVITY AND INNOVATION

Organization creativity can be seen as a process where creativity is the input to the processes that lead to innovation, competitiveness and returns on investment.

The time spent in the "pipeline" varies for different industries e.g. in software applications it may be months and in the aerospace industry it may be decades. Any shortening of the pipe "length" or improvements in the number of ideas converted to innovations will produce financial benefit. In not-for-profit organizations, the notion of increased market share or return on investment may be replaced by more appropriate outcomes, such as contribution or enhancement of strategic positioning. To make progress through the pipeline requires that the organization has a strategy for converting creativity into innovation. My own research shows that the creativity in organizations has much more to do with an appropriate "context" and rather less to do with "creativity techniques". This can be summarized by the 80:20 creativity "formula".

Figure 1 An input-output view of the creative organization
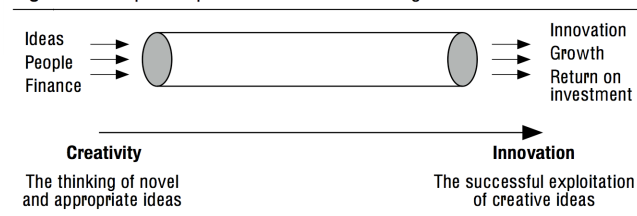
The 80:20 creativity "formula"

Creativity is 80 per cent context and 20 per cent technique. In reality, the 80:20 "formula" is not a universal recipe. However, it does give the correct emphasis to the balance between "context" and "technique". In my experience as a research and development leader and consultant, too little emphasis is placed on setting a suitable context for creativity, and this has consequences for the successful exploitation of techniques and tools. This article explores the 80 per cent.

A MODEL OF ORGANIZATION DESIGN FOR CORPORATE CREATIVITY

Organization theory offers several approaches for building models of the structure and functioning of organizations (Child and Kieser, 1981; Khandwalla, 1977; Pfeffer, 1982). Three approaches are especially useful for building a model of Organizational design for sustained and successful innovativeness. Contingency theory eschews all universally best designs and argues that, for the organization to be able to survive; its structure and functioning must be adapted to such features of its operating context as the environment it operates in, the nature of its industry or domain, its size, its technology etc. (Thompson, 1967; Donaldson, 2001). The strategic choice perspective argues that, in any context, organizations can adopt a variety of designs depending upon the strategic choices they make (Child, 1972; Hrebiniak and Joyce, 1985).Especially important may be such strategic choices as diversification, internationalization of operations, the core values, the core philosophy of the management, the vision of the future, key elements of the competitive strategy, etc. The synergy perspective argues that, for superior performance, the various elements of organizational design such as the organization's strategy, structure, management style, key management functions, decision-making and other processes, and the capabilities of its human resources must be properly aligned, i.e., must support each other rather than work at cross purposes Khandwalla, 1973; Miller and Friesen, 1984).
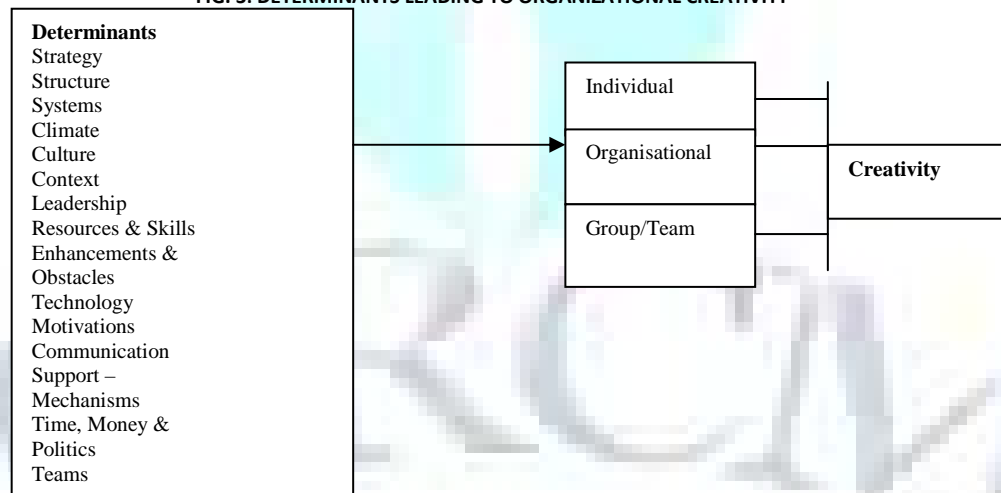
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FIG. 2: MODEL OF ORGANIZATIONAL DESIGN FOR CORPORATE CREATIVITY

Liberalization and globalization of an emerging economy

↓

Increasingly turbulent, competitive, exacting operating

↓

Strategic choice by corporate

Adopt a creativity-compatible   Status- quo in organizational design
Organizational design

- Innovation-inducing business strategy
- Innovation-inducing management style
- Innovation-inducing organizational structure
- Innovation-inducing management practices
- More effective management o innovations

↓

Record of a stream of successful technical and management-related innovations

↓

Sustained competitive advantage

Drawing on the literature survey summarized earlier and the tenets of these three approaches, the above model of organizational design for corporate creativity (i.e., sustained and successful innovativeness) is proposed for the corporate of emerging economies undergoing liberalization and globalization:

➢ As emerging market economies grow more competitive, turbulent, and customer-focused, the greater is the pressure on the organizations to adapt in various ways, including by modifying business strategy, management style, organizational structure, management practices, and effective modes of managing innovations/changes. This is because customary ways of operating do not work well enough and the shelf life of market offerings keeps getting shortened. These pressures are likely to induce decision-makers to search for means for meeting these pressures.

➢ In spite of the environment becoming more competitive, turbulent, and exacting, some organizations choose to change their design in innovation–congruent directions, while others choose not to change in this fashion or to a much lesser extent. This is because the 'prospector' types of management would tend to see more opportunities than threats through change and innovation while managements with more conservative mindsets may prefer a wait-and-watch attitude or see more threats than opportunities from change and innovation (Miles and Snow, 1978).

➢ Organizations that do adopt an innovation-friendly organization design tend to display substantial corporate creativity, i.e., they tend to be copiously and successfully innovative. Innovating successfully is a form of learning and once a facilitative organizational design is adopted and the process of innovating successfully is mastered, the management would feel encouraged to try out many more innovations and changes required to operate in a turbulent, competitive, and demanding environment.

➢ Organizations that are copiously and successfully innovative tend to have a strong competitive advantage as evidenced by an above average performance on a variety of effectiveness indicators. This is because there is a time lag between a successful in an organization and its diffusion among its rivals, so that the more numerous the successful innovations, the larger overall would be the performance advantage of the innovating organization.

FIG. 3: DETERMINANTS LEADING TO ORGANIZATIONAL CREATIVITY

Determinants		
Strategy		
Structure	Individual	
Systems		
Climate	Organisational	**Creativity**
Culture		
Context	Group/Team	
Leadership		
Resources & Skills		
Enhancements & Obstacles		
Technology		
Motivations		
Communication		
Support – Mechanisms		
Time, Money & Politics		
Teams		

Leadership and creativity: - As per Peter Cook (1998), a fundamental challenge leader's face in the 21st century is how to profit from individual potential and then leverage it so that it produces organizational innovation and excellence. Creative organizations should attract, develop and retain creative talents if they want to remain competitive. Leadership styles conducive to creativity are participative leadership, leader's vision for creativity and ability to develop effective groups. Cook proposes that leaders must effectively communicate a vision conducive to creativity through any available formal or informal channel of communication and constantly encourage employees. Leaders should also be in a position to balance employee's freedom and responsibility (Amabile, 1998). Individuals with strong leadership will consider themselves to have more potential for innovation than individuals with weak leadership potential and individuals with strong potential for innovation and creativity will be more likely to practice them when they perceive strong support from work place than weak support (DiLiello and Houghton, 2006). Their model suggests encouraging self-leadership among organizational members while building organizational environment to support innovation and creativity.

WHAT IS CREATIVE CONTEXT?

Creative organizations have strategies that are built on a flexible but firm context, which includes some of the following elements:

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- Culture, leadership style and values
- Structure and systems
- Skills and resources

Climate, Context, and Culture for Creativity: - Organisational climate could be determined by measuring the level of participation, freedom of expression, performance standards, interaction with small barriers, large number of stimuli, freedom to experiment and building on earlier ideas. Creativity is a key element to competitive advantage. When the context is right, creativity techniques can play their role in raising the level and type of creativity within organization (Peter Cook, 1998). The corporate research foundation lists six key drivers for future success, namely structural flexibility, innovative power, international orientation, human resources, growth markets and quality of management. Creativity is 80% context and 20% techniques (Peter Cook, 1998). Creative strategy can be explained by a three legged stool analogy taking creative strategy on the top, and culture, leadership and values, structure and systems and skills and resources being the three legs of the stool. Organisational culture should be developed to encourage open flow of communication, risk taking, self initiated activity and teamwork. Moreover, management should trust and respect its employees.

FIG. 4: DETERMINANTS LEADING TO COMPETITIVE EXCELLENCE
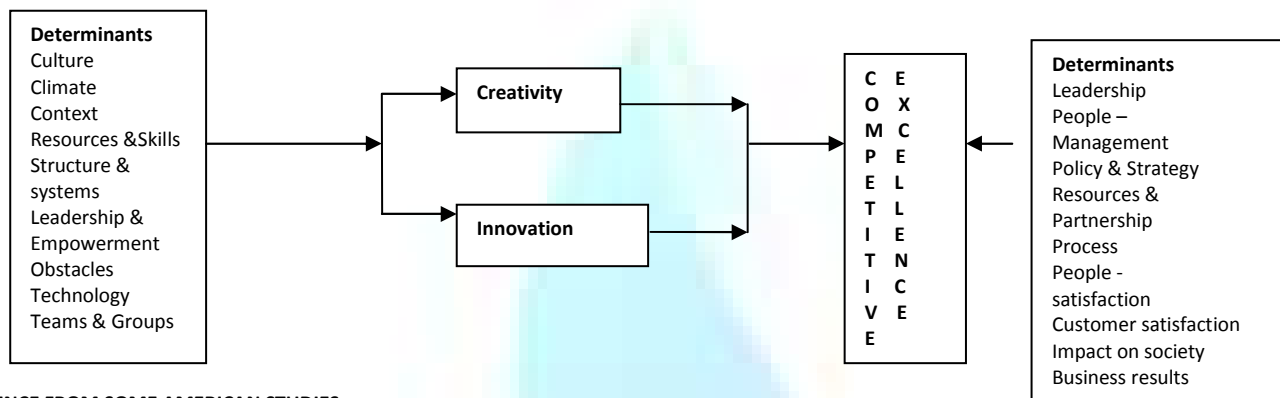
EVIDENCE FROM SOME AMERICAN STUDIES

An American study on 141 pairs of projects conducted by Teresa Amabile and associates also provides interesting insights (Amabile *et al.*, 1995). In each pair, one project was judged to be high on creativity while the other was judged to be low on creativity. The 'creative' projects significantly outscored the 'uncreative' projects on six aspects of workplace practices: greater challenge provided in work, greater encouragement to creativity, greater work group support to individuals, greater sense of autonomy as well as of ownership, and greater encouragement provided by superiors to subordinates. In another study, it was found that when people jointly identified work-related problems, there was not only greater feeling of participation but the solutions individuals found to problems tended to be more creative.

TABLE 1: BASIC STATISTICS OF SOME VARIABLES INFLUENCING CREATIVITY AND ITS CORRELATION

Variables	Average (in %age points)	Product moment correlations with						
		CSM	CMS	COS	CMP	CMI	CIS	CCE
Change in environmental pressure (CEP)	20.1	**0.03**	0.03	-0.10	0.01	0.05	-0.03	-0.20
Change in innovations-supportive strategic management (CSM)	18.8		0.79	0.31	0.65	0.64	0.73	0.35
Change in innovations-supportive top management style (CMS)	15.4			0.40	0.77	0.75	0.79	0.40
Change in innovations-supportive organizational structure (COS)	14.9				0.36	0.28	0.38	0.40
Change in innovations-supportive management practices and culture (CMP)	17.0					0.76	0.79	0.35
Change in effective management of innovation (CMI)	14.6						0.80	0.40
Change in corporate innovational success (CIS)	17.9							0.63
Change in corporate competitive excellence (CCE)	8.4							

Source: Khandwalla, Pradip N (1995). *Management Style*.

RESEARCH METHODOLOGY

Organizational creativity is about being different and appropriate. It therefore differs from traditional viewpoints on creativity, which tend to consider ideas for their own value, independent of any commercial application. This paper presents case studies which will illustrate the different view of creativity.

CREATIVE ORGANIZATION IN PRACTICE

Jacob's study of four pairs of Indian organizations indicates that organizational design for innovativeness is a strategic choice of the management (1998). Each pair shared the same industry or activity or parent organization, and yet one in the pair displayed relatively high innovativeness (corporate creativity) while the other one displayed a distinctly lower innovativeness. A striking difference was within a pair of advertising organizations, both based in Ahmadabad. Mudra Communications was set up in 1980 by the Reliance business group; Bidhan Advertising, started a decade earlier, was a proprietorship. Mudra was highly entrepreneurial; Bidhan found a niche early in its life and stuck to it tenaciously. By 1988, Mudra already had a diversified portfolio of activities — nurturing of small clients that Mudra tried to help grow fast, an example being Pioma Industries, the producer of Rasna line of drinks; market research and advertising support functions; production of videos; a distribution house; and fashion and textile design. In another decade, Mudra added many more activities, such as value-adding information for clients; outdoor media work; public relations assignments; product designing; promotions, exhibitions, road shows, and event management; creation of websites for clients; graphics; sponsored television programmes; creation of corporate brands, etc. All these diversifications catapulted Mudra into one of the four largest communications companies in India. In contrast, Bidhan stuck primarily to producing more or less conventional advertising copy for less than a score of loyal clients; 20 years after it's founding, it had notched up barely 2 per cent of Mudra's revenues. Mudra won innumerable awards for communications excellence and creativity; Bidhan simply never entered that race. Organizationally, Mudra was highly divisional zed, had a flat structure, and was regionally decentralized; Bidhan was run as a tight ship, with the proprietor insisting on overseeing every account personally. Mudra aggressively hired creative, dynamic youngsters, many from India's premier management schools, and gave them autonomy in pursuing challenging assignments; Bidhan had no such policy. Mudra entered into a collaboration with a major American media company; Bidhan never pursued this route. Mudra blended professional management into its entrepreneurship. For example, it carefully studied the long-term prospects of targeted industries, developed high quality communications products based on market research for presentation to actual or potential sophisticated clients looking for quality, and custom-tailored communications services. It targeted not industry leaders but the relatively under-serviced segment of smaller but dynamically managed companies hungry for growth. Mudra also fully computerized its operations and hired a doctorate holder to head the IT function. Mudra's CEO travelled incessantly, practicing 'management by moving around' (Peters and Waterman, 1982); he liked to play the roles of a mentor, coach, and motivator. Bidhan's CEO primarily played the role of a controller. Mudra developed an internal work climate favoring creativity and innovation. A survey showed that its score on this dimension was 35 versus 16 for

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Bidhan. Mudra also displayed an altruistic and visionary streak — it set up a pioneering institute of communications to train communications professionals, not just for itself, but for the entire industry. Bidhan stayed away from any such entrepreneurship, strategizing, professional management or altruism.

CASE STUDY ON POPY UMBRELLA MART

Popy umbrella mart, an SME (Small and Medium Enterprise) located at Alleppey (known as Venice of the east) in Kerala is a national leader in umbrella and a success story for creativity and innovation. The mission of Popy is to continually improve its products and services to meet the customer's needs. Its daily production varies from 9600 to 12000 umbrellas, which represents only half the demand expected in and outside Kerala. Popy removed its website from the internet on account of inability to meet the additional demand created through the internet from India and abroad.

Popy was the first company to be awarded the coveted ISO 9001 certification, for its excellence in the process of umbrella manufacturing. Popy bagged the prestigious "Rajeev Gandhi National Quality Award" in the year 1999 for its continuous innovation for bringing variety of products and its excellent process of umbrella manufacturing. Popy has exhibited exceptional brilliance in bringing quality products, product innovation, marketing of its products, meeting competition and understanding and dealing with culture of customers and employees in Kerala. The long years of experience of V.T.Skariah, the managing director, and modern management inputs from son Davis, an MBA holder, has helped Popy to build up a culture of innovation in their organization. They have diagnosed areas where improvement was necessary, identified parts manufacturers in India and abroad, understood the empowerment requirement of their employees for creativity and innovation, as well as understood the culture of employees and customers of Kerala. Regular interactions with kids and children along with inputs from cartoon films have enabled them to design innovative umbrellas for kids and children. Popy's creative advertisements have enabled them to capture 50% market share of Indian market for umbrellas. Popy's product specifications was selected by ISI as a benchmark for Indian umbrellas; as other umbrella manufacturers could not satisfy these specifications, competitors of Popy gradually disappeared from the market. Popy gave full freedom for its employees for nurturing their creativity and innovation. But at the same time each product is given a serial number and a register is maintained on who assembled the product and made the stitching etc. This appears to match Peters and Waterman's suggestion of freedom with accountability. Popy has its Research and Development department under the guidance of the managing director and general administrator. They collect information about latest cartoon films and cartoon story heroes from children who visit their showrooms. This resulted in an umbrella with cartoon pictures, which has been hugely popular among kids. Some other innovative ideas include the AC umbrella with ultra vibrant coating, water proof umbrella with WPWR coating, light house umbrella which lights up when opened, godfather umbrella which can double up as walking stick, gems umbrella made out of a single piece of cloth without any stitching, Teflon waterproof umbrella, torch umbrella which can be used as a torch light in the night, comic umbrella with cartoon pictures, five fold Nokia umbrella which look like a cellular phone etc. Umbrella manufacturing in Popy is highly labour intensive. Popy has gone for automation under the leadership of Davis but the product quality is yet to reach the level obtained by manual processing.

Popy's outsourcing to family units satisfies the self-leadership and prestige need of the people of Kerala. The strategy is to provide raw materials and to get back the finished products form these family units. This year Popy has been declared the best liked product in Kerala after Milma (StateMilk Marketing). The presence of a competitor, John's Umbrella Mart, near Popy keeps them vigilant in terms of innovation and quality. Davis has been given full freedom by his father for experimenting and exploration. Davis introduced the use of computers in designing innovative umbrellas, as well as introduced automation in umbrella manufacturing. Popy is planning to start a factory in Chennai for umbrella manufacturing and intend to increase the number of family production units in Kerala to increase production to meet the demand. Every consumer with a Popy umbrella in his hand is an advertiser. Popy converted umbrella selling in India to an industry of repute. Earlier, the umbrella industry was not considered for recognition and reward. Popy takes good care of its employees, through welfare programs for its employees, financial support at the time of employees' house construction, marriage of employees' daughters, children's education etc. Popy is also involved in a social welfare society for mentally retarded children. For Popy, the manner in which they accomplish their mission is as important as the mission itself. Popy considers its employees as its source of strength in providing corporate intelligence and determine their reputation and vitality. Commitment and teamwork are their core human values.

RESULTS AND DISCUSSIONS

This case study illustrates the following themes about creativity:
➢ Giving tangible example to the need for tolerance of failure.
➢ Integration of functions that need to communicate and the tolerance of conflict.
➢ Using diversity to produce ideas.
➢ The need for ambiguity tolerance and opportunity spotting (seeing the glass half full rather than half empty)
➢ Passion and persistence in action.

CONCLUSION

The paper presents fairly strong evidence that redesigning organizations for creativity both technical as well as non-technical can provide a powerful edge to organizations regardless of the pressures of their operating environments. It is noteworthy that only one in three corporate in environments that had got a lot tougher and a minority of corporate in environments that had not changed much had learnt how to adopt creativogenic organizational designs. As environmental pressures mount through further liberalization and global competition, the non-adopters could suffer gravely.

Whilst there is no universal prescription for encouraging organizational creativity, a number of factors may be identified that make creativity more probable. Broadly speaking these subdivide into the following areas: Setting an appropriate culture, leadership style, focusing more on informal structures and communications than trying to formalize these features and also encouraging diversity of people and skills. Tolerating the conflict that may result, provided that this is over ideas rather than being of a corrosive nature. At times many organizations have is. So take necessary steps and let the employees be at their creative best!

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A STUDY OF STUDENT'S PERCEPTION FOR SELECTION OF ENGINEERING COLLEGE: A FACTOR ANALYSIS APPROACH

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ABSTRACT

This paper proposes and describes student's perception towards selection of engineering college. Implicit in this theory is the notion that engineering college selection may be viewed as a process which consists of a sequence of interrelated stages. It is posited that students move through these series of stages as they search for desirable colleges. This paper attempts at studying all those aspect which are taken into consideration by a higher secondary passed student while taking admission in an engineering college. Now a days number of engineering institutes in India are catering to a lot of marketing activity, which perplex the students and have substantial effect on the decision making process, which again leads to their expectations. Selecting engineering institutes is high involvement decision for any individual as it determines his career and therefore, the information search behavior is very important. A brief questioner which measures the influence of factors on college choice was administered amongst 100 students seeking admission for engineering colleges. The relationship of these factors to gender, college, aptitude, distance of home and some important factors were examined through factor analysis approach. This research has been undertaken to study and examine the perception of students about the engineering colleges. From the research it is concluded that the five important variables contributing in decision making of the students for selection of institute are Placement activities of the institute and package offered by the recruiters, the recruiters, Alumni opinion, availability of workshops and laboratories and suggestion given by coaching institutes.

KEYWORDS
Factors, Factor analysis, motivation, Perceptions.

INTRODUCTION

In today's competitive environment, rendering quality service is a key for success, and many experts concur that the most powerful competitive tool currently reshaping marketing and business strategy is service quality. Service quality is a pervasive strategic force and a key strategic issue in any organization. It is no surprise that practitioners and academicians are keen on accurately measuring and understanding issues affecting service quality delivery. Today, many universities are being driven towards commercial competition imposed by environmental challenges. Institutions, in general, need to be concerned not only with what the society values in the skills and abilities of their graduates, but also how their students feel about their educational experience (Bemowski, 1991).Perception plays a key role in college selection. How much prestige, honor, or academic glory can be attained by attending engineering institute? What about a university? Or, in contrast, the perceived status or Image plays a huge role in college selection. Perception is the act or faculty of apprehending by means of the senses or of mind: cognition; understanding. How students perceive service quality is critical because it determines how they evaluate the service. Students evaluate a service based on their expectations. Because expectations are dynamic, evaluations may also shift from time to time. Thus, how customers (students) evaluate what they term as a quality service today, (based on some criterion) may change tomorrow. This calls for continuous monitoring and evaluations of service quality in any service firm.

There are many factors that go into college selection, as well as college perception. The main socializing agents of family, friends, school, and media can help to create how engineering colleges are perceived; perhaps that is where India's bias begins. Research suggests that some agents have more influence than others. The purpose of the study was to illuminate students' views on how it affect and influence their career decisions. Many economists feel that the nation has failed to take advantage of its greatest resource, this being its diverse population. Some of the reasons for this failure are reflected in challenges that are apparent when seeking to attract a diverse population of students to the fields of engineering and other related professions. The college choice is a decision influenced by a number of demographic, economic, social, political, and institutional factors. Different types of students chose to attend certain universities on the basis of one or more factors that link directly to their characteristics and needs. Major factors cited in the literature to influence college choice are: the advice of parents, academic reputation of the institution, availability of the desired program, availability of financial aid, cost of attending the institution, and the location of the college.

Is the students' perception of the college determined by their motivations to attend? For example, are students more satisfied if they chose to attend when they had other options or less satisfied if they were forced by their financial circumstances? This is the aim of this study to determine the perceptions and motivations of students attending engineering students. Therefore, to study the important attributes especially institutional factors that affect students' college choice decision in higher education institutions become pertinent on the part of marketing strategy planning for students' recruitment of higher educational institutions.

LITERATURE REVIEW

Joseph & Joseph (2000) concluded that course and career information, and physical aspects and facilities and facilities are critical issues that must be kept in mind when educational institutions are trying to create sustainable competitive advantages in marketing strategies. Leblance and Nguyen (1999) identified perceptions of price in the form of the price/quality relationship as most important factors, while Ford et al. (1999) recognized academic reputation, cost/time issues and program issues as the determinants of universities choice. Sevier (1986) stated that research has consistently shown that college or university location can be a major factor for potential student's decision to apply and enroll. Some students may be looking for a school close to their hometown or place of work for convenience and accessibility (Absher & Crawford, 1996; Servier, (1994).A study by Kohn et al. (1976) discussed that an important factor in student predisposition to attend college is the close proximity of a higher education institution to home. It was found that a low-cost, nearby college was an important stimulator of a student's decision to further his or her education. Hossler & Gallagher (1990) also concluded that the proximity to a college campus does affect college attendance rates. Students who live close to a campus are more likely to attend college though they may not attend the campus located near home. As a result, this study hypothesizes that location has a significant influence on college choice decision. Tapan Kumar Nayak & Manish Agrawal(2010), through their research focused on the most important factors that the students keep in the mind while selecting a particular B- School .and suggested how a marketing communication based on these factors can help to these B-school to gain competitive edge.

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OBJECTIVES OF THE STUDY

- To identify and examine the factors responsible for the selection of engineering college.
- To rank the effective factors responsible for the selection of engineering college.
- To identify the factors which are been ignored by the students while selecting the engineering College
- To find out the sources through which students outlines an opinion about engineering colleges
- To identify the key dimensions/factors that influence students' decision in college selection.
- To determine the nature and strength of relationship between service quality dimensions and perception

METHODOLOGY

The objectives of the study indicate that the study must be carried out at micro level. We elucidate the concept of factor analysis and sampling design, based on the literature pertaining to the student's perception about the engineering college. To study the factors affecting the selection of an engineering college in India the *factor analysis* is being used in our study.

FACTOR ANALYSIS

The factorial analysis allows a reduction in the number of variable to be groped in to common factors. The use of factor analysis in this study is relevant because it identifies the salient attributes, which potential students use to evaluate an engineering institute. Further, we have also used quantitative marketing research techniques to collect data from a sample of 100 students concerning their ratings of all the institutional attributes.

The main applications of factor analysis technique are:

1. To reduce the number of variables and
2. To detect structure in the relationship between variables, that is to classify variables.

Therefore, factor analysis is applied as data reduction or structured detection method. (Factor analysis was first introduced by Thurstone-1931). The research methodology is broadly divided under the heading as follows:

a) <u>Sampling Design</u>: The sampling technique used in the study is non-probability sampling. It is convenient sample with a judgmental basis. The sample unit is taken as students who have passed their higher secondary examination. The total sample size is 100.

b) <u>Research Design</u>: While determining the various factors, exploratory study was carried out with the help of secondary data. Once the basic factors of the study were found a descriptive study was carried out to know the preferences of the respondent.

c) <u>Data Collection</u>: Data was collected with the help of primary survey as well as secondary sources. The primary data was collected with the help of a close ended -structured questionnaire, designed on a semantic differential scale.

d) <u>Data Analysis</u>: The data is analyzed with the help of factor analysis, to reduce excessive data and correlation techniques. The factors are differentiated with the various variables that are strongly correlated to them. Independent but like factors were grouped by their factor loadings and the result were analyzed by the varimax rotation. The study is based on 44 independent/dependent variables, which were again toned down to 11 different factors with the help of data reduction technique **(factor analysis),** based on most significance to the respondents.

ANALYSIS AND INTERPRETAION

PARAMETERS TAKEN IN THE STUDY

1) Institutional Service Standards:
i) University
ii) Certified from National Board of Accreditation(NBA)
iii) ISO Certification
iv) Placement Cell
v) Recruiters
vi) Package offered by the recruiters
vii) Training Programme
viii) Technical events
ix) Opportunity to handle live project
x) Academic qualification of Faculty Members
xi) Teacher student ratio
2) Institutional Environment:
i) College location
ii) The city is attractive
iii) The city having facility for further study
iv) Easy transportation facility (Connectivity with other area)
v) Accommodation
vi) Safety
vii) Existence of cultural activities
viii) Existence of health care means
3) Brand :
i) Ranking given to the college
ii) Golden History of the college
iii) Reputation of the institute
4) Institutional Infrastructure:
i) Size of the building
ii) Physical Facilities
iii) Accessibility of all facilities
iv) Workshops & Laboratory
v) Library resource
vi) Fast search facility in library
vii) E-Library
viii) Wi-Fi zone
ix) Smart classroom equipped with modern pedagogy
x) Canteen facilities
xi) Extracurricular activities organized by college
xii) Sponsorship to attend development program at university level
xiii) Stipend

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5)   Sources used to form perception:
i)   Opinion of friends and family
ii)   Coaching institutes
iii) Self visit to college
iv)   Alumni opinion
v)   Event & exhibition
vi)   Publicity
6)   Financial factors :
i)   Fee structure
ii)   Loan facility
iii) Scholarship
The above cited parameters have been classified Into 11 factors with the help of data reduction techniques (factor analysis). The results are shown as follows:

TABLE 1: KMO AND BARTLETT'S TEST(a)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.425
Bartlett's Test of Sphericity	Approx. Chi-Square	4482.225
	Df	946
	Sig.	.000

The Bartlett's Test of sphericity is used here to decide whether the results are worth considering or not. The Bartlett's Test of sphericity significant to a level of significance of 0.000 indicates that there is a high level of correlation between variables; therefore factor analysis is being applied.

FACTOR ANALYSIS AND ITS RESULTS

A data of 100 students who have cleared Engineering Entrance Exam (PET) were randomly surveyed. The use of factor analysis in this study is relevant as it helps in identifying the variables which are taken into consideration by the students seeking admission. The main applications of factor analytic technique are:
1. To reduce the number of variables
2. To detect structure in the relationships between variables, that is to classify the variables.
The result of factor analysis after varimax rotation, has grouped the data into *11 factors.* Table 2 below is the representation of the variance explained in terms of 11 factors extracted. The Eigen value chart is show below:

TABLE 2: TOTAL VARIANCE EXPLAINED

Component	Initial Eigen Values(a)			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	19.782	20.093	20.093	19.782	20.093	20.093	9.167	9.311	9.311
2	15.244	15.484	35.576	15.244	15.484	35.576	7.436	7.553	16.864
3	11.416	11.596	47.172	11.416	11.596	47.172	8.713	8.851	25.715
4	7.781	7.903	55.076	7.781	7.903	55.076	9.225	9.37	35.085
5	6.116	6.213	61.288	6.116	6.213	61.288	9.929	10.085	45.17
6	5.816	5.907	67.195	5.816	5.907	67.195	8.244	8.374	53.544
7	4.646	4.72	71.915	4.646	4.72	71.915	7.049	7.16	60.704
8	4.016	4.079	75.994	4.016	4.079	75.994	5.866	5.958	66.662
9	2.798	2.842	78.836	2.798	2.842	78.836	7.117	7.229	73.891
10	2.541	2.581	81.417	2.541	2.581	81.417	4.248	4.315	78.206
11	2.322	2.359	83.776	2.322	2.359	83.776	5.483	5.569	83.776

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TABLE 3: COMMUNALITIES

	Raw		Rescaled	
	Initial	Extraction	Initial	Extraction
VAR00001	2.401	2.007	1.000	.836
VAR00002	3.958	3.611	1.000	.912
VAR00003	.961	.536	1.000	.557
VAR00004	1.148	.772	1.000	.672
VAR00005	.740	.233	1.000	.314
VAR00006	.596	.346	1.000	.580
VAR00007	.933	.530	1.000	.568
VAR00008	1.851	1.508	1.000	.815
VAR00009	2.273	1.893	1.000	.833
VAR00010	2.642	2.273	1.000	.860
VAR00011	1.715	1.361	1.000	.794
VAR00012	3.692	3.452	1.000	.935
VAR00013	2.755	2.443	1.000	.887
VAR00014	.659	.451	1.000	.684
VAR00015	2.985	2.522	1.000	.845
VAR00016	4.842	4.575	1.000	.945
VAR00017	3.456	3.132	1.000	.906
VAR00018	2.160	1.872	1.000	.867
VAR00019	1.481	1.022	1.000	.690
VAR00020	2.572	2.030	1.000	.789
VAR00021	1.483	.930	1.000	.627
VAR00022	.568	.293	1.000	.515
VAR00023	2.081	1.622	1.000	.779
VAR00024	1.048	.672	1.000	.641
VAR00025	1.017	.756	1.000	.744
VAR00026	.269	.132	1.000	.490
VAR00027	.311	.188	1.000	.605
VAR00028	.965	.615	1.000	.638
VAR00029	2.170	1.739	1.000	.801
VAR00030	4.916	4.714	1.000	.959
VAR00031	3.414	3.115	1.000	.912
VAR00032	3.544	3.233	1.000	.912
VAR00033	2.340	1.861	1.000	.795
VAR00034	3.755	3.252	1.000	.866
VAR00035	3.523	2.905	1.000	.824
VAR00036	1.738	1.275	1.000	.734
VAR00037	.559	.264	1.000	.473
VAR00038	3.063	2.768	1.000	.904
VAR00039	.304	.125	1.000	.409
VAR00040	4.512	4.354	1.000	.965
VAR00041	3.043	2.458	1.000	.808
VAR00042	3.666	3.323	1.000	.906
VAR00043	3.067	2.670	1.000	.870
VAR00044	3.275	2.649	1.000	.809

NOTE: Extraction Method: Principal Component Analysis.

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TABLE 4: ROTATED COMPONENT MATRIX (a)

Veriable	1	2	3	4	5	6	7	8	9	10	11
VAR00001	-0.388	-0.573	-0.128	-0.103	-0.503	-0.680	0.586	0.494	0.269	0.328	0.129
VAR00002	0.038	-0.480	-0.086	-0.191	-0.135	-1.778	-0.222	0.312	0.054	0.075	-0.024
VAR00003	0.080	0.100	0.349	0.019	-0.152	-0.465	0.381	0.070	0.051	0.003	0.074
VAR00004	0.287	0.114	-0.363	-0.530	-0.117	0.078	-0.036	0.331	-0.152	0.096	0.317
VAR00005	0.101	0.091	-0.250	-0.080	-0.104	-0.334	-0.047	0.061	-0.068	0.033	0.104
VAR00006	0.420	0.035	-0.164	-0.211	-0.155	0.173	-0.045	0.127	-0.113	-0.072	-0.084
VAR00007	0.563	-0.023	-0.036	-0.062	0.189	-0.151	0.184	0.024	-0.068	-0.288	0.164
VAR00008	0.940	-0.066	0.028	-0.345	0.134	0.076	0.644	-0.128	-0.070	-0.086	0.183
VAR00009	1.252	0.015	0.252	0.210	-0.116	0.209	0.247	-0.121	-0.238	0.051	-0.155
VAR00010	1.339	-0.103	-0.251	0.001	0.295	-0.508	-0.106	-0.172	0.096	0.034	0.093
VAR00011	0.959	-0.385	-0.210	-0.099	0.159	-0.205	-0.216	-0.139	-0.086	0.303	-0.076
VAR00012	0.246	-0.456	0.184	0.612	1.407	0.765	0.146	0.015	-0.032	0.431	0.058
VAR00013	-0.446	-0.038	0.092	0.776	1.146	0.179	0.115	0.066	0.506	0.030	0.110
VAR00014	0.012	0.064	-0.147	0.164	0.210	0.046	0.584	0.032	0.069	0.012	0.068
VAR00015	0.547	-0.051	-0.043	0.038	0.418	0.752	1.157	0.109	-0.330	0.112	-0.062
VAR00016	-0.381	-0.222	0.251	0.052	0.012	-0.367	0.190	0.175	2.018	-0.205	-0.009
VAR00017	0.039	-0.388	0.178	0.358	0.772	-0.201	1.317	0.030	0.368	-0.121	0.545
VAR00018	-0.863	0.543	-0.083	0.224	-0.138	0.009	0.571	-0.052	-0.212	0.509	0.353
VAR00019	0.306	-0.175	-0.073	-0.127	0.861	0.084	0.312	-0.115	-0.083	-0.075	-0.066
VAR00020	0.115	0.631	1.108	-0.187	0.377	-0.198	0.060	-0.267	0.237	-0.196	-0.061
VAR00021	-0.164	0.777	-0.121	0.347	0.189	-0.067	0.083	-0.021	-0.222	0.080	0.247
VAR00022	0.009	-0.041	-0.407	-0.202	0.088	-0.126	-0.028	0.142	-0.157	0.077	-0.098
VAR00023	-0.046	1.170	0.217	0.066	-0.242	0.081	-0.299	-0.063	0.133	0.045	-0.148
VAR00024	0.009	0.624	0.030	0.066	-0.044	0.430	0.044	-0.236	-0.040	0.161	0.077
VAR00025	-0.162	0.713	0.236	0.012	-0.105	0.290	0.165	-0.010	0.006	0.201	-0.047
VAR00026	0.145	-0.230	-0.134	-0.082	0.063	0.020	0.116	0.102	0.037	-0.042	-0.045
VAR00027	0.116	-0.231	-0.197	-0.111	0.019	-0.040	0.110	0.213	0.063	-0.071	0.045
VAR00028	0.081	-0.151	0.042	-0.532	-0.029	-0.004	0.006	0.363	-0.202	-0.322	-0.155
VAR00029	-0.064	-0.257	-0.349	-0.318	-0.308	-0.060	0.241	1.091	-0.252	0.153	0.103
VAR00030	-0.326	-0.317	0.867	-0.699	0.402	-0.373	-0.657	1.331	0.717	-0.435	-0.250
VAR00031	-0.691	-0.261	0.447	-0.004	0.512	-0.152	0.022	1.295	0.613	-0.059	0.165
VAR00032	0.002	0.126	1.595	0.087	0.061	0.006	-0.077	0.262	0.224	0.720	-0.133
VAR00033	0.911	-0.283	0.641	0.241	0.076	0.236	0.475	-0.036	-0.066	0.359	0.247
VAR00034	0.025	0.235	1.118	-0.357	1.143	-0.080	0.140	0.106	-0.409	0.019	0.554
VAR00035	0.302	0.202	0.659	0.100	1.402	-0.121	0.414	0.145	0.068	-0.043	0.386
VAR00036	-0.062	0.303	-0.179	0.104	-0.088	0.985	0.038	0.205	-0.204	0.230	0.140
VAR00037	0.079	-0.069	-0.433	-0.135	-0.133	0.029	0.104	-0.054	0.111	0.038	-0.033
VAR00038	-0.014	0.602	0.141	0.296	0.110	0.151	0.086	-0.027	-0.292	1.468	-0.120
VAR00039	-0.099	0.181	-0.072	-0.029	0.005	-0.018	-0.172	-0.055	0.167	-0.118	0.035
VAR00040	0.007	0.067	0.180	0.115	0.389	0.021	0.376	0.100	0.055	-0.121	1.996
VAR00041	0.068	0.009	0.619	1.272	0.303	0.244	-0.080	-0.048	0.478	0.252	0.019
VAR00042	-0.251	0.479	-0.106	1.515	0.174	0.504	0.298	-0.279	-0.518	0.067	0.050
VAR00043	0.060	0.716	0.183	1.270	-0.175	0.035	0.574	-0.070	-0.372	0.028	0.041
VAR00044	0.034	0.935	0.115	0.715	0.369	0.793	0.589	-0.144	-0.328	0.095	-0.039

THE EXTRACTED FACTORS

By principle component matrix we get total eleven factors and all the 44 variables are categorized according to the level of correlation they show. All the eleven factors are listed below:

Factor 1: Affiliations and Ranking (Variable)
1.   University
2.   Certified from National Board of Accreditation(NBA)
3.   ISO Certification
4.   Ranking given to the college
5.   Golden History of the college
6.   Reputation of the institute

Factor 2: Job Orientation (Variable)
1.   Placement Cell
2.   Recruiters
3.   Package offered by the recruiters
4.   Training Program
5.   Technical events
6.   Opportunity to handle live project

Factor 3: Financial factors (Variable)
1.   fee structure
2.   Loan facility
3.   Scholarship & waiver scheme

Factor 4: Teaching Philosophy (Variables)
1.   City environment
2.   Academic qualification of Faculty Members
3.   Teacher student ratio

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Factor 5: Institutional Infrastructure (Variable)
1.   Size of the building
2.   Physical Facilities
3.   Accessibility of all facilities
4.   Canteen facilities

Factor 6: Physical Facility (Variable)
1.   Workshops & Laboratory
2.   Library resource
3.   Fast search facility in library
4.   E-Library
5.   Wi-Fi zone
6.   Smart classroom equipped with modern pedagogy

Factor 7: Environment (Variable)
1.   College location
2.   The city is attractive
3.   The city having facility for further study

Factor 8: Food & Lodging (Variable)
1.   Easy transportation facility (Connectivity with other area)
2.   Accommodation
3.   Safety

Factor 9: Orientation & Recognition (Variable)
1.   Extracurricular activities organized by college
2.   Technical events
3.   Sponsorship to attend development program at university level
4.   Stipend

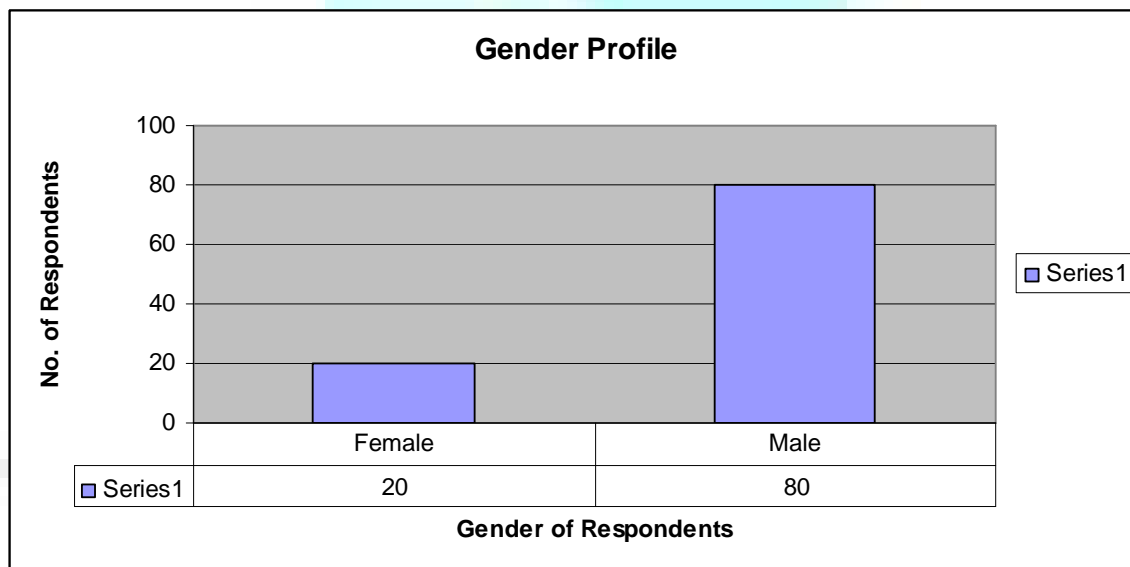Factor 10: Social Measures (Variable)
1.   Existence of cultural activities
2.   Existence of health care means
3.   Transport facility

Factor 11: Word of mouth and observation (Variable)
1.   Opinion of friends and family
2.   Coaching institutes
3.   Self visit to college
4.   Alumni opinion
5.   Event & exhibition
6.   Publicity

RESULTS

FIGURE: 1

Gender Profile

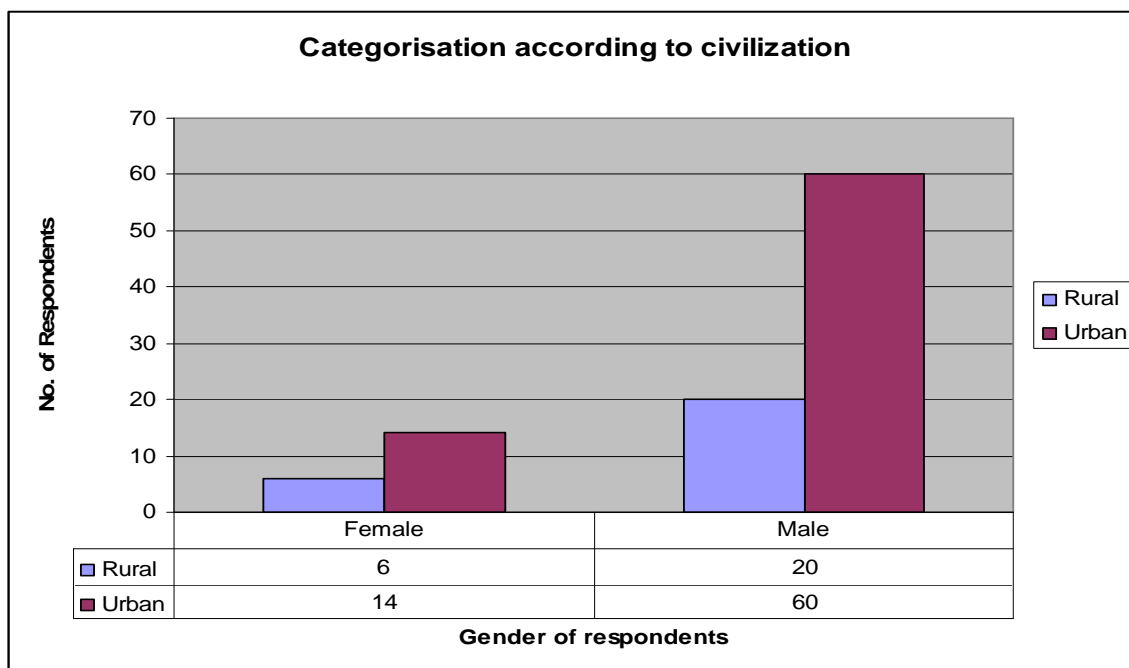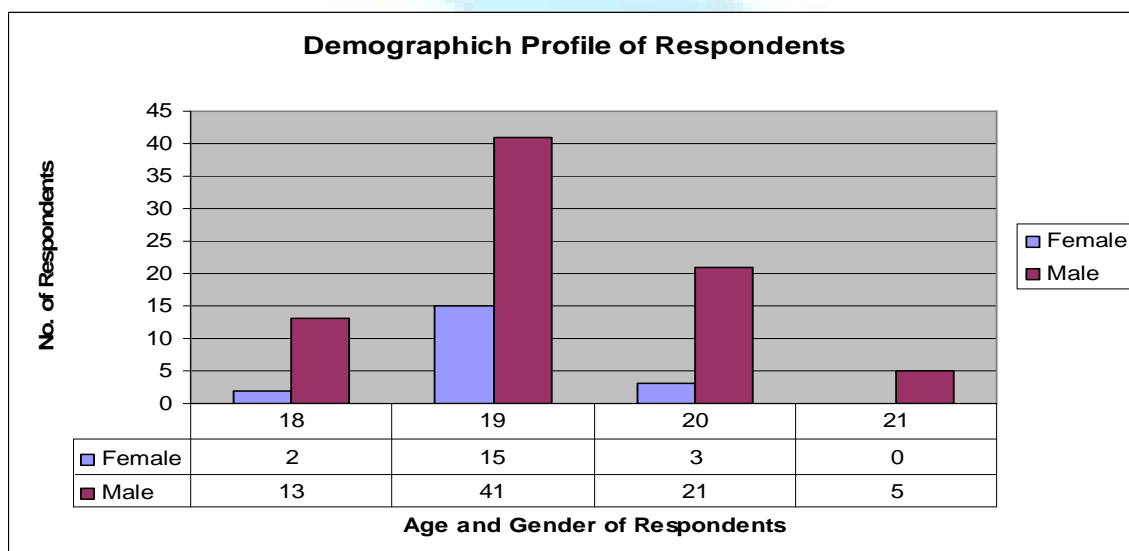| Series1	Female	Male
	20	80

From the research point of view sample of 100 students was surveyed randomly. Out of which 20 respondents are females and 80 are males.

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FIGURE: 2

Categorisation according to civilization

	Female	Male
Rural	6	20
Urban	14	60

Gender of respondents

From fig 2 it is concluded that out of 100 respondent 26 students belong to rural area Out of which 6 were females, remaining 74 students are from urban area.14 respondent were female and 60 were male.
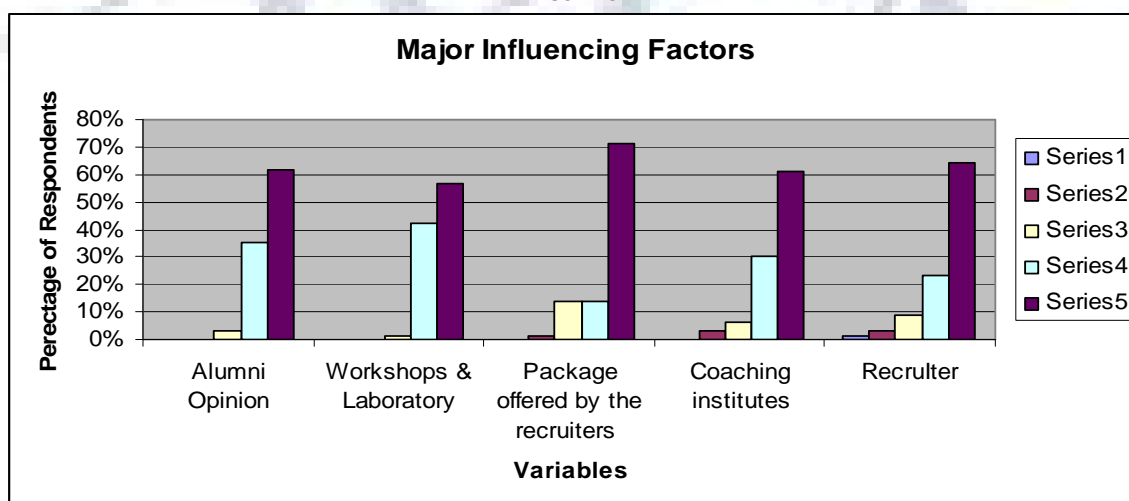
FIGURE: 3

Demographich Profile of Respondents

	18	19	20	21
Female	2	15	3	0
Male	13	41	21	5

Age and Gender of Respondents

From Fig: 1,2 &3 it is clear that maximum respondents are male from urban area and are of 18 years ,whereas least number of candidates are of 21 years.
To make research comprehensive we try to trace the perception of both male and female of different civilization having different demographic characteristics.
INTERPRETATIONS

FIGURE: 3

Major Influencing Factors

Series1, Series2, Series3, Series4, Series5

Alumni Opinion, Workshops & Laboratory, Package offered by the recruiters, Coaching institutes, Recrulter

Variables

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It is observed that 71% of the students gave high weightage to the packages received by the passed out student of the particular institute through campus selection. At second order recruiters are considered important hence 64% student preferred it. Due to the increase number of engineering colleges in the Madhya Pradesh potential candidates relies on the advices received from the Alumni students rather than other sources of information. In our research 62%of the respondent gave emphasis on Alumni and 61% and gave emphasis to coaching institutes where as 57% respondent were of opinion that facilities of Workshop and laboratory is an important aspect while considering Engineering college.

On contrast least consideration is given to the certification of ISO. It is found that students are not aware of accreditations especially in rural area.

FINDINGS

Through the research it has been found that there are few factors which are considered vital by the students while they evaluate any engineering institute. A total of 44 variables were included in the study, which were categorized into eleven factors .The research findings are as follows:

- The entire Variable under the factor Job orientation has been weighted highest.
- Sources of information for Students are: Alumni, Opinion of friends and family, coaching institute, events and exhibition. They also gather information by visiting institutes (very rare).Among all these variables students relies most on opinion of Alumni.
- Infrastructural facilities of the institute are the next concerned area besides above mentioned factors.

LIMITATION

With the data collected being of multiple choice, data may have some limitations in terms of responses. The following points served as limitations to this study.
1. The sample size is small and it is limited to 100 students, and it does not represent the entire universe.
2. The sample is surveyed in Indore (MP) and nearby sregion.
3. Study focuses only those students who have appeared in MP-PET.

CONCLUSION

Initially work started with 44 factors which were further categorized into eleven factors from the research it is concluded that in today's scenario where there is mushrooming of engineering institute's, an attempt has been made to rank the variable contributing in decision making of the students for selection of institute. Considering all the sources it has been found that there are three major sources of information: Alumni opinion, coaching institutes, event and exhibition. Facts collected from Alumni and job orientation is valued as a major factor. This research helps Engineering institutes to market their services and also to the psychologist to read the brains of future technical leaders.

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