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A FRAMEWORK FOR GREEN PRODUCT ADOPTION BY INDIAN CONSUMERS**VISHNU NATH****RESEARCH SCHOLAR****DEPARTMENT OF MANAGEMENT STUDIES****UTTARAKHAND TECHNICAL UNIVERSITY****DEHRADUN****DR. RAJAT AGRAWAL****ASST. PROFESSOR****DEPARTMENT OF MANAGEMENT STUDIES****INDIAN INSTITUTE OF TECHNOLOGY****ROORKEE****DR. ADITYA GAUTAM****DIRECTOR****OMKARANANDA INSTITUTE OF MANAGEMENT & TECHNOLOGY****RISHIKESH****DR. VINAY SHARMA****ASST. PROFESSOR****DEPARTMENT OF MANAGEMENT STUDIES****INDIAN INSTITUTE OF TECHNOLOGY****ROORKEE****ABSTRACT**

The purpose of this paper is to consolidate the research done on Green Consumer Behavior into one comprehensive theoretical framework which can be use to study the Green product adoption process of Indian Consumers. The research prepositions proposed in this paper are derived on the basis of review of literature from the field of Green Consumer Behavior and Green Marketing. The paper provides a framework for studying the Green Product adoption process by Indian consumers keeping in mind the particular factors that affect environmental behaviors of Indian consumer like cultural values, legal enforcement. There is a very little body of literature available on Green Marketing and Green Consumer Behavior in India context, this paper tries to consolidate the findings of various authors regarding Green Behaviors and presents them in form of a theoretical framework for studying Green Behaviors of Indian consumers.

KEYWORDS

Green Marketing, Environmental Marketing, Sustainable Marketing, Indian Consumers, Green Consumer Behavior.

INTRODUCTION

Many corporations around the world have started the green initiative to counter ill effects of business processes particularly transformation and consumption of products on natural environment and its inhabitants. Customer awareness and liking for green products are also increasing. Today citizens across the global are focused on problems like terrorism, rising inflation etc, but at the same time environmental issues also remain high on the list of concerns to the average citizen (Butler, 2006). In Asian countries particularly in China many firms have started the green initiative because of the increased demand for green products in the Asia-Pacific region of the world (Gurau and Ranchhod, 2005; Johri and Sahasakmontri, 1998).

The business world has undergone a sea change since the early days of the environmental movement when environmentalism was primarily confined to a niche segment of consumers, many of whom had emerged from the alternative life styles and consumption patterns movements, majority of people think that they reflect on the social upheaval happening in the United States and European nations during the decade of 60's (Montgomery, 2009). The "Green movement" since then has entered the mainstream status in many developed nations, where eco-friendliness is becoming a major consumer preference and an orientation among the elite living in such nations (Webb *et al.*, 2008; Holusha, 2000; Rosenthal and Revkin, 2007). But a question arises here that is whether environmental concerns have some broad appeal in the developing world economies? However, based on the data about the air quality in China and India it appears that these nations are giving more emphasis to economic expansion and progress and not to clean air and emissions (Plant, 2007). According to Head (1996), Asian countries particularly China took a long time to develop some awareness about environmental problems.

McGougall (1993) has pointed out the role of consumers in environmental movement. This fact is supported by fact that 30-40% of the environmental degradation has been brought about by the consumption activities at house hold level (Grunert, 1993). However, in a recent market research study it was found that many dual-income couples from china responded that they prefer natural ingredients and organic food products despite they are more costly than their conventional counter parts (Manget and Munnich, 2008). Like China and other developing nations today India is also facing a severe problem of environmental degradation (National Environment policy, 2006). However, apart from the studies conducted by Jain and Kaur (2004, 2006) there is a lack of studies that have explored the environment behaviors of Indian consumers. Thus to get a better understanding of India's environmental efforts, a study of how its consumers view and feel about environmental issues and how they behave accordingly serves as a good research agenda.

REVIEW OF LITERATURE

For preservation of the degrading environment it necessary that a paradigm shift must occur towards sustainable consumption and this can only be achieved by increasing consumer awareness about the environment and motivating the consumers to purchase and use green products. Thus it is necessary to study and understand the green purchase behavior of the target consumer. As per Mostafa (2007) green purchasing behavior refers to the consumption of products that are:

- Beneficial to the environment
- Products are recyclable

- And Products that are sensitive or responsive to ecological concerns.

Consumers can play a significant role in reducing their environmental foot print by purchasing green products. As per Mainieri *et al.*, (1997) consumers pro environmental concern is one of the main determinants of their “green buying” i.e. purchase of eco friendly products that have a less harmful foot print on the environment.

However, as also pointed by Laroche *et al.*, (2001) consumers, who are concerned about the environment and have knowledge about environmental problems try to purchase eco friendly or green products. Recent additions to the present body of literature also suggest that there is a many fold increase in number of consumers who are willing to purchase green products and market for green products is also expanding (Laroche *et al.*, 2001). Also the available literature suggests that such green consumers are evolving and also points that they tend to vary or differ in terms of their acceptance of green or eco-friendly products and life styles (Jungermann & Jungermann, 2010).

According to Ishaswini and Datta (2011) there is very little body of literature about green consumers in India. Booming Indian economy (Lenartowicz and Balasubramanian, 2009) and huge Indian consumer market (Enderwick, 2009) is inspiring many researchers to study various dimensions of the Indian consumers' behavior. One such dimension could be exploring the environment friendliness of Indian consumers. The studies conducted by Jain and Kaur (2004 and 2006) are a mile stone in green marketing research in Indian context, but others consumer behavior related aspects of green marketing like role of Green advertising, Eco-labels, Perceived Consumers Effectiveness, cultural values, effect of legal constraints, availability of green products to the consumer, needs to be explored along with pro-environmental awareness, attitudes and demographics of the consumers. Thus a comprehensive framework needs to be developed in order to study the green product adoption process in India.

NEED OF SUCH FRAMEWORK

A framework to study green consumer behavior is need because of the following reasons:

- To make better positioning strategies for green products for Indian Markets.
- Propelling green marketing and increasing adaptability of green products then only production and capital investment in green products can be increased.
- Enhancing the role of green marketing in future Indian economy as a tool of environmental protection and increasing consumer welfare.

DEVELOPMENT OF RESEARCH PREPOSITIONS/ RESEARCH METHODOLOGY

Based on the review of literature the following important variables that affect green consumer behavior have been identified viz., Product Pricing and Willingness to pay, Green Advertising, Eco labeling, Environmental Awareness, Environmental Attitudes, Perceived Consumer Effectiveness, Peer Groups, Socio Demographic variables, Cultural Values, Legal constraints, Availability of green products and support services. The following sections of the paper discusses about the relationship of these variables with Green product adoption.

PRICING AND WILLINGNESS TO PAY

The pricing aspect in green marketing is mainly focused on “the consumers' willingness to pay” theme. As per Hopkins and Roche (2009) the most important factors in estimating the consumers' willingness to pay a premium price for green products is the product category and the perceived benefits received from using a green product. Also as pointed out by Molla-Bauza *et al.*, (2005) in case of Spanish consumers that they were willing to pay up to 16% more for a green alternative than the price of the conventional non green product. D'Souza *et al.*, (2006) also have reported a very important finding about pricing issues related with green products, that in a study of Australian consumers it was found that 60 percent of the respondents are having the perception that green products are expensive than conventional products. Forbes *et al.*, (2009) have also reported that the New Zealand consumers are willing to pay 5% more for an eco-friendly alternative. Willingness to pay studies are very much dependent on the demographic profile of the consumer. In this regard an important point is stated by Rowlands *et al.*, (2003) that willingness to pay studies should be concentrated more on psychographic segmentation of consumers instead of the usual demographic models. They have also pointed out that willingness to pay bear a direct relationship to ecological concern. Also in this regard Laroche *et al.*, (2001) have mentioned that consumer's attitudes towards environment and its problems plays as good predictors of consumers' willingness to pay for green products. However, in Indian context a study by Manaktola and Jauhari (2007) points out that although Indian consumers prefer to use services that are eco friendly but at the same time the Indian consumers are not willing to pay extra for such green attributes. So any effort to make green products main stream should start by studying the willingness to pay of Indian consumers and the percentage of price premium the consumers are willing to pay for green products. Hence it can be proposed that:

P1: There is a significant relationship between cost of green products and their adoption by the consumer.

GREEN ADVERTISING

Green or environmental advertisements first came to the light in the decade of 60's in the 20th century (Easterling *et al.*, 1996). Zinkhan and Carlson (1995) have defined green advertising as, “Environmental or green advertising refers to all appeals that include ecological, environmental sustainability, or nature friendly messages that target the needs and desires of environmentally concerned stakeholders.” Green advertisements can be classified under three categories mainly:

- Those advertisements that directly or indirectly address the relationship between a product/ service and the natural environment.
- Those advertisements that promote an environmentally responsible life style without specifically mentioning the use or a particular product or service.
- Advertisements that also present a corporations environmental conscious image also come under this category (Banerjee *et al.*, 1995).

Banerjee *et al.*, (1995) and Menon *et al.*, (1999) have also discussed about the content of green advertisements, as they have pointed out that some of these advertisements have educational content, while some only promote a green product and some project a responsible corporate image to the public.

Green advertisements can play a positive role in influencing the consumers towards becoming more environmentally oriented. Schuhwerk and Lefkoff-Haugis (1995) have reported that low environmentally involved consumers were positively affected by green appeals. Leonidou *et al.*, (2011) have pointed out that green advertisements are an important tool in communicating a firm's eco friendly business practices to various stakeholders and for gaining competitive advantage in the market place. As pointed out by Cohen (1973), green advertisements help to shape consumer's knowledge and transform this knowledge into the purchase of green products. However studies regarding effects of green advertisements on Indian consumer are meager. Hence on the basis of the above discussion we conclude that:

P2: There is a significant relationship between purchase process of green products and green advertising.

ECO LABELING

Truffer *et al.*, (2001) have defined Eco-labeling as, “Eco-labeling may be defined as making relevant environmental information about a product available to the appropriate consumers through the product label to promote environmental goal, cause or objective through consumer choice.” As per OECD (1997) there are three types of Eco- Labels:

- First type refers to those labels which refer to the environment friendliness of a product compared with rest of the products and are meant to encourage the consumers to make a switch towards more green or eco-friendly products. These labels are part of third party certification program and are voluntary in use and nature.
- Second type of labels are the ones that provide environmental claims made by manufacturers and refer to specific attributes of products like ‘CFC’ free etc.
- Third and last type use pre-set indices and give quantitative information about the products based on independent test and verification.

An important point made by Teisel *et al.*, (2002) is that Eco-labeling affects consumer behavior. Also Eco-labels can influence both consumer and manufacturer behavior. This is so because if a large portion of the populations demands eco friendly products then presence of Eco-labels on the products may provide the manufacturer an incentive to differentiate and sell their products and services along environmental characteristics. Thøgersen (2002) also points out that that majority of the consumers pay attention to Eco-labels. Also Grankvist *et al.*, (2004) have pointed out that information about the environmental outcomes provided by Eco-labels did influence product preferences. A recent study conducted by Goswami (2008) pointed out about the effectiveness of Eco-labels in Indian context for clothing brands. The study concluded that 64.2% respondents which were negative on environmental concern and certification; these consumers were also negative on the importance of certification. Thus majority of the respondents of the study did not favor Eco-labels, which is contrary to the findings of Grankvist (2004), Thøgersen (2002) and Teisel *et al.*, (2002). Hence in respect of Indian consumers it can be proposed that:

P3: There is no significant relationship between adoption of green products and Eco-labeling

ENVIRONMENTAL AWARENESS

Environmental awareness means the individual consumers perception of the impact of human activities on the environment (Kollmuss and Agyeman, 2002). The available literature suggests a positive association between awareness of environmental problems and the environmental or green behavior of consumers (Grob 1995). Also a study carried out by Roberts (1996) reports that a high degree of environmental awareness separates the green consumers' from the non green ones. Other authors have pointed out the positive relationship between knowledge of environmental issues and environmentally responsible behaviors (Smith-Sebasto 1995; Schann and Holzer 1990; Roth and Perez 1989; Hines *et al.*, 1987). However, some researchers are in disagreement with the relationship between environmental behaviors and knowledge (Shean and Shei, 1995).

In Indian context a study conducted by Jain and Kaur (2006) explored the environmental awareness of the Indian consumer. They have reported that both Indian male and female share almost similar levels of awareness. Also age was found to show no significant relationship with awareness. Thus it can be proposed that:

P4: Consumer awareness plays a significant role in adoption of green products.

CONSUMER'S ENVIRONMENTAL ATTITUDES

The available literature indicates a strong relationship between attitudes and eco friendly behaviors (Lynne and Rola 1988). Kassarian (1971) studied consumers' reaction towards a brand of petrol that reduced air pollution and also found attitudes towards air pollution as a significant predictor in determining the consumer behavior towards that brand of petrol. In this regard Balderjahn and Katz (1988) has also found that a positive attitude towards eco friendly living resulted in eco friendly behaviors like buying and using green products. Also moderating relationship between attitudes and eco friendly behaviors has been explored by authors such as Axelrod and Lehman, (1993) and Smith *et al.*, (1994). The present body of literature also strengthens the relationship between attitudes and behaviors, when attitudes towards performing specific eco friendly behaviors like recycling are considered rather attitudes towards the environment in general (Hines *et al.*, 1987; Schwepker and Cornwell, 1991). A few authors also have reported a weak relationship between attitudes and eco friendly behaviors like Berger and Corbin (1992).

Jain and Kaur (2006) have examined the environmental attitudes of Indian consumers and they have pointed out that gender wise difference exists between environmental attitudes of Indian consumers and age of the consumer has negative relationship with environmental attitudes. Hence it can be hypothesized that:

P5: Consumer's attitudes towards the environmental problems play a significant role in adoption of green products.

PERCEIVED CONSUMER EFFECTIVENESS

As per the following studies for example Antil (1978); Berger and Corbin (1992); Kinnear *et al.*, (1974); Roberts (1995); Roberts (1996); Roberts and Bacon (1997); Webster (1975); Weiner and Doescher, (1991), it is evident that consumers' attitudes and responses to environmental appeals are a function of their beliefs and individuals can positively influence the outcomes to such environmental problems. Such attitude or belief shown by consumers' is referred to as Perceived Consumer Effectiveness. Roberts (1996) have mentioned PCE as the single strongest predictor of environmentally conscious behaviors. PCE was initially considered as a measure of the attitude of the consumer itself and was also modeled as a direct predictor of environmentally friendly behaviors (Kinnear *et al.*, 1974; Ritchie *et al.*, 1981; Seligman *et al.*, 1979). PCE is also defined as an estimate of the extent to which personal consumption activities contribute to the solution of a problem (Allen, 1982; Ellen *et al.*, 1991). Hines *et al.*, (1987) have mentioned that consumers with high perceived consumer effectiveness more often behave in environmentally friendly manner. Also Shamdasani *et al.*, (1993) concluded that green consumers are more often internally controlled as they believe that an individual consumers' action can be effective in environmental protection. Berger and Corbin (1992) also concluded that perceived consumer effectiveness is a very influencing moderating factor of the attitude - green consumer behavior relationship. Ellen *et al.*, (1991) states that PCE is a significant predictor of environmental behaviors like recycling, purchasing green products and participating in environmental group activities.

However, there exists a research gap which warrants a detail investigation for determining the PCE of Indian consumers as the literature on this aspect of green consumer behavior of Indian consumers is meager.

On the basis of the above discussion it can be hypothesized that:

P6: Perceived consumer effectiveness plays a significant role in adoption of green products.

ROLE OF PEER GROUPS

Relationship with peers is more intense and influential in adults (Berndt, 1982). The present body of literature also suggests that adolescent consumers learn the symbolic meaning of products and services and prefer products, brands and stores from their peers in the process of consumer socialization (McNeal and Ji, 1999). The available literature suggests that peers influence each other in the following ways:

- As reinforcing and pushing agents (Lamb *et al.*, 1980)
- As modeling agents (Sagotsky and Lepper, 1982)
- As objects for social comparisons (Shaffer, 1994)
- As value setters for a particular idea or behavior (Shaffer, 1994)

According to Lee (2010) peer groups exert direct and indirect effects on green consumer behavior. Their study suggested that peer influence on green purchase behavior could be exerted in the following manner:

- Reinforcing directly green consumption or a lifestyle
- Kindling a consumer's emotional/passion about the environment, leading in turn to green purchase behavior.

In this regard Lee (2009) also has reported that peer influence was found to be the top predictor of green purchase behavior in both male and female consumers. The power of peer influence suggests a "group effect" in environmental behaviors.

Thus it can be concluded that peer groups play an important role in shaping the green consumer behaviors. The issue regarding the role of peer groups in developing and fostering environmental behaviors amongst Indian consumers needs to be explored in detail as literature on this aspect of green consumer behavior of Indian consumer is meager.

Thus it can be a research preposition:

P7: Peer groups play a significant role in adoption of green products.

SOCIO DEMOGRAPHIC VARIABLES

In green marketing studies profiling of consumers has been a regular feature in the past (Chan 1999; Cornwell *et al.*, 1995; Jain and Kaur, 2006). Different characteristics have been adopted by various authors for profiling and segmenting green consumers (Kilbourne and Beckmann, 1998). The characteristics used by various authors include geographic (Pickett *et al.*, 1993; Samdhal and Robertson, 1989), culture (Anderson and Cunningham, 1972; Webster 1975) and socio demographics (Diamantopoulos *et al.*, 2003; Jain and Kaur, 2006) such as age, gender, occupation, educational level, income level as determinates of eco friendly behaviors. Majority of authors have reported that gender and environmental knowledge have significant relationship. In general males tend to have higher knowledge of environmental issues than females (Jain and Kaur, 2006). Age is another factor that has significant and negative relationship with environmental knowledge (Anderson and Cunningham, 1972; Arcury *et al.*, 1987; Diamantopoulos *et al.*, 2003). In general there is a reverse relationship between age and environmental knowledge, attitudes and behaviors (Straughan & Roberts, 1999). The available literature suggests that there is a positive relationship between educational level and environmental knowledge (Arbuthnot and Lingg, 1975; Arcury *et al.*, 1987; Diamantopoulos *et al.*, 2003). Also educational level has been reported to be positively associated with environmental attitudes (Aaker *et al.*, 1982; Zimmer *et al.*, 1994; Roberts, 1996). With regards to environmental behavior, a positive relationship is also there (Arbuthnot, 1977; Devall, 1970; Scott and Willits, 1994; Webster, 1975). The study conducted by Jain and Kaur (2006) shows how different socio demographic variables effect the environmental knowledge, attitudes and behaviors of the Indian consumers but a direct link between how socio demographic variables effect the likely hood of consumers adopting green products and life styles is still far from clear. Thus this presents a research gap which needs be addressed. Also how demographics variables play a role in consumer perception and effectiveness of green advertisements and eco labels also needs to be examined. The role of socio demographic variables in influencing the consumers' willingness to pay for green products also needs to be explored in depth. Other thing like PCE (perceived consumer effectiveness) should also be studied in relation to socio demographic profile of the Indian consumers.

Hence we can conclude that:

P8: Socio Demographic variables like educational background, gender and age play a significant role in adoption of green products.

CULTURAL VALUES

In different societies beliefs are there to respect the environment. Indian society particularly Hindu mythology attaches a very important role to different elements of the environment by calling them "Panch-Bhut" (Kannan, 2009). Different elements of the environment which are air, water, earth, ether and fire need to be respected, but they are also the provider of different types of material benefits which are essential to life (Kannan, 2009). It is stated time and again that man must exploit these resources for a comfortable life, but within the limits of capacity to replenish. When a society is worshipping trees, rivers, mountains, it is easily possible to sensitize the persons about efficient use of natural resources. Chinese studies by authors like Chan & Lau (2000) have examined the role of cultural values on eco-friendly purchase behavior. Chinese studies like that by Yau (1988) using the Kluckhohn and Strodtbeck (1961) framework i.e. the K&S framework also have supported the view of green marketing as a result of cultural beliefs of Chinese people. In context of India where majority of population follows Hinduism, Jainism, Sikhism etc, by and large Indian society believes in religious values. It is appropriate to propose the following research preposition.

P9: Cultural values also play a significant part in adoption of green products.

EFFECT OF LEGAL CONSTRAINTS

When it comes to adoption of green products and green technology legal constraints play a very important role. A very good example in this regard is the government enforced C.N.G. (Compressed Natural Gas) fuel use by commercial vehicles in major metro cities like Delhi (Khawal *et al.*, 2006). Discussion with experts in this regard also point out another phenomenon of banning of poly bags in many Indian cities which has forced consumers and marketers to use more eco-friendly packaging materials like paper bags. Studies focusing on this aspect of green product adoption are meager. Legal constraints are very powerful in influencing green product adoption as their presence can eliminate the whole consumer selection process. Hence it can be proposed that:

P10: Legal constraints play a significant role in adoption of green products.

AVAILABILITY OF GREEN PRODUCTS AND SUPPORT SERVICES

Byrne and Polonsky (2001) have pointed out that low availability of green products like alternative fuel vehicles and their under developed support services as a major barrier to adoption of such green technologies. The above authors have also reported that some firms tend to sell alternate fuel vehicles on a limited basis. This is done to attract the "early adopters", but at the same time it also excludes a larger market and is a hindrance for partners to collaborate for development of support infrastructure. The above authors also point out that the scarce availability of fuel delivery outlets and maintenance service centers are also a major barrier to consumer adoption of eco friendly vehicles. In this regard in Indian context same situation exists. Few companies like Maruti Udyog Limited and Hyundai Motors have launched natural gas powered vehicles in India, but the non availability of filling stations and maintenance centers has caused such vehicles to attract a limited market in metro cities only where such filling stations are there. Thus this aspect needs to be explored in detail.

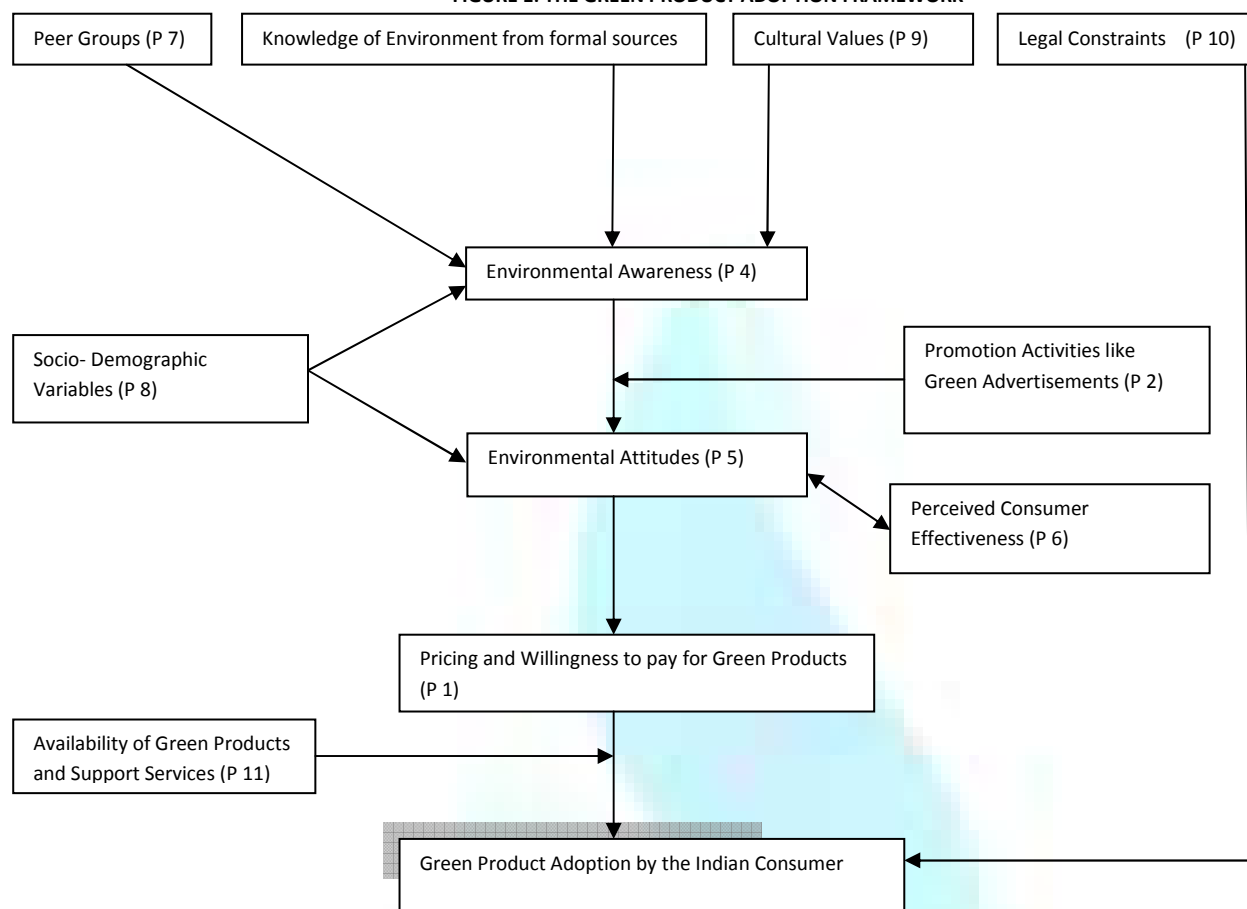
Hence it can be proposed that:

P11: Availability of green products and their support services play a significant role in adoption of green products.

THE PROPOSED FRAMEWORK

The following framework is proposed as per our prepositions stated above:

FIGURE 1: THE GREEN PRODUCT ADOPTION FRAMEWORK



As per figure 1, it is evident that peer groups, knowledge of environment through formal sources (knowledge gained through compulsory environmental education at school and college level), cultural values and ethics lead to environmental awareness in individuals. This awareness is enhanced by green promotion activities like green advertising. Also socio-demographic variables also play a part in influencing environmental awareness and attitudes as pointed out by Jain and Kaur (2006) for Indian consumers. Perceived consumer effectiveness also forms part of environmental attitudes and this leads to willingness to pay for green products. At this stage availability of green products to such willing consumers lead to green product adoption by the Indian consumer. However, legal constraints play a very important role as enactment of laws by the government for making use of eco friendly products can force consumers to by-pass the whole evaluation process.

CONCLUSIONS AND FURTHER RESEARCH

The Green Product Adoption Framework developed in figure 1 is a result of various studies conducted by different authors in different conditions. However there are few important points in this regard, the above mentioned framework should be tested statistically to first ascertain the relative importance of the factors that influence the green product adoption and secondly to ascertain the sequence of operation of all these factors. In this regard legal constraints play a very important role. Enactment of laws for compulsory use of eco friendly products can force consumers to by-pass such a decision making model to adoption of such eco friendly alternatives (as mentioned in P10). Therefore in such cases it is the foresightedness of the marketing managers that works to provide competitive advantage to a firm. If such firms already have a ready product line of green products which are in compliance with the government's environmental standards then upon enactment of such laws these firms can sell their products in large numbers very easily.

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PROBLEMS IN IMPLEMENTING E-COMMERCE IN OMAN

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ABSTRACT

This research paper has examined the significance of various problems in implementation of e-commerce solution in business organisations in Oman. Oman and Gulf Cooperation Council (GCC) member states have witnessed substantial progress in the field of infrastructure development in the last decade. Information technology sector has also seen substantial investment and progress. However, despite these positive developments and abundant resources, GCC countries in general and Oman in particular, have not been able to catch up with the pace of digital development in the rest of the world. The research paper attempts to identify the problems in implementing e-commerce in Oman. This research paper on the basis of analysis of data through hierarchical multiple regression modeling and multiple response analysis of the data has identified statistically significant problems in implementation of e-commerce in GCC nations and outlined key policy options that GCC nations can consider in formulation of policies to stimulate, support and maximize the effect e-commerce has on their economies.

KEYWORDS

e-commerce, GCC, hierarchical multiple regression, Oman, problems.

INTRODUCTION

The dawn of new millennium has opened the floodgates of technological innovations. Technology and technological innovations have always played a key role in reshaping and revolutionizing the business practices. Rapid advancements in the field of information and telecommunications technologies in the latter part of the 20th century have been truly remarkable and have resulted in amazing transformation of some societies (notably Western) into information-based cultures.

Rapid emergence and acceptance of e-commerce has resulted in effecting deep impact on business world. Worldwide it has become a major trend especially among Trans National Companies (TNCs). These companies are conducting business in many countries and working through various partners such as suppliers, dealers, importers and carry & forward (C&F) agents, distributors and retailers, the coordination between these entities has become vital so as to be successful in the competitive environment. An integrated supply chain with a well designed e-commerce infrastructure may improve their performance and minimize costs. The use and application of electronic commerce in business practices is quite varied between different parts of the world. There has been rapid growth in the use of e-commerce in North American, West European, South East Asian countries, while in Middle East Asia it has yet to see that level of growth. Oman, which is the founding member of the Gulf Cooperation Council [GCC] provides an ideal context for analysis of the problems in E-Commerce development and implementation. Electronic commerce is in its nascent stages of development in GCC countries in general and in Oman in particular. Information and Communication technology development, adoption and access are far from adequate in the GCC region. The problems faced by the region are related to the low uptake and less than efficient use of new technologies, specifically in the field of information and technology. It is further compounded by digital illiteracy, a vastly absent enabling environment, and the often limited awareness at decision-making levels of the importance of sound and forward-looking ICT policies and strategies as well as the potential for ICT applications.

LITERATURE REVIEW

Review of the available literature shows that the bulk of the conceptual works and empirical studies on E-Commerce are in the context of North & Latin America, Europe and Japan. There is a **paucity of writings** focusing on the impact of electronic commerce implementation in organization in other parts of the world especially Oman and GCC. One of these overlooked areas is the GCC countries where writings still focus on end-user computing rather than on "E" and its role and impact of its implementation in business.

The existing literature is largely fragmented and therefore does not offer a holistic view of the factors affecting e-commerce implementation results. Almost negligible work has been done to examine the statistical significance of problems faced by organization in implementation of ecommerce in GCC region. There have been very few meta-analyses of the literature which attempt to bring this aspect of research to provide a holistic picture of e-commerce implementation results. Up till 2004, almost negligible research was undertaken for assessment of e-commerce implementation results and analysis of factors that influence these results.

Research study undertaken by **Radovilsky and Hegde (2004) [1]** to investigate the factors that affect e-commerce implementation is one of the pioneering work in this regard. They carried out a survey to identify and determine the factors influencing e-commerce implementation in San Francisco Bay region, West Coast of USA, which is considered as the financial centre of West Coast of USA. Their research paper presented a general assessment of e-commerce implementation results and analysis of factors that influence these results, however, the problems in implementation of eCommerce were not clearly identified and no empirical evidence was given to establish the statistical significance of these problems.

Teo et al (2004)[2] have done a meta analysis of literature related to factors affecting adoption of e-commerce specifically in small and medium enterprises. They concluded from the meta analysis that the factors affecting the adoption of e-Commerce are highly complex, with various studies providing different lists of factors, or with studies focused on understanding or identifying a particular factor, or groups of factors, but ignoring the bigger picture. They have identified some meta factors from the available literatures, which are related to adoption of e-commerce. However, different literatures have conflicting viewpoints about these meta factors. In addition to this, none of these meta factors are related to measure the impact of e-commerce implementation results neither does it identify the major barriers in its implementation at business level.

Study undertaken by **Oreku et al (2011)[3]**, does identify the important factors in implementation of electronic commerce however the study has been carried out in East Africa which has a very different cultural environment as compared to GCC. As there is substantial difference between east Africa and middle east on economic, social and cultural parameters hence its findings may not be applicable in this part of the world.

Begin and Boisvert (2002)[4] analyzed strategic factors[5] that influence e-commerce implementation in Canada. They found that, like strengths and weaknesses, internal factors[6] that influence the implementation of electronic commerce activities vary between companies. When these internal factors favor the adoption of Internet technologies and their deployment within business processes, they are referred to as inductors. On the other hand, if they hinder or block the introduction of online activities, they can be described as inhibitors. Some of these factors are found at the individual level, while others exist at the organizational level. They have tried to classify the factors into groups which can serve as a good starting point to analyze these factors and identify their influence on e-commerce implementation results, however, their study does include any statistical analysis of the problems that are affecting the implementation of e-commerce.

RESEARCH PROBLEM

Despite having higher than world average in terms of internet penetration of population, GCC countries in general and Oman in particular is lagging behind in use and application of e-commerce. Some organizations have invested heavily in developing e-commerce related infrastructure as well. In line with the competitive advantage which GCC nations enjoy in certain sectors, sizable investments in e-commerce have been made, however there is substantial lack of information to identify the major problems in implementation of ecommerce solution in business enterprises.

There is few empirical data to characterize the problems in implementation of e-commerce initiatives as well as to gauge the scale of their impact on firm performance - especially in the context of Middle East Asia, partly because of the difficulty of developing measures and collecting data in this part of the world. Evidently, lack of analysis of factors that influence these results are creating uncertainty and ambiguity in the mind of middle and top level management. These are the situations which need to be investigated. The specific objective of this research is to identify and test the statistical significance of problems / obstacles faced by organizations in adopting & implementing e-commerce in GCC nations.

METHODOLOGY

For identifying the problems in implementation of e-commerce in GCC nations, a two phased process has been used. In the first phase, **SPSS 16.0 Multiple Response Analysis** techniques has been used to identify the obstacles. The **Multiple Response Analysis** command allows to analyze a number of separate variables at the same time, and is best used in situations where the responses to a number of separate variables that have a similar coding scheme all 'point to' a single underlying variable. In this research, we have considered each of the items in the question as all pointing to the fact of negatively affecting e-commerce implementation. It helps in summarizing the responses to these items at once so that we can use the pattern of responses across these items in further analysis with other variables.

In the second phase, **Hierarchical Multiple Regression Modeling (SPSS 16.0)** has been used. It is an advanced variant of the basic multiple regression procedure that allows to specify a fixed order of entry for variables in order to control for the effects of covariates or to test the effects of certain predictors independent of the influence of others. It is a form of multi-level analysis that allows variance in outcome variables to be analyzed at multiple hierarchical levels.

FINDINGS

In this part, major obstacles and barriers in the implementation of and adoption of E-commerce in GCC were analyzed. A total of 13 major obstacles were listed (identified through pilot survey in Oman) and the respondents were asked to evaluate these items using a 5-point scale. SPSS 16.0 Multiple Response Analysis yielded following five important problems affecting implementation of e-commerce. These are "concern for data security and privacy", "difficulty in integrating e-com software with the existing system", "small size of market for e-commerce", "lack of supporting business law" and "lack of skilled manpower".

Using SPSS 16.0 multiple response command, all the separate variables (multiple responses to above question) were analyzed at the same time. In the second part, Hierarchical Multiple Regression Modeling has been used to further analyze the variables to test their statistical significance.

In multiple response analysis, it has been observed that factors "concern for data security and privacy", "difficulty in integrating e-com software with the existing system", "small size of market for e-commerce", "lack of supporting business law" and "lack of skilled manpower" are the widely recognized obstacles in implementing electronic commerce in Oman. Although the five barriers have been highlighted by the respondents in the survey, but it is possible that their identification is only due to chance and it has no statistical significance. Hence further statistical analysis is required to find out their statistical significance. In order to examine the effects of these barriers on implementation of e-commerce in Oman, I have used Hierarchical Multiple Regression in SPSS. Hierarchical multiple regression, a variant of the basic multiple regression procedure that allows to specify a fixed order of entry for variables in order to control for the effects of covariates or to test the effects of certain predictors independent of the influence of others. In this hierarchical regression analysis model, the variables have been named as follows:

TABLE- 1: VARIABLE DESCRIPTION

Dependent Variables		Variable Indicator
1	E-Commerce Implementation	ecom_implmnt
Independent Variables		Variable Indicator
1	Lack of awareness of e-commerce	lack_awareness_ecom
2	Limited knowledge of available technology	lmt_knowledge_tech
3	Lack of confidence in benefits of ecommerce	lack_confidence_ecom
4	Cost of initial investment in adopting ecommerce	highcost_imple_ecom
5	Lack of trust between customer and company	lack_trust_cust_company
6	Insufficient infrastructure for e-commerce	infrastructure_ecom
7	Resistance in adopting ecommerce	resistance_ecom_adption
8	Low return on investment	lowreturn_investment
9	Relatively small size of market for e-commerce	small_market_ecom
10	Lack of supporting business law for ecommerce	lack_busi_law_ecom
11	Concern for data security & privacy	concern_data_security
12	Difficulty in integrating e-commerce with existing system	difficulty_integrating
13	Shortage of skilled human resources	shortage_skilled_hr

The hierarchical regression model contains thirteen categories of independent variables (obstacles) hereafter referred as predictors. Model 1 refers to the first stage in the hierarchy when first set of predictors are included in the model. In this analysis, I have tried to find out whether the five important barriers / obstacles (identified in the multiple response analysis – the last five variables shown in above table) substantially contribute to obstacle in implementation of e-commerce in Oman. At the same time I am concerned that other variables might be associated with obstacles in e-commerce implementation. To make sure that these variables do not explain away the entire association between the above mentioned predictors and obstacles in e-commerce implementation, all other predictors (other than the five selected predictors) have been put into the first model (Model-1). This ensures that they will get "credit" for any shared variability that they may have with the predictor that I am really interested in.

Model-2 refers to the second stage in the hierarchy when predictor "Small size of market for e-commerce" is considered as contributing to obstacles in ecommerce implementation.

Model-3 refers to the third stage in the hierarchy when set of predictors "Small size of market for e-commerce" and "Lack of supporting business law for ecommerce" are considered as contributing to obstacles in ecommerce implementation.

Model-4 refers to the fourth stage in the hierarchy when set of predictors "Small size of market for e-commerce", "Lack of supporting business law for e-commerce" and "Concern for cyber crime, data security & privacy" are considered as contributing to obstacles in e-commerce implementation.

Model-5 refers to the fifth stage in the hierarchy when set of predictors "Small size of market for e-commerce", "Lack of supporting business law for e-commerce", "Concern for cyber crime, data security & privacy" and "Shortage of skilled human resources" are considered as contributing to obstacles in e-commerce implementation.

Model-6 refers to the sixth stage in the listing when set of predictors "Small size of market for e-commerce", "Lack of supporting business law for e-commerce", "Concern for cyber crime, data security & privacy", "Shortage of skilled human resources" and "Difficulty in integrating e-commerce software with existing system" are considered as contributing to obstacles in e-commerce implementation.

The SPSS output (for Oman) in the form of Model Summary (table 2) shows the percent of "variability in the dependent variable that can be accounted for by all the predictors together (that's the interpretation of R-square). In the column labeled R are the values of the multiple correlation coefficients between the predictors and the outcome. The next column gives a value of R^2 which is a measure of how much of the variability in the outcome is accounted for by the predictors. The change in R^2 is a way to evaluate how much predictive power was added to the model by the addition of another variable in step 2. In this case, the % of variability in the outcome accounted for, went up from 4.7 % to 26 % – a substantial increase of more than 21%. The model summary in table-2 (SPSS 16.0 output) is as follows:

TABLE 2: MODEL SUMMARY [FOR OMAN]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.217 ^a	.047	.102	.35455	.175	2.462	8	93	.018	
2	.429 ^b	.184	.104	.35446	.009	1.048	1	92	.309	
3	.444 ^c	.197	.109	.35348	.013	1.508	1	91	.223	
4	.458 ^d	.210	.114	.35262	.013	1.444	1	90	.233	
5	.478 ^e	.229	.125	.35041	.019	2.139	1	89	.147	
6	.510 ^f	.260	.150	.34519	.031	3.712	1	88	.057	2.431
a. Predictors: (Constant), lowreturn_investment, lmt_knowledge_tech, infrastructure_ecom, lack_confidence_ecom, lack_awareness_ecom, resistance_ecom_adpion, lack_trust_cust_company, highcost_imple_ecom										
b. Predictors: (Constant), lowreturn_investment, lmt_knowledge_tech, infrastructure_ecom, lack_confidence_ecom, lack_awareness_ecom, resistance_ecom_adpion, lack_trust_cust_company, highcost_imple_ecom, small_market_ecom										
c. Predictors: (Constant), lowreturn_investment, lmt_knowledge_tech, infrastructure_ecom, lack_confidence_ecom, lack_awareness_ecom, resistance_ecom_adpion, lack_trust_cust_company, highcost_imple_ecom, small_market_ecom, lack_busi_law_ecom										
d. Predictors: (Constant), lowreturn_investment, lmt_knowledge_tech, infrastructure_ecom, lack_confidence_ecom, lack_awareness_ecom, resistance_ecom_adpion, lack_trust_cust_company, highcost_imple_ecom, small_market_ecom, lack_busi_law_ecom, concern_data_security										
e. Predictors: (Constant), lowreturn_investment, lmt_knowledge_tech, infrastructure_ecom, lack_confidence_ecom, lack_awareness_ecom, resistance_ecom_adpion, lack_trust_cust_company, highcost_imple_ecom, small_market_ecom, lack_busi_law_ecom, concern_data_security, shortage_skilled_hr										
f. Predictors: (Constant), lowreturn_investment, lmt_knowledge_tech, infrastructure_ecom, lack_confidence_ecom, lack_awareness_ecom, resistance_ecom_adpion, lack_trust_cust_company, highcost_imple_ecom, small_market_ecom, lack_busi_law_ecom, concern_data_security, shortage_skilled_hr, difficulty_integrating										
g. Dependent Variable: ecom_implmnt										

The Durbin-Watson statistic [5] informs about whether the assumption of independent errors is tenable. The closer to that the value is, the better, and for these data the value is 2.431, which is somewhat close to the value of adjusted R square, hence it can be stated that the assumption has almost certainly been met. The next part of the SPSS output (Table-3) of this model contains an Analysis of Variance (ANOVA).

TABLE - 3: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.476	8	.310	2.462	.018 ^a
	Residual	11.691	93	.126		
	Total	14.167	101			
2	Regression	2.608	9	.290	2.306	.022 ^b
	Residual	11.559	92	.126		
	Total	14.167	101			
3	Regression	2.796	10	.280	2.238	.022 ^c
	Residual	11.371	91	.125		
	Total	14.167	101			
4	Regression	2.976	11	.271	2.176	.023 ^d
	Residual	11.191	90	.124		
	Total	14.167	101			
5	Regression	3.238	12	.270	2.198	.018 ^e
	Residual	10.928	89	.123		
	Total	14.167	101			
6	Regression	3.681	13	.283	2.376	.009 ^f
	Residual	10.486	88	.119		
	Total	14.167	101			
a. Predictors: (Constant), lowreturn_investment, lmt_knowledge_tech, infrastructure_ecom, lack_confidence_ecom, lack_awareness_ecom, resistance_ecom_adpion, lack_trust_cust_company, highcost_imple_ecom						
b. Predictors: (Constant), lowreturn_investment, lmt_knowledge_tech, infrastructure_ecom, lack_confidence_ecom, lack_awareness_ecom, resistance_ecom_adpion, lack_trust_cust_company, highcost_imple_ecom, small_market_ecom						
c. Predictors: (Constant), lowreturn_investment, lmt_knowledge_tech, infrastructure_ecom, lack_confidence_ecom, lack_awareness_ecom, resistance_ecom_adpion, lack_trust_cust_company, highcost_imple_ecom, small_market_ecom, lack_busi_law_ecom						
d. Predictors: (Constant), lowreturn_investment, lmt_knowledge_tech, infrastructure_ecom, lack_confidence_ecom, lack_awareness_ecom, resistance_ecom_adpion, lack_trust_cust_company, highcost_imple_ecom, small_market_ecom, lack_busi_law_ecom, concern_data_security						
e. Predictors: (Constant), lowreturn_investment, lmt_knowledge_tech, infrastructure_ecom, lack_confidence_ecom, lack_awareness_ecom, resistance_ecom_adpion, lack_trust_cust_company, highcost_imple_ecom, small_market_ecom, lack_busi_law_ecom, concern_data_security, shortage_skilled_hr						
f. Predictors: (Constant), lowreturn_investment, lmt_knowledge_tech, infrastructure_ecom, lack_confidence_ecom, lack_awareness_ecom, resistance_ecom_adpion, lack_trust_cust_company, highcost_imple_ecom, small_market_ecom, lack_busi_law_ecom, concern_data_security, shortage_skilled_hr, difficulty_integrating						
g. Dependent Variable: ecom_implmnt						

Next table (Table-4) represent the last section for sixth model after the table is split into six sections: one for each model. Here it is important to note that value of F defines the accuracy of the regression model. Value of F is greater than 1, may be interpreted that regression model overcomes the inaccuracy within the model and SPSS calculates the exact probability of obtaining the value of F by chance. For the initial model the F -ratio is 2.462, and it is **highly unlikely to have happened by chance** (as $p < 0.05$). For the second model the value of F is 2.306, which is also highly significant ($p < 0.05$). The value of F -ratio of third, fourth, fifth and sixth models are 2.238, 2.176, 2.198, and 2.376, all of which are also highly statistically significant ($p < 0.05$). From these results it may be safely interpreted that the final model might count as significant to predict the outcome variable.

ANOVA table reinforces our earlier findings. Here all the models predicted scores on the Dependent Variable to a statistically significant degree as the significance values of all the models is less than 0.05. The next part of the SPSS 16.0 output is concerned with the parameters of the model. Here it more important to look at the final model because it includes all predictors that make a significant contribution to predicting relationship between predictors and inefficient E-Commerce in OMAN.

In SPSS 16.0 output, Standardized Coefficients are labeled as "Beta" while the ordinary Unstandardized coefficients are labeled "B". The B values tell us about the relationship between inefficient and each predictor. If the value is positive it can tell that there is a positive relationship between the predictor and the outcome whereas a negative coefficient represents a negative relationship. Each of these beta values has an associated standard error indicating to what extent these values would vary across different samples, and these standard errors are used to determine whether or not the B value differs significantly from zero. Therefore, if the t-test associated with a B value is significant (if the value in the column labeled sig. is less than 0.05) then that predictor is making a significant contribution to the model.

Here it clear from the output that for the final model (table 4) that lack of supporting business law (lack_busi_law_ecom, $t = 0.471$, $p < 0.05$), concern for data security & privacy (concern_data_security, $t = 1.544$, $p < 0.05$) and difficulty in integrating ecommerce software with existing system (difficulty_integrating, $t = 1.927$, $p < 0.05$) are statistically significant in terms of contribution to obstacles in e-commerce implementation in Oman.

TABLE 4: COEFFICIENTS FOR THE SIXTH (FINAL) MODEL

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
6	(Constant)	2.297	.695		3.307	.001
	lack_awareness_ecom	-.021	.049	-.047	-.432	.667
	lmt_knowledge_tech	-.113	.048	-.257	-2.334	.022
	lack_confidence_ecom	.022	.049	.050	.458	.648
	highcost_imple_ecom	-.034	.055	-.068	-.616	.539
	lack_trust_cust_company	-.092	.057	-.182	-1.627	.107
	infrastructure_ecom	-.083	.209	-.043	-.394	.694
	resistance_ecom_adaption	.159	.106	.208	1.499	.137
	lowreturn_investment	-.002	.053	-.005	-.045	.964
	small_market_ecom	-.129	.104	.156	-1.230	.222
	lack_busi_law_ecom	.549	.105	.553	.471	.039
	concern_data_security	.105	.068	.158	1.544	.026
	shortage_skilled_hr	-.137	.099	-.182	-1.393	.167
	difficulty_integrating	.163	.085	.216	1.927	.047

The standardized beta values (β) are all measured in standard deviation units and so are directly comparable: therefore, they provide a better insight into the 'importance of predictor in the model. In this model out of the five predictors, "Lack of supporting business law for ecommerce", "Concern for cyber crime, data security & privacy", and "Difficulty in integrating e-commerce software with existing system" are having positive standardized Beta values which proves that they affect the implementation of ecommerce while "Shortage of skilled human resources" and "Small size of market for e-commerce" are not that much important in contributing to obstacle in ecommerce implementation in Oman.

CONCLUSION

In the light of above analysis, it can be concluded that out of the five factors "concern for data security and privacy", "difficulty in integrating e-commerce software with the existing system", and "lack of supporting business law" are statistically significant problems in implementing e-commerce in business organizations in Oman while "Shortage of skilled human resources" and "Small size of market for e-commerce" are important but not statistically significant in contributing to problems in ecommerce implementation in Oman.

Here it is imperative to mention that as Oman is in the process of economic integration with five other Arab countries and has formed a regional trading bloc called as GCC, the process of economic integration in this part of the world continues, it offers tremendous opportunities for market expansion across the nations boundaries and this would result in better prospect for implementation of electronic commerce. This realization is already there among business managers and that precisely is the reason why business managers were reluctant to select "Small size of market for e-commerce" as a problem or obstruction in implementing e-commerce.

Concern for data security and privacy and difficulty in integration of e-commerce software with existing system are areas that require immediate and sustained attention. As one of the biggest stumbling block in implementing electronic commerce is concern for data security and privacy, hence it is quite imperative that companies that already have privacy policies address the issue of enforcement and redress. As existing policies fail to engender customers' trust in the site, it is also recommended that companies further need to develop privacy policies that include all elements of the principle of the fair information practices.

SCOPE FOR FURTHER RESEARCH

This study is horizontal in nature and a large sample size has been used for the research hence a more in depth or vertical study with a smaller sample size may possibly give more insight into this problem. Besides this study is identifying the problems only in one of the GCC country hence for generalization, similar type of study is required covering all the six GCC nations.

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FINANCIAL PERFORMANCE (FP) AND INFORMATION TECHNOLOGY CONTROL SYSTEM (ITCS) IN NIGERIAN BANKS

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ABSTRACT

The objective of this study is to determine the extent to which information technology control system (ITCS) relates to financial performance (FP) and establish whether the relationship is attributable to the existence of the information technology control officer (ITCO) and the separation of information technology security officer or group (ITSO/G) from the information technology (IT) division. In this wise, data were extracted from a hundred and five annual financial reports and accounts from 21 different banks for a period of five years (2006 – 2010) that made the sample of the study. In order to test hypothesis formulated for the study, the anova, and correlation were used as techniques for data analysis. The findings of the study revealed ITCS is not significantly related to FP. The culture of identifying separate capacities in the IT division and control division should be pursued with vigor by banks.

KEYWORDS

Financial performance (FP), Information technology control system (ITCS).

INTRODUCTION

The Nigerian banking sector has been exposed to a lot of experiences to make it stand the taste of time. This exposure came through series of reforms and innovations. One of such innovation is technology. Technology outpaced manual processes in the banking sector. The technology was referred to as electronic data processing (EDP) which through time, transformed into information technology (IT). As a result, there was a reflection of an equivalent change in the use of banks from automation of paper flow to reduction in unit cost (David, 1995). Consequently, banks became increasingly dependent on deployment of IT which in turn made budget for IT in the sector, larger than that of any other sector in Nigeria (Ovia, 2000). A big budget IT implies, huge investments on IT infrastructure and personnel, more installed base for personal computers (PCs), local area net works (LANs), wide area networks (WANs) and a better linkage to internet than any other sector of the economy (Worem, 2000).

According to HSBC (2000), the investment in IT attracts benefits that are more than three times its cost. One of such benefit is that banking operation will have a more effective control activities component of the internal control system (ICS) through several analytical tools generated by the EDP (Nwanzembe, 2010). The EDP is the basis of information technology control system (ITCS).

ITCS are a subset of an organisation's internal control system (ICS). It relates to the confidentiality, integrity, availability of data and overall management of IT function of the organisation. These attributes breeds the understanding that, IT controls can have a direct or indirect impact on financial reporting process. For instance, IT application controls that ensure completeness of transactions can be directly related to financial assertions. Thus, the relationship between IT control and financial assertion calls for a regulatory protection. In this wise the central bank of Nigeria (CBN) in 2003 required banks to identify an information control technology compliance officer (ICTCO) whose responsibility is to ensure compliance with CBN guide lines in application system soft ware and bank policy on ICT. This created the first component of information technology governance (ITG). Furthermore, banks were directed to make certain that the information technology security officer or group (ITSO/G) that deals with information system security is distinct from the IT division in charge of computer system software implementation. This also, created the second component of information technology governance (ITG).

The CBN directive was to align information technology control system (ITCS) to internal control system (ICS) in order to optimise corporate governance practices by ensuring increase in shareholders' value and meeting the expectations of other stakeholders. From this view, the following can be deduced; when information technology control system is aligned with internal control system through a well defined code of corporate governance practice, there is the possibility of return on investments which increases shareholders value and satisfies the expectations of other stakeholders. It is in this context that the study seeks to address the following question; to what extent has ITCS relates to financial performance (FP) and whether the relationship is attributable to the fact that, the ICTCO has been identified and the ITSO/G is distinct from the IT division? Based on this premise the following hypothesis was formulated:

H₀₁ financial performance is not significantly related to Information technology control system's (separation of IT capacities [SITC] and the existence of the information communication technology compliance officer [ITCO]) of banks in Nigeria.

The remaining part of this paper is structured into five sections, section one is the introduction including this paragraph. Section two, presents the literature in concepts, prior studies and theoretical review. Immediately after that is the methodology, presenting the model and how the study defined and measured its variables. Afterwards, is the discussion of findings and based on the findings the paper concludes in the last section of the paper.

REVIEW OF LITERATURE CONCEPTS

In business and accounting, information technology control (ITC) are specific activities performed by persons or system design to ensure that business objectives are met (Wikipedia, 2011). ITC are a subset of an enterprise's internal control system (ICS). This is because it complements mostly the control environment (CE) and the control activities (CA) components of the ICS. The former sets the tone of an organization, influencing the control consciousness of its people. It is the foundation for all other components of internal control system, providing discipline and structure. Control environment factors include the integrity, ethical values and competence of the entity's people. It is the control component that insists, management assigns responsibilities, organizes and develop people and pay attention to the direction it provides (Boyd and Edward, 1995). ITC that have direct impact on the control environment is the information technology general control (ITGC). They include controls over the IT environment, program development and program changes. It represents the foundation of the IT control structure by helping to ensure the reliability of data generated by the ITCS and supports the assertion that the system operates as intended and that output is reliable.

On the other hand, the latter component ensures accuracy and completeness of records in accounting, arithmetic, authorization and approval controls in the ICS (Dobrowolski, 2006). Arithmetic and accounting control requires the putting in place of an effective bookkeeping and accounting system (Arens & James, 1999; Graz and Manson, 2000; and Dandago, 2002). Authorization and approval control focuses on all the transactions that should be authorized or approved by the appropriate person, before they are executed. In this regard, an organization will have to develop a policy on the maximum amount of expenditure to be incurred by officers and committees at various levels. The ITC that have direct impact on the control activities is the information technology application control (ITAC). It deals with transaction processing control, sometimes called input processing-output controls. It is fully automated, i.e it performs automatically by the system designed to ensure the complete and accurate processing of data from input through output. They help to ensure the privacy and security of data (Wikipedia, 2011).

From the explanation presented above, information technology control system (ITCS) plays an important role in the financial reporting system of an organisation. Because the control environment component and control activities components of the internal control system (ICS) are complimented by the information technology general control (ITGC) and information technology application control (ITAC) respectively.

PRIOR STUDIES

Information technology (IT) is believed to have the potentials to enhance information driven economy and social services in specific areas of finance, education and health (Odedra et al, 1993). However, the benefits of IT have been argued differently by various researchers. For most of the studies the benefits are positive, while for some others it is a negative situation. The common grounds for all the researches is that, they all investigated the benefits of IT in banks by evaluating electronic banking (e-banking). Like the study of Wu et al (2006), they posit it created an unprecedented opportunities for banks in the ways they organise financial products development, delivery and marketing via the internet. Similarly, Simpson (2002) noted e-banking is likely to be implemented where the delivery of banking services are less than the operational costs of delivery of financial services through branch networks. For Sannes (2001) too, e-banking is driven largely by the prospects of operating costs minimisation and operating costs maximisation. This position was earlier revealed by Emmon and Green (1998). More so, in terms of operational efficiency it is evident that, the operational premises and back office paper work are minimised because the customer can use on line financial self services to attend to financial transactions (Heeks, Idowu et al, 2002; Liao and Cheung, 2003; Southard and siau, 2004; Akindele et al, 2006; and Agboola, 2007).

From the same perspective, Jalath-conia et al (2001) examined the economic value network by analysing data from the earlier implementation of an electronic inter-bank payment adopted by all Mexican banks. They measured performance by balances on the reserve account that commercial banks held at the central bank. They discovered electronic interbank payments network enhances banks reserve management performance, i.e. reducing opportunities and penalty costs by providing more timely information on deposit and withdrawals affecting the bank's reserve accounts.

Going by the reviews above, IT usage has quite a number of advantages. According to Fox and Zonneveld (2003), there are more benefits when an organisation builds a strong internal control system (ICS) with IT programs. This includes preventing the loss of resources and the probability of system breach, making better business decisions with high quality and more timely information, optimising operations with an integrated approach to security availability and processing integrity.

However, some studies maintained IT made organisations vulnerable to a lot of unfavourable conditions. For instance the study of Donli (2002) posit that, because most banks used network architecture and solutions with little attention paid to their compatibility, interfacing these applications for overall system synergy was difficult. Earlier on Saatcioglu et al (2001) argued , while IT offers new opportunities to banks, it also poses many challenges such as the innovation of IT applications, the blurring of market boundaries, the breaching of industrial barriers, the entrance of new competitors and the emergence of new business models. Furthermore, the speed and scale of the challenges are rapidly increasing with the pervasiveness of the internet and the extension of information economy (Wu et al, 2006).

For Idolor (2010), the tendency for software to be manipulated at the data collection stage, the input processing stage, or even the data dissemination stage, improper input system, virus program and cyber theft is almost not avoidable. Also, Stalder (2002) opined IT proved apparent failure.

There are studies that went beyond knowing whether IT is beneficial or not. These studies emphasis was to know whether or not IT had any impact on the performances of banks by looking at return on equity and assets. For example, Furst et al, 1998 did not find IT affecting the profitability of banks as measured by return on equity for shareholders. From a different angle, Nolle et al (2000), investigated whether offering internet banking affected a bank's profitability. They discovered IT better influenced accounting ratios and higher returns in equity for bank's share holders.

METHODOLOGY

The objective of this study is to assess the impact of information technology control system (ITCS) on financial performance (FP) of Nigerian banks, and to determine whether the impact is attributable to the fact that, the information communication technology compliance officer (ICTCO) exist in banks and the information technology security officer or group (ITSO/G) is distinct from the IT division (i.e separation of IT capacities [SITC]).

To achieve these objectives, content analysis was used to collect ITCS and FP data from the annual financial reports of 21 banks quoted on the Nigerian stock exchange fact book 2009, for the period 2006-2010. The choice of this period is influenced by the fact that, it is in the era of post consolidation. The study developed a model as the basis for testing the hypothesis formulated for this study. The study specified an accounting ratio (Return on investment [ROI]) as proxy for the dependent variable financial performance (FP). The choice of this proxy is based on the assertions that, a lot of resources go in to achieving an ITCS that ensures reasonable assurance for positive returns on banks assets. For the independent variable information technology control system (ITCS) two proxies separation of IT capacities (SITC) and the existence of the information communication technology compliance officer (ITCO) were employed to represent it. The choice of these proxies is based on the objective of this study which is to know whether the impact of ITCS on FP is attributable to these proxies. SPSS version 15 was used to aid the analysis of data collected.

POPULATION AND SAMPLE OF THE STUDY

The population of the study is the 21 banks quoted on the Nigerian stock exchange. These banks are also the sample of this study. This implies $n = N = 21$. Where:

n = Sample size

N = Population size

Arising from the above, considering the period under review (2006-2010), a total of 105 annual reports and account made the sample. However, due to non availability of trend flow in data for the study period 10 banks only made the sample. The researchers believe is that, this will not in any way limit the reliability of results generated from 50 annual financial reports of the following banks; First bank, Union bank, Guarantee trust bank, Sterling bank, Wema bank, FCM bank, Skye bank, Diamond bank, Eco bank, and Zenith bank.

MODEL AND VARIABLES SPECIFICATION

The following mathematical model;

$FP = f(SITC + ITCO)$ was developed to test the following null hypothesis:

H₀, Corporate financial performance is not significantly related to Information technology control system's (separation of IT capacities [SITC] and the existence of the information communication technology compliance officer [ITCO]) of banks in Nigeria.

TECHNIQUE OF DATA ANALYSIS

The analysis of variance and correlation technique was employed to determine whether or not the impact of ITCS on FP is attributable to SITC and ITCO.

DISCUSSION OF FINDINGS

Hypothesis was formulated to achieve the objective of this study, which is to determine the extent to which ITCS impacts and relate to FP in Nigerian Banks. The result for testing the hypothesis is presented in tables' 4.1a-c below.

TABLE 4.1a: DESCRIPTIVE STATISTICS

	Mean	Std. Deviation	N
financial performance (FP)	.1100	3.92946	5
Separation of information technology capacities (SITC)	.8600	.19494	5
information technology compliance officer (ITCO)	.0000	.00000	5

Source: Spss output listing 2012

In table 4.1a above the means for the three variables are shown. That of FP is 0.1100, for SITC is 0.8600, and for ITCO is 0.000. That of ITCO is at nothing because binary number zero was assigned all through the years under review due to the non existence of such a capacity in Nigerian banks. The standard deviation for CFP is 3.9 that of SITC are 0.19, the variation between the mean is too wide to create a significant relationship.

TABLE 4.1b: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.969	1	9.969	.577	.503
	Residual	51.793	3	17.264		
	Total	61.763	4			

a Predictors: (Constant), Separation of information technology capacities

b Dependent Variable: financial performance

Source: Spss output listing 2012

The table 4.1b above is the analysis of variance (anova) for the means. The variation in the means was shown to be very wide in table 4.1c. The F value in the anova table is the litmus test of significance for the variables and it is at 0.577, which is not significant. This explains why the wide variation in mean. To further test the second hypothesis, table 4.1e below, was also considered.

TABLE 4.1c: CORRELATIONS

		financial performance (FP)	Separation of information technology capacities (SITC)	information technology compliance officer (ITCO)
Pearson Correlation	financial performance (FP)	1.000	-.402	.
	Separation of information technology capacities (SITC)	-.402	1.000	.
	information technology compliance officer	.	.	1.000
Sig. (1-tailed)	financial performance	.	.251	.000
	Separation of information technology capacities (SITC)	.251	.	.000
	information technology compliance officer (ITCO)	.000	.000	.
N	financial performance	5	5	5
	Separation of information technology capacities (SITC)	5	5	5
	information technology compliance officer (ITCO)	5	5	5

Source: Spss output listing 2012

In the table above, the correlation between FP and SITC is given at a fairly strong negative correlation (0.402) and it is not significant at the 5% level because 0.251 is greater than 0.05. This implies the null hypothesis which states; corporate financial performance is not significantly related to Information technology control system's (separation of IT capacities [SITC] and the existence of the information communication technology compliance officer [ITCO]) of banks in Nigeria is accepted.

CONCLUSIONS

The study had, as an objective to determine whether information technology control system (ITCS) relates significantly to financial performance of banks in Nigeria and to find out whether the relationship is attributable to the existence of an information communication technology control compliance officer (ITCO) whose responsibility is to ensure compliance with CBN guide lines on application system soft ware and bank policy on ICT. Also, the separation of the information technology security officer or group (ITSO/G) [that deals with information system security] from the IT division [in charge of computer system software implementation].

Based on the findings, the study concludes The extent to which ITCS impacts on FP is not significant because of the absence of ITCO in banks for the period under review. This implies there is no significant relationship between FP and ITCS. This finding is in line with that of Furst et al (1998).

The implication of this finding is that, the study did not find a significant relationship between investment in ITCS and Banks performance due to the absence of ITCO whose responsibility is to ensure compliance with CBN guide lines on application system soft ware and bank policy on ICT. This, the study believes is a limitation and a possible area for further research. Such research should recognise the other banks not included in the sample of this study as well as redefining the study period and validating findings with primary sources of data.

This study recommends the need for banks to strictly adhere to CBN guide line on the separation of the information technology security officer or group (ITSO/G) [that deals with information system security] from the IT division [in charge of computer system software implementation]. This will provide a sure direction for checks and balances.

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AN EXTENDED TECHNOLOGY ACCEPTANCE MODEL TO UNDERSTAND ONLINE SHOPPING**MUHAMMAD RIZWAN****MS SCHOLAR****DEPARTMENT OF MANAGEMENT SCIENCES****IQRA UNIVERSITY****ISLAMABAD, PAKISTAN****IMRAN ANWAR MIR****RESEARCH SCHOLAR****DEPARTMENT OF MANAGEMENT SCIENCES****IQRA UNIVERSITY****ISLAMABAD, PAKISTAN****DR. KASHIF UR REHMAN****ASSOCIATE PROFESSOR****DEPARTMENT OF MANAGEMENT SCIENCES****IQRA UNIVERSITY****ISLAMABAD, PAKISTAN****ABSTRACT**

Although the technology takes years to evolve, however people take more time to accept it and adopt in their daily lives. Lack of customer acceptance remains a big challenge for the success of new technology. Despite the previous success of online shopping, the adoption rate is still a challenge especially in developing countries. Previously, many studies utilize the Technology Acceptance Model (TAM) to investigate the adoption and potential impediments for online shopping and it prove to be extremely valid approach. A wide spectrum of disciplines examine the electronic consumer behavior and being a recent issue in marketing still many areas are open for researchers to investigate the electronic consumer behavior in marketing. The present study develops an extended technology acceptance model for studying the effects of locus of control, innovativeness and perceived risk in adoption of online shopping and identifies opportunities and gaps for advancing the knowledge on online shopping. Available data and studies reviewed to justify the inclusion of these new variables in TAM. The study propose that locus of control can influence the perception of the customers for adopting online shopping, while innovativeness and perceived risk can act as a moderator between the relationship of attitude and intention for online shopping. Current study provides extensive literature review and results of the previous studies to support the argument presented in the study.

KEYWORDS

Attitude, Innovativeness, Locus of Control, Online Shopping, Perceived Risk.

INTRODUCTION

Although the technology takes years to evolve, but people take more time to accept it and adopt in their daily lives (Davis, 1993). Online shopping is facing the similar problems where having discrete benefits for the customers; the adoption rate is still a challenge. Online shopping is a process where customers purchase products and services directly from the sellers using internet as a medium (Koivumaki, 2001). This new shopping medium enable them to buy books, apparels, groceries, cars and even houses from their favorite place without going anywhere from home (Brown, Pope and Voges, 2003). The instant success of online shopping has invited widespread research on understanding the drives of online shopping and different other factors that motivate a person to become online shopper. Among all the theories and models, the technology acceptance model (TAM) has been viewed the commonly used and the most prominent model for understanding the electronic commerce from a consumer oriented view. Many researchers in the field of online shopping broadly use the TAM (McKechnie *et al.*, 2006; Burner and Kumar, 2005).

Davis (1993) calls for introducing new external variables that can be instrumental to understand the roles of these variables in influencing the perception of usefulness, ease of use, attitude and intentions. Locus of control (LOC) describe the beliefs of the persons that the outcomes in their lives are results of their abilities and skills or these outcomes are due to other factors such as chance or other powerful peoples (McCarty and Shrum, 2001).

Many researchers used the construct of attitude to measure the intention of an individual to perform a particular behavior. While some researchers argue that although the attitude is a good proxy for measuring the intentions but still many external variable influence the intention of a person to actually perform the behavior. Previously, many studies confirm that, despite the favorable attitude of a person towards a particular object, it is difficult to perform the actual behavior when there are difficulties to do so (Chen, 2007). The current study proposes two variables (innovativeness and perceived risk) that can moderate the attitude and intention relationship in the context of online shopping.

The primary purpose of the study is to extend the technology acceptance model by including new external variable as recommended by Davis (1993, p. 483) and further investigate the relationship of attitude and intention with the help of moderating variables as mentioned by (Chen, 2007). Specifically, the current study will address the following questions:

- Q1.** Is it instrumental to include the locus of control as an external variable to perceived usefulness and perceived ease of use?
- Q2.** Whether innovativeness and perceived risk moderate the attitude intention relationship?

LITERATURE REVIEW**ONLINE SHOPPING**

Online shopping is a new form of trade that takes place on the internet where customers visit various websites offering different products for sale, select a product, order that product, makes payment via internet with the help of credit card, and finally the seller physically delivered the product to the customers (Lee and Lin, 2005). Earlier studies have suggested that different other variables are suppose to greatly influence the adoption of internet for the use of online shopping and need to investigate (Brashear *et al.*, 2009; Park and Jun, 2003).

Technology Acceptance Model (TAM)

Davis introduced the technology acceptance model (TAM) in 1989 to explain the acceptance of new information technology. This model relied on theory of reasoned action (TRA) and theory of planned behavior (TPB) to explain the adoption of a new information system. The two salient beliefs in this model are user

perception of usefulness and ease of use. Usefulness refers to the user perception that using this new technology will improve or enhance his or her performance (Davis, 1989). Perceived ease of use refers to the customer perception that using this technology is free of efforts (Davis, 1989). The TAM model explain this link as the more convenience a person feel to use it, the more beneficial it can be for him (Venkatesh, 2000; Davis *et al.*, 1989).

Locus of Control as an external variable

Davis (1993, p. 483) invites future research to include other external variables to investigate their impact on perceived usefulness and perceived ease of use. These variables can be user involvement, system familiarity, task characteristics, experiences, complexity, or design features of new technology. Different studies consider various external variables such as enjoyment (Thong *et al.*, 2006), user involvement (Xie, 2003), User habits (Ozen and Basoglu, 2006), task characteristics (Chaomei and Roy, 1996), subjective norms (Lu *et al.*, 2009), perceived playfulness (Hansen, 2006) and online shopping anxiety (Forsythe *et al.*, 2006).

In psychology literature, Rotter (1966) originated the construct of Locus of control. He explains it as the attribution of a person regarding the outcome of his life to external or internal sources. People with internal locus of control tend to associate the outcomes of their life with their own action. The external people on the contrary associate these things with external factors that are out of their own control. Different researches describe that the people with internal locus of control are confident in their own capabilities and skills (Phillips and Gulley, 1997) and have a tendency to involve in a novel and complicated task (Howell and Avolio, 1993). The external people lack this confidence in their skills and tend to avoid engaging in complex tasks (Brender, 1987) and solving problems (Larson *et al.*, 1990).

These internals are more inclined towards difficult, risky and innovative tasks (Howell and Avolio, 1993). They commit the tasks that allow them personal control (Brenders, 1987). For completing tasks, they more rely on their personal skills and capabilities. They set their personal goals and confident that they have the skills to perform the behaviors and to control the events (Phillips and Gully, 1997). Additionally, they struggle for getting new skills to mastering situations (Ryff, 1989). People with internal locus of control are more inclined to use the new technologies compare to externals (Oyedele and Simpson, 2007). In case of new technology, the internals are more likely to participate and utilize it to enhance their performance related to work (Hoffman *et al.*, 2003). Externals avoid complex situations that need their active involvement. They go for the tasks that needs little mastery and as compare to internals they are not willing too much to improve their skills to complete the tasks (Zimmerman, 1995). Externals think that they do not have the skills required to accomplish their goals (Skinner, 1996; Ingledew, Hardy and Cooper, 1997). As a result, these externals are more prone to procrastinating (Mzoughi *et al.*, 2007), escaping, withdrawing or retreating (Ingledew, Hardy and Cooper, 1997; Skinner, 1996).

Internals are supposed to use the internet in a more goal directed manner (Hoffman, Novak and Schlosser, 2000). Internals adopt more proactive behavior and apply their problem solving skills to control the environment than externals (Skinner, 1996). Internals use their accumulated information to decrease the level of uncertainty and to complete their goals by applying instrumental approach toward communication (Lefcourt, 1966).

Based on above results and discussion that locus of control determine the confidence of the person to involve in a new task (Phillips and Gulley, 1997; Howell and Avolio, 1993) and inclination for using the new task for personal achievement (Hoffman *et al.*, 2003), the study propose that:

P1: *Locus of control influences the perception of usefulness and ease of use.*

ATTITUDE TOWARDS ONLINE SHOPPING

The word "Attitude" symbolizes the overall level of favorability or un-favorability toward any external stimulus (Fishbein, 1963). Attitude is an indicator that reflects the liking or disliking of a person regarding any object (Ajzen and Fishbein, 1980, p.64). According to TAM, the beliefs of ease of use and usefulness of the new technology are the main factors for the acceptance of new technology (Liao and Shui, 2009).

In different studies, individual attitude was a significant predictor for online shopping intentions. The attitude towards internet shopping had the significant impact on the intention to web purchase (Limayem *et al.*, 2000). Different studies also confirm the similar results for the relationship between attitude and online shopping intentions (George, 2002; Kim *et al.*, 2003; Hsu and Chiu, 2004; Pavlou, 2006; To *et al.*, 2008; Lu *et al.*, 2009).

ATTITUDE AND INTENTION RELATIONSHIP

Many researchers argue that, although the attitude is a good proxy for measuring intention but still different external variables influence the intention of a person to perform the behavior. According to adjusted model of "theory of planned behavior" by Ajzen (1991) the available resources and control over the specific behavior can affect intention of an individual to carry out the behaviors. These perceived behavioral control encompass two factors (Ajzen, 1991; Taylor and Todd, 1995). The first factor addresses the availability of required resources to perform the behavior. These resources include time, money and other resources needed to engage in that behavior. The second factor includes the individual's confidence and ability to perform the behavior.

Previously, many studies confirm that, despite the favorable attitude of a person towards a particular object, it is difficult to perform the actual behavior when there are difficulties to do so (Chen, 2007). According to Vermeir and Verbeke (2006), the attitude and intention relationship is inconsistent due to external factors that influence the purchase of organic food such as price. Kim and Chung (2011) extended the theory of planned behavior by introducing the factor of behavioral control that moderate the relationship between attitude and intention in purchasing organic food items. Habit is an important variable in predicting behavior that decreases the importance of other variables to estimate the behavioral intention. In online grocery shopping, the situational factors such as having a baby, health problems and driving restriction for women influence the intentions towards online grocery shopping (Hand *et al.*, 2009; Maghrabi and Dennis, 2011).

Based on above discussion, several variables can moderate the relationship of attitude and purchase intention in the context of online shopping. To the best to our knowledge, no previous study examines the role of moderating variables between the relationship of attitude and intention in the context of online shopping. Therefore, the current study proposes the following:

P2: *Different variables can moderate the attitude intention relationship in online shopping*

The perceived behavioral control that can moderate the attitude intention relationship falls into two categories, the skills or capability of the user and available resources or constraints for performing the behavior (Taylor and Todd, 1995). The current study proposes innovativeness as a user capability and perceived risk as a constraint to adopt online shopping.

MODERATOR: INNOVATIVENESS

Innovativeness is a conception related to the adoption of new ideas and products (services) and it receive substantial consideration in the past by many researches (Robertson, 1971; Midgley and Dowling, 1978; Hirschman, 1980). According to Rogers and Shoemaker (1971) innovativeness is the customer characteristics that shows his adoption of any innovation prior to the adoption of any other member in their respective society and system.

Many researches apply this innovativeness in their studies and find a significant positive correlation with the intention to search a product on web and their behavioral decision to buy the product from the internet (Goldsmith, 2000; Citrin *et al.*, 2000; Blake *et al.*, 2003). The frequency of using the internet positively correlates with the degree of innovativeness (Blake *et al.*, 2003). Innovativeness, affinity to mobile and compatibility have a direct positive impact on the customers intentions to engage in mobile shopping (Manzano, Mafe and Blas, 2009).

P2a: *Innovativeness act as a moderator between attitude towards online shopping and future online shopping behavior, such that the effect of the attitude on intention will be stronger when the customers have high level of innovativeness than when customers have low level of innovativeness.*

MODERATOR: PERCEIVED RISK

It is common that the individuals are anxious about the possible risk linked with a new information system. In the case of online shopping, the perception of risk significantly affects the customer intention (Lee and Clark, 1996). Many studies prove the relation of perceived risk with the purchase intention of the customers (Cunningham *et al.*, 2005; Vijayasathya and Jones, 2000). Several researches elaborate the security concerns of the customers such as misuse of their personal information and credit card influence the customer decision to do online shopping (Malhotra *et al.*, 2004; Forsythe and Shi, 2003). These risks related to internet shopping create an uncertainty in the mind of the customers and they hesitate to give their financial and personal information over the internet that influences their behavior not to purchase from electronic channel (Miyazaki and Fernandez, 2001).

Many studies measure the different dimensions of risk attach with this new shopping medium. Chen and Dubinsky (2003) measure the financial risk of online shopping, Bhatnagar and Ghose (2004) measure the security risk. Drennan *et al.* (2006) investigate the general risk perception of online shopping with the help of two elements such as privacy and security risk. Garbarino and Strahilevitz (2004) try to estimate the risk associated with the customer's personal information misuse and illegal use of credit card. The customers are also concerned about the physical quality of the product that they are purchasing on internet (Park *et al.*, 2005). The customers perceive a purchase more risky when they are incapable to trial or physically examine the product before they finally purchase it (Akhalq, Ahmed, 2011).

P2b: Perceived risk act as a moderator between attitude towards online shopping and future online shopping intention, such that the effect of the attitude on intention will be stronger when the customers have low level of perceived risk than when customers have high level of perceived risk.

PROPOSED TECHNOLOGY ACCEPTANCE MODEL



DISCUSSION

Technology acceptance model prove to be useful for understanding the adoption of online shopping from the customer's perspective. Many researchers in the field of online shopping broadly use the TAM (McKeechnie *et al.*, 2006; Burner and Kumar, 2005). Perceived usefulness and perceived ease of use are important factors that influence the attitude of the customer towards online shopping (Chie *et al.*, 2009). Some studies investigate the external factors that affect the perceived usefulness and perceive ease of use and found empirical support for these variables such as enjoyment, internet use, subjective norm, task characteristics, online shopping anxiety and perceived playfulness (Celik, 2011). Locus of control is a personality factor that can be instrumental for adoption of new ideas and processes. People with internal locus of control are more prone to new ideas and they believe that they can control the outcomes (Phillips and Gulley, 1997).

The internals are more confident in their skills and capabilities (Phillips and Gulley, 1997) and having more tendencies to involve in an innovative and complex task (Howell and Avolio, 1993). In the context of online shopping, locus of control can be an important variable in the adoption of online shopping. There is a general tendency that people avoid new experiments and continue their old habits. Therefore, internals will be the early adopter of online shopping and externals adopt this technology later.

Previous studies use the attitude as a proxy for customer's intention towards online shopping. Several researches prove that the attitude intention relationship is not straightforward and many variables can influence this relationship (Chen, 2007). Many external variables increase or decrease the actual behavior despite the positive attitude towards any object. In several situations, people are unable to perform the actual behavior although they have positive attitude towards the object. Similarly, in online shopping different variables can influence the actual behavior of the customers. These variables can be positive or negative and may relate to internal skills of the customers or from external environment.

Current study proposes innovativeness and perceived risk that can moderate the attitude intention relationship. People with high degree of innovativeness are more inclined towards any new phenomenon while may be having the same degree of attitude as others. These innovative customers are more receptive towards innovation, make unique decisions without having any experience, and maintain the status of first adopter in the society (Vrechopoulos *et al.*, 2001). While, perceived risk decrease the possibility of online shopping due to the risk associated with this new shopping medium although these customers possess positive attitude towards online shopping. These customers feel uncertainty about any physical or financial loss in case of online shopping (Rehman *et al.*, 2011).

CONCLUSION AND FUTURE RESEARCH

Adoption of new technology is a complex phenomenon and requires support of many internal and external factors. Developing a good perception of the new technology is instrumental to diffuse it in the customers. People avoid changing their routines and adopting new pattern of life when they feel they cannot control the outcomes. This lack of confidence becomes an obstacle and makes the people to stick with their old routines. On the other hand, if people believe that these outcomes are due to their own skills and capabilities they become more receptive to new ideas and life styles. Future studies attempt to utilize it and incorporate in technology acceptance model.

The relationship of attitude and intention is very straightforward, attitude drive the person towards the actual behavior. In this way, a positive attitude is necessary for actual behavior and occurrence of behavior can easily predicted by the attitude. This relationship can be true where the situation is in control of the person. Lack of opportunities, skills and capabilities can make it difficult to perform the behavior although having positive attitude. Similarly, external factors or constraints also weaken the attitude intention relationship. In this way, only developing a positive attitude towards online shopping does not guarantee the usage of this new interactive shopping channel rather other factors should be considered for fully adoption of online shopping. Future studies fill this gap by investigating the role of these variables as moderators.

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AN ATTITUDE SURVEY ON FIVE TOP TOURIST TRAFFIC HOST COMMUNITIES TOWARDS TOURISM ACTIVITIES: A CASE STUDY OF ETHIOPIA

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ABSTRACT

The main purpose of this study is to examine the level of high tourist traffic host community resident's /members attitudes towards tourism activities in their respective communities in Ethiopia. Residents of the respective host communities were asked to identify the most significant positive dimensions and negative dimensions, main concerns of residents in relation to tourism activities in their localities and areas of improvements in host -tourist relationships. A total of 750 structured questionnaires were distributed to five communities. In other words 150 questions were distributed to each of the five tourist destination communities. These communities included Axsum, Bahir Dar, Konso, Lalibela and Semien Mountain National Park. All Respondent groups used as a unit of analysis were able to read and write as well as 18 years and above. The most significant dimensions that heavily determine positive and negative dimensions as well as negative dimensions were identified using Step wise multiple regression methods. Moreover, major areas of concerns as well as areas that need improvement in relation to host community members tourists relationships were identified by this study. This enables to develop appropriate tourism strategy & policy in tourism to establish a healthy relationship between host communities and travelers as well as to enable the residents to gain economic and non-economic benefits from tourism.

KEYWORDS

Communities, Dimensions, Improvement, Tourism, host, Tourist, Initiatives.

INTRODUCTION

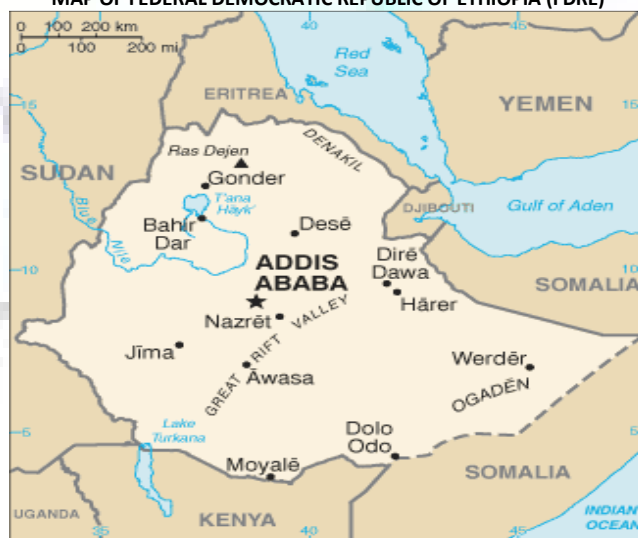
Tourism activity and its importance as an economic activity has experienced considerable growth in recent decades. WTO (1994) defined tourism as "the activities of persons traveling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes". According to Khan (2005), "Tourism denotes the temporary, short-term movement of people to destinations outside the place where they normally live and work and their activities during their stay at these destinations. McIntosh and Goeldner (1986) defined tourism as "The sum of phenomena and relationships arising from interaction of tourists, business suppliers, host governments, and host communities in the process of attracting and hosting these tourists and other visitors." Krippendorff (1987) says "marketing in tourism is to be understood as the systematic and coordinated execution of business policy by tourist undertakings whether private or state-owned at local, regional, national, or international levels to achieve the optimal satisfaction of tourist groups and individuals in view of sustained tourism growth."

Ethiopia is one of the largest countries in sub-Saharan Africa. The country covers 1.14 million square kilometer and occupying a large part of the horn of Africa. According to the world fact book (2007), the land boundaries which consists of 5,328km border countries total where Djibouti 349 km, Eritrea 912 km, Kenya 861 km, Somalia 1,600 km and Sudan 1,606 km. As cited in <http://www.csa.gov.et> the census carried out at a national level showed that the population of Ethiopia up to December, 2008 has risen to 76.9 million (Nearly 77 Million). According to the world fact book (2007), the GDP - composition by sector consists agriculture: 47%, Industry 13.2% and Services 39.8%; GDP - real growth rate 11.1% and GDP - per capita (PPP) \$700 The country is endowed with unique combination of natural and cultural heritages, impressive scenery, suitable climate, rich flora and fauna and recognized archaeological sites.

Its capital Addis Ababa is the venue and unchallenged political capital of Africa being the seat of many international organizations including the African Union (AU) and the United Nations Economic Commissions for Africa (UNECA).

Ethiopia is truly a land of contrasts and extremes; a land of remote and wild places. Some of the highest and most stunning places on the African continent are found here, such as the jaggedly carved Semien Mountains, one of United Nations Education, Science, Culture Organization's (UNESCO's) World Heritage Sites - and some of the lowest, such as the hot but fascinating Danakil Depression, with its sulphur fumaroles and lunar-like landscape. Ethiopia is old; old beyond all imaginations. As Abyssinia, its culture and traditions date back over 3,000 years. And far earlier than that lived "Lucy" or Dinknesh, meaning 'thou art wonderful', as she is known to the Ethiopians, whose remains were found in a corner of this country of mystery and contrasts.

MAP OF FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA (FDRE)



Ethiopia is beautifully endowed with many kinds of flora and is natural heaven for many kinds of wildlife and avifauna. More than 800 species of birds reside in Ethiopia of which 23 are endemic to the country. There are more than 100 mammal species, of which seven of the big mammals are unique to Ethiopia. The mountains, the lakes and the rivers of the country have many fascinating features. There are 25 mountains in central and northern Ethiopia, which are over 400 meters high above sea level and 60 of them are over 3000 meters. The 4th – highest pick of Africa's Mountain Ras Dashen is also located in Ethiopia. Ethiopia

is a country enjoying great geographical features ranging from highest peak at Ras Dashen ...4,550 meters above sea level...the Afar Depression...110m below sea level. More than 50% of the country lies above 1,500 meters.

There are broadly three climatic zones; the 'kola' or hot lowlands (below approximately 1,500 meters), 'Weyna Dega' (1,500-2,400 meters) and "Dega "above 2,400 meters with a mean annual temperature that range from 10-16°C, 16-29°C in the 'Weyna Dega' and 29-33°C in the 'Kolla'. It has colorful and unique national festivals, arts and handicrafts, music, folklore, native life and customs but it cannot make use of all this inventory of tourist attraction points.

Ethiopia is a country of "thirteen months of sunshine". The principal rainy season is from June –September, while it is relatively dry for the rest of the months except a little interruption of rain in February and March. The average temperature of the country is 18 degree centigrade in the hottest seasons and 14 Degree centigrade in the rainy season. The average annual rainfall of the central highlands is 1,000 mm. The coldest nights in the country are registered in November and December while the wettest Months are July and august. Humidity varies between 50 % and 80 % throughout the year.

Ethiopia is rich in History. Its history extends in the pre-historic period when written history was not available. Among other things, the eight world heritage sites namely the Axsum obelisks, the castles of Gondar, the Semien mountain National Park, the rock-hewan churches of Lalibela, the Stale of Tiya, Hadar (where Lucy was found) the lower Omo valley paleoantropological site and the walled city of Harar registered by UNESCO as world heritages, testify Ethiopia's might of ancient times and the endowment of the country with significant tourist attractions site. The Ethiopian Airlines (EAL) is one of Africa's space-selling airlines with the fastest growing system of international routes within and outside of the continent and as well as complementing travels within the country.

Ethiopia, as it is often described as the land of thirteen months of sunshine, the cradle of mankind and the source of the Blue Nile, is one of the African countries that possess a tremendous tourist attraction sites. It is greatly endowed with both natural and cultural attractions.

The Favorable climate, magnificent waterfalls, magnificent lakes, high mountains, variety of fascinating landscapes, national parks with endemic flora and fauna are parts of Ethiopian natural attractions. The country is also a museum of many a mosaic of cultural features such as archeological and paleontological sites, historical monuments, religious and ethnographic objects and so on. The pleasant holidays, the unsophisticated and friendly attitudes of the people are among the intangible cultural attractions of the country.

According to Hancock (1994), Ethiopia is a land of beautiful scenery mountains, canyons, oral creefs, cliffs, rivers, great many lakes, waterfalls, forests grasslands, settlement features like towns, cities, villages, historical remains, archeological remains, open countryside, beaches art galleries caravans, depressions, resort complexes. Among the many tourism products/ destinations available in Ethiopia sample historical, archeological and natural attraction destinations include the following:

FIVE TOP TOURIST HOST COMMUNITIES

In this study five top tourist host communities were identified and discussed based on tourism development endeavors and high tourist attraction destinations by the ministry of culture and tourism management in Ethiopia. These communities were Axsum, Bahir Dar, Konso, Lalibela and Semien host communities respectively.

AXSUM HOST COMMUNITY



Axsum historical and archaeological sites, central Tigray (Tigray Region) Rightly famous for its obelisks, Axsum was the capital of the Axumite kingdom – once one of the four kingdoms of the world. It was also home to the Queen of Sheba whose ruined palace and bathing pool can still be found in and near the town. According to Girma (1997), the civilization was particularly dynamic during the reign of Queen of Sheba, due to foreign trade relations, administration, religion and other social institutions. According to legend, queen of Sheba went to great king Solomon in Jerusalem and to gain Knowledge, as she had heard he was the wisest king on earth at that time.

BAHIR DAR HOST COMMUNITY



The River Nile, the longest river in Africa, in Ethiopia. From Lake Tana, the Blue Nile, known locally as Abbay, flows from Ethiopia to meet the White Nile in Khartoum to form the great river that gives life to Egypt and the Sudan. It has been said that the Blue Nile contributes up to 80% of the Nile's flow. Nowhere is it more spectacular than when it thunders over the Tississat Falls near Bahir Dar.

The Blue Nile gathers its volume mainly from Lake Tana, in the Ethiopia, in the Ethiopian highlands. Locally the Blue Nile is known as Abbay. The Blue Nile rises at a spring site upstream of Lake Tana in Ethiopia. The river flows west then north until it eventually meets the White Nile at Khartoum. The smoke of fire is known locally as Tississat -"Smoke of Fire". The Blue Nile falls 400meters (1,312 feet) wide when in flood, and dropping over a sheer chasm more than 45 meters (150 Feet) deep. The fall throws up a continuous spray of water, which drenches onlookers up to a kilometer away. Many notable visitors, including the late eighteenth-century traveler James Bruce, and, in more recent times, Queen Elizabeth II of Britain has visited it.

Lake Tana, the largest lake in Ethiopia is the source of the Blue Nile from where it starts its long journey to Khartoum and on to the Mediterranean. The 37 islands that are scattered about the surface of the Lake shelter fascinating churches and monasteries, some of which have histories dating back to the 13th Century.

According to Birdlife International (2007),bird line's online world bird database, there is a number of bird species thought to exceed 20,000 seasonally.Lesser Flamingo(phoeniconaias minor), Wattled Ibis (bostrychia carunculata minor),,, Pallied Harrier(circus macrourus), Roughet,s Rail (Rauouget's rougetii), Wattled crane (Grus carunculatus), White-collard pigeon (Columbia albitorques), Black-winged lovebird(Aragorn's tarnta), White-cheeked Turaco (Turaco Leucotis), Abyssinian owl (Asio abyssinicus), Nyanza swift (Apus



niansae), Banded Barbet (*Lybius undatus*), Dark-headed oriole (*Oriolus monacha*), White-backed Tit (*Parus leuconotus*), Montane white-eye (*Zosterops poliogastrus*), Slender-billed staring (*Onychognathus tenuirostris*), Rueppell's Robin-chat (*Cossyphina semirufa*), Rueppell's chat (*Myrmecocichia malaeana*), Tacaze sunbird (*Nectarinia tacaze*), Swainson's sparrow (*Passer swainsoni*), Baglafecht weaver (*Ploceus baglafecht*), Abyssinian Citril (*Serinus citrinellus*), Yellow-rumped seedeater (*Serinus xanthopygius*).

THE KONSO HOST COMMUNITY

The southern Nations Nationalities people's Regional State (SNNPRS) is a federal entity comprised of the former regions: 8, 9, 10 and 11. It is located in south-western Ethiopia bordering Kenya and Sudan. The capital of the southern Nations, Nationalities, and people's Regional State is Awasa.

The Konso, pagan society erects eerie wooden totems replete with phallic symbols over the graves of the dead and have numerous cults based around the breeding and veneration of serpents. The Konso have adopted a complex age grading system similar to that of the Oromo. Shared drums, symbolizing peace and harmony are and are beaten in rituals circulated from village to village according to a fixed cycle that mark the transition from one age grade to the next. As cited in <http://www.capitalethiopia.com/2006>, the corner stone of the Konso culture, however, is a highly specialized and successful agriculture economy that, through terracing buttressed with stone, enables these people to extract a productive living from the none-too-fertile hills and valleys that surround them. As cited in Birdlife International (2007), there are many types of species of birds which includes the following: Eastern chanting-goshawk (*Melierax poliopterus*), Buff-crested bustard (*Eupodotis gindana*), Red-bellied Go-away-bird (*Corythaixoides leucogaster*), Black-billed wood hoopoe (*Phoeniculus somaliensis*), Eastern Yellow-billed hornbill (*Tockus flavirostris*), Von der Decken's Hornbill (*Tockus deckeni*), Black-throated barbet (*Tricholaema melanocephala*), Red and yellow barbet (*Trachyphonus erythrocephalus*), D'Arnaud's Barbet (*Trachyphonus darnaudi*), Friedman's Lark (*Mirafra pulpa*), Somali crombec (*Sylvietta isabellina*), Scaly chatterer (*Turdoides aylmeri*), Rufous chatterer (*Turdoides rubiginosa*), Shelley's starling (*Lamprolornis shelleyi*), Golden-breasted staling (*Cosmopsarus regius*), Bristle-crowned starling (*Onychognathus salvadorii*), Magpie starling (*Speculipaster bicolor*), Kenya violet backed sunbird (*Antheptes orientalis*), Hunter's sunbird (*Nectarinia habessinica*), Parrot-billed sparrow (*Passer gongonensis*), White-headed buffalo-weaver (*Dinmelia dinmelii*), Purple Grenadier (*Uraeginthia ianthinogaster*), Red-Rumped waxbill (*Estrilda charmosyna*) and Somali Golden-breasted bunting (*Emberiza poliopleura*).

LALIBELA HOST COMMUNITY

Lalibela, 642 kilometres from Addis Ababa, is internationally-renowned for its rock-hewn churches which are sometimes called the "Eighth Wonder of the World". Physically prised from the rock in which they stand, these monolithic churches were originally thought to have been built in the 12th century during the reign of King Lalibela, but some have been dated back to the 10th century. There are eleven churches, assembled in three groupings:



Ethiopia's one of the ancient countries in the world known for its rock-churches (Asrat, 2007). Though it is very difficult to date these churches accurately, it is very likely that most of them flourished during the medieval period. Undoubtedly, however, there are few churches, which date back to the close of Axumite period around the 5th and 6th centuries A.D. It is customary to associate the town of Lalibela with Jerusalem (the Holy Land) certainly by the local people and some writers. Sometimes the site is also called the second Jerusalem; Jerusalem in Ethiopia or African Jerusalem, apparently for a number of reasons.

First, the construction of the rock-hewn churches by king Lalibela was believed to be a deliberate attempt to create the second Holy Land, in Ethiopia. It was done to minimize the suffering and death of Ethiopian Christians in the deserts of Muslim lands on their journey to Jerusalem. Lalibela was thus a substitute for Jerusalem as a place of safety for pilgrims. Second, various place names in Lalibela are related to places of the holy land (Jerusalem). Third, according to local traditions the rock-hewn churches of Lalibela symbolizes the earthly and heavenly Jerusalem.

That is why the churches are still a source of inspiration and hope for Ethiopian Christianity, as they were considered comparable in significance to those in Jerusalem. Pilgrims to Lalibela are believed to have shared the same blessings as pilgrims to Jerusalem (Sergew,

1972).

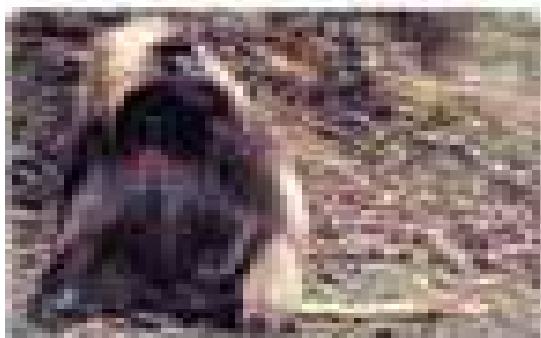
The church combines Tangible and cultural intangible cultural heritage According to Mengistu (1997), Cultural heritage can be divided in to two major categories: tangible cultural heritage and intangible cultural heritages. The research and conservation of cultural heritage Proclamation of 209/2000 has also defined Tangible cultural heritages as: Cultural heritage that can be seen and felt and includes immovable or moveable historical and manmade cultural heritage. According to the research and conservation of cultural heritage proclamation 209/2000, intangible cultural heritage is defined as: "Any cultural heritage that cannot be felt by hands but can be seen or heard and includes different kinds of performances and show, folklore, religious, belief, wedding and mourning ceremonies, music, drama, literature and similar other cultural values, traditions and customs of nations, nationalities and peoples."

THE SEMIEN MOUNTAINS NATIONAL PARK (NP)

The joys of Mule-trekking and of the Ethiopian scenery, reach their ultimate perfection at Semien Nation Park., surely one of the most beautiful stretches of unspoilt mountain wilderness surviving in the world today. Here are several of Ethiopia's tallest peaks, including the towering Ras Dashen which, at 4,543 meters, is the 4th highest Mountain in Africa. The principal camps, consisting of simple lodge accommodation, have been established on a line running horizontally across the national park. From any one of these-Lima Limu in the west, Sankaber, and Geech in the east-the traveler may venture out on foot or mule-back to discover the unique scenery, flora and fauna of the Semien range.

Nicknamed the "lion monkey" because of its characteristics mane of fine auburn hair, the Gelada is a polite and cautious creature quite unlike the more common baboons found elsewhere in Africa. The heart-shaped patch of bare, reddish skin seen on the chests of both male and female has given rise to another nickname for this species, "bleeding-heart baboons." Geladas are strict vegetarians and are to be seen in large groups roaming over the grassy slopes of the high Semien, digging for the roots and bulbs on which they feed.

Found only in Ethiopia's high country, their 'sacred heart' a patch of bare skin on the chest distinguishes them from any other species of baboon.





The Red Fox, Semien Wolf or Abyssinian Wolf: can also occasionally be seen in the national park, although curiously given its name, it is far common in the Bale Mountains far to the south and east. Neither a wolf nor a fox, it is in fact a member of the dog family, but the only one of its genus. It has a bright red coat with white under markings, and a black tail, and stands about 60 centimeters high at the shoulder. Semien wolf, endemic to Ethiopia, also known as the Semien jackal or Abyssinian wolf (3000-4500meters high)



Walia Ibex the last remaining habitat in the world and rare. It is a type of large wild goat weighting up to 120 kilogram's; with long, curved densely ridged horns. It is estimated that fewer than 1000 individuals of this species remaining existence, although, fortunately for the trekker, one of their favorite grazing grounds is only a few hours walk from Sankaber camp. Rarely found at altitudes below 2,400 meters, these lovely, shy creatures are hard to approach. Ecology has adapted them to live on nearly vertical cliff faces, where they can sometimes be seen in the morning or evening browsing on narrow, grassy ledges.

According to Francesco (2006), over the past several years, it has become evident that tourism can only flourish in a safe and peaceful environment. Following an attack on tourists in sharm el sheikh or Antalya, the murder of the children of foreign visitors in Namibia, the kidnapping of tourists in Yemen and the bombardments in Lebanon, tourism in these countries collapsed. Peace is a necessary condition for tourism development but at the same time tourism itself is a vital force for peace, in two ways.

- a) Because the direct and non-mediated contracts it engenders between visitors and host communities are irreplaceable; how can we feel enmity towards someone we know personally, someone whom we have received or who has received us? and
- b) Because both destinations and tour operators in the same regions are linked by common interests and by a common destiny, around shared development projects: why oppose peace when it works to everyone's advantage, unlike conflict, which benefits no one.

In the years to come, fostering the emergence of a culture of peace through tourism will continue to be an obligation for the United Nations World Tourism Organization (UNWTO). The reduction of poverty has become one of the most compelling challenges of our time. Poverty cannot be summed up as a lack of income-it is a multi-dimensional and complex phenomenon with an intricate relationship to issues such as diseases, illiteracy, infant mortality, environmental degradation and any other aspects. With respect to poverty, tourism not only brings wealth, but also provides an incentive to fight it given the fact that a certain minimum level of environmental and health standards is necessary in order to be able to welcome visitors.

This process has begun and we must help it along. Over the past decade, the annual growth rate of tourist arrivals in developing countries has been higher than the world average. In 2005 they received some 326 million arrivals which generated 205 billion dollars in revenues. In the 1990's such countries experienced stronger growth in their international tourism receipts than the industrialized countries, which demonstrates the existence of a competitive advantage in their favor.

Contrary to a common misconception revenues from tourism in most developing countries are much larger than the "leakages" in the form of induced imports or repatriations of profits that it may generate. In all developing countries, tourism has shown itself to be a highly labor intensive activity that opens up opportunities for the businesses that provide products and services to the tourism industry. Its impact is particularly strong in the local farming and fishing industries, handicrafts and even the construction industry. With the development of micro credit, it represents fertile ground for private initiative. It serves as a foothold for the development of a market economy where small and medium-sized enterprises can expand and flourish. In poor rural areas, it often constitutes the only alternative to subsistence farming which is in decline.

RESPONSIBLE TOURISM (as cited at <http://www.responsible/tourism>)

- Minimizes negative economic, environmental and social impacts;
- Generates greater economic benefits for local people and enhance the well being of host communities, improves working conditions and access to the industry.
- Involves local people in decisions that affect their lives and life chances;
- Makes positive contributions to the conservation of natural and cultural heritage to the maintenance of the world's diversity.
- Provides more enjoyable experiences for tourists through more meaningful connections with local people and a greater understanding of local cultural, social and environmental issues.
- Provide access for physically challenged people and is culturally sensitive,
- Engenders respect between tourists and hosts and builds local pride and confidence.

As cited in <http://www.responsibletourism/partnership>, responsible tourism vision in Gambia states that "to make Gambia a better place to visit and a better place to live in – recognizing that it is the interaction between guests and hosts in a secure and enjoyable environment that should be experienced in Gambia and which encourages people in return."

RESPONSIBLE TOURISM POLICY FRAMEWORK IN GAMBIA

Responsible tourism policy framework in Gambia focused on three major responsibilities discussed here in under. These are Economic, Social Responsibility and Environmental Responsibility.

a) Economic Responsibility

As cited at <http://www.responsibletourism/partnership>, responsible tourism policy for the Gambia states, its economic responsibility as follows: The Gambia as a destination will increase both national and local community earnings from tourism and outlined three major objectives to be achieved within five years.

i) Assess Economic Impacts as a Prerequisite to Developing Economic Growth:

- Extend the season to create better employment conditions and to provide a stronger base for local economic development
- Increase the contribution from tourism to the maintenance of cultural heritage, traditional ways of life and wildlife and habitats
- Encourage business relationship between originating, market companies and local and emerging enterprises.
- Consider the opportunity costs of tourism for the local community and their livelihoods and be prepared to accept that there may be more appropriate economic opportunities for people in their area.
- Maintain and encourage economic diversity, avoiding over-dependency on tourism
- Ensure that tourism initiatives and investments contribute to local economic development strategy and avoid developments which negatively impact on local communities.
- Ensure that market and financial feasibility assessments are competently completed before raising expectations and exposing the community or local entrepreneurs to risk.

ii) Maximize Local Economic Benefits by Increasing Linkages and Leakages:

- Encourage and strengthen the informal sector to become part of the formal sector, through partnership and other business linkages by encouraging local purchasing.
- Encourage accommodation and tour operating business to co-operate in order to enrich the product; increase average length of stay and visitor spending; assist local entrepreneurs to establish themselves and market new products and services creating additional jobs and other livelihood opportunities by developing complementary products.
- Maximize economic benefits for local communities by encouraging tourists to purchase locally produced crafts.
- Encourage formal sector businesses individually and together to source goods and services from the local community; and to assist with the development of the local capacity to supply tourism goods and services consistently at appropriate price and quality and on a sufficient scale to meet the requirements of the industry.
- We shall work with the industry to achieve these objectives and encourage them to provide visitor feedback on their products and provide marketing training and managerial support.
- Encourage tour operators to be more innovative in their itineraries by for example, including markets, local museums, heritage sites, arts and crafts and local restaurants and by doing so encourage visitor spending.
- Recognizes that excessive competition in the informal sector contributes to hassling and undermines both quality and livelihood opportunities. We will work with the formal and informal sectors to diversify provision and to match supply and demand.

iii) Implementation

We will work in a spirit of partnership with all stakeholders to achieve our responsible tourism objectives. We will:

- Work with the formal and informal sectors to identify partnership and joint initiatives which can assist in the development of the tourism industry in the Gambia
- Seek to establish targets for improving the quality of the tourism experience in the Gambia and for improving revenues to the national economy and in particular to local communities.
- Report annually on the progress made towards achieving our objectives, transparency is essential in ensuring accountability and developing trust. We will encourage self-regulation, but this is only possible within a framework of transparent reporting.

b) Social Responsibility

Tourism provides opportunities for human interaction; at its best these relationship can take the form of African culture between hosts and guests. However, tourism can also bring social problems and it has to be worked out with the formal and informal sectors, government and local communities to address the issues that arise.

There are two major tasks.

i) Involve Local Communities in Planning and Decision Making

- Encourage participation by all stakeholders, the formal and informal sectors, government and communities.
- Involve the local community by creating opportunities for them to engage with the process of planning for tourism development in the Gambia
- Develop awareness of the positive aspects of tourism and of ways of mitigating negative impacts, through education within the school curriculum and public education initiatives with communities
- Pay particular attention to practical strategies involving all stakeholders to prevent the sexual exploitation of the children.
- Assess social impacts in the tourism development process and planning, to maximize positive impacts and minimize negative ones.

ii) Maintain and Encourage Social and Cultural Diversity

- Tourism development should not compromise respect for social, cultural and religious rights.
- Use local guides to ensure that the community speaks for itself and to increase the revenues going into the local community.
- Encourage opportunities for visitors to interact with locals as equals in a structured and guided manner.
- Develop a local social contract with participation and contributions from the community for interactions and behavior between the local community and tourists.
- Negative social and cultural impacts associated with tourism such as increased crime, drug and alcohol abuse, prostitution and child sex abuse should be monitored and action should be taken with local communities to minimize negative impacts and enhance positive ones.

c) Environmental Responsibility

The natural environment of Gambia is an important resource for the tourism industry; it is in the interest of the industry that is considered. The tourism industry is also a major consumer of natural resources and its environmental impacts need to be managed, particularly where its impacts adversely affect other stakeholders.

Positive and Negative Effects of Tourism

According to Tariku (2004), tourism as a contributor to pro-poor growth has both positive and negative consequences. The characteristics of pro-poor tourism are presented below (available at <http://www.pro-poortourism.org.uk>):

a) Positive Characteristics

- More labor intensive than manufacturing and can also involve more intensive use of unskilled and semi-skilled labor
- Employs a high percentage of women as compared to other industries
- Can build on assets of the poor such as culture and natural resources.
- Can involve a wide variety of micro enterprises, informal sectors and SME's;
- Potential means for responsible and sustainable tourism development.

b) Negative characteristics

- Expropriation of land, water and other assets of the poor by tourism industry
- Entry barriers to poor entrepreneurs since the industry is information and marketing intensive
- Less economic linkages due to high transaction costs

- Undesirable cultural impacts
- Environmental degradation may result if necessary actions are not taken.

These negative effects of tourism can be overcome, if there is a sound tourism development policy and implementation focusing on poverty reduction through the involvement of both the local community and entrepreneurs. Thus, its advantages outweigh the disadvantages, if tourism development is planned and implemented properly.

As cited in <http://www.grips.ac.jp/alumni/uzbikistan>, tourism provides 10 % of the world's income and employs almost 1/10 of the world's workforce. Positive effects of tourism may include:

- Developing positive attitudes towards each other
- Learning about each other's culture and customs
- Reducing negative perceptions and stereotypes
- Developing friendships
- Developing pride, appreciation, understanding, respect and tolerance for each other's culture.
- Increasing self-esteem of hosts and tourists
- Psychological satisfaction with interaction

So social contacts between tourists and local people may result in mutual appreciation, understanding, tolerance, awareness, learning, family bonding, respect and liking. Residents are educated without leaving their homes, while their visitors significantly learn about a distinctive culture. Local communities are benefited through contribution by tourism to the improvement of the social infrastructure like schools, libraries, health care institutions, internet cafes and so on. For example, in Uzbekistan, particularly in such famous regions as Samara and, Buhara and Horezem tourist contributes significantly to their preservation of traditional handcrafting, wood carving, hammered copper work, handmade silk and carpets and maintenance of architectural and historical monuments. On the other hand, terrorism can increase tension, hostility and suspicion. Claims of tourism as a vital force for peace are exaggerated.

In most all-inclusive package tours more than 80 % of traveler's fees go to the airlines, hotels and other international companies not to local business men and workers.

- Large hotel chain restaurants often import food to satisfy foreign visitors and rarely employ local staff for senior management positions preventing local farmers and workers from reaping the benefit of their presence.
- Tourism has the power to affect cultural change among these are over development, assimilation, conflict and artificial reconstruction, and tourism may dilute or even destroy it.
- Tourism often grows into mass-tourism. It leads to the over consumption, pollution and lack of resources
- However, from the ecological point of view tourism is often more acceptable and preferable than any other industrial production as it is environmentally friendlier.
- Local communities use the natural resources but they also protect them.

As cited in <http://www.grips.ac.jp/alumni/uzbikistan>, in order to decrease the negative effects on local societies, we can check the following points when arranging a tourism activity in a region or taking part in it.

- Are local people involved in the tourism industry as employees?
- Does the organization cooperate with the local business?
- Does it have a respectful attitude to the local culture?
- How many economic benefits will the local population get from tourism?
- Are tour operators concerned about ecological hotels, transport and restaurants?

Francesco (2006) has identified seven major challenges of tourism, as presented hereunder:

- The need for a better understanding of the economic importance of tourism through the satellite account
- The congestion of sites and infrastructure resulting from the continuous increase in tourist flows
- The need to encourage the liberalization of trade in services while respecting the principles of sustainable development
- Appraising tourism's contribution to understanding among nations and to the promotions of a culture of peace;
- The introduction of new information and communication technologies
- The contribution of tourism to the fight against poverty and to job creation and
- The growing need for harmonious partnership between the public and private sectors.

Contrary to common misconception, revenues from tourism in most developing countries are much larger than the "leakages" in the form of induced or repatriation of profits that it may generate. In all developing countries tourism has shown itself to be a highly labor intensive activity that opens up opportunities for the business, that provide products and services to the tourism industry. Its impact is particularly strong in the local farming and fishing industries, handicrafts and even the construction industry. In fact, with the development of micro credit, it represents fertile ground for private initiatives.

As cited in Douglas <http://www.mailto:lainsworth.snv>, a larger number of families are now directly engaged in and benefiting from tourism and are more favorable towards tourists which results in longer visitor stays and better tourism experience. As cited in CarolineAshley@adi.org.uk, Laos in May 2006, an assessment of the tourism economy estimated that tourists spent US \$ 23 million per year within probing of which around 27 % accrued to semi-skilled and fairly urban, with some capital or skills. The supply chain for food and silk, however, representatives more than half the cash flow, and involved many poor and more rural households. A study was undertaken in the area of value chain to boost participation by the poor in tourism in Gambia (reported in 2005 annual register).

As cited in <http://www.propoortourism.org.uk>, annual register 2006, 20% of the farmers supply more than 50 % of its products to hotels. In addition, farmers report receiving as much as 40 % more for their produce, than if they had sold to vendors wholesale. As cited in <http://www.tribal.voice.co.uk>, a one year travel foundation funded project in Kenya seeks to transform the currently unsustainable "kipass Massai village". Tourism is located in the western end of the massi mara game reserve in Kenya.

The project Kipass Massai village aims to:

- Significantly increase the economic benefit from tourism to the local community
- Develop a quality village tourism experience that encourage genuine cultural exchange
- Provide UK tour operators and destinations suppliers with a sustainable cultural tourism excursion to responsibly market to their client.
- Disseminate good practice and lessons learnt from the project to enable other community tourism ventures to improve the sustainability of their business.

As cited in <http://www.spier.co.za/>, a South African Hotel, Spine reported in the 2005 annual register of its action to shift procurement to small local black business. Spine has initiated the following two specific initiatives.

- The staff catering service has been outsourced to a black previously disadvantaged member of staff and is breaking even as a business,
- Owing to a directive from senior management stating that all on-site construction materials should be both locally sourced and have as small as ecological footprint as possible.

COMMUNITY BASED INITIATIVES

Community based initiatives that were carried out in many countries like, Peru, Vietnam, India, Rwanda, Ethiopia are discussed briefly here in under.

a) Peru

As cited in <http://www.yachagu.wayi.org>, in the shadow of Peru highest mountain. 24 peasant families have developed Yayachaqui wayi the responsible travel center managed and owned by a recently formed peasant association, aims to inform and educate travelers on responsible travel and community tourism in the region.

b) Vietnam

As cited in <http://www.yachagu.wayi.org>, Vietnam Doi village household income was less than \$15 USD life in the village is defined by poverty. In January 2004 SNV together with HUE department initiated the Doi village cultural tourism project.

By adopting a community based planning approach and effective cooperative stakeholders including local Government, community associations, local tourism training institutions and tourism business this project is showing positive results.

New and expanded income earnings opportunities have been created for more than 50 % of village households, through direct involvement in tourism activities and the links with handicrafts and honey productions. Now, a community development has been established which collects 20 % of tourism revenues.

c) India

As cited in <http://www.help tourism .com>. in west Bengal, India help tourism was established in 1991 and has pioneered the sustainable developments of communities through ecotourism in rural areas. The program is running in cooperation with Association for Conservation and Tourism (ACT). The goals of both organizations are:

- Linking protected areas or world natural heritage sites with peoples livelihood through tourism
- Nature conservation and presentation of traditional cultures encouraging pride in indigenous and historical heritage.
- Alternative Livelihood for Protection of Important Natural Areas and Environment (ALPINE).
- Terrorism to tourism and peace (political stability assuring safe visits and peace).
- Support-social uplift, poverty alleviation, people's ownership in rural India through tourism.

d) Rwanda

As cited in <http://www.amahoro.tours/>, in the foothills of virayunga in Rwanda's northern province, international tourists visiting the Gorillas are being encouraged to visit local communities via a new partnership with a local tour operator, Amahoro tours and a small Rwandan tour operator (established 2003) sells gorilla visit permits and guest transport to the park.

The tour company helped local communities to set up umbrella associations of 13 communities associations which are now becoming a business Amahoro tourism allies. The 13 community's have 180 members some of which receive tourists others focus on food production and nurseries and some are not yet involved in the tourism supply chain. The communities are paid fees directly by the tour operator and or tourist. For example, a one day community trip for those people will bring US \$ 80 to three communities reaching 50 people directly.

e) Ethiopia

As cited in <http://www.tourismethiopia.org>, a dialogue on cultural heritage in sustainable development 16th April 2007 carried out in Ethiopia. The economic impact of tourism in Lalibela –hub of the historic route was identified as follows:

- Tourism creates direct jobs for 50 people, who in turn support 4.4 family members.
- 3740 people depend on -1/4 of the population of bugna woreda
- Tourism generated \$2.35 million for over enterprise in 2004.
- Each tourist represents a per capital income of \$167 to the economy of Bugina wereda. The per capital income break down to the economy of Bugina takes the following forms: Accommodation 45 %, Transport services 19%, Church 13%, Restaurant and bars 10%, Suppliers of goods 8%, Craft sellers 1 %, Tourist guides 1% and Others including 2% of beggars.

RESIDENTS ATTITUDE TOWARDS TOURISM ACTIVITIES/MARKETS

As cited in <http://www.fs.fed.us/ne/newtown square>, residents of Valdez Alaska were studied to understand their attitudes towards the perceptions of tourism development in their community. This study provided an assessment of resident's support for or against current and potential future levels of tourism. Specifically, resident's rate tourist markets by the impact they have on Resident's Quality Of Life (RQOL) and economic livelihood.

Three models provide a background to examine resident's perceptions to tourism activities in a community or area. Butler (1980) illustrated the nature of changes in a destination life cycle model that suggests over time, based on a destination gaining popularity, more tourists brings changes in the tourism system. These changes are enhanced by entrepreneurial and corporate activities of locals and outsiders eager to gain economically. Butler's model illustrates changes as a whole, but this model could also be studied according to tourist market segments. Over time in a destination, some tourist market segments will continue and flourish, and other segments will diminish for a variety of reasons.

AP and Crompton (1993) profiled four levels of reactions by resident's to tourism activities. The first level is embracement, which describes a euphoric stage where residents holding very positive attitudes toward tourists and their impacts. Tolerance is next on the continuum and describes residents who hold positive on some impacts and negative toward others. Adjustment is the third level on the continuum, where the residents have learned to cope with tourists and find ways of continuing with their lives with tourists crowding their community. Finally, the withdrawal strategy describes a community where residents leave when the tourists arrive.

Smith (1989) suggested residents react to both the type and quantity of tourists. Her seven types of tourist range from explorer, which represents an independent traveler, to a charter, which represents large group touring, and she suggests that these tourist segments impact a community differently. The explorer tourist accepts the local conditions and environment and tries to fit in with and get along with residents. The researcher on Alaska used a 4-page questionnaire which included 24 questions. Many of the questions were rating a list of features or statements. Specifically, the questionnaire asked resident's to rate visitor market segments impacting the local economy and their own quality of life using a 5-point Likert scale with "1" being very positive, "2" very negative. A "no opinion" option was also provided for those respondents who may not be familiar with the tourist market segments under enquiry.

The theoretical contribution of this research shows that Valdiz residents hold a mix of tolerance and embracement strategies (AP and Crompton, 1993) toward tourist market segments. The strong support for the economic impact that tourism brings, particularly with summer tourism markets, shows the locals embrace their current dependence and future livelihood on tourism.

METHODS

The respondent group consisted of the top five tourist host communities in Ethiopia identified and selected by MOCT marketing experts. These communities included Axsum, Bahir Dar, Konso, Lalibela and Semien Mountain National Park. Community members who are able to read and write as well as 18 years and above were selected as target groups.

The main purpose of the questionnaire was to identify attitudes/satisfaction levels of host communities regarding tourism activities undertaken in their respective localities. The questionnaire was translated from English into Amharic by a licensed document translation office operating in the capital city Addis Ababa, Ethiopia to extract the necessary information from residents.

The questionnaire contains section like positive and negative dimensions of tourism, identification of main concerns of tourism, the expected volume tourist traffic into the locality, major areas that call for improvement of tourism marketing in the area and respondents profile.

The number of questionnaires distributed was 650 copies in total. In other words, 150 copies of same questionnaire were distributed to each of the five communities. A closer follow up with the sincere support of host community tourism experts were made to facilitate the distribution and collection process of the questionnaires as well as to maximize the response rate.

The actual response rate was different from community to community. The actual response rate in Axsum was 59 % (88/150), Bahir Dar 73 % (110/150), Konso 50 % (75/150), Lalibela 53 % (80/150), and Semien Mountain national Park 60 % (90/150).

Once the data's were collected, and then the usable questionnaires were sorted out or edited, coded, entered on the data editor and processed using SPSS. During analysis independent T-test, one way – ANOVA and stepwise multiple regression analysis were used to process and interpret the collected data; wherever they were deemed appropriate. Moreover, descriptive statistics were also used for descriptive- research- oriented research questions.

DATA ANALYSIS AND INTERPRETATION

H1: The positive tourism dimensions are not significant drivers of the host community opinions towards the tourism marketing activities in the respective host communities.

H2: The Negative tourism dimensions are not significant drivers of the host community opinions towards the tourism marketing activities in the respective host communities.

TABLE 1: A COMPARATIVE ANALYSIS ON THE FIVE TOP TOURIST TRAFFIC AREAS IN ETHIOPIA

s/n	significant dimensions	Axsum	Bahir dar	Konso	Lalibela	Semien NP
1	Positive Dimensions of Tourism Vs. Overall satisfaction level of residents	<ul style="list-style-type: none"> Alpha coefficient =0.5505 R= .771 R²=.594 F value =(24.035) Significant level = (.000). 	<ul style="list-style-type: none"> Alpha coefficient =(0.5678) R= .789 R²=.622 F value =(58.076) and Significant level= (.000) 	<ul style="list-style-type: none"> Alpha coefficient = (0.5656) R= .694 R²=.482 F value =(8.904) and Significant level (.000) 	<ul style="list-style-type: none"> Alpha coefficient =(0.6313) R= .893 R²=.798 F value =(40.644) and significant level =(0.000) 	<ul style="list-style-type: none"> Alpha coefficient =(0.6804) R= .817 R²=.668 F value (42.720) and a small significant level = (.000).
		<ul style="list-style-type: none"> money spent by tourism, good for community, easy access to tourist areas, selling goods to tourism, obtaining new skills 	<ul style="list-style-type: none"> money spent in tourism remains in the community, easy access to the areas tourists use, stimulates local culture & crafts, creates jobs for local residents, personally benefit from tourism industry, helps community to obtain services, personally speak to tourists 	<ul style="list-style-type: none"> money spent in tourism remains in the community, easy access to the areas tourists use, stimulates local culture & crafts, creates jobs for local residents, personally benefit from tourism industry, helps community to obtain services, personally speak to tourists regularly) 	<ul style="list-style-type: none"> feel secure in my job, working in tourism, good for our community, selling goods to tourists, money spent in tourism remains in the community, helps obtaining new skills, participate in development planning 	<ul style="list-style-type: none"> money spent in tourism remains in the community, control over tourism, helps obtaining new skills, speak to tourists regularly
2	Negative Dimensions of Tourism Vs. Overall satisfaction level of residents	<ul style="list-style-type: none"> Alpha coefficient =(0.5796) R= .798 R²=.636 F value =(28.656) and Significant level (.000) 	<ul style="list-style-type: none"> Alpha coefficient =(0.7561) R= .697 R²=.487 F value =(50.416) and Significant level = (.000). 	<ul style="list-style-type: none"> Alpha coefficient = (0.5864) R= .830 R²=.690 F value =(30.671) and Significant level = (.000) 	<ul style="list-style-type: none"> Alpha coefficient =(0.7845) R= .918 R²=.843 F value (207.021) and Significant level = (.000). 	<ul style="list-style-type: none"> Alpha coefficient =(0.5805) R= .822 R²=.676 F value (59.695) and a small significant level= (.000).
		<ul style="list-style-type: none"> Bothering me while working, raises price of goods and services, raises crime rates, uses natural resources needed, violates community traditions 	<ul style="list-style-type: none"> violates of community traditions, cause rise in crime rates 	<ul style="list-style-type: none"> bothering me at work, causes rise in crime rates, violates community traditions, Raise prices of goods and services, uses natural resources needed 	<ul style="list-style-type: none"> raises prices for goods, bothering me at work 	<ul style="list-style-type: none"> Causes rises in crime rates, raises prices for goods, tourism harms the environment)

ANALYSIS OF THE HYPOTHESIS TESTED REGARDING HOST COMMUNITIES

- 1) Alpha coefficient- describes the internal reliability and consistency of factors/variables used.
- 2) R - value shows a strong /moderate or low / degree of relationship between tourism dimensions and overall satisfaction level of residents
- 3) R² - Shows the variations explained by the model
- 4) F -value indicates the overall variance accounted for in the model.
- 5) The associated Sig value = (.000). < p value (< 0.05)
- 6) Thus, the null hypothesis is rejected on an F statistics of the above variables/dimensions.

TABLE 2: SIMILARITIES AND DIFFERENCES AMONG TOP TOURIST TRAFFIC DESTINATIONS IN ETHIOPIA

S/N	Items	Axsum	Bahir Dar	Konso	Lalibela	Semien
1	Expected volume of tourists	<ul style="list-style-type: none"> (83%) of the respondents preferred more tourist inflow than now (13%) opted for maintaining the current level 4% preferred much more tourist inflow 	<ul style="list-style-type: none"> 67 % of respondents want more tourism activities nearly 23 % need much more tourism now and 10 % preferred to have same tourist inflow in the future. 	<ul style="list-style-type: none"> 62 % of respondents want more tourist inflow, 28 % need much more tourism than now and the rest 10 % needed same, or less or much less than the present traffic. 	<ul style="list-style-type: none"> 66 % of respondents want much more tourism activities, 28 % need more tourism, 4 % preferred to have the same tourist inflow and the rest 2% preferred less or much less than the current level of tourist traffic. 	<ul style="list-style-type: none"> 59 % of respondents want much more tourism activities, 30 % need more tourist inflow, 9 % preferred to have the same tourist inflow and the remaining 2% preferred less and much less tourist inflow than the present level
2	Main concerns regarding tourism Activities	<ul style="list-style-type: none"> 60 % of the respondents identified harassment by beggars, 14% of stealing and damaging historical heritages, and 11% tourist hostile community members as a major concern in tourism activity in Axsum. 	<ul style="list-style-type: none"> 63 % of the respondents identified environmental degradation 7 % violates local traditions and culture. 6 % identified increased number of illegal guides and 5% identified poor or non-maintenance of historical heritages. 	<ul style="list-style-type: none"> 16 % of the respondents equally identified low awareness level of community members and harassment by local beggars as major concern 12 % residents identified tourist hostile community members, 11% believed taking nude photographs of local girls as their main concern. 	<ul style="list-style-type: none"> 28 % of the respondents identified poor or non maintenance of historical heritages, 20 % theft as main concern for tourism. 14 % of the respondents identified stealing and damaging historical heritages and wide spread of HIV by irresponsible tourists as their main concern equally. 11% identified, non - availability of considerable benefits to the community and harassment by local beggars with equal weight, and 3% identified increased number of illegal guides in their locality as their main concern. 	<ul style="list-style-type: none"> 22 % of the respondents identified harassment by local beggars, 21 % identified non-availability of entertainment facilities as main concern for tourism. The study further revealed, 16 % of the respondents identified tourist hostile community members, 14 % increased number of illegal guides, 13 % non - availability of considerable benefits to the community 4% of the respondents identified equally for violation of local traditions and culture, and low awareness level of community members
3	Measures to be taken to improve the performance of tourism	<ul style="list-style-type: none"> 55% Developing the infrastructure 10% Developing a clear & comprehensive host community policy & strategy 7% Conducting a regular survey on the needs of the tourists 6% identified improving hotels, banking and telephone facilities, while 5 % identified developing tourist controlling mechanisms during their stay 	<ul style="list-style-type: none"> 55% of the residents identified promoting the community 12% identified protecting heritages and environmental degradation 5% identified availability of potable water, making regular survey on needs of tourists, and maintaining peace and stability. 18% of the respondents together have identified developing the host community, reallocating money earned to the community, clear and comprehensive tourism policy and strategy, training local and legal guides who speak the local language, receiving tourist fees on legal voucher, upgrading awareness level of the community and developing tourist controlling mechanisms to improve the performance of tourism in the community. 	<ul style="list-style-type: none"> 19 % of the residents identified maintaining peace and stability and protecting heritages and environmental degradation; 17% identified promoting the community while 16% availability of potable water will improve performance of tourism in the community .13 % training local and legal guides who speak the local language, 4% identified equally building hotels, banks, telecom and other facilities and developing the host 	<ul style="list-style-type: none"> 26 % of the residents identified protecting heritages and environmental degradation, 19 % identified availability of potable water, 16 % of the respondents identified making regular survey on needs of tourists, 14% identified clear and comprehensive tourism policy and strategy, 13 % identified training local and legal guides who speak the local language, 	<ul style="list-style-type: none"> 26 % of the resident's identified making regular survey on needs of tourists, 13 % of the respondents identified promoting the community 12 % of respondents identified clear and comprehensive policy and strategy regarding tourism development in the host community and 11% identified availability of potable water to improve tourism performance in the community.

				community, reallocating income generated from tourism to the community	<ul style="list-style-type: none"> 8 % identified developing tourist controlling mechanisms during their stay, while 5 % identified receiving tourist fees on legal vouchers by the relevant bodies to minimize corruption 	<ul style="list-style-type: none"> 8 % of the respondents equally identified reallocating income to the community, training local and legal guides who speak the local language and receiving tourist fees on legal vouchers and 7% developing the host community to enhance tourism performance community.
4.	Most welcomed tourists	<ul style="list-style-type: none"> Highly spending tourists (43 %) those who suggest how to develop tourism in the locality (23 %) those who have good image about Ethiopia(15 %) 9% identified tourists who disseminates good information about the community, 6% tourists who share ideas with elders, respect for local tradition & culture and 5 % of the residents identified highly friendly tourists 	<ul style="list-style-type: none"> 56 % of the residents identified tourists with big interests in local traditions, 15 % of residents identified tourists with a good image about Ethiopia, 9% identified disciplined and well behaving tourists, 7 % identified respect for local tradition and culture, 5 % of the residents identified highly spending tourists and 2 % residents identified tourists who suggest ideas how to develop tourism, highly friendly tourists, tourists who disseminate good information about the community independently. 	<ul style="list-style-type: none"> 15 % of the residents identified respect for local tradition and culture, about 14 % of residents equally identified highly friendly tourists, tourist who visit with legal documents, and tourists who disseminate good information about the community are to be welcomed. 12 % identified all types of tourists are welcomed. 8 % of the respondents equally identified ,disciplined and well behaving tourists, tourists with big interests in local traditions, tourists who suggest ideas how to develop tourism , tourists who share ideas with elders tourists. 11 % of the respondents welcomed all types of tourists. 	<ul style="list-style-type: none"> 28 % of the respondents identified highly spending tourists as the most welcomed tourists, 18 % of the respondents identified disciplined and well behaving tourists, 16% of respondents equally identified highly friendly tourists ,and tourists who disseminates good information on about the community, 13 % preferred tourists with a good image about Ethiopia while 10 % identified all types of tourists 	<ul style="list-style-type: none"> 41 % of the respondents identified highly spending tourists as the most welcomed tourists, 12 % of the respondents identified tourists who share ideas with elders, 11% tourists who disseminate good information about the community and 8 % of the respondents identified equally tourist who visit with legal documents and all types of tourists welcomed in their community 7 % of respondents equally identified, respect for local tradition and culture, tourists who suggest ideas how to develop tourism and tourists with a good image about the community
5	Overall satisfaction /over all attitude of residents	<ul style="list-style-type: none"> Good (41%) 38% as excellent and 22 % as satisfactory. 	<ul style="list-style-type: none"> 46% of the respondent's found tourism activity in their community as good, 27% as excellent and 26 % as satisfactory. 	<ul style="list-style-type: none"> 43% of the respondents in Konso felt good about tourism activities in the area, 33 % found it satisfactory and 24 % as excellent 	<ul style="list-style-type: none"> 39% of the respondents felt good regarding performance tourism in their community, 36% found it satisfactory and the 24% found it very good. 	<ul style="list-style-type: none"> 48% of the respondents perceived tourism activities in the community as satisfactory 27% as good and the rest 26 % of the respondents perceived as excellent.
6.	Availability of significant difference in the overall satisfaction level of residents	by gender and religion	by occupation and religion	by length of stay, occupation and age.	by Gender, occupation, employment, in the industry, length of time and social class	by gender, occupation, employment in the industry, length of time they lived in the community, and level of income

CONCLUSIONS

This study examined the overall attitude of five top rated tourist host communities in Ethiopia towards tourism activities. Descriptive analysis was used to analyze the demographic profiles of residents. An attempt was made to explore the host community attitudes about tourism positive and negative dimensions' in relation to the tourism marketing activities in their respective localities. A stepwise multiple regression analysis was utilized for this purpose. The result of the study demonstrated that there was a significant relationship between positive and negative dimensions' on the overall attitude/ satisfaction level of residents. Moreover, the study revealed the expected volume of inbound tourists for the future, major concerns, measures to be taken to enhance tourism performances and type of most welcomed tourists by community members in the selected five major tourist destinations. The study also disclosed the significant mean

response differences in the overall satisfaction level of host communities in terms of resident's demographic characteristics, such as gender, age, education level, and total household incomes using a two-tailed independent t-test and One-way ANOVA.

The cultural and economic impacts of international tourism on host communities in many respects are quite remarkable. It is used as instrument to widely share cultural attitudes and consumer habits. It fosters social unity in countries and the integration of those who may have felt excluded. Since it promotes encounters and dialogue between visitors and hosts, it fosters their knowledge of each other. It further enhances mutual recognition of individuals and groups alike at the national level as well as international level. On the other hand it leads to an irreversible deterioration of sites, the over – use of natural resources, the impairment of biodiversity, the degradation of historic monuments through overcrowding, the precarious nature of seasonal work, the unlimited exploitation of workers uprooted from the areas around resorts, the decline in cultural production and craftsmanship, organized sex tourism involving children. Tourism is an instrument in the fight against poverty and to job creation. Poverty is not only a matter of lack of money but a multi-dimensional and complex phenomenon with an intricate relationship to issues such as disease, illiteracy, infant mortality, environmental degradation and many other aspects. Tourism provides not only wealth but also provides an incentive to fight.

Tourism is a highly labor-intensive activity which opens up opportunities for the businesses that provide products and services to the tourism industry. Its impact is particularly strong in the local farming and fishing industries, handicrafts and even the construction industry. With the development of micro-credit, it represents fertile ground for private initiative. It serves as a foothold for the development of a market economy where small and medium – sized enterprises can expand and flourish. Although at low level the poorest economies like Ethiopia benefit from tourism receipts.

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CHANGING SCENARIO OF EXPORT ORIENTED CERAMIC TABLEWARE INDUSTRY OF BANGLADESH AND MARKETING STRATEGY FORMULATION: AN APPLICATION OF GROWTH-SHARE MATRIX

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ABSTRACT

People are used to household appliances from the very beginning of human civilisation. Habitually human beings are paying attention on aesthetics and are contributing new and newer utensils everyday by its maturity. Tableware ceramic products are these kinds of household utensils. Many companies are producing ceramic tableware products but very few are going out of national boundary; i. e., Shinepukur Ceramics Ltd., Monno Ceramics Ltd., Artisan Ceramics Ltd., Farr and Others etc. This study attempted to find out changing face of ceramic tableware industry of Bangladesh and set marketing strategies by using growth-share matrix. Study was done depending on secondary data of company and industry sales from 2004-2005 to 2008-2009. The study found that in 2005-2006 SBUs are in the lower parts of cash cow and dog quadrants area, in 2006-2007 SBUs are in the upper parts of cash cow and dog quadrants area, in 2007-2008 SBUs are in the upper parts of star and question mark quadrants area, and in 2008-2009 SBUs are in the lower parts of cash cow and dog quadrants area. Then the study suggested some marketing strategies depending on the resulting changing scenario of the SBUs.

KEYWORDS

Growth-Share Matrix, Marketing Strategy, Ceramic Tableware Industry.

PRELUDE

Marketing deals with identifying and meeting human and social needs. One of the shortest definitions of marketing is "meeting needs profitably". According to American Marketing Association "Marketing is an organizational function and a set of processes for creating, communicating, and delivering value to customers and for managing customer relationships in ways that benefit the organization and its stakeholders" (Kotler and Keller, 2005). Marketing is the anticipation, management, and satisfaction of demand through an exchange process (Evans and Berman, 1994). **Marketing**, more than any other business function, deals with customers. It is managing profitable customer relationships. Marketing is the process by which companies create value for customers and build strong customer relationships in order to capture value from customers in return. (Kotler and Armstrong, 2005). Marketing is an ongoing process of planning and executing the marketing mix for products, services or ideas to create exchange between individuals and organizations. The American Marketing Association (AMA) states, Marketing is an organizational function and a set of processes for creating, communicating and delivering value to customers and for managing customer relationships in ways that benefit the organization and its stakeholders (<http://en.wikipedia.org/wiki/Marketing.html>). Strategy embodies a firm's objectives and reasons for being in business. It includes corporate policies, resource allocations, customer markets, and the competitive environment in which it chooses to operate (Anderson and Vincze, 2006). A **Strategy** is a long term plan of action designed to achieve a particular goal, most often "winning." Strategy is differentiated from tactics or immediate actions with resources at hand by its nature of being extensively premeditated, and often practically rehearsed. Strategies are used to make the problem easier to understand and solve. (<http://en.wikipedia.org/wiki/Strategy.html>). **Marketing Strategy** is the marketing logic by which the business unit hopes to achieve its marketing objectives. (Kotler and Armstrong, 2005). Marketing strategy means guiding the long-run use of the firm's resources based on its existing and projected capabilities and on projected changes in the external environment. At its essence, strategy (the "how") is a way to accomplish an objective (the "what"). In terms of a marketing strategy, if the objective of marketing is to select, serve and satisfy customers in a profitable manner, then a marketing strategy is the way a company accomplishes those objectives, which may include segmentation studies, competitive analysis, and the tactical 4 Ps (Perla, 2003).

The art of ceramic is perhaps as old as human civilization. Initially, it started with clay and then passed through stages of molding various media like wood, stone, shell and metal before reaching the age of ceramic and porcelain. Ceramics denote the manufacture of any product made from a non-metallic mineral hardened at high temperatures. Industrial ceramics comprise all industrially used solid materials that are neither metallic nor organic. Major ceramic products include glass, earthenware, porcelain, and white-ware, porcelain enamels, Bone China, Stoneware, brick tiles and terracotta, refractories, cement, lime and gypsum and certain abrasives. (http://banglapedia.search.com.bd/HT/C_0071.htm).

The first ceramic factory in Bangladesh (the then East Pakistan) was established by Tajama Ceramic Industries in the year 1962. The production capacity was limited and so was the company's impact on the market. In 1968, some quality porcelain tableware manufactured by People's Ceramic Industries Ltd. started to come to the market but the journey was stalled by the liberation war. The post-liberation years saw a dull performance by the existing companies until the mid 80s when with the coming of some new quality companies the sector was rejuvenated. In the 90s, there were more entries and the sector attracted foreign investment. At the same time the process of product diversification began with the industry manufacturing different types of ceramic products such as Ceramic Sanitary Ware. (<http://theexecutivetimes.com/bangladesh-ceramic-industry-outlook.html>). About 95% of raw materials for making quality and exportable ceramic products in Bangladesh are imported from abroad. The materials are imported mainly from Japan, Germany, New Zealand, South Korea and India. The prime raw materials of ceramic products are white clay and sand (http://banglapedia.search.com.bd/HT/C_0071.htm). At present, there are 15 ceramic producing plants (12 private, 1 state owned and 2 joint ventures) in the country producing over 40,000 tonnes of ceramic products per year. (<http://smetimes.com/ceramic-sector-in-bangladesh.html>). Monno, Shinepukur, Bengal Fine, Standard, Peoples and National Ceramic are engaged in tableware while RAK, Fu Wang, China-Bangla and Mir are engaged in tiles and sanitary ware. Ceramic products including stone tableware, porcelain tableware, bone China tableware, tiles and sanitary ware have a \$20 billion world market of which Bangladesh's share is only 0.17 percent (Rahim, 2005).

The BCG Growth-Share Matrix is a portfolio planning model developed by Bruce Henderson of the Boston Consulting Group in the early 1970's. It is based on the observation that a company's business units can be classified into four categories based on combinations of market growth and market share relative to the largest competitor, hence the name "growth-share". Market growth serves as a proxy for industry attractiveness, and relative market share serves as a proxy for competitive advantage. The growth-share matrix thus maps the business unit positions within these two important determinants of profitability (<http://arjun.net.np/bba/bcg.php>).

A decisive impulse for strategic planning activities comes from the ideas promoted by the Boston Consulting Group (BCG) in the late 1960s (Henderson 1973, 1979). The essence of BCG approach is to present the firm in terms of a portfolio of businesses, each one offering a unique contribution with regard to growth and profitability. The firm is then viewed not just as a single monolithic entity, but as composed by many largely independent units whose strategic decisions are to be distinctively addressed. In order to visualize the particular role to be played by each business unit, BCG developed the growth-share matrix, in which each business is plotted on a four-quadrant grid. The area within each circle is proportional to the total sales generated by that particular business (Hax and Majluf, 1984). There are three basic insights a manager can gain from the growth-share matrix. **First**, the graphic display provides a powerful and compact visualization of the strengths of the portfolio of businesses of the firm. **Second**, it is a mechanism to identify the capability for cash generation as well as the requirements of

cash for each business unit, and thus it contributes to assist in balancing the firm cash flow. And **third**, because of the distinct characteristics of each business unit, it can suggest unique strategic directions for each business.

Rahamn Pramanik et al. (2004) focused on the prescription of BCG matrix for strategy formulation of backward linkage industries of RMG sector in Bangladesh. The study was conducted with an aim to provide an appropriate guideline to the policy makers of the country so that they can prepare industrial policy for the textile sector of the country. Boston Consulting Group (BCG) matrix was used for the study. It's an important tool for determining performance of SBUs in terms of market growth rate and relative market share and for determining strategy. By applying the matrix the study found that to survive in the local market is not safe for the industry and the industry should expand its market abroad gradually for better future. This study did not discuss how cut-off points of the matrix were set.

Although much criticized in the business press and no longer featured as a leading product by the Boston Consulting Group, the cows, dogs, stars and question marks of the growth/share matrix have become part of the language of business strategy. Their images are powerful, as are the oversimplified prescriptions for action which students and managers may attach to the images: we should kick the dogs, cloister the cows, and throw our money at the stars. To avoid those oversimplifications, we must remember that the dogs may be friendly, the cows may need a bull now and then to remain productive, and the stars may have burned themselves out (Seeger, 2006).

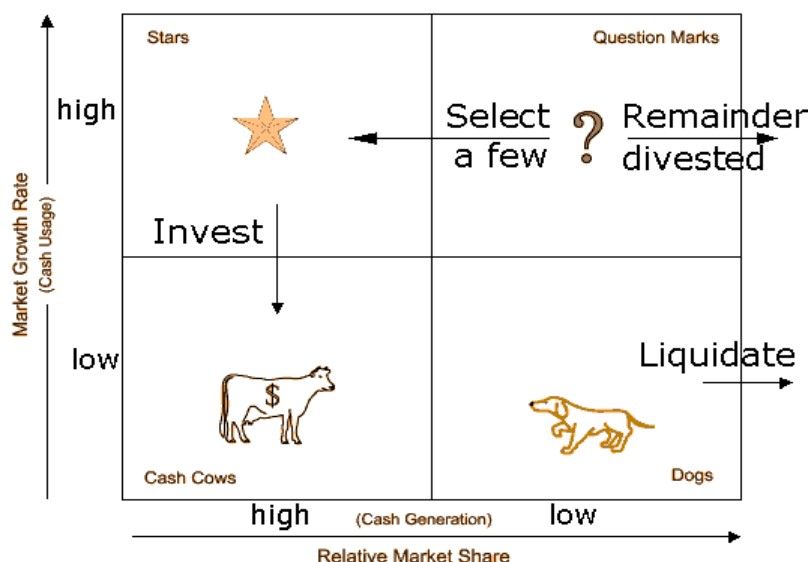
RELATED CONSTRUCTS OF THIS STUDY

It is necessary to clarify the related constructs of this study; i.e., Growth-Share Matrix, Cut off Point, Strategic Business Unit (SBU), Marketing Strategy, Ceramic Industry, Ceramic Tableware Industry, and Export Oriented Ceramic Tableware Sub-Sector.

GROWTH-SHARE MATRIX

The **Growth-Share Matrix** also known BCG matrix, B.C.G. analysis, B.C.G.-matrix, Boston Box, Boston Consulting Group analysis. It was first traced to a consulting project. Alan Zakon of BCG did the project for the Mead paper corporation in the late 1960s (Morrison and Wensley, 1991). Using the BCG approach, a company classifies all its SBUs (Strategic Business Units) according to the growth share matrix. On the horizontal axis relative market share and on the vertical axis market growth rate is presented (Kotler and Armstrong, 2007). BCG divides business organizations or strategic business units into four groups, those are given below:

FIGURE-1
The BCG Matrix



Stars (High Growth, High Market Share)

Stars are units with a high market share in a fast-growing industry. The hope is that stars become the next cash cows. Sustaining the business unit's market leadership may require extra cash, but this is worthwhile if that's what it takes for the unit to remain a leader. When growth slows, stars become cash cows if they have been able to maintain their category leadership, or they move from brief stardom to dogdom.

Cash Cows (Low Growth, High Market Share)

Cash Cows are units with high market share in a slow-growing industry. These units typically generate cash in excess of the amount of cash needed to maintain the business. They are regarded as staid and boring, in a "mature" market, and every corporation would be thrilled to own as many as possible. They are to be "milked" continuously with as little investment as possible, since such investment would be wasted in an industry with low growth.

Question Marks (High Growth, Low Market Share)

Question marks are growing rapidly and thus consume large amounts of cash, but because they have low market shares they do not generate much cash. The result is a large net cash consumption. A question mark (also known as a "problem child") has the potential to gain market share and become a star, and eventually a cash cow when the market growth slows. If the question mark does not succeed in becoming the market leader, then after perhaps years of cash consumption it will degenerate into a dog when the market growth declines. Question marks must be analyzed carefully in order to determine whether they are worth the investment required to grow market share.

Dogs (Low Growth, Low Market Share)

Dogs, or more charitably called pets, are units with low market share in a mature, slow-growing industry. These units typically "break even", generating barely enough cash to maintain the business's market share. Though owning a break-even unit provides the social benefit of providing jobs and possible synergies that assist other business units, from an accounting point of view such a unit is worthless, not generating cash for the company. They depress a profitable company's return on assets ratio, used by many investors to judge how well a company is being managed. Dogs, it is thought, should be sold off.

MARKET GROWTH RATE

It is the ratio between the change in the total market in the current year from previous year and the total market in the previous year. That is,

$$\text{Market Growth Rate} = \frac{\text{Total Market (Current Year)} - \text{Total Market (Previous Year)}}{\text{Total Market (Previous Year)}} \times 100$$

$$\text{Market Growth Rate} = \frac{\text{Total Market (Current Year)} - \text{Total Market (Previous Year)}}{\text{Total Market (Previous Year)}} \times 100$$

RELATIVE MARKET SHARE

Relative market share as used in the BCG matrix is the strategic alternative's share divided by the share of its largest competitor or the leading company. In other words, it is the ratio between business sales to leading competitor's sales. Business sales mean sales of the company, which is being studied. On the other hand leading competitors means the company or firm or enterprise, which is in the top of the market in the same line of trade. If the company itself is in the top, then the second from the top will be the leading competitor. That is, when an alternative is number one in a market, the largest competitor is number two. When an alternative is not number one, the market leader is the largest competitor. That is,

$$\text{Relative Market Share} = \frac{\text{Business Sales (Current Year)}}{\text{Leading Competitor's Sales (Current Year)}} \\ \text{(Hax and Majluf, 1984)}$$

CUT OFF POINT

The horizontal line of the matrix divides the alternatives plotted in the space into high and low growth markets. This line is usually set at 10%. The vertical line is typically set at 1.0 relative share and thus divides the alternatives that are market leaders and followers. The BCG Matrix, shown above, establishes four cells (a 2X2 matrix), with the midpoint for the Relative Market Share set at 1.0 (Key Rival's market share). Where the mid-point of the Market Growth Rate axis is set depends. If all SBU's are in the same industry, then the average growth rate of the industry is used. If the SBU's are located in different industries, then the mid-point is set at the growth rate for the economy (<http://arjun.net.np/bba/bcg.php>). The mid-point on this axis (vertical axis, market growth rate) is dependant on the industry or segments growth or decline. (if all the business/products etc. belong to one industry) If they are not in the same industry then the growth of the gross national product is usually used or a weighted average of all of the industries can also be used. The original classical matrix used a mid point of 10%, which was seen as the company investment threshold cut-off rate. The midpoint or cut off point on this matrix was determined to be 1.0 by the Boston Consulting Group. The market leader, which is a business/product with a relative market share greater than one, has a significant strength. Some companies use a cut off point of 1.5 because a positioning above this determines that a business/product can truly dominate an industry (http://www.ciphersys.com/HofHelp/Bcg/plot_configuration.htm). The cut-off point is usually chosen as 10 per cent per annum (http://en.wikipedia.org/wiki/Growth-share_matrix). According to Henderson's rule of three and four and presented in Henderson (1979), that in its initial proposition BCG selected a relative market share of 1.0 to perform this distinction. Sometimes basic cut off line is drawn at a relative market share of 1.5, because only by enjoying that kind of competitive advantage, a firm can truly exercise a significant dominance in a business ((Hax and Majluf, 1984)). In this study the cut off point **market growth rate** is set at 10% and **relative market share** is at 1.

STRATEGIC BUSINESS UNIT (SBU)

A strategic business unit is a unit of the company that has a separate mission and objectives and that can be planned independently from other company businesses. An SBU can be a company division, a product line within a division, or sometimes a single product or brand (Kotler and Armstrong, 1997). In bigger organizations, and SBU could be a company division, a single product or a complete Product Line. In smaller organizations, it might be the entire company (Google, 2008). This study has considered each company as an SBU.

MARKETING STRATEGY

Marketing strategy is to effectively allocate and co-ordinate marketing resources and activities to accomplish the firm's objectives within a specific product-market (Boyd et al., 1998).

CERAMIC INDUSTRY

Ceramics denote the manufacture of any product made from a non-metallic mineral hardened at high temperatures. Industrial ceramics comprise all industrially used solid materials that are neither metallic nor organic. Major ceramic products include glass, earthenware, porcelain, and white-ware, porcelain enamels, brick tiles and terracotta, refractories, cement, lime and gypsum and certain abrasives (<http://www.encyclopedia.com/doc/10999-ceramic.html>). Which companies are producing such types of products are jointly called ceramic industry. Ceramic industry took a formal start in this country in 1958 (<http://www.ceramics-directory.com/CERAMIC-INDUSTRY/2-0.html>).

CERAMIC TABLEWARE INDUSTRY

Which ceramic products are used for fine art of dining and showcase are called ceramic tableware products. Which companies are producing such types of products are jointly called ceramic tableware industry. Ceramic tableware sub-sector took a formal start in this country in 1965 (<http://www.ceramics-directory.com/CERAMIC-INDUSTRY/2-0.html>). In the tableware ceramic industry, companies are delivering almost same types of products. Different types of ceramic tableware products are marketed; i.e., Bone China, New Bone China, Ivory China, Porcelain, High Alumina Porcelain (Tableware Catalog, 2007). The companies which are producing such types of products are: Shinepukur Ceramics Ltd., Monno Ceramics Ltd., Artisan Ceramics Ltd., FARR Ceramics Ltd., Bengal Fine Ceramics Ltd., Peoples Ceramics, H & S Ceramics Ltd., Standard Ceramics, National Ceramics Ltd. (Financial Express).

EXPORT ORIENTED CERAMIC TABLEWARE SUB-SECTOR

Some companies of the ceramic tableware industry are selling products out of national boundary, i.e., Shinepukur Ceramics, Monno Ceramics, Artisan Ceramics, and Farr and Others (From discussion with employees of Shinepukur Ceramics).

OBJECTIVES

The broad objective of the research is to apply Growth-Share Matrix on export oriented ceramics tableware sub-sector of Bangladesh to know changing scenario of the industry and suggest strategic marketing options.

More specifically, the study has following four objectives:

- To identify market growth rate of the industry from 2005-2006 to 2008-2009.
- To identify the relative market share of the companies from 2005-2006 to 2008-2009.
- To position each business (SBU) in the matrix to understand the scenario.
- To suggest marketing strategic options for the players.

METHODOLOGY

Methodology includes sources of data and data analysis.

SOURCES OF DATA

This study was conducted mainly on the basis of secondary data. Export oriented ceramic tableware producing companies, i.e., Shinepukur Ceramics Ltd., Monno Ceramics Ltd., Artisan Ceramics Ltd., and Farr Ceramics Ltd. under ceramic industry of Bangladesh were considered for this study. Negligible part of products are also exported by some other Data were collected through different reports and papers of the companies, prospectus, relevant journals, dailies, periodicals, related research works, and relevant books and websites. To calculate the **market growth rate** of the SBUs, Total Market (Current Year) and Total Market (Previous Year) were collected from different previous papers of the association of the ceramic tableware industry. To calculate the **relative market share** of the SBUs, Business Sales (Current Year) and Leading Competitor's Sales (Current Year) were collected from different previous papers of the companies.

DATA ANALYSIS

Data collected from different sources have been tabulated and analyzed using Growth-Share (BCG) matrix or growth-share matrix. To implement the portfolio analysis following steps were followed:

- In using this model the study first identified strategic business units (SBUs).
- The study carefully calculated the market growth rate of the industry.

- 3) The study carefully calculated the relative market share of the companies.
- 4) Plotted SBUs in the matrix considering market growth rate and relative market share.
- 5) Viewed resulting graph and forecasted trends of the driving factor
- 6) Formulated strategies for each business (sbu)

FINDINGS AND ANALYSIS OF THE STUDY

To understand the condition of the players (SBUs) of the industry through Growth-Share matrix market growth rate and relative market share were considered. For market growth rate study focused on sales of the industry for five years (2004-2005 to 2008-2009) and for relative market share focused on sales of the industry players for four years (2005-2006 to 2008-2009). Depending on the calculated market growth rate and relative market share SBUs were plotted in the graph and marketing strategies were formulated considering scenario of each SBU in the each graph.

MARKET GROWTH RATE

TABLE 1: MARKET GROWTH RATE OF THE INDUSTRY FOR FINANCIAL YEARS 2005-2006 TO 2008-2009

Financial Year	Total Market of the Industry (in million \$)	Market growth Rate
2004-2005	28.75	-
2005-2006	26.76	(6.92) %
2006-2007	28.35	5.94%
2007-2008	34.03	20.04%
2008-2009	31.70	(6.85) %

In tableware ceramics industry, the main competitor of Shinepukur is Monno Ceramics Ltd. In domestic market they are the market leader also. In this matrix, I have selected the fiscal year or base year is 2005-2006. This BCG growth share matrix is done only on some leading companies under ceramics industry in Bangladesh through tableware. The analysis of the BCG matrix is as follows:

RELATIVE MARKET SHARE

TABLE 2: RELATIVE MARKET SHARES OF THE COMPANIES FOR 2005-2006 TO 2008-2009

Financial Year	Name of the Company	Business sale (in million \$)	Leading Competitor's Sale (in million \$)	Relative Market Share
2005-2006	Shinepukur	17.14	6.23	2.75
	Monno	6.23	17.14	0.36
	Farr and Others	3.39	17.14	0.20
2006-2007	Shinepukur	15.45	7.51	2.05
	Monno	7.51	15.45	0.49
	Artisan	1.52	15.45	0.10
	Farr and Others	3.87	15.45	0.25
2007-2008	Shinepukur	16.72	9.86	1.70
	Monno	9.86	16.72	0.59
	Artisan	1.56	16.72	0.09
	Farr and Others	5.89	16.72	0.35
2008-2009	Shinepukur	12.47	6.78	1.84
	Monno	6.78	12.47	0.54
	Artisan	0.67	12.47	0.05
	Farr and Others	11.78	12.47	0.94

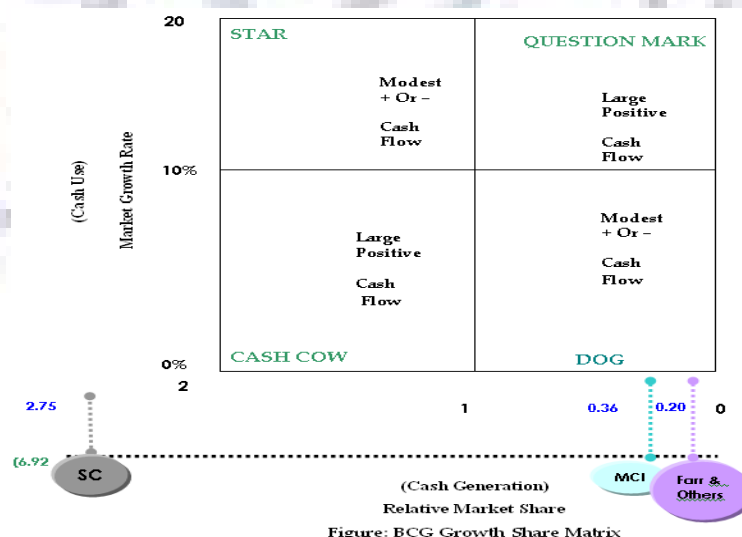
GRAPHICAL PRESENTATION AND MARKETING STRATEGY FORMULATION

Putting the values of market growth rate and relative market share of Shinepukur Ceramics Ltd., Monno Ceramics Ltd., Artisan Ceramics Ltd., and Farr & Others in the matrix following scenarios were found.

Graphical presentation and marketing strategy formulation for fiscal year 2005-2006

Following is the scenario of Shinepukur Ceramics Ltd., Monno Ceramics Ltd., and Farr & Others for fiscal year 2005-2006. Shinepukur is in the lower left area of cash cow quadrant (MGR=-6.92%, RMS=2.75), which indicates high relative market share and negative market growth rate. So, company should go for hold strategy, i.e., product modification, lower price, intensive distribution, trade and consumer deals, market expansion opportunities, improving the effectiveness of marketing variables and programs. Monno (MGR=-6.92%, RMS=0.36) and Farr (MGR=-6.92%, RMS=0.20) are in the lower right area of dog quadrant, which indicates low relative market share and negative market growth rate but overall condition is not bad. So, companies should go for some moderate harvest strategies, i.e., reducing the number of sizes and features, competitive price, reducing promotion, eliminate marginal distribution channels etc.

FIGURE 1: GROWTH-SHARE MATRIX OF EXPORT ORIENTED CERAMIC TABLEWARE COMPANIES FOR 2005-2006



Graphical presentation and marketing strategy formulation for fiscal year 2006-2007

Following is the scenario of Shinepukur Ceramics Ltd., Monno Ceramics Ltd., Artisan, and Farr & Others for fiscal year 2006-2007. Shinepukur is in the upper left area of cash cow quadrant (MGR=5.94%, RMS=2.05), which indicates high relative market share and moderate market growth rate. So, company should go for hold strategy, i.e., diversify brand and models, lower price, intensive distribution, trade and consumer deals, market expansion opportunities, improving the effectiveness of marketing variables and programs. Monno (MGR=5.94%, RMS=0.49), Artisan (MGR=5.94%, RMS=0.10) and Farr (MGR=5.94%, RMS=0.25) are in the upper left area of dog quadrant, which indicates low relative market share and moderate market growth rate. So, companies should go for some harvest strategies, i.e., increasing investment, repositioning, competitive price, reducing the number of sizes and features, reducing promotion in some areas etc.

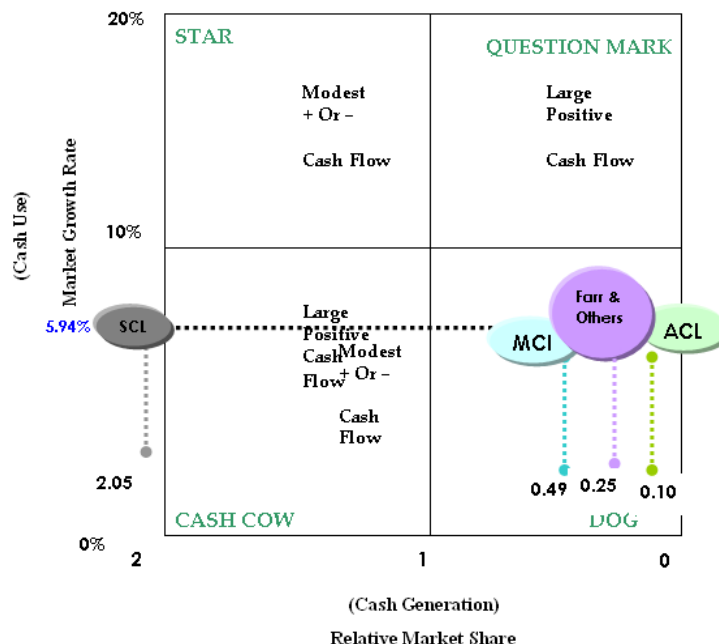
FIGURE 1: GROWTH-SHARE MATRIX OF EXPORT ORIENTED CERAMIC TABLEWARE COMPANIES FOR 2006-2007

Figure: BCG Growth Share Matrix

Graphical presentation and marketing strategy formulation for fiscal year 2007-2008

Following is the scenario of Shinepukur Ceramics Ltd., Monno Ceramics Ltd., Artisan, and Farr & Others for fiscal year 2007-2008. Shinepukur is in the upper left area of star quadrant (MGR=20.04%, RMS=1.70), which indicates high relative market share and high market growth rate. So, company should go for hold strategy, i.e., product extensions, service, warranty, price to penetrate market, intensive distribution, build awareness and interest in the mass market, and reduce sales promotion to take advantage of heavy consumer demand. Monno (MGR=20.04%, RMS=0.59), Artisan (MGR=20.04%, RMS=0.09) and Farr (MGR=20.04%, RMS=0.35) are in the upper left area of question mark quadrant, which indicates low relative market share and high market growth rate. So, companies should go for some build strategies, i.e., offer a basic product, use cost-plus pricing, selective distribution, build product awareness among early adopter and dealers, and use heavy sales promotion to entice trial etc.

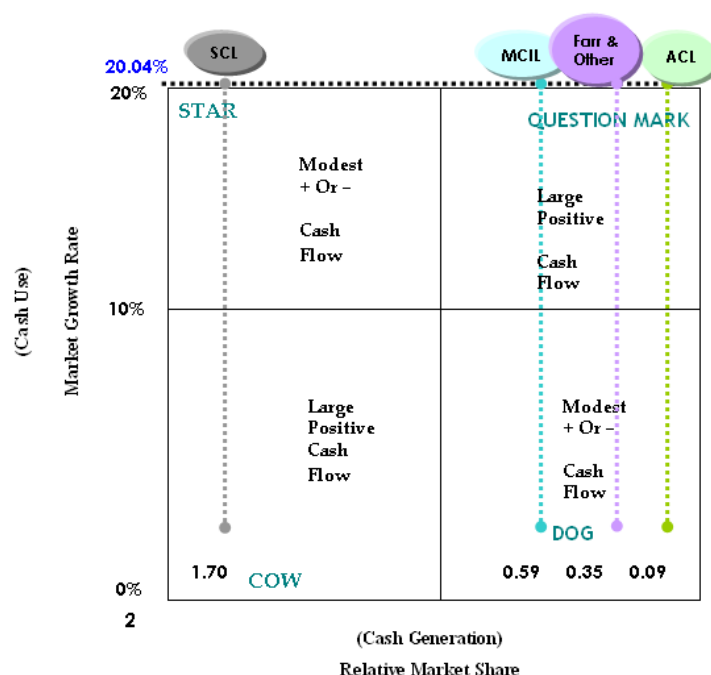
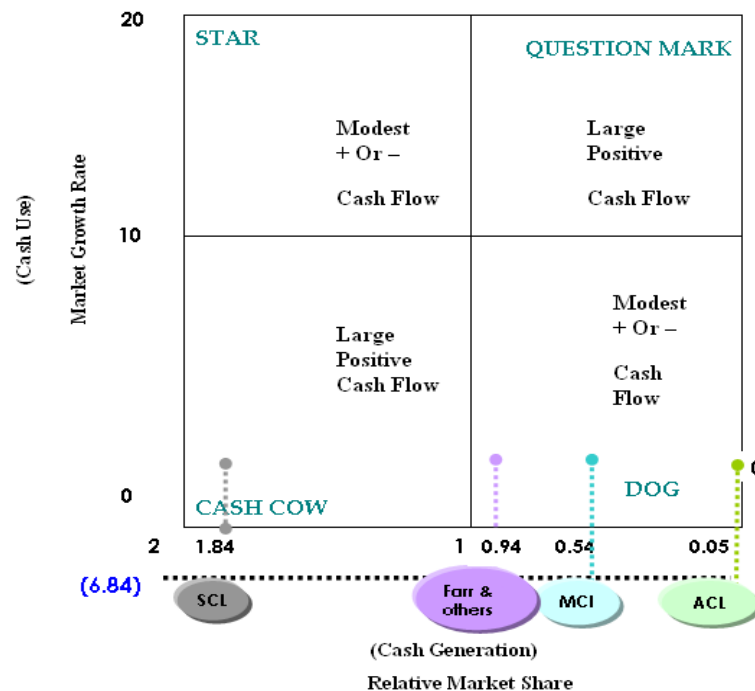
FIGURE 1: GROWTH-SHARE MATRIX OF EXPORT ORIENTED CERAMIC TABLEWARE COMPANIES FOR 2007-2008

Figure: BCG Growth Share Matrix

Graphical presentation and marketing strategy formulation for fiscal year 2008-2009

Following is the scenario of Shinepukur Ceramics Ltd., Monno Ceramics Ltd., Artisan, and Farr & Others for fiscal year 2008-2009. Shinepukur is in the upper left area of cash cow quadrant (MGR=-6.85%, RMS=1.84), which indicates high relative market share and negative market growth rate. So, company should go for hold strategy, i.e., diversify brand and models, lower price, intensive distribution, trade and consumer deals, market expansion opportunities, improving the effectiveness of marketing variables and programs. Monno (MGR=-6.85%, RMS=0.54), and Farr (MGR=-6.85%, RMS=0.94) are in the lower right area of dog quadrant, which indicates moderate relative market share and negative market growth rate. So, companies should go for some harvest strategies, i.e., increasing investment, repositioning, competitive price, reducing the number of sizes and features, reducing promotion in some areas etc. Artisan is in the lower right area of dog quadrant (MGR=-6.85%, RMS=0.05), which indicates very low relative market share and negative market growth rate. That means Artisan has entered in the declining market and its relative market share is also low. So it should capture competitors' market share through right product, right price, right distribution, and right promotion.

FIGURE 1: GROWTH-SHARE MATRIX OF EXPORT ORIENTED CERAMIC TABLEWARE COMPANIES FOR 2008-2009**Figure: BCG Growth Share Matrix****CONCLUSION**

In our country tableware ceramics industry is developing day by day. Already many companies are in the market and are serving consumers delivering quality products but very few are going for overseas markets. To compete smartly in the international markets companies need to set appropriate marketing strategies. For setting correct strategies companies need to find out its position the industry appropriately. Growth-share matrix can help a lot identify the companies' position in the industry correctly. Growth-share matrix says that overall situation of the industry is not so pleasant because of frequent fluctuating growth rate of the industry. If individual organizations can set appropriate marketing strategies, this problem can be solved and that will be beneficial for the organizations as well as for the industry. Lots of changes have taken place in tableware ceramics industry in last few years. In modern world consumers' demand is changing day by day and they switch companies frequently. So, to retain the consumers is important and it will be possible when companies will set right marketing strategy at right time.

LIMITATIONS AND FUTURE RESEARCH DIRECTION

There are a number of limitations of this study. Henceforth, the findings should be considered with caution.

- The BCG approach ignores factors like risk, customer loyalty, channel control, market structure etc (Sudharshan, 1995)
- The factors of this study are latent factors. Researchers always recommended multi-item scales for measuring these types of variables. Therefore, findings of this study should be validated further by identifying the dimensions, developing multi-item scales and assessing their internal consistency and different types of validity
- Market growth rate is only one factor in industry attractiveness, and relative market share is only one factor in competitive advantage. The growth-share matrix overlooks many other factors in these two important determinants of profitability.
- The framework assumes that each business unit is independent of the others. In some cases, a business unit that is a "dog" may be helping other business units gain a competitive advantage.
- The matrix depends heavily upon the breadth of the definition of the market. a business unit may dominate its small niche, but have very low market share in the overall industry. In such a case, the definition of the market can make the difference between a dog and a cash cow (<http://arjun.net.np/bba/bcg.php>).

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IMPACT OF THE THEORY AND PRACTICE OF GOVERNMENT CONTRACTING IN THE SOUTH AFRICAN PUBLIC HEALTH SYSTEM

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ABSTRACT

Government outsourcing and contract supply theory and practice are meant to provide competitive services at competitive prices to assist the government to deliver to the public. The proponents of outsourcing emphasise the positive effects of contract supplying through tendering as the most effective practice for good governance within the public health sector. The reality, however, is that money is returned to the national coffers as excess, amidst a shortage of medicines and medical equipment in poorly operated government hospitals. This poses questions on the effectiveness of the current theory and practice, and whether it has not been overrated beyond its capabilities. If it is overrated, does this not leave room for a re-look at the theory and practice, or could the blame be placed on management systems? This paper discusses both the theory and practice of government contracting and its impact on the public health system. The effect of this theory is felt by the customer who is a patient at the lower end of the spectrum. The paper seeks to critically investigate theories behind the practice, their effects on the customer, possible causal factors and the relevance of this theory and practice regarding realities on the ground. In conclusion, realistic and practical recommendations are suggested for consideration for a public health system strategy in South Africa.

KEYWORDS

Government contracting, Public Health System.

INTRODUCTION

Understanding the theory and practice of government contracting in the public health system within developing countries across the world in general and in South Africa, in particular, has become a critical aspect lately. This has become more prominent owing to a reality that South Africa's public health system is one of the greatest spending departments and continues to stretch limited state resources to no end. Part of this spending goes to public centres in huge amounts for government contracted services where the intention is to improve the state of operational efficiency and effectiveness.

This paper, therefore, argues that the theory and practice of government contracting, which covers cost, strategy and political contracting driven approaches, have both direct and indirect impact on standards of services that are offered by South African public health centres. Engaging this practice to establish who should do what, where, how, when and with whom is critical, and should be explored. Why has government contracting practice built such a huge dependence on public health centres? To gain more insight, this paper employed a qualitative methodology relying on a literature review as a tool of data collection for assessment, and analysis to draw up certain conclusions that should inform suggestions for workable recommendations.

BRIEF BACKGROUND OF THE SOUTH AFRICAN HEALTH SYSTEM MANAGEMENT

South Africa has a dual health system, which is characterised by large public and private sectors. The public sector serves the indigent population constituting more than 80% of the total, and is funded predominantly by the government from general tax revenue, comprising 40% of total health spending. The private sector, which is highly developed, serves less than 20% of the population, comprising those who are insured or are high income earners, and is responsible for 60% of total health expenditure (Pillay, 2008:1). Hospitals in South Africa reflect a stark contrast between health service provision in the public and private sectors. Government-owned and managed public sector hospitals are often characterised as being inefficient and ineffective, as evidenced by anecdotes, which detail patient dissatisfaction and disaffections, and personal observation. In contrast, privately-owned and managed hospitals are amongst the more profitable of enterprises, and compare favourably with the best in the world, as evidenced by constantly rising share prices and the growth in medical tourism. In an attempt to improve public sentiment about the public sector, and in their quest to enhance efficiency and effectiveness within the sector, public sector agencies are aspiring to emulate the private sector philosophy and management approach. The underlying assumption is that there is a potential shortcoming in management capacity between the two sectors (Pillay, 2008:2).

Burch (2000: 55) outlines a difficult inheritance of the post 1994 government from the apartheid government, and states that the health service, which was inherited in 1994, was a reflection of a system, which focused primarily on supporting the Apartheid State, rather than on improving health or providing an efficient and effective health service. Like the country, the health service had been fragmented into Black, Coloured, Indian and White "own affairs", four provincial and 10 homeland health departments. These were not even contiguous, furthering inefficiency and there was wasteful duplication. Resources, and with them access to health care, had been distributed along racial lines. There was a predominant focus on hospital care, with hospitals serving Whites having more resources. Primary health care (PHC) was severely underdeveloped. In the "homelands", services were more integrated, but decidedly sparse, while elsewhere preventive services provided by local authorities were separated from the curative services of the four former provinces. First level curative care was often only available at a distant hospital outpatients' department.

Burch (2000: 56) argues further that much progress has been made since 1994 in overcoming the Apartheid legacy with regard to health system and management, which include the following achievements:

- Establishment of a unitary health system with a single national department and nine provincial Health Departments;
- Appointment, for the first time, of talented managers of "colour" to executive positions;
- Removal of structural racism;
- Upgrading of many clinics and health centres and the building of approximately 500 new ones, in poor, hitherto under-served communities. Although a number are yet to be made fully operational, this did bring elements of PHC within reach of many for the first time;
- Introduction of free primary health care not only made good economic sense, but also removed the affordability barrier that many faced;

- Progress, albeit variable, in the establishment of a District Health System (DHS), with provinces and local authorities starting to pool their resources and integrate care, so as to offer a more comprehensive service under one roof. This not only improves economies of scale and efficiency, but means that parents do not have to go to two or more venues and face duplicate queues and examinations to get care for themselves and their family;
- Community service for newly qualified doctors, which further strengthened services in the poorest parts of the country;
- Contracting Cuban doctors to improve medical care in 'under-doctored' areas;
- A massive primary school nutrition programme, which even with implementation difficulties, meant that many children were no longer too hungry to learn;
- Addition of Hepatitis B and Haemophilus influenzae B vaccines to the routine immunisation schedule;
- Launch of various programmes to tackle priority health problems, including Integrated Management of Childhood Illnesses, Directly Observed Treatment, Short-course for the management of Tuberculosis and a Maternal Mortality Programme;
- Restructuring of the district surgeon system;
- Promulgation of important pieces of legislation that are steering the health sector towards greater effectiveness;
- Transformation of health governance institutions, such as the professional bodies;
- Important efforts to improve public health, including measures to curtail use of tobacco; and
- Launch of a Patient's Charter to serve as a benchmark of how patients could expect to be treated.

However, not all has been positive. The negative aspects include:

- A relentlessly worsening HIV/AIDS epidemic, which government has not sufficiently handled;
- A reduction in health budgets in real terms, after increases in the first two years. The reasons for the decreases include:
 - i) a reduction in the central hospital conditional grant;
 - ii) tightened provincial health votes and health inflation remaining above general inflation, and
 - iii) wide scale rank and leg promotions for health staff.
- An inability to retrench or transfer staff, which prevented tackling of inequity and inefficiency; and
- Difficulties imposed by the rules, which govern management of the public service.

These and other factors have placed pressure on the health service, and have led to concerns about quality and delivery. Staff morale and motivation has also been affected.

CONCEPT OF GOVERNMENT CONTRACTING

Government contracting is a process of buying goods and services by government agencies or departments to support operational execution with the purpose to fulfill the government agency or department mandate and aimed recipients (Ntonzima, 2008). In order to raise the concept of government contracts, State Lawyers (2010:1) state that it comprised of all the statutes, cases, rules, regulations and procedures with which any company must comply to do business with the government (national, provincial or municipal level). These rules and regulations apply to virtually every aspect of making, performing and eventually terminating a contract with a government agency or department.

The set of laws and regulations that involve government contracts is immense, complex and constantly changing. While the laws and rules may be complicated, several governments' contracting regulations are designed to prevent favoritism and to force the government contracting officer to give all bidders fair access to be awarded a contract with the government. The rules are also intended to protect taxpayers by ensuring that the government obtains the lowest price for goods and services from the private sector, thus making certain that the contract is fair to taxpayers (State Lawyers, 2010:1).

THEORY AND PRACTICE OF CONTRACTING OR OUTSOURCING

Giving the rationale for outsourcing theory and practice, Kakabadse and Kakabadse (2000a: 109) provide three categories of motivations, namely as cost, strategy and politics. The first two (cost and strategy) are commonly driven by the private industry. Political motives for contracting are often driven by public organisations. While there may be three categories, government contracting activities are likely to be determined by elements from all three categories.

COST-DRIVEN OUTSOURCING

In theory, outsourcing for cost reasons can occur when suppliers' costs are low enough even with added overheads, profits and transaction costs. Suppliers can still deliver required service in accordance with the prescribed specifications and applied terms and conditions for a low price (Bers, 1992: 55). One may wonder how an organisation can achieve enough savings to cover an additional layer of overheads and still meet profit requirements, whilst perform a function for less than another organisation that already provides the function (Kremic, Tukul, and Rom, 2006: 468). Specialisation and economies of scale are mechanisms that are used to achieve this level of efficiency (Klainguti, 2000; Ashe, 1996; Kakabadse and Kakabadse, 2000a; Quinn, Doorley and Paquette, 1990a, b; Roberts, 2001). A desire to save indirect costs may also drive outsourcing. Having fewer employees requires less infrastructure and support systems, which may result in a more quick and efficient organisation (Hubbard, 1993). Although organisations may outsource for cost related reasons, there are no guarantees that expected savings will be realised. There is increasing evidence that cost savings have been overestimated, and costs are sometimes higher after outsourcing (Vinn and Gliberman, 1999; Welch and Nayak, 1992).

STRATEGY-DRIVEN OUTSOURCING

One of the main drivers for outsourcing more recently appear to be shifting from costs to strategic matters such as organisational core competencies and a need for flexibility (DiRomualdo and Gurbaxani, 1998; Elmuti and Kathawala, 2000; Harris and Guinipero, 1998; Lanford and Parsa, 1999; Meckbach, 1998; Muscato, 1998; Mullin, 1996; Quinn, 1999; Roberts, 2001; Wright, 2001). In general, the literature supports outsourcing as strategy, which may offer improved business performance on numerous magnitudes (Brades *et al*, 1997; Old, 1998; Dekkers, 2000; Klopach, 2000; McIvor, 2000b; Moran, 1997; Prahalad and Hamel, 1990). Literature contends that outsourcing using strategy as an approach is to allow organisations to better focus on its core competences (Sislian and Satir, 2000; Quin and Hilmer, 1994; Quinn, 1999). Because of strong competition, organisations are forced to reassess and redirect scarce resources (Works Management, 1999; Drtina, 1994; Jennings, 1997; Ketler and Walstrom, 1993; Kriss, 1996; Leavy, 1996; Ngwenyama and Bryson, 1999; Quinn, 1999; Razaque and Chen, 1998). Kremic, Tukul, and Rom (2006: 469) state that resources are typically redirected to where they make the greatest positive impact, namely the organisation's core competences. Kremic, Tukul, and Rom warn that there are potential pitfalls when outsourcing for strategic reasons. Gillett (1994) argues that organisations may give away the crown jewels if they are not careful. If organisations outsource the wrong functions, they may develop shortcomings in their learning or knowledge base, which may exclude them from future opportunities (Earl, 1996; Prahalad and Humel, 1990).

POLITICAL-DRIVEN OUTSOURCING

Kremic, Tukul, and Rom (2006: 469) believe that there are various reasons why government contracting practices may behave differently compared to private firms, which and therefore, leads to different outsourcing motivating factors. For example, Avery (2000), in Kremic, Tukul, and Rom (2006: 469), argues that the performance of a service by the public laboratory is not based on market demand or profitability. The issue may be more social than economic. Avery (2000) uses the example of the public organisation detecting a virus or health hazard, whereas the private organisation would be in the business of treating the infected for a fee. Industry performs services to make money, whereas the public organisation attempts to ensure general well-being, hence a different goal and mission. While cost and strategy may drive private firms, the desire for general well-being of citizens may drive contracting government by public organisations (Kremic, Tukul, and Rom, 2006: 469).

According to Kremic, Tukul, and Rom (2006: 470), another reason for public sector outsourcing may be better accountability. Deakin and Walsh (1996) find that managers in public organisations generally realise an accountability improvement in the particular function that is outsourced. However, the managers also

believe that there is a simultaneous decline in public accountability to the public. The explanation is that a supplier works for the government and performs their functions to satisfy the government representative, whereas a government employee works for the public and regards their interests as primary.

GOVERNMENT CONTRACTING KEY LEGISLATIVE FRAMEWORK

OPERATIONAL PLAN FOR COMPREHENSIVE HIV AND AIDS CARE, MANAGEMENT AND TREATMENT FOR SOUTH AFRICA, 19 NOVEMBER 2003

Chapter Seven that deals with drug procurement, sections 88-95 of this plan come closer to what the paper presents. Section 88 states that this chapter establishes a system of drug procurement that attempts to secure antiretroviral drugs at prices well below today's best international prices. This purchasing system should eventually result in the creation of fully integrated production facilities for these drugs in South Africa. Section 89 states that the procurement system also seeks to support an adequate and sustainable supply of these drugs by involving multiple competing suppliers and multiple production locations. Section 90, subsection 90.3 states that the supply of medicine must be secure and sustainable at a volume, which is large enough to meet the demand that is envisaged.

Chapter Eight provides for the upgrading of the system of distributing drugs, where section 96 states that there should be an improvement of inventory management, patient prescription information and financial management systems; by investing in more secured storage facilities; by ensuring efficient and secured transportation; by training pharmacy personnel; and by providing packing to support inventory control and ease of use by patients.

PUBLIC FINANCE MANAGEMENT ACT 1 OF 1999

This Act was assented to on 2 March 1999. Its objective is to secure transparency, accountability, and sound management of the revenue, expenditure, assets and liabilities of institutions to which the Act applies. Institutions included are national and provincial departments and other public entities, including the South African Medical Research Council. Some relevant and key definitions in the Act including the following:

- "fruitless and wasteful expenditure", which means expenditure that was made in vain and would have been avoided had responsible care been exercised;
- "irregular expenditure", which means expenditure other than authorised expenditure, incurred in contravention of or that is not in accordance with a requirement of any applicable legislation including the Public Finance Management Act and the State Tender Board Act of 1968; and
- "unauthorised expenditure", which means overspending of a vote or a main division within a vote, and expenditure not in accordance with the purpose of vote or main division.

Provision has been made for the appointment of accounting officers (in the case of departments) and accounting authorities (in the case of public entities). The responsibilities of accounting officers and accounting authorities are extensive and include, *inter alia*, ensuring that the relevant body has and maintains effective, efficient and transparent systems of financial and risk management and internal control. They are responsible for ensuring that systems of procurement and provisioning are fair, equitable, transparent, competitive and cost-effective. In addition, they must prevent unauthorised, irregular and fruitless and wasteful expenditure and losses which result from criminal conduct. The Act can, in time, be expected to have a dramatic effect on management practices in the health sphere, as in the rest of the Public Service.

PROMOTION OF ACCESS TO INFORMATION ACT (ACT 2 OF 2000)

This Act was assented to on 2 February 2000 and its purpose is to give effect to the constitutional right of access to any information held by the State. It also guarantees access to any information that is held by another person, and that is required for the exercise or protection of any rights. An example might be information held by a hospital that is required by a patient in order to pursue a complaint against the owner of that hospital. Also, it could be a request by the interested party to access information about the process followed to handle a particular procurement process for a particular product supply.

GENERAL PROCUREMENT GUIDELINES

National Treasury (2009: 1-8) issued general procurement guidelines to provide a clear prescription of standards of behaviour, ethics and accountability. The government of South Africa views these guidelines as a statement of commitment to procurement systems and practices, which are aimed at enhancement of economic and social well-being for all South Africans. Most critical is a directive that accompanies these general procurement guidelines that no public procurement system should be operated if its pursued activities are not within these guidelines. These procurement guidelines are:

- Value for money** – this is an essential test against, which government entities should justify a procurement outcome that should give value for money, which means the best available outcome when all relevant costs and benefits over the procurement cycle are considered.
- Open and effective competition** – this requires transparency in the application of a framework of procurement laws, policies, practices and procedures, as well as openness in the procurement process and encouragement of effective competition through procurement methods, which are suited to market circumstances.
- Ethics and fair dealing** – this is essential as all involved parties should comply with the process of ethical standards that may include dealing with each other on a basis of mutual trust and respect, whilst conducting their business in a fair and reasonable manner and with integrity.
- Equity** – this guideline requires full application and observance of government policies, which are designed to advance persons or categories of historical disadvantaged individuals by unfair discrimination.
- Accountability and reporting** – this involves ensuring that individuals and organisations are answerable for their plans, actions and outcomes.

GOVERNMENT CONTRACTING SELECTED CASES

Groote Schuur Hospital Contracts spending for 2010 – 2011 Financial YEAR (6 month – 5 year period), Western Cape

	BID NO.	DISCRIPTION	TOTAL
1	GSH PT2/2009	Milk Powder	R 964,080 - 00
2	GSH PT3/2007	Cell Sperator Mechine	R519,650 - 00
3	GSH PT4/2007	General ward and service (pottering)	R3,620,283 - 17
4	GSH PT5/2008	After Hours Transport	R508,200 - 00
5	GSH PT8/2007	Supply of coal	R6,952,206 - 00
6	GSH PT9/2009	Maintenance Siemens	R18,755,232 - 00
7	GSH PT25/2006	General compacted domestic waste	R231,650 - 28
8	GSH PT37/2007	Maintenance - AGFA - Daylight processor	R449,372 - 28
9	GSH PT39/2007	Maintenance - Toshiba & ANDIO Cardio - Vascular	R516,853 - 08
10	GSH PT40/2007	Maintenance - Colbat C60 Units	R183,928 - 00
11	GSH PT45/2007	Comprehensive Cleaning Service	R5,666,208 - 00
12	GSH PT46/2005	Security Guarding GSH	R8,808,017 - 46
13	GSH PT47/2008	Cleaning Service - Catering	R1,880,596 - 00
14	GSH PT48/2007	Maintenance Lodox	R367,800 - 17
15	GSH PT49/2005	Alquillion CT & KODAK Printer	R446,160 - 48
16	GSH PT50/2006	Maintenanca Angrio, Suite and Simulator	R684,516 - 72
17	GSH PT51/2007	Maintenance Gamma Camera	R627,744 - 00
18	GSH PT52/2007	Maintenance Cardio, Theracic Lab	R806,751 - 00
19	GSH PT53/2008	Turning Team Service	R755,827 - 80
20	DOH141/2005	Maintenance Linac	R402,390 - 00
21	DOH30/2005	Service Laundry and Linen	R5,021,492 - 40
22	DOH30/2005	Service Laundry and Linen Management Fee	R2,274,510 - 00
TOTAL AMOUNT			R60,443,470.04

GROOTE SCHUUR HOSPITAL MINI CONTRACTS FOR 2010-2011 FINANCIAL YEAR

BID NUMBER	DESCRIPTION	ESTIMATED MONTHLY AMOUNT	CONTRACT PERIOD
SUP069336	Frozen mixed vegetables	R17, 432.50	01/07/2010 – 30/09/2010
SUP069337	Bulgarian yoghurt	R1, 680.00	01/07/2010 – 30/09/2010
SUP069338	Cottage Cheese	R2, 400.00	01/07/2010 – 30/09/2010
SUP069339	Inkomas	R1, 176.00	01/07/2010 – 30/09/2010
SUP069325	Chicken Steaklets	R24, 400.00	01/07/2010 – 30/09/2010
SUP069334	Chicken Keels	R54, 600.00	01/07/2010 – 30/09/2010
SUP069326	Chicken Thighs	R40, 920.00	01/07/2010 – 30/09/2010
SUP069331	Eggs	R1, 438.00	01/07/2010 – 30/09/2010
SUP069329	Cheddar Cheese	R28, 680.00	01/07/2010 – 30/09/2010
SUP069322	Hake Fillet	R17, 750.00	01/07/2010 – 30/09/2010
SUP069327	Hake Battered Portions	R32, 800.00	01/07/2010 – 30/09/2010
SUP069333	Fruit Fresh Various	R20, 040.00	01/07/2010 – 30/09/2010
SUP069328	Bread White	R1, 612.50	01/07/2010 – 30/09/2010
SUP069346	Bread Brown	R46, 800.00	01/07/2010 – 30/09/2010
SUP069347	Bread Nutty Wheat	R20, 040.00	01/07/2010 – 30/09/2010
SUP069332	Vegetables Fresh	R90, 000.00	01/07/2010 – 30/09/2010
SUP069420	Paper A4	R58, 928.40	01/07/2010 – 30/09/2010
SUP069421	Paper A3	R25, 133.40	01/07/2010 – 30/09/2010
SUP068059	French Polony	R14, 517.90	01/06/2010 – 31/08/2010
SUP068045	Ostrich Goulash	R81, 225.00	01/06/2010 – 31/08/2010
SUP068049	Sausage Roll	R6, 300.00	01/06/2010 – 31/08/2010
SUP058046	Vienna Halaal	R15, 882.48	01/06/2010 – 31/08/2010
SUP058041	Ostrich Mice	R60, 000.00	01/06/2010 – 31/08/2010
SUP068042	Sausage Ostrich	R9, 110.88	01/06/2010 – 31/08/2010
SUP068050	Cornice Pies	R5, 760.00	01/06/2010 – 31/08/2010
TOTAL AMOUNT		R678 547.06	

KARL BREMER HOSPITAL PROCURED ACTIVITIES AND SPENDING FOR 2010 -2011 FINANCIAL YEAR, WESTERN CAPE

	Outsourced Activity	Total Annual Value
1.	Agency Services	R12, 254, 000 - 00
2.	Burial Services	R63,000 - 00
3.	Medical Waste Removal	R633, 000 - 00
4.	Computer Services	R174,000 - 00
5.	Lab Services	R11,199,000 - 00
6.	Employee Wellness	R105, 000 - 00
7.	Equipment Maintenance	R288,000 - 00
8.	Medical Services	R225,000 - 00
9.	Tracing Agents Debt Collectors	R65,000 - 00
11.	Medical Gas	R348,000 - 00
12.	Blood Services	R3,912,000 - 00
13.	Leases Photocopy Machines	R123,000 - 00
14.	Leases Telecommunication Services	R92,000 - 00
15.	Property Maintenance	R651,000 - 00
16.	Sewerage	R530,000 - 00
17.	Security	R1,225,000 - 00
18.	Garden Services	R147,000 - 00
19.	Cleaning Services	R348,000 - 00
20.	Laundry Services	R107,000 - 00
21.	Pest Control	R17, 000 - 00
22.	Central Laundry	R319,000 - 00
23.	Fire Protection	R3,000 - 00
TOTAL AMOUNT		R20 586 254.00

Qualifying what is critical as elements that drive procurement theory and practice (cost, strategy and political elements), both Table 1 and 2 reflect all aspects of these elements. It can be concluded that the rationale to procure in these two public hospitals is executed strategically in order to drive critical health aspects, which the public health centres could have found difficult to cope with its operations, considering both the technical and financial aspects that confront government. For example, Siemens maintenance and cell separator machine at Groote Schuur Hospital and lab services at Karl Bremer Hospital that reflect high cost expenditure for the 2010 and 2011 financial year, means that to continue spending for such services, is a matter of achieving high levels of effectiveness down to ordinary sick citizens, while procurement involves both strategic and political decisions. The 2010-2011 financial year procurement spending by these two hospitals is a matter of cost serving as spending to save one life, is spending to save several costs simply because the government may directly and indirectly incur costs related to one death for example by subsidising the education for dependents of the deceased person.

IMPACT OF GOVERNMENT CONTRACTING ON PUBLIC HEALTH SYSTEM

FINDINGS

Firstly, through literature review analysis, this paper did not find a link between poor performance of the South African public health system and a failure of government contracting theory and practice. Rather, it found that this theory and practice in developing countries such as South Africa is still relevant and has a long way to go complementing the public health system to deliver better services.

Secondly, this paper has found that there are certain areas where government contracting within the public health system in South Africa is underperforming. However, this underperformance by public hospitals has no relationship with the failure of the government contracting theory and practice.

Noted aspects that require an urgent attention to improve the current state of the South African public health system may lead to a blame of government contracting. Sometimes these aspects are blindly attributed to a failure of government contracting theory and practice, as per the South African public health system context and the prevailing state of public health system management.

These aspects though not limited to, are mentioned below:

- a) Incapacity of employees within the public health system to properly plan for government contracting;
- b) Poor use of the selected approach to source suppliers;
- c) Poor management of government contracting linked logistics systems;
- d) Poor management of contracts awarded; and
- e) Accountability pitfalls.

IMPACT OF GOVERNMENT CONTRACTING

Of the prevailing current practices by the public health system in South Africa, government contracting for health operational matters has not yet performed to its fullest capacity. This problem also exists as a result of the above mentioned and noted aspects that seem to generate public blame and failure problems, both wrongly so, and justifiable by some, to government contracting theory and practice. Of the prevailing South African public health system, the impact of inefficient and ineffective government contracting creates problems by ordinary public health system users such as:

- a) Medicine dispense to patients for different illnesses as holding treatment in the absence of a direct prescribed one, for example, dispense of headache tablets to a patient who has no headache problems but stomach pains;
- b) Long waiting lists for people queuing for chronic treatment such as HIV/AIDS, TB, and so on;
- c) An increasing unnecessary bureaucracy within public health system; and
- d) Avoidable deaths owing to non existence or poor service.

DISCUSSION AND RECOMMENDATIONS

Health and physical health well-being are essential to the formation and maintenance of human capital, and success in the health sector is extricably linked to any government objectives of increasing economic growth, strengthening poverty alleviation programmes, delivering competent human resources and improving status of the poor. Therefore, public health should be as efficient as possible, maximising benefits and minimising costs (Asian Development Bank, 2000:1). The South African public health system is not different to a problem that confront the rest of the world's developing countries and mainly that of delivering to its citizen's a quality and responsive public health system.

Government contracting practice is but one intervention to maximise benefits and minimise costs of delivering and managing an effective public health system. Shortcomings of this practice include numerous problems linked with government contracting, which include the environment under which the practice is utilised, since there is not enough to justify any argument that government contracting theory and practice in the public health system is failing. A greater shift by governments in developing countries is the maximum use of public and private partnerships to improve services within the public health system. Government contracting is one of the key means to maximise this public/private partnership strategy. The reality linked to government contracting practice could be that the costs of maintaining this approach is increasing and requires a high level of integrity to those who are involved in making it a success. For example, for Groote Schuur Hospital to spend up to 6.4 million rands for procured activities in the 2010/2011 financial year, is no small business and requires strong leadership and management by both government and the private sector. More critically, this partnership requires leadership and management that subscribe to principles of good governance.

PRACTICE SHIFT RECOMMENDATIONS

- Procurement sections of public health in South Africa of all government spheres and entities must be filled by competent personnel that have all required technical and management expertise on how to deal with government contracting practice to deliver both efficient and effective outcomes. This will assist in making sure that:
 - a) Medicine stock levels, cost efficient equipment privately owned, and other health needs are strategically and properly sourced; and
 - b) Adequate financial and procurement systems are fully introduced and used to maximise benefits, produce accurate and reliable financial forecast and performance information.
- Make all senior procurement posts contract performance posts in order to increase accountability and competency levels. This will assist to deal with:
 - a) mediocre and scrupulous work performance;
 - b) proper conduct of risk management and internal controls;
 - c) demand analysis and epidemiological sentinel;
 - d) corruption related activities; and
 - e) deliver at least best results from government contracting spending practice.
- Commit leadership involvement and oversight in order to set the tone at the top and create an environment, which is conducive to good government contracting practices and deliver quality service. This increased focus leadership involvement and oversight role should assist in evaluating and monitoring government contracting practice to enable quality decision making and service delivery. Again, leadership involvement and oversight should help to identify other alternative arrangements for management and service delivery.
- To minimise government contracting costs for food supply, the South African government must consider:
 - a) acquiring state farming across the country;
 - b) allowing trained prisoners in several aspects of farming to be considered as the main employees in state farming for both crop and animal farming; and
 - c) introducing an Agriculture University, which should assist state farming when it comes to science and research for farming in southern Africa, generally, and South Africa, in particular.

CONCLUSION

Government contracting theory and practice cannot be seen as the panacea of public health system for effective delivery of quality and responsive health needs of the general public, which predominantly compromises poor people who cannot afford private hospitals. But it (government contracting theory and practice) should be viewed as one tool to deliver an effective public health system to its ultimate users. Achieving good government contracting practice is dependent on competent government employees that drive the practice, leadership involvement and oversight, as well as conducive governance arrangements to deliver effective results.

What propels the theory and practice of government contracting theory and practice, which is argued as costs, strategy and political motives, is clearly articulated in this paper solely to clarify this theory and practice, how it functions, why it has failed, and that it will take government strengths to implement it. This was also clarified simultaneously with the discussion around the significance of legislative framework that governs government contracting theory and practice in South Africa, and the value adds in correct application of government contracting theory and practice.

An analysis of two case studies of public hospital procured activities within the specific financial year of 2010-2011 was conducted following a qualitative methodology by attaching meanings on figures in the context of what should constitute good government contracting theory and practice for an effective public health system that functions to deliver a quality and responsive service. This led to conclusions, which include an argument that government contracting theory and practice is not yet used at its best level in South Africa and, therefore, makes it difficult to link it with the failures or poor performance of the public health

system to deliver quality and responsive services. Instead, certain aspects were found as what could constitute as both wrongly and justifiable accusations regarding failure of government contracting theory and practice servicing the public health system in South Africa.

Lastly, practice shift recommendations are suggested in this paper for consideration for a public health system strategy in South Africa, which covers a relook of the employment approach of senior managers in procurement sections in all government spheres and entities that deal with the public health system. This also includes the significance of leadership involvement and an oversight role to deliver effective government contracting practice as part of short-term workable recommendations, which were raised. Whilst state farming may reduce the costs of government contracting and increase its benefits, it is suggested as part of long-term implementable recommendations.

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COMPARISON OF COMPREHENSIVE INCOME AND NET INCOME IN EVALUATING OF FIRM PERFORMANCE

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ABSTRACT

Comprehensive statement is a tool to evaluate the performance of a company as a main financial statement like income statement. The objective of this research is applied and the type of character is excellent. This study compared the performance of comprehensive income with net profit of the accepted companies in Tehran Stock Exchange deals between 2005 until 2011, correlation method is applied for the purpose of this study. The first, using Pearson correlation analysis to examine the relationship between both variables and analysts continue to use simple linear regression models were estimated and hypothesis testing. Results of hypothesis test showed that company reports comprehensive income for performance evaluation of return on equity is superior to net profit but the estimation results of models in general about the superiority of comprehensive income to net income for the assessment of company performance based on stock market prices, does not show the superiority of comprehensive income. The results show that comprehensive income and the net book value of equity and book value in relation to performance assessment based on the price of the stock market has superior.

KEYWORDS

Comprehensive Income, Net Income, Performance Assessment, Profit, Stock Returns.

INTRODUCTION

Income statement as the basis for investment decisions and other decisions. Profit is the best indicators of performance measurement and evaluation, and motivation to do more research efforts in accounting. The Financial Statements have been prepared on the historical value of many items that are potentially associated with participation in profits and losses are not reflected, reflected directly in equity and balance sheet or even cannot be measured, therefore, the financial statements less transparent, and always have been criticized. Failure to report important changes in the income statement and a direct reflection of its equity in earnings quality reduces and its role as an important input in valuation, and contracts will damage. In this regard, managers are encouraged to manage profit and makes use of misleading financial information to infer face. Zimmerman & Watts (1986), Management and Society Research Investment (1993),

Statement of Financial Accounting Concepts No. 1 in the first term comprehensive income statement concepts introduced in the No.3 was defined as follows:

Change in capital (net assets) of a firm over a period of financial transactions and other events related to resource owners. Comprehensive income includes all changes in assets other than a financial investment owners and owners of the resources (Financial Accounting Standards Board, 1980- 1985).

Comprehensive income as a measure of company performance. The purpose of this publication if the company's financial performance is to expose some of the specific items to help users of financial reports to the company's performance to better assess also, comprehensive income as a basis for financial all revenues and expenses should be separately identified in the company to report. The preparation of a comprehensive income statement and profit and loss, to identify all revenues and expenses during a fiscal period. The main focus of interest expense is on the income and expenses operational. Groups using financial reports to all costs and revenues for the company's decision. Thus, as in preface to prescribed, prepared and presented as a new money as "a comprehensive income statement" it is necessary to such items include changes in equity-related the items show.

Since the comprehensive income includes all income and costs identified, both achieved and not achieved, net profit or loss for the financial period as the first item in profits and comprehensive loss is reflected. Proponents, including the general terms, the expression that comprehensive income criteria for evaluating company performance better than others provide. Because all changes in net assets the company has over a period of resource owners, covers. Proponents of the current operating profit said that net income without non-current items unusual ability to better reflect the company's future cash flow. This study compared the ability of comprehensive income and net profit for the two Fiber used in the performance of the company's performance as Learning is reflected in stock returns.

Accounting and financial reporting purposes, mainly arising from the needs information to users outside the organization. Among the elements circuit is considered important in the economies of the capital. The primary objective of reported profits, and provide useful information for those who most have a

financial interest to report. Profit as a guide payment of dividends, to measure the effectiveness of management and a means to predict and evaluating decisions about the use of capital makers, managers and analysts have been. The aim of this study comparison of comprehensive income and net income in the assessment of corporate performance. Comprehensive tool for evaluating the performance of the company's income statement that some specific items of disclosure in corporate financial performance help users of financial reports of company performance to better assess. The need for comprehensive profit and loss

Growing size and importance of financial instruments and increased reliance on the information using the standard values for the measuring instrument, was more compelling. If the financial reporting tools finance is about the identification and measurement of financial instruments it is essential to the normal value. Comprehensive income statement is a means it can help to change the conventional value of financial instruments as shown in a performance without the traditional measurement net effect. In the present study, this problem the measurements were evaluated based on the concept of comprehensive income, better measure of company performance relative to other criteria for said.

LITERATURE REVIEW AND BACKGROUND RESEARCH

Observational studies conducted between 1970 and 1990 has shown that accounting profits and content accounting standards board in statement number one focus of financial reporting, information "that the financial the transition is related to the performance standards profit and its constituent components to be supplied.

Lyndel the concept of guaranteed benefits in the form of dividends (interest) stated Hiks said that with the development of concepts and high-profit-digit person during the same period at the end of a round and taking in the first period is that welfare. In other words, the above definition, the amount and ratio of profits to maintain the property before are consumed.

The concept of comprehensive income to officially come to No. 3 concepts of financial accounting Standards Board in "Elements of Financial Institution Business" as year (1980) was introduced in statement number six concepts board element 'formulation of financial accounting standards as this statement was replaced in 1985 and financial The second statement of comprehensive income as defined in the following were:

Comprehensive income consists of changes in capital (net assets) during the course of commercial agency transactions and other events related to sources other than owners. Comprehensive income includes all changes in capital during the financial period other than an investment landowners and resource distribution between the owners.

In 130, the Board developed draft financial accounting standards proposed by the general components of comprehensive income in one or two income (If the financial performance) is reported. The profit and loss may be in the form of a new comprehensive financial, profit and the second loss is added to the statutory financial statements, or income statement is presented in the form of traditional.

Dalual et al., (1999) in a study capable of comprehensive income net profit for the company to reflect the performance of are. They had two purposes in their research.

Their main purpose was to examine the issue of whether comprehensive income to better assess the performance measure is the net profit or not. To investigate this claim, reflected in company performance stock returns examined. Another goal, of this was one of the components of a comprehensive benefit to reflect the company's profit performance will improve. Research results, evidence of the relationship between comprehensive income stock price returns and stronger than the relationship between profit net returns and stock market price is not provided. Also saw the benefits of comprehensive income future net cash flows and profit forecasts. In addition, they found that the adjusted profit buy and sell securities and the loss was not achieved, the relationship between profits and improve efficiency

Bidel and Choi (2003) in a study titled "The usefulness of comprehensive income" The benefits of comprehensive measures studied. Their research results showed that the various definitions of content, the definition of comprehensive income in accordance with statement No. 130 Financial Accounting Standards Board on the net and comprehensive income is superior. Second, separating the components of comprehensive income for the reporting decision is helpful.

Kanagartnam, Mathieu and Shhata (2008), reported the usefulness of comprehensive income the relationship between return and market value of the other components of comprehensive income to determine the amount of information that must be disclosed, in Canada in the period between 1998 and 2003 were reviewed. Their ability to predict the accumulated comprehensive income to net profit of about was studied. They were a better predictor of the net profit for the company's future performance relative to comprehensive income is accumulated.

Goncharou and Hudson (2008) comprehensive income in the Europe of the evaluation and conservative predictions. Results show proficiency in comprehensive income net of expected cash flows and as a tool to measure shareholder value.

Kobota, soda and Taka Hara (2009) in research content information on net income, comprehensive benefits and other items of comprehensive income Japanese companies looked at dummy. They concluded that the usefulness information on comprehensive income, of comprehensive income and net profit cannot prefer one over another.

Pronobis and Zalch (2010) the predictive power of profits comprehensive and specific components studied in the case of German companies. They found no evidence of superiority of power company executives predict the future of comprehensive income relative to net income. They predicted the rise to power components of total comprehensive income for the coming period, the company executive found. Their analysis shows that the components of comprehensive income, anticipated increases in power beyond a show.

Obinata Takashi (2010) in their study of the concept and profits are being examined. The results show a response to the needs accountants and intelligence analysts, the total net profit obtained based on the realization, matching and allocation, utility cash flows and comprehensive income is more than.

RESEARCH HYPOTHESES AND VARIABLES

The hypotheses of this research are:

- H₁: the linear relationship between stock returns and net profit increase is established.
- H₂: the relationship between the linear increase of the share and comprehensive income is established.
- H₃: the opening price of the shares and net profit increased linear relationship is established.
- H₄: the opening price of the equity and comprehensive income increased linear relationship is established.
- H₅: the price of the stock market has a linear relationship with net income and book value.
- H₆: the price of the stock market has a linear relationship with the comprehensive income and book value.

Independent variables included in this study, comprehensive income and net worth office and dependent variables in this study are the market value of market value of shareholders equity and stock returns.

MATERIALS AND METHODS

The objective of this research is applied and the type of character is excellent. On the other hand the analysis based on past information (statements financial companies) is done. Also, since this study is among the areas of capital market research in accounting is proved. This study uses primary data (if available funding) the library stock exchange, stock exchange official website, banks computer data (the Iranian software) and Research, Development and Islamic Studies was done RDIS site. In this study, Information relating to accepted companies Tehran Stock Exchange between 2005 was the end of 2010.

Total number of companies in the year 2005 of about 412 companies. Given that accepted companies on stock exchange and the collection of information is too difficult, so I have to determine the sample size of the stock companies were registered and only companies that meet the following conditions were chosen as examples.

1. Companies that their activities are not financial intermediation and investment.
2. Companies were active in the exchange between the 6-year periods.
3. Companies that are leading to the 19 March financial year.

4. The companies were not the losses.

Considering the above criteria, 90 companies were selected.

ANALYSIS OF DATA

The table (1) includes the mean and median central indices and indices distribution of standard deviation, and the strain variables there are various large median average of the major points the data shows, The mean values of these cases the data are distributed to the right in Otherwise it is left for distribution to the distribution of price returns equity, net income and comprehensive income and book value of the right some variables are the mean and median values close to each other, the distribution of these variables is symmetrical output variables and the logarithm of stock price relative to the symmetry properties of the symmetry properties of the normal distribution as will be discussed later. The elongation of both variables is close to normal (table1).

TABLE 1: STATISTICS

price	Mean	Median	Std.Deviation	Skewness	Kurtosis
	5356.0112	3735.5600	4641.26378	1.639	3.188
R	1.7380	1.6100	4.08030	.414	1.256
LN(price)	8.2397	8.2256	.84570	.081	-.931
COMP	428915.64	64051.50	1243091.931	5.393	33.380
NI	464848.88	68586.50	1340581.387	5.109	29.170
BV	1693.1992	1433.0000	1433.000	3.000	14.071

STUDY OF NORMALITY OF DEPENDENT VARIABLE DISTRIBUTION

Normality of dependent Variables distribution has been studied with use of the kolmogorov-smirnov test because normality of the dependent variables leads to normality of the model remainders (difference of estimated values of actual values). Then, it is necessary to control normality of the dependent variable before estimation of the parameters and adopt suitable solution for their normality (such as converting it) in case that this condition is not established.

Significance level for R in different years is higher than 0.05, therefore, null hypothesis i.e. normality of distribution is not rejected for this variable. It means that variable distribution in different industries is normal (combination of normal data is also normal) Significance level for Price in different years is lower than 0.05, therefore, null hypothesis i.e. normality of distribution is rejected for this variable. But Price logarithm in different years is normal because its significance level is higher than 0.05 (table 2).

TABLE 2: ONE SAMPLE KOLOMOGOROV – SMIRONOV TEST

TABLE 2. ONE SAMPLE KOLMOGOROV-SMIRNOV TEST									
Year		N	Normal Parameters(a,b)		Most Extreme Differences			Kolmogorov-Smirnov	Asymp.Sig. (2-tailed)
			Mean	Std.Deviation	Absolute	Positive	Negative		
R	2006	2008	-1.0471	3.21838	.049	.049	-.038	.457	.985
	2007	2011	2.1344	4.19847	.076	.076	-.042	.719	.681
	2008	2011	-.0222	3.16025	.109	.065	-.109	1.036	.233
	2009	2010	3.6206	3.92990	.079	.074	-.079	.745	.636
	2010	2011	3.9324	3.32595	.086	.086	-.039	.813	.523
Price	2006	2011	5801.8124	4936.89275	.175	.175	-.155	1.661	.008
	2007	2011	5909.7862	5277.08469	.177	.177	-.165	1.678	.007
	2008	2011	5484.4930	4818.81072	.165	.156	-.165	1.566	.015
	2009	2011	4353.8642	3585.05932	.168	.168	-.153	1.595	.012
	2010	2011	5230.1001	4338.35052	.163	.163	-.161	1.544	.017
Ln(Price)	2006	2011	8.3161	.87116	.100	.071	-.100	.944	.335
	2007	2011	8.3162	.87778	.061	.061	-.056	.583	.885
	2008	2011	8.2584	.86292	.064	.064	-.058	.605	.858
	2009	2011	8.0708	.79036	.085	.085	-.053	.807	.533
	2010	2011	8.2371	.81762	.083	.083	-.081	.786	.567

LINEARITY OF SCATTER DIAGRAMS

In scatter diagrams, dependent variable has been drawn opposite to independent variables. These diagrams are used for two reasons before estimation of the model:

A-recognition of inaccessible points in data

B-Studying if linear relation is more suitable for data or nonlinear model (such as second and third degree sentence) should be used for mentioning the relation.

As shown in the following diagram, linear relation is more suitable and no inaccessible point is found in data in addition to this point.

RESULTS OF HYPOTHESES TEST

The results obtained from research hypotheses test are as follows:

H₁: there is linear incremental relationship between shares return and net profit.

In order to study relationship between NI and R, the most suitable ways is to use regression model. The hypothetical model is as follows:

$$R_{i,t} = \beta_0 + \beta_1 NI_{i,t} + \varepsilon_{i,t} \quad (1)$$

The goal is to estimate parameters of β_1 and β_0 with use of the ordinary least squares method (ols) which shows values of intercept and lien slope respectively. Line slope specifies type of relation (direction and extent of relation).

At first, k-s test was performed for variables of this hypothesis and their normality was specified. In the next stage, scatter diagram of this hypothesis was presented for the model, was drawn and showed linear relationship between dependent variable of shares return and independent variable of net profit.

Null hypothesis and the opposite hypothesis are as follows;

$$\begin{cases} H_0 : \beta_1 = 0 \\ H_1 : \beta_1 \neq 0 \end{cases}$$

In table 3, regression analysis results are as follows:

TABLE 3: ANOVA**

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	35.794	1	35.794	2.148	.144*
Residual	7216.587	433	16.666		
Total	7252.381	434			

*Predictors : (Constant), NI ** Dependent Variable's

By performing regression analysis, value of significance level F for this model equals to 0.144 and because this value is higher than 0.05, null hypothesis is not rejected with confidence level of 95%. As result, net income coefficient in linear regression model is zero. Therefore, there is no significance model and the presented model is rejected (table 3).

TABLE 4: MODEL SUMMARY**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.070*	.005	.003	4.08246	1.600

* Predictors : (Constant), NI

** Dependent Variable: R

In this model, determination coefficient equals to 0.005 that is lower than 1% of dependent variables changes are mentioned by net income variable. Durbin-Watson statistic value is not so different from 2 (equivalent to 1.60). Values close to 2 indicate lack of correlation of the remainders which shows one of the other regression hypotheses (table 4).

TABLE 5: COEFFICIENTS*

Model	Un standardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std.Error	Beta		
1(Constant)	1.650	.207		7.971	.000
NI	2.18E-007	.000	.070	1.465	.144

* Predictors : (Constant), NI

For the model, t value has been obtained to be 1.46 for line slope; therefore, t value for this model has been included in non-rejection of null hypothesis that is the above variables are not significant. Standardized beta value for the model is 0.07(table 5).

H₂: there is linear incremental relationship between shares return and comprehensive income.

The hypothetical model is as follows:

$$R_{i,t} = \beta_0 + \beta_1 COMP_{i,t} + \varepsilon_{i,t} \quad (2)$$

At first, k-s test was performed for variables of this hypothesis and their normality was specified. In the next stage, scatter diagram of this hypothesis was presented for the model, was drawn and showed linear relationship between dependent variable of shares return and independent variable of comprehensive income.

Null hypothesis and the opposite hypothesis are as follows;

$$\begin{cases} H_0 : \beta_1 = 0 \\ H_1 : \beta_1 \neq 0 \end{cases}$$

In table 6, regression analysis results are as follows:

TABLE 6: ANOVA**

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	46.770	1	46.770	2.810	.094*
Residual	7205.611	433	16.641		
Total	7252.381	434			

* Predictors : (Constant), COMP

** Dependent Variable: R

By performing regression analysis, value of significance level F for this model equals to 0.094 and because this value is higher than 0.05, null hypothesis is not rejected with confidence level of 95%. As result, therefore, there is no significance model and the presented model is not rejected (table 6).

TABLE 7: MODEL SUMMARY**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.080*	.006	.004	4.07935	1.599

* Predictors : (Constant), COMP

** Dependent Variable: R

In this model, determination coefficient equals to 0.006 that is lower than 1% of dependent variables changes are mentioned by comprehensive income variable (table 7). Durbin- Watson statistic value is not so different from 2 (equivalent to 1.60).

TABLE 8: COEFFICIENTS*

Model	Un standardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std.Error	Beta		
1(Constant)	1.637	.207		7.913	.000
COMP	2.70E-007	.000	.080	1.676	.094

* Dependent Variable: R

For this model, t value has been obtained to be 1.68 for line slope; therefore, t value for this model has been included in non-rejection of null hypothesis that is the above variables are not significant (this variable in confidence level of 90% is significant because statistic value is larger than 1.64). Standardized beta value for the model is 0.08(table 8).

H₃: there is linear incremental relationship between shares market and net profit.

The hypothetical model is as follows:

$$LnPrice_{i,t} = \beta_0 + \beta_1 NI_{i,t} + \varepsilon_{i,t} \quad (3)$$

At first, k-s test was performed for variables of this hypothesis and their normality was specified. In the next stage, scatter diagram of this hypothesis was presented for the model, was drawn and showed linear relationship between dependent variable of share market price and independent variable of net profit.

Null hypothesis and the opposite hypothesis are as follows;

$$\begin{cases} H_0 : \beta_1 = 0 \\ H_1 : \beta_1 \neq 0 \end{cases}$$

In table 9, regression analysis results are as follows:

TABLE 9: ANOVA**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	0.42	1	.042	.059	.809*
Residual	313.904	436	.720		
Total	313.946	437			

* Predictors : (Constant), NI

** Dependent Variable: Ln (Price)

Significance level F for this model equals to 0.81. This value is higher than 0.05, null hypothesis is not rejected with confidence level of 95%. As result, there is no significance model and the presented model is rejected (table 9).

TABLE 10 - MODEL SUMMARY**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.012*	.000	-.002	.84851	1.648

* Predictors : (Constant), NI

** Dependent Variable: Ln (Price)

In this model, determination coefficient equals to 0.000 that is lower than 1% of dependent variables changes are mentioned by net income variable. Durbin-Watson statistic value is equivalent to 1.65 (table 10).

TABLE 11 - COEFFICIENTS*

Model	Un standardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	8.234	.043		191.861	.000
NI	7.34E-009	.000	.012	.242	.809

* Dependent Variable: Ln (Price)

For this model, t value has been obtained to be 0.24 for line slope; therefore, t value for this model has not been included in rejection zone of null hypothesis that is the above variables are not significant. Standardized beta value for the model is 0.012 (table 11).

H₄: there is linear incremental relationship between shares market price and comprehensive income.

The hypothetical model is as follows:

$$\ln Price_{i,t} = \beta_0 + \beta_1 COMP_{i,t} + \varepsilon_{i,t} \quad (4)$$

At first, k-s test was performed for variables of this hypothesis and their normality was specified. In the next stage, scatter diagram of this hypothesis was presented for the model, was drawn and showed linear relationship between dependent variable of share market price and independent variable of comprehensive income.

Null hypothesis and the opposite hypothesis are as follows;

$$\begin{cases} H_0 : \beta_1 = 0 \\ H_1 : \beta_1 \neq 0 \end{cases}$$

In table 12, regression analysis results are as follows:

TABLE 12 - ANOVA**

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	.482	1	.482	.671	.413*
Residual	313.464	436	.719		
Total	313.946	437			

* Predictors : (Constant), COMP

** Dependent Variable: Ln (Price)

Value of significance level F for this model equals to 0.41. This value is higher than 0.05, null hypothesis is not rejected with confidence level of 95%. Therefore, there is no significance model and the presented model is rejected (table 12).

TABLE 13 - MODEL SUMMARY**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.039*	.002	-.001	.84791	1.646

* Predictors : (Constant), COMP

** Dependent Variable: Ln (Price)

Determination coefficient equals to 0.002 that is lower than 1% of dependent variables changes are mentioned by comprehensive income variable. Durbin-Watson statistic value is equivalent to 1.65 (table 13)

TABLE 14 - COEFFICIENTS*

Model	Un standardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	8.226	.043		191.910	.000
COMP	2.67E-008	.000	.039	.819	.413

* Dependent Variable: Ln (Price)

For this model, t value has been obtained to be 0.82 for line slope; therefore, t value for this model has not been included in rejection zone of null hypothesis that is the above variables are not significant. Standardized beta value for the model is 0.039 (table 14).

H₅: there is linear incremental relationship between shares market price and net profit.

The hypothetical model is as follows:

$$\ln Price_{i,t} = \beta_0 + \beta_1 NI_{i,t} + \beta_2 BV_{i,t} + \varepsilon_{i,t} \quad (5)$$

At first, k-s test was performed for variables of this hypothesis and their normality was specified. In the next stage, scatter diagram of this hypothesis was presented for the model and was drawn showing linear relationship between dependent variable of share market price and independent variable of net income and book value.

Null hypothesis and the opposite hypothesis are as follows;

$$\begin{cases} H_0 : \beta_1 = \beta_2 = 0 \\ H_1 : \beta_i \neq 0, i = 1, 2 \end{cases}$$

In table 15, regression analysis results are as follows:

TABLE 15 – ANOVA*

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	35.774	2	17.887	27.930	.000*
Residual	277.299	433	.640		
Total	313.073	435			

* Predictors : (Constant), BV, NI

** Dependent Variable: Ln (price)

Value of significance level F for this model equals to 0.000. Because this value is lower than 0.05, there is significance model in confidence level of 95% (table 15).

TABLE 16 - MODEL SUMMARY**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.338*	.114	.110	.80026	1.659

* Predictors : (Constant), BV, NI

** Dependent Variable: Ln (Price)

Determination coefficient between the variables equals to 0.11 that is about 11% of dependent variables changes are mentioned by net income and book value variables (table 16).

TABLE 17 – COEFFICIENTS*

Model	Un standardized Coefficients		Standardized Coefficients	t	Sig.	Co linearity Statistics	
	B	Std.Error	Beta			Tolerance	VIF
1(Constant)	7.617	.091		84.000	.000		
NI	3.99E-008	2.91E-008	.062	1.372	.171	1.000	1.000
BV	3.58E-004	4.79E-005	.337	7.475	.000	1.000	1.000

* Dependent Variable: Ln (Price)

Line slopes for independent variables of net income and book value equal to 1.37 and 7.47 indicating that only book value is significant and net income is excluded from this model due to its inclusion in non-rejection zone of null hypothesis (table 17).

H_0 : there is linear incremental relationship between shares market price and comprehensive income and book value.

The hypothetical model is as follows:

$$\text{LnPrice}_{i,t} = \beta_0 + \beta_1 \text{COMP}_{i,t} + \beta_2 \text{BV}_{i,t} + \varepsilon_{i,t} \quad (6)$$

At first, k-s test was performed for variables of this hypothesis and their normality was specified. In the next stage, scatter diagram of this hypothesis was presented for the model and was drawn showing linear relationship between dependent variable of share market price and independent variables of comprehensive income and book value.

Null hypothesis and the opposite hypothesis are as follows;

$$\begin{cases} H_0 : \beta_1 = \beta_2 = 0 \\ H_1 : \beta_i \neq 0, i = 1, 2 \end{cases}$$

In table 18, regression analysis results are as follows:

TABLE 18 – ANOVA**

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	36.231	2	18.116	28.334	.000*
Residual	276.842	433	.639		
Total	313.073	435			

* Predictors : (Constant), BV, COMP

** Dependent Variable: Ln (Price)

By performing regression analysis, Value of significance level F for this model equals to 0.000. Because this value is lower than 0.05, there is significance model in confidence level of 95% (table 18).

TABLE 19- MODEL SUMMARY**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.340*	.116	.112	.79960	1.658

* Predictors : (Constant), BV, COMP

** Dependent Variable: Ln (Price)

Determination coefficient between the variables equals to 0.12 that is about 12% of dependent variables changes are mentioned by comprehensive income and book value variables. Durbin- Watson statistic value is about 1.66 (table 19).

TABLE 20 – COEFFICIENTS*

Model	Un standardized Coefficients		Standardized Coefficients	t	Sig.	Co linearity Statistics	
	B	Std.Error	Beta			Tolerance	VIF
1 (Constant)	7.612	.090		84.310	.000		
BV	3.57E-004	4.78E-005	.336	7.458	.000	1.000	1.000
COMP	6.24E-008	3.15E-008	.089	1.982	.048	1.000	1.000

* Dependent Variable: Ln (Price)

Line slopes for independent variables of comprehensive income and book value equal to 1.98 and 7.46. Therefore, value of line slope for both variables is in null hypothesis rejection zone indicating that comprehensive income and book value are significant and the above hypothesis is accepted (table 20).

MODEL VALIDITY STUDY

Validity of the estimated models is equal to establishment of the required presuppositions for estimation of the model. The most important presuppositions are:

- 1- variance match
- 2- lack of remainders correlation
- 3- linear relation and lack of inaccessible and effective points
- 4- lack of linearity between independent variables
- 5- lack of co linearity between independent variables

In this research, the premises have been studied with tests and diagnostic diagrams.

1- kolmogorov-smirnov test

2-Remainder diagram in front of the estimated values (lack of model in this diagram indicates variance match. these diagrams are given in the appendix).

3-Durbin- Watson test (values close to 2 indicate lack of correlation).

4-Scatter diagrams (these diagrams are given in the previous sections).

5-In order to study co linearity, VIF statistic has been used. If value of this statistic is lower than 10, it will indicate lack of co linearity (there should not be correlation between independent variables). Values of this statistic in multivariate model equal to 1.

DISCUSSION AND CONCLUSION

Generally, research results show that comprehensive income report for assessment of the company's performance on the basis of shares return is preferred over net income. Models estimation results in total sample level about preference of the comprehensive income over the net income don't show preference of the comprehensive income for assessing performance of the company on the basis of shares market price.

With regard to the fact that shares market price model can be determined by mistake due to exclusion of book value of the shareholders' salary, therefore, we included another variable called book value in the model on the basis of shares market price. Hypotheses test results show that comprehensive income and book value of the shareholders' salary are preferred over net income and book value for assessing performance on the basis of shares market price. Results of models estimation show that inclusion of book value as variable in the model for expressing performance of the company on the basis of share market price has improved model expression power.

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TABLE

TABLE 21 - CORRELATIONS

		R	Ln(Price)	NI	COMP	BV
R	Pearson Correlation	1	.093	.070	.080	.111*
	Sig. (2-tailed)		.050	.144	.094	.020
	N	446	446	435	435	445
Ln(Price)	Pearson Correlation	.093	1	.012	.039	.339**
	Sig. (2-tailed)	.050		.809	.0413	.000
	N	446	450	438	438	447
NI	Pearson Correlation	.070	.012	1	.977**	.002
	Sig. (2-tailed)	.144	.809		.000	.963
	N	435	438	438	438	436
COMP	Pearson Correlation	.080	0.39	.977**	1	.018
	Sig. (2-tailed)	.094	.413	.000		.701
	N	435	438	438	438	436
BV	Pearson Correlation	.111*	.339**	.002	.018	1
	Sig. (2-tailed)	.020	.000	.963	.701	
	N	445	447	436	436	447

*.Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

INFLUENCE OF SERVICE QUALITY ON SATISFACTION OF CUSTOMERS OF TELECOM SECTORS IN CHENNAI

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ABSTRACT

Telecommunication Reforms in India revolutionized the telecom industries sector in India, which is an important factor for the growth of the Indian telecom sector and in turn helped the Indian economy to perform well for the past few years. Technological advancements and innovations contributed largely towards the reformation of the telecom sector in India. The data and information have been collected from 400 customers of Government telecom sector and 400 customers of private telecom sector by adopting stratified random sampling technique. The forgoing analysis shows that more than one-third of customers of Government telecom sector belong to the age group of 31-40 years, whereas, most of the customers of private telecom sector belong to the age group of 21-30 years. The results also indicate that about 42.25 per cent of customers of Government telecom sector belong to the monthly household income group of Rs. 10001-20000 and about 46.00 per cent of customers of private telecom sector belong to the monthly household income group of Rs. 20001-30000. The customers of Government telecom sector are satisfied with drop rate, converge, bill details, technology, calling rate, promotional offer, mode of payment, reliability and responsiveness. The customers of private telecom sector are satisfied with quality, free calls, number selection, entertainment, special features, promotional offer, mode of payment, complaint redressal system, complaint resolution, customer relation, innovativeness, reliability and responsiveness. The communication, services and customer care are positively influencing the overall satisfaction of customers of Government telecom sector. The communication, services, customer care and facility are positively influencing the overall satisfaction of customers of private telecom sector. Hence, it is suggested that lowering the tariff plans of service provider will increase more competition. In order to improve the service of number portability(service migration) to allow more free market conditions for fixed line customers, without taxing new entrants or customers for moving away from a monopoly service providers. The Value Added Services (VAS) for the betterment of the users should be up graded and also increase the accessibility of services through better network infrastructure in both Government and private telecom sectors. Besides, the service providers should also concentrate more on the attributes such as talk-time facility, network and voice clarity apart from SMS, VAS and schemes.

KEYWORDS

Regression, Satisfaction, Service Quality and Telecom Sector.

INTRODUCTION

The telecom services have been recognized the world-over as an important tool for socio-economic development for a nation. It is one of the prime support services needed for rapid growth and modernization of various sectors of the economy. Indian telecommunication sector has undergone a major process of transformation through significant policy reforms, particularly beginning with the announcement of NTP 1994 and was subsequently reemphasized and carried forward under NTP 1999. Driven by various policy initiatives, the Indian telecom sector witnessed a complete transformation in the last decade. Such rapid growth in the communication sector has become necessary for further modernization of Indian economy through rapid development in IT.

Telecommunication Reforms in India revolutionized the telecom industries sector in India, which is an important factor for the growth of the Indian telecom sector and in turn helped the Indian economy to perform well for the past few years. The Telecommunication reforms in India were development and growth oriented. Technological advancements and innovations contributed largely towards the reformation of the telecom sector in India.

This rapid growth has been possible due to various proactive and positive decisions of the Government and contribution of both by the public and the private sector. The rapid strides in the telecom sector have been facilitated by liberal policies of the Government that provide easy market access for telecom equipment and a fair regulatory framework for offering telecom services to the Indian consumers at affordable prices. With this background, the present study was attempted to examine influence of service quality on satisfaction of customers of telecom sectors in Chennai.

METHODOLOGY

Among the different cities in Tamil Nadu, the Chennai city has been purposively selected for the present study. The customers of both Government and private sector telecom services have been selected by adopting stratified random sampling technique through pre-tested and structured interview schedule. The data and information have been collected from 400 customers of Government telecom sector and 400 customers of private telecom sector through direct interview method, thus, the total sample size for the present study is 800 and data and information pertain to the year 2010-2011.

STATISTICAL TECHNIQUES

In order to understand the socio-economic characteristics of Government and private telecom sectors, the frequency distribution and percentage analysis are worked out. In order to examine the difference between socio-economic characteristics of customers, the Chi-Square test has been applied. In order to study the difference between satisfaction of service quality dimensions of both Government and private telecom sectors, the ANOVA test has been adopted. In order to assess the influence of quality of services of Government and private telecom sector on satisfaction of customers, the multiple linear regression by Ordinary Least Square (OLS) estimation has been applied. The functional form of multiple liner regression model are given below:

$$Y = \alpha + \beta_i X_i + e$$

Where

Y = Customer's Satisfaction

X_i = Service Quality Dimensions

i = 1 to 6

α = Intercept

β_i = Partial Regression Coefficients

e = Random Error or Stochastic Disturbance Term

The α and β_i are the coefficients which are to be calculated through Ordinary Least Square (OLS) estimation.

The Likert five point scale (highly satisfied to highly dissatisfied) was used to measure the service quality dimensions of both Government and private telecom sectors.

RESULTS AND DISCUSSION

Socio-Economic Characteristics of Customers

Gender

The frequency distribution of gender of customers of telecom sector in Chennai city was analyzed and the results are presented in **Table1**. The results show that out of 800 customers of telecom sector, about 54.63 per cent of customers are males, while the rest of 45.37 per cent of the customers are females. Out of 400 customers of Government telecom sector, about 57.50 per cent of customers are males and the rest of 42.50 per cent of customers are females. Out of 400 customers of private telecom sector, about 51.80 per cent of customers are males and the rest of 48.20 per cent of customers are females.

TABLE - 1: FREQUENCY DISTRIBUTION OF GENDER OF CUSTOMERS OF TELECOM SECTOR

Gender	Government	Private	Total	Chi-Square Value	Significance
Male	230 (57.50)	207 (51.80)	437 (54.63)	0.03	0.01
Female	170 (42.50)	193 (48.20)	363 (45.37)		
Total	400 (100.00)	400 (100.00)	800 (100.00)		

Note: The figures in the parentheses are per cent to total.

The chi-square value of 0.03 is significant at one per cent level indicating that there is a significant difference between gender of customers of Government and private telecom sector.

Age

The frequency distribution of age of customers of Telecom sector in Chennai city was analyzed and the results are presented in **Table 2**. The results indicate that out of 800 customers of telecom sector, about 31.50 per cent of customers belong to the age group of 21-30 years followed by 31-40 years (29.25 per cent), less than 20 years (17.38 per cent), 41-50 years (13.87 per cent) and more than 50 years (8.00 per cent).

TABLE - 2: FREQUENCY DISTRIBUTION OF AGE OF CUSTOMERS OF TELECOM SECTOR

Age(Years)	Government	Private	Total	Chi-Square Value	Significance
< 20	62 (15.50)	77 (19.25)	139 (17.38)	0.09	0.01
21-30	105 (26.25)	147 (36.75)	252 (31.50)		
31-40	127 (31.75)	107 (26.75)	234 (29.25)		
41-50	68 (17.00)	43 (10.75)	111 (13.87)		
>50	38 (9.50)	26 (6.50)	64 (8.00)		
Total	400 (100.00)	400 (100.00)	800 (100.00)		

Note: The figures in the parentheses are per cent to total.

Out of 400 customers of Government telecom sector, about 31.75 per cent of customers belong to the age group of 31-40 years followed by 21-30 years (26.25 per cent), 41-50 years (17.00 per cent), less than 20 years (15.50 per cent) and more than 50 years (9.50 per cent). Out of 400 customers of private telecom sector, about 36.75 per cent of the customers belong to the age group of 21-30 years followed by 31-40 years (26.75 per cent), less than 20 years (19.25 per cent), 41-50 years (10.75 per cent) and more than 50 years (6.50 per cent). The chi-square value of 0.09 is significant at one per cent level indicating that there is a significant difference between age of customers of Government and private telecom sector.

Educational Qualification

The frequency distribution of educational qualification of customers of Telecom sector in Chennai city was analyzed and the results are presented in **Table.3**. From the table, it is clear that out of 800 customers of telecom sector, about 33.75 per cent of customers are under graduates followed by up to higher secondary (33.00 per cent), post graduation (21.63 per cent), no formal education (6.37 per cent) and professionals (5.25 per cent). Out of 400 customers of Government telecom sector, about 47.25 per cent of customers are educated up to higher secondary followed by under graduation (23.25 per cent), post graduation (15.25 per cent), no formal education (8.75 per cent) and professional qualification (5.50 per cent). Out of 400 customers of private telecom sector, about 44.25 per cent of the customers are undergraduates followed by post graduates (28.00 per cent), up to higher secondary (18.75 per cent), professionals (5.00 per cent) and no formal education (4.00 per cent).

TABLE - 3: FREQUENCY DISTRIBUTION OF EDUCATIONAL QUALIFICATION OF CUSTOMERS OF TELECOM SECTOR

Educational Qualification	Government	Private	Total	Chi-Square Value	Significance
No Formal Education	35 (8.75)	16 (4.00)	51 (6.37)	0.08	0.01
Up to Higher Secondary	189 (47.25)	75 (18.75)	264 (33.00)		
Under Graduation	93 (23.25)	177 (44.25)	270 (33.75)		
Post Graduation	61 (15.25)	112 (28.00)	173 (21.63)		
Professionals	22 (5.50)	20 (5.00)	42 (5.25)		
Total	400 (100.00)	400 (100.00)	800 (100.00)		

Note: The figures in the parentheses are per cent to total.

The chi-square value of 0.08 is significant at one per cent level indicating that there is a significant difference between educational qualification of customers of Government and private telecom sector.

Monthly Household Income

The frequency distribution of monthly household income of customers of Telecom sector in Chennai city was analyzed and the results are presented in **Table 4**. It is apparent that out of 800 customers of telecom sector, about 34.75 per cent of customers belong to the monthly household income group of Rs. 10001-20000 followed by Rs. 20001-30000(30.75 per cent), less than Rs. 10000(15.38 per cent), Rs. 30001-40000(11.12 per cent) and more than Rs. 40000(8.00 per cent).

Out of 400 customers of Government telecom sector, about 42.25 per cent of customers belong to the monthly household income group of Rs. 10001-20000 followed by less than Rs. 10000(26.75 per cent), Rs. 20001-30000(15.50 per cent), Rs. 30001-40000(10.75 per cent) and more than Rs. 40000(4.75 per cent).

TABLE - 4: FREQUENCY DISTRIBUTION OF MONTHLY HOUSEHOLD INCOME OF CUSTOMERS OF TELECOM SECTOR

Monthly Household Income(Rs)	Government	Private	Total	Chi-Square Value	Significance
< 10000	107 (26.75)	16 (4.00)	123 (15.38)	0.08	0.01
10001-20000	169 (42.25)	109 (27.25)	278 (34.75)		
20001-30000	62 (15.50)	184 (46.00)	246 (30.75)		
30001-40000	43 (10.75)	46 (11.50)	89 (11.12)		
>40000	19 (4.75)	45 (11.25)	64 (8.00)		
Total	400 (100.00)	400 (100.00)	800 (100.00)		

Note: The figures in the parentheses are per cent to total.

Out of 400 customers of private telecom sector, about 46.00 per cent of customers belong to the monthly household income group of Rs. 20001-30000 followed by Rs. 10001-20000(27.25 per cent), Rs. 30001-40000(11.50 per cent), more than Rs. 40000(11.25 per cent) and less than Rs. 10000(4.00 per cent). The chi-square value of 0.08 is significant at one per cent level indicating that there is a significant difference between monthly household income of customers of Government and private telecom sector.

Customer's Satisfaction

The customer's satisfaction of service quality of telecom sector was analyzed and the results are presented in **Table 5**. The mean values of quality of services provided by Government telecom sector to the customers are varying from 3.39 for mode of payment to 2.74 for entertainment. The customers of Government telecom sector are satisfied with drop rate, converge, bill details, technology, calling rate, promotional offer, mode of payment, reliability and responsiveness. Besides, the customers are neutral with quality, free calls, number selection, entertainment, special features, complaint redressal system, complaint resolution, fault restoration time, customer relation and innovativeness.

The mean values of quality of services provided by private telecom sector to the customers are ranging from 4.44 for quality to 2.74 for technology. The customers of private telecom sector are satisfied with quality, free calls, number selection, entertainment, special features, promotional offer, mode of payment, complaint redressal system, complaint resolution, customer relation, innovativeness, reliability and responsiveness. Besides, the customers are neutral with drop rate, coverage, bill details, technology, calling rate and fault restoration time. The F-value for between groups of 1.457 and within groups of 1.432 are statistically significant at one per cent level indicating that there is a significant difference in customer's satisfaction between services and service providers of telecom sector.

TABLE – 5: CUSTOMER'S SATISFACTION OF SERVICE QUALITY OF TELECOM SECTOR

Service Quality	Government		Private		F Value			
	Mean	SD	Mean	SD	Between Groups	Significance	Within Groups	Significance
Communication					1.457	0.01	1.432	0.01
Quality	3.21	0.7542	4.44	0.7451				
Drop Rate	3.88	0.7836	3.12	0.7260				
Coverage	3.62	0.8218	3.01	0.8539				
Service								
Bill Details	3.96	0.8218	3.42	0.7284				
Free Calls	3.19	0.8362	4.23	0.7786				
Number Selection	2.76	0.9162	3.86	0.8835				
Facility								
Entertainment	2.74	0.9210	3.73	0.8763				
Technology	3.63	0.9210	2.74	0.8532				
Special Features	3.43	0.8923	3.71	0.8785				
Price								
Calling Rate	3.74	0.9210	2.95	0.8102				
Promotional Offer	3.64	0.9132	3.82	0.8272				
Mode of Payment	3.99	0.8510	3.97	0.8019				
Customer Care								
Complaint Redressal System	2.85	0.7886	3.98	0.8434				
Complaint Resolution	2.94	0.9009	3.75	0.7366				
Fault Restoration Time	3.02	0.9021	2.84	0.8373				
Service Providers								
Customers Relation	2.82	0.7743	3.89	0.7774				
Innovativeness	2.88	0.8469	3.84	0.7644				
Reliability	3.78	0.8361	3.83	0.7442				
Responsiveness	3.82	0.7943	3.81	0.8115				

Note: The figures in the parentheses are per cent to total.

4= Satisfied

3=Neutral

Influence of Service Quality on Satisfaction of Customers of Government Telecom Sector

In order to assess the influence of quality of services of Government telecom sector on satisfaction of customers, the multiple linear regression by Ordinary Least Square (OLS) estimation and the results are presented in **Table 6**. The results indicate that the coefficient of multiple determination (R^2) is 0.63 and adjusted R^2 is 0.59 indicating the regression model is moderately fit.

TABLE – 6: INFLUENCE OF QUALITY OF SERVICES OF GOVERNMENT TELECOM SECTOR ON CUSTOMER'S SATISFACTION -MULTIPLE REGRESSION

Quality of Service	Regression Coefficients	t-value	Significance
Intercept	1.214	1.526	.162
Communication(X_1)	.583**	3.671	.012
Service(X_2)	.542**	3.882	.013
Facility(X_3)	.326	0.211	.033
Price(X_4)	-.352*	2.989	.018
Customer Care(X_5)	.326**	4.412	.013
Service Providers(X_6)	.198	0.930	.354
R^2	0.63		
Adjusted R^2	0.59		
F	5.647		0.034
N	400		

Note: ** Significance at one per cent level

* Significance at five per cent level

The results show that communication, services and customer care are positively influencing the overall satisfaction of customers at one per cent level of significance, while price is negatively influencing the customer's satisfaction at five cent level of significance in Government telecom sector.

Influence of Service Quality on Satisfaction of Customers of Private Telecom Sector

In order to assess the influence of quality of services of private telecom sector on satisfaction of customers, the multiple linear regression by Ordinary Least Square (OLS) estimation and the results are presented in **Table 7**. The results indicate that the coefficient of multiple determination (R^2) is 0.64 and adjusted R^2 is 0.61 indicating the regression model is moderately fit.

TABLE – 7: INFLUENCE OF QUALITY OF SERVICES OF PRIVATE TELECOM SECTOR ON CUSTOMER'S SATISFACTION -MULTIPLE REGRESSION

Quality of Service	Regression Coefficients	t-value	Significance
Intercept	1.648**	2.964	.012
Communication(X_1)	.642**	3.782	.011
Service(X_2)	.620**	3.869	.012
Facility(X_3)	.564*	3.029	.036
Price(X_4)	-.536*	3.026	.019
Customer Care(X_5)	.592**	3.922	.010
Service Providers(X_6)	.362	0.895	.096
R^2	0.64		
Adjusted R^2	0.61		
F	6.285		0.02
N	400		

Note: ** Significance at one per cent level

* Significance at five per cent level

The results shows that communication, services and customer care are positively influencing the overall satisfaction of customers at one per cent level of significance, while facility is also positively influencing the overall satisfaction of customers at five per cent level of significance. Besides, the price is negatively influencing the customer's satisfaction at five cent level of significance in private telecom sector.

CONCLUSION AND RECOMMENDATIONS

The forgoing analysis shows that about 57.50 per cent of the customers of Government telecom sector are males, while 51.80 per cent of the customers of private telecom sector are also males. More than one-third of customers of Government telecom sector belong to the age group of 31-40 years, whereas, most of the customers of private telecom sector belong to the age group of 21-30 years. Nearly half of the customers of Government telecom sectors are educated up to higher secondary level, while the majority of the customers of private telecom sector are undergraduates. The results also indicate that about 42.25 per cent of customers of Government telecom sector belong to the monthly household income group of Rs. 10001-20000 and about 46.00 per cent of customers of private telecom sector belong to the monthly household income group of Rs. 20001-30000.

The customers of Government telecom sector are satisfied with drop rate, converge, bill details, technology, calling rate, promotional offer, mode of payment, reliability and responsiveness. The customers of private telecom sector are satisfied with quality, free calls, number selection, entertainment, special features, promotional offer, mode of payment, complaint redressal system, complaint resolution, customer relation, innovativeness, reliability and responsiveness. The communication, services and customer care are positively influencing the overall satisfaction of customers of Government telecom sector. The communication, services, customer care and facility are positively influencing the overall satisfaction of customers of private telecom sector.

Hence, it is suggested that lowering the tariff plans of service provider will increase more competition. In order to improve the service of number portability(service migration) to allow more free market conditions for fixed line customers, without taxing new entrants or customers for moving away from a monopoly service providers. The Value Added Services (VAS) for the betterment of the users should be up graded and also increase the accessibility of services through better network infrastructure in both Government and private telecom sectors. Besides, the service providers should also concentrate more on the attributes such as talk-time facility, network and voice clarity apart from SMS, VAS and schemes.

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EFFECT OF COMPUTER ASSISTED INSTRUCTION (CAI) ON ELEMENTARY SCHOOL STUDENTS' PERFORMANCE IN BIOLOGY

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ABSTRACT

The purpose of this study was to investigate the effect of Computer Assisted Instructional (CAI) on elementary school students' performance in Biology, and to explore whether CAI is differentially effective for boys and girls. The study included three chapters of Biology from the Science course prescribed by Central Board of Secondary Education (CBSE) for class VII. Eighty students of class VII studying in CBSE affiliated School of District Karnal of Haryana (India) participated in the present study. The CAI package developed by the researcher was validated before administration to the students of experimental group. The control group received instructions through traditional method. Standardized achievement test in Biology developed by the investigator was administered as pre-test before the instruction and post-test after the experimentation on both the groups. Paired sample t-test was used to find any significant difference in the Mean Achievement scores of both the two groups. The findings revealed that students using the CAI package performed better than those taught through traditional Instruction (TI). Both boys and girls performed equally in achievement in Biology with CAI.

KEYWORDS

Academic performance, Biology teaching, Computer Assisted Instruction (CAI).

INTRODUCTION

In the present state of knowledge explosion with increasing specialization, increased pupil-teacher ratio and increase in the workload of teachers, classroom instructions alone cannot bring out the desired goals from the teaching learning process. Conventional classroom teaching does not motivate the students as a result they lose interest in the subject. This is more often seen in Science subjects in general and Biology in particular. Researchers have identified defective teaching strategies as one of the reasons of the poor performance of students in Sciences. Hence, a number of studies relating to the strategies used in teaching Biology and the other Sciences have emerged. As a result, use of instructional technology, such as Computer Assisted Instruction (CAI) has become a part and parcel of teaching-learning process. Investigations have proved the effectiveness of CAI in various subject areas and grade levels. Yusuf and Afolabi (2010) found that CAI package enhances students' academic performance in Biology.

Cotton (1997) in his review of empirical studies concluded that use of CAI as a supplement to conventional instruction produces higher achievement than the use of conventional instruction alone. CAI as a supplementary tool with conventional teaching is found to be more effective for the average achievers (Kaur, 2007).

Effect of gender too has been linked with performance of students in several studies but without any definitive conclusion. Past studies suggest that, relative to traditional teaching, the use of CAI can give rise to gender inequities in classroom interaction and achievement (Hattie & Fitzgerald, 1987; Siann, Macleod, Glissov & Durndell, 1990). Some researchers are of the opinion that boys often monopolize the computer in CAI setting and they feel more comfortable than girls with using computers. Past studies revealed that male students perform better than females in Physics, Chemistry and Biology (Danmole, 1998; Novak & Mosunda, 1991) while others revealed that female students are better off than male (Kelly, 1978). Some studies as those of Yusuf & Afolabi, (2010) did not find any difference in male and female students' performance.

However little is known about the use of CAI in Haryana. In addition very few empirical studies exist regarding the use of CAI in Biology. Therefore, the present study explores whether CAI is differentially effective for boys and girls in terms of their performance in Biology.

The study investigated the effect of Computer Assisted Instruction on the performance of elementary school students in Biology. Specifically the study examined:

- i. The difference in performance in Biology, if any, of elementary school students exposed to individualized Computer Assisted Instruction (CAI) package and those exposed to Traditional Instruction (TI).
- ii. Influence of students' gender on their performance in Biology, when they are exposed to individualized Computer Assisted Instruction package.

RESEARCH QUESTIONS

The study addressed following research questions:

1. Is there a statistically significant difference in the Mean achievement scores, on the standardized achievement test in Biology, of the group of students taught Biology in the traditional teacher oriented classroom and the group of students taught Biology through Individualized CAI package?
2. Is there a statistically significant difference in the Mean achievement scores, on the standardized achievement test in Biology, of boys and girl students taught Biology through individualized CAI package?

RESEARCH METHODOLOGY**SAMPLE**

This research is a quantitative and experimental study with the real experiment model in the form of controlled pre-test and post-test design. In this research, there are two groups as experimental group, which follow the lesson with CAI and control group, which follow the lesson with traditional instruction (TI). The target population of the present study was class VII students of Central Board of Secondary Education affiliated, English medium School situated at Karnal district of Haryana (India), during the session 2011 – 12. The nature of the study, however, required that the research sample was purposively selected because a research on CAI must necessarily be conducted in school where computers are available for students' use and where the students were computer literate. Eighty students (equal number of boys and girls) equated on their scores of Science in previous class were randomly divided in to the control and experimental groups so that both groups have equal number of students of both the gender (20 boys and 20 girls).

RESEARCH INSTRUMENTS

The instruments for this research were the treatment instrument "Computer Assisted Instruction (CAI)" and the test instrument "Standardized Achievement test in Biology". The treatment instrument CAI on Biology, was a self-instructional, interactive package developed in "Visual Basic" computer language for Microsoft Windows XP and below. The text material of the three chapters of Biology (Organisation of the living world; Sustenance of the individual; and Reproduction) from the Science textbook of class VII was transformed into CAI software. To transform this text material into CAI software the text was divided into segments suitable for a tutorial. Unfamiliar terms and concept in the text were explained through hyperlinks and images. Multiple-choice items along with their feed-back followed each text segment so that student may keep track of their own learning. These questions also provided the students with a facility of drill and practice. Same text material was used in the traditional classroom teaching instructions.

The test instrument was developed by the investigator with the help of experienced Biology teachers and teacher educators. Final Standardized Achievement test in Biology was a 50 item multiple-choice objective test with four options. The reliability of the test was calculated by Kuder-Richardson method which came out to be 0.81. There are some measures whose validity is taken for granted for example, achievement test scores (Guilford, 1971). Therefore, the validity of the Achievement test prepared for the present study was taken for granted because this achievement test was constructed after preparing the blue print and ascertaining the weightage of different topics and items.

PROCEDURE FOR DATA COLLECTION

Both the groups (experimental and control) were subjected to standardized achievement test in Biology as pre-test. Then, the students in the experimental group were individually exposed to CAI which had been installed on the desktop computers. The students in the experiment group were introduced to the CAI format to make them familiar with the navigation buttons and use the package independently.

The control group students were exposed to the traditional teaching method on the same content used for experimental group. They were taught in conventional classroom format. The treatment for both groups lasted for six weeks. After the treatment the two groups were exposed to standardized achievement test in Biology as post-test. The achievement of the student was taken as the difference in the scores at pre-test level and the post-test level. This will eliminate the intervening factor of previous knowledge of the student.

RESULTS & DISCUSSION

To determine the effectiveness of CAI the students' achievement scores were analyzed using paired sample t-test and the results are shown in Table - 1.

TABLE 1: RESULTS OF THE PAIRED SAMPLE T-TEST BETWEEN THE SCORES AT PRE-TEST, POST-TEST AND ACHIEVEMENT SCORES OF THE STUDENTS OF EXPERIMENTAL GROUP AND CONTROL GROUP

Occasion	Treatment	N	Mean Score	sd	t-value	Sig. (2-tailed)
Pre-test	Control	40	9.82	2.42	1.109	0.274
	CAI	40	9.2	2.1		
Post-test	Control	40	38.95	4.29	2.061	0.046
	CAI	40	41.57	6.11		
Achievement (Post-test-pre-test)	Control	40	29.12	4.37	2.395	0.022
	CAI	40	32.37	6.05		

Table value at df = 39 is 2.71 at 0.01 level of significance and 2.02 at 0.05 level of significance.

An examination of the above Table - 1 shows that the difference between the Mean scores of Control and Experimental group at pre-test was insignificant (t-value = 1.109, p = 0.275). This is because the significance of p = 0.275 is greater than 0.05. After the experimentation the difference in the Mean scores at post-test of the control group (38.95 ± 4.29) and that of the experimental group (41.57 ± 6.11) was statistically significant at 0.05 level of significance in favour of the experimental group (t-value = 2.061, p < 0.05). Also, the difference of the Mean achievement scores (difference between the pre-test score and post-test score) of control group (29.12 ± 4.37) and the experimental group (32.37 ± 6.05) was statistically significant favouring the experimental group (t-value = 2.397, p < 0.05). Hence, the research question -1 can be answered that, individualized CAI has significantly positive effect on the achievement in Biology of the students at VII grade of schooling.

Table – 2 shows a summary of the results of Paired sample t-test performed over the scores of boys and girl students of the experimental group.

TABLE 2: DIFFERENCE IN THE MEAN ACHIEVEMENT SCORES OF BOYS AND GIRLS OF EXPERIMENTAL GROUP

Gender	N	Mean Score	Sd	t-value	Significance of Difference (two tailed)
Boys	20	32.40	6.15	0.039	0.97
Girls	20	32.35	6.11		

It was observed that the difference in the Mean achievement scores of the boys (32.40 ± 3.75) and Mean achievement scores of girls (32.35 ± 6.11) of experimental group was insignificant (t-value 0.039; p > 0.05). Hence, the research questions 2 can be answered that there is no difference in the Mean achievement score of boys and girls when exposed to individualized CAI. On an average, gender of the student does not interfere with the learning in Biology of the student.

The results of the analysis of paired sample t-test on the performance of students taught Biology using CAI and those taught with conventional classroom instructions indicated a significant difference in favour of students in the experimental group.

These findings are in agreement with the earlier findings of Yusuf and Afolabi (2010), Ali (2005), Gilani (2005), French & Russell (2001), Phillips & Moss (1993), Jegede, Okebukola & Ajewola (1992) who's studies were directly on Biology. Similar results were obtained by Kara & Kahraman (2008) on Physics of 7th grade Science; Siskos, Antoniou, Papaioannou and Laparidis (2005) on physical education; Onasanya, Daramola & Asuquo (2006) on Introductory Technology; Kulik, Bangert & Williams (1983), on Mathematics. Siskos, Antoniou, Papaioannou, & Laparidis (2005); Kolb, (1984) CAI suggested that multimedia computer assisted instruction promotes active learning by encouraging students to take an active role in learning process. Indeed Filipczak (1995) opined that CAI increases students' motivation to learn. The finding is also supported by Kim and Lee (2000) who claimed that CAI improves students' understanding. The present study on the other hand is in contradiction to findings of Adams, Kandt, Throgmartin & Waldrop (1991), Skinsley & Brodie (1990), which support the view that Computer Assisted Instructions is not consistently superior to the traditional instructions.

Influence of gender on achievement of students in Biology when taught with individualized CAI package was analyzed by comparing the achievement scores of the two genders after exposure to CAI. The results of the paired sample t-test showed no significant difference in the Mean scores of boys and girls of experimental group. These findings showed that both the genders perform equally well in Biology when taught through CAI. These finding are in agreement with

the earlier findings (Yusuf & Afolabi, 2010 and Jeyamani, 1991). Thus it can be concluded that CAI enhance the performance of the students in Biology irrespective of genders.

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RURAL TRANSFORMATION AND SHGS IN NAGAPATTINAM DISTRICT – A HOLISTIC APPROACH

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ABSTRACT

Women empowerment is a holistic concept involves the basic realization and awareness of women powers, potentialities, capabilities and competencies, rights and opportunities of all round development in all spheres of life through realisation of self confidence, potential, identity and power to do, what they want to do in all spheres of their life. Women empowerment includes various dimensions like economic, social, cultural, political, educational, personal and familial. The SHGs are the instruments to achieve the objectives of rural transformation and development and specially women empowerment. The study is focused on various dimensions of women empowerment through self help groups in Nagapattinam district, Tamilnadu, India. Structured Questionnaires were used to elicit information regarding the performance of the members of the SHGs. Purposive Judgement and Snowball Random sampling methods were followed to select the 100 samples from the study area. SPSS is being used for analysis. Frequency analysis, Factor analysis and one way ANOVA have been used to analyze the data. This paper discusses the impact of SHGs on Women Empowerment and the challenges faced by the SHGs and suggestions to improve the well being of the SHG members.

KEYWORDS

empowerment, rural development self help groups.

INTRODUCTION

The national agenda for Human Resource Development(HRD) is vital for nation building. Human Resource Development is either understood as an approach, a perspective or a programme with definite expected outcome. T. V. Rao (1990:8) defines HRD as “a continuous process to ensure the development of employee competencies, dynamism, motivation and effectiveness in a systematic and planned way”. The UN Human Development Report puts, “development must be participatory and for this people must have the opportunity to participate and to invest in the development of their capabilities. They also must have the opportunity to put their capabilities to use, to be fully involved in all aspects of life, to express themselves freely and collectively”. The challenge of HRD in the 21st century is to develop the human resources at the grassroots. These resources are landless farm laborers, the daily wage laborers in the fields or in contract works, industrial labourers, the marginalized, the oppressed and the women across the groups or communities. The early 90s saw the reshaping of strategies of socio-economic development and the emphasis has shifted from “development” to “empowerment”.

WOMEN EMPOWERMENT

Empowerment is a core concept of the new management model by which the organization harnesses individual talents to the fullest. The empowerment strategy enables the team based departments to become more enthusiastic, active and successful. Seth Kreisberg (1997) defines it thus, “empowerment is a process through which people and communities increase their control or mastery of their own lives and the decisions that affect their lives.” Empowerment has three dimensions affecting one another simultaneously – it is a process which goes on within the individual, it happens between two or more individuals, i.e. interpersonal and organizational/ communitarian in which the individual/s live and function.

Women are a vital human resource contributing actively for the development of an organisation and society at large. A social development strategy in the recent past includes advancement, development and empowerment of women as the central issue. Women are seen as active change agents, braving “the glass ceiling” or the “glass cage” and proving to be in equal footing with men. Women have proved their competence and worth in every field – be it justice or diplomacy, technology or politics, administration or astronauts. In past, very few women entered into fields like industry, engineering, commerce and trade, but recently more women employees have started playing a dominant role in almost all arenas of the country. Though they play a key role, they are facing lots of problems in their work place, in families, in the society, etc.

According to “THE HINDU” report dated 30th January, 2011, Baskaran D, Member Secretary of Tamilnadu State Council of Higher Education opined that women empowerment can be achieved at three levels – Education, Employment, and Empowerment. The government has provided many schemes for their empowerment. It is in their hands to make use of them. Entrepreneurship development of rural women through SHGs had brought about a sea change in the lives of rural women and remained as key agents of sustainable development and women’s equality as central to more holistic approach. The contribution of women and their role in the family as well as in economic development and social transformation is pivotal.

SELF HELP GROUPS

A Self-Help Group (SHG) is a registered or unregistered group of micro entrepreneurs having homogenous social and economic background, voluntarily coming together to save small amounts regularly, to mutually agree to contribute to a common fund and to meet their emergency needs on mutual help basis. The group members use collective wisdom and peer pressure to ensure proper end use of credit and timely repayment thereof.

The SHGs comprise very poor people who do not have access to formal financial institutions. They act as the forum for the members to provide space and support to each other. It also enables the members to learn, to cooperate and work in a group environment. The SHGs provide savings mechanism, which suits the needs of the members. It also provides a cost effective delivery mechanism for small credit to its members. The SHGs significantly contribute to the empowerment of poor women. An economically poor individual gains strength as part of a group. Besides, financing through SHGs reduces transaction costs for both lenders and borrowers. But nowadays the Central government, State government and both the nationalized and private banks lend money to the SHGs not only to inculcate financial transactions among the rural community but also to act as the agents of social empowerment. State governments began to establish revolving loan funds which are used to fund SHGs is the tool for formation of federations.

The table - 1 shows the number of beneficiaries and the amount disbursed through various schemes sponsored by governments to the self help groups(SHG) of India and Tamilnadu.

TABLE – 1: BENEFICIARIES AND AMOUNT BENEFITTED BY THE SHGs

Through National Bank for Agriculture and Rural Development(NABARD) as on 31.03.2010			
SHG – Bank Linkage model		MFI – Bank Linkage model	
No. of SHGs	Amount disbursed (in crores)	No. of SHGs	Amount disbursed (in crores)
1319419	12255.00	691	8062.74
Through Swarnajayanthi Gram Swarojgar Yojana(SGSY) scheme as on 31.03.2010			
SHG – Bank Linkage model		MFI – Bank Linkage model	
No. of SHGs	Amount disbursed (in crores)	No. of SHGs	Amount disbursed (in crores)
267403	2698.00	88	2665.75
Under State government's Tamil Nadu Corporation for Development of Women(TNCDW) as on 31.03.2010 – Tamilnadu Adidravadar Housing and Development Corporation(TAHDCO) scheme			
Revolving Fund(RF)		Economic Assistance(EA)	
No. of SHGs	Amount disbursed (in lakhs)	No. of SHGs	Amount disbursed (in lakhs)
1020	102.00	1567	2110.67
Under State government's Tamil Nadu Corporation for Development of Women(TNCDW) as on 31.03.2010 – Mahalir Thittam (MATHI) scheme			
Number of SHGs provided with RF		Cash – Credit disbursed (in lakhs)	Subsidy disbursed (in lakhs)
55542		27771.00	5554.20

Source: www.nabard.org/microfinance/shglinkageprogress.asp & www.tnrd.gov.in**AREA PROFILE**

Nagapattinam, a coastal district of Tamilnadu in India, lies on the east coast, 326 km south of state capital, Chennai. The district capital Nagapattinam extends between 10° 10' N to 11° 20' N and 79°15'E to 79° 50'E. As on 31.01.2011, in the Nagapattinam district, there are 15,008 SHGs functioning with 2,33,420 women members. The total savings of the SHGs is 43.10 crores. The loan assistance of Rs.52.89 crores have been sanctioned to 9100 SHGs by various commercial banks with NABARD assistance and under SGSY scheme.

TABLE – 2: STRENGTH OF THE SHGS IN NAGAPATTINAM DISTRICT

No. of SHGs	15008
No. of SHG Members	233420
No. of Rural SHGs	12392
No. of Rural SHG members	194272
No. of Urban SHG	2616
No. of Urban SHGs members	39148

Source: www.nagapattinam.tn.nic.in/po-mt.html**REVIEW OF LITERATURE**

Venkatarao (2009) in his article "Role of SHGs in the empowerment of women" studied the profile of the members of women self help groups in two rural mandals in Vishakapattinam district, functioning of SHGs in the light of the theoretical framework of women empowerment developed by Longwe and the level of empowerment such as welfare, access to and utilisation of financial resources, conscientisation, participation and control among the selected SHG members. The study was carried out with random sampling, interview schedule(Longwe model) with 245 samples in Vizagapattinam district of Andhra Pradesh. It has been concluded that on the whole, women are empowered through self-help groups mostly in the areas of participation and access to financial resources but regarding welfare, they are far below and SHGs may take some time to empower, if the SHG functions properly.

Nalini Bikkina(2010) looked at the impact of two SHGs in terms of household autonomy, decision making patterns and self esteem of beneficiaries. In her study, "A comparative study of the impact of membership of SHGs on household autonomy, decision making patterns and self esteem", the levels of household autonomy, decision making and self-esteem among the beneficiaries of DWCRA in Andhra Pradesh and Kudumbashree and the difference in levels of household autonomy, decision making and self-esteem within the beneficiaries and non-beneficiaries of DWCRA and Kudumbashree in Kerala have been identified. Questionnaire collected from 82 respondents were analysed and the findings say that entrepreneurship among women no doubt improves the wealth of the nation in general and of the family in particular. Women today are more willing to take up economic activities and have proved that they are second to none with respect to contribution to the growth of the economy. But women in Indian society have been facing several problems from different directions. Hence, provisions of necessary support by all means will help them to overcome the problems.

Subramanian S(2010) in his study, "Empowerment of Women through SHGs in Tirunelveli district, Tamil Nadu – a SWOT analysis" analysed the strengths, weaknesses, opportunities and threats of SHGs in Tirunelveli district. The empirical study was based on fieldwork involving about 100 SHGs and 200 SHG members selected on stratified random basis with the help of purposive interview schedule. The SWOT matrix shows that the strengths outweighed the weaknesses and the opportunities outnumbered the threats. The study reveals that the capacity building exercises taken up by the promoting agencies are not adequate to meet the need of SHGs members. They lack proficiency in soft skills, technical skills and managerial skills. The SHG members are to be trained in soft skills like leadership traits, team spirit, negotiation, risk-taking and assertiveness, etc. Intensive training in all functional aspects of business is to be given to the promoters prior to the operationalisation of micro-enterprises. It is observed that due to lack of technical skills, quite often, SHGs are promoting micro-enterprises based on traditional skills without any consideration of market which can be given to the promoters for setting up innovative micro-enterprises. Sustainability of these units depend on how effectively the strengths are used, how fast the weaknesses are eliminated, how opportunities are exploited and what precautions are used to safeguard against the possible threats.

From the earlier studies related to SHGs, it is clearly understood that the SHGs are the tools in the hands of rural women to promote themselves in a great way.

STATEMENT OF THE PROBLEM

Even though the governments, financial organizations and specialized agencies are planning and implementing various schemes to empower the whole women community, the outcome is not up to the desired level. Also, in some areas, the SHGs are liquidating for one reason or other. Strengthening the present SHGs by continuous support through all means to venture for entrepreneurial activities and motivating the non members to become members to improve their position in their family and to contribute to the nation are the need of the hour. Friendly approach, availability of required facilities and constant encouragement will enlighten the women folk and can bring a tremendous change in the economy.

OBJECTIVES OF THE STUDY

- 1) To study the demographic pattern of members of the SHGs in the study area,

- 2) To analyse the improvement of various skills of the respondents, the members of the SHGs after joining SHGs, and
- 3) To record the findings and give suggestions to improve further development.

HYPOTHESIS

The study is based on the formulation of the following hypothesis:

H₀₁ : The members of the SHGs belonging to different age groups, educational qualification and monthly income have same level of improvement in various skills such as political participation, earnings and spending, team management, business skills and social commitments

H₀₂ : The members of the SHGs having various community and duration of membership have same level of improvement in various skills such as political participation, earnings and spending, team management, business skills and social commitments .

METHODOLOGY

Structured Questionnaires were used to elicit information regarding the performance of the members of the SHGs. Purposive Judgement and Snowball Random sampling methods were followed to select the 100 samples from the study area.

TOOLS USED IN THE ANALYSIS

SPSS is being used for analysis. Frequency analysis, Factor analysis and one way ANOVA have been used to analyze the data.

LIMITATIONS OF THE STUDY

The present study is confined only to the members of the women SHGs of Nagapattinam district of Tamilnadu.

RESULTS AND DISCUSSIONS

TABLE – 3: AGE GROUP OF RESPONDENTS

Age Group	Frequency	Percentage
Less than 20	9	9.00
20 – 40	71	71.00
Greater than 40	20	20.00
Total	100	100.00

Source: Primary data

INTERPRETATION: Age and economic activities are inter related with each other. The working population, middle age group comprising 71 % are actively participating in the SHGs. However, 20% of the respondents belong to the age group of greater than 40 and 9% of the respondents belong to the age group of less than 20 years.

TABLE – 4: LEVEL OF QUALIFICATION

Educational Qualification	Frequency	Percentage
Primary	27	27.00
Primary to Higher secondary	50	50.00
UG and PG	23	23.00
Total	100	100.00

Source: Primary data

Interpretation: Although the governments are taking initiatives for higher education and research, the drop outs after primary education in rural areas are very common on various reasons. Half of the respondents, 50 % of them are having an educational qualification from primary to higher secondary, 27% of the respondents are having primary education, upto fifth standard and the remaining 23 % of the respondents have qualified as graduate or post graduate degree holders.

TABLE – 5: MONTHLY INCOME OF THE FAMILY

Income in Rs.	Frequency	Percentage
Less than 5,000	9	9.00
5,000 – 10,000	71	71.00
Greater than 10,000	20	20.00
Total	100	100.00

Source: Primary data

Interpretation: Income shows the standard of living of the people. Majority of the respondents, 71% belong to middle income group between Rs.5,000/- and Rs.10,000/- per month. Although the movement was started mainly for poverty alleviation, even the middle income group have joined the groups to improve their economic position further more and through joining SHGs, they have started their developmental measures. 20 % of the respondents are having a monthly income of above Rs.10,000/- and only 9 % of the respondents are getting less than Rs.5,000/- . The middle income group are joining the SHGs to improve their entrepreneurial and leadership skills.

TABLE – 6: COMMUNITY OF THE RESPONDENTS

Community	Frequency	Percentage
SC/ST	12	12.00
MBC	45	45.00
BC	33	33.00
Others	10	10.00
Total	100	100.00

Source: Primary data

Interpretation: From the table - 6, it is inferred that 45 % of the respondents belong to MBC community, 33% of the respondents belong to BC community, SC/ST community occupies 12 % and the remaining 10 % has been occupied by other communities. This indicates that irrespective of the community they belong to , women are interesting to join SHG for one or other reason.

TABLE – 7: DURATION OF MEMBERSHIP

Duration	Frequency	Percentage
0 – 2 Years	12	12.00
3 – 5 Years	51	51.00
Above 5 Years	37	37.00
Total	100	100.00

Source: Primary data

Interpretation: In the introductory period of the movement, the enrolment was comparatively lower. After getting known the peculiarities of the scheme, many of the women have joined the SHGs and 51% of the respondents are having 3 – 5 years of membership period. 37% of the respondents have a membership of more than 5 years and the remaining 12% of the respondents have joined within 0 – 2 years of duration.

FACTOR ANALYSIS

Analysis of empowerment of various skills of the respondents was carried out with factor analysis and ANOVA has been used to compare those factors with socio-demographic factors of the respondents. 18 items related to various skill development were given in the questionnaire and the respondents were requested to grade on 5 point Likert Scale model (More benefitted, Notably benefitted, Benefitted, No benefits, Not at all). Value against KMO Test, i.e, 0.677 and significance value for chi square test ensure the validity of Factor Analysis. All the 18 items contribute more than 40% of variance to the factors identified which is a reasonable contribution. Based on the table of Eigen values, five factors were deduced. From the rotated factor matrix, the factors which are having greater than 0.5 were grouped to identify the factors. The identified factors are,

1. Political Participation
2. Earnings and Spending
3. Team Management
4. Business Skills and
5. Social Commitments

TABLE – 8: DESCRIPTIVES

	N	Mean	Std. Deviation
Political participation <20	9	16.2222	2.86259
20 – 40	71	16.0845	5.23927
>40	20	13.3000	3.72898
Total	100	15.5400	4.89985
Earning and Spending <20	9	11.0000	2.91548
20 – 40	71	11.8028	2.29048
>40	20	10.8000	1.96281
Total	100	11.5300	2.30702
Team Management <20	9	11.4444	2.35112
20 – 40	71	12.3239	2.14326
>40	20	11.8500	1.98083
Total	100	12.1500	2.12904
Business Skills <20	9	15.3333	3.70810
20 – 40	71	15.6197	2.32604
>40	20	13.9000	1.86096
Total	100	15.2500	2.46337
Social Commitment <20	9	11.3333	1.73205
20 – 40	71	12.8169	6.42386
>40	20	11.1500	1.75544
Total	100	12.3500	5.52748

Source: Primary data

Table 8 gives the mean and standard deviation of each factor based on their demographic variable, age group.

TABLE – 9: ANOVA

	Sum of squares	Df	Mean square	F	Sig.
Political participation					
Between Groups	125.591	2	62.796	2.706	0.072
Within Groups	2,251.249	97	23.209		
Total	2,376.840	99			
Earnings and Spending					
Between Groups	18.471	2	9.235	1.762	0.177
Within Groups	508.439	97	5.242		
Total	526.910	99			
Team Management					
Between Groups	8.428	2	4.214	0.928	0.399
Within Groups	440.322	97	4.539		
Total	448.750	99			
Business Skills					
Between Groups	46.218	2	23.109	4.042	0.021
Within Groups	554.532	97	5.171		
Total	600.750	99			
Social Commitment					
Between Groups	53.580	2	26.790	0.875	0.420
Within Groups	2,971.170	97	30.631		
Total	3,024.750	99			

Level of significance $\alpha = 5\%$

From the table 9, it is inferred that there is no significant difference in the Political Participation (sig. = 0.072 > 0.05), Earnings and Spending (sig. = 0.177 > 0.05), Team Management (sig. = 0.399 > 0.05) and Social Commitments (sig. = 0.420 > 0.05) between the respondents belonging to various age groups and so we accept the null hypothesis.

But there is a significant difference in Business Skills between the respondents (sig. = 0.021 < 0.05) of various age groups. So we reject the null hypothesis as the calculated value 0.021 which is less than the level of significance $\alpha = 0.05$. To identify which group differs significantly from other two groups, Post Hoc test was applied.

TABLE – 10: POST HOC TEST

Tukey HSD

Age category(i)	Age category(j)	Mean difference (i - j)	Std. error	Sig.
20 – 40	<20	0.28638	0.84600	0.939
	>40	1.71972(*)	0.60528	0.015

The Post Hoc table 10 shows that the respondents of 20 – 40 age group is significantly higher in Business skills than the respondents of <20 and >40 years age group. This shows that the middle age group between 20 – 40 are having more interest to improve their business skill to venture for entrepreneurial activities. The participation in SHGs gives them skill of entrepreneurship and if they are continuously motivated they may go for even small scale industrial activities.

TABLE – 11: DESCRIPTIVES

	N	Mean	Std. Deviation
Political participation-Primary	27	13.8519	4.58848
Primary – H. Sc.	50	16.2400	4.86369
UG & PG	23	16.0000	5.06324
Total	100	15.5400	4.89985
Earning & Spending - Primary	27	10.9259	2.52565
Primary – H. Sc.	50	11.6600	1.96510
UG & PG	23	11.9565	2.67103
Total	100	11.5300	2.30702
Team Management - Primary	27	12.0000	2.14834
Primary – H. Sc.	50	12.3200	1.84546
UG & PG	23	11.9565	2.68799
Total	100	12.1500	2.12904
Business Skills - Primary	27	14.4815	2.04508
Primary – H. Sc.	50	15.3600	2.14533
UG & PG	23	15.9130	3.30169
Total	100	15.2500	2.46337
Social Commitment - Primary	27	11.7037	1.68283
Primary – H. Sc.	50	12.8600	7.59702
UG & PG	23	12.0000	2.08893
Total	100	12.3500	5.52748

Source: Primary data

Table 11 gives the mean and standard deviation of each factor based on their demographic variable, educational qualification.

TABLE – 12: ANOVA

	Sum of squares	df	Mean square	F	Sig.
Political participation					
Between Groups	106.313	2	53.156	2.271	0.109
Within Groups	2,270.527	97	23.407		
Total	2,376.840	99			
Earnings and Spending					
Between Groups	14.882	2	7.441	1.410	0.249
Within Groups	512.028	97	5.279		
Total	526.910	99			
Team Management					
Between Groups	2.913	2	1.457	0.317	0.729
Within Groups	445.837	97	4.596		
Total	448.750	99			
Business Skills					
Between Groups	26.663	2	13.332	2.253	0.111
Within Groups	574.087	97	5.918		
Total	600.750	99			
Social Commitment					
Between Groups	27.100	2	13.550	0.438	0.64
Within Groups	2,997.650	97	30.904		
Total	3,024.750	99			

From the table 12, it is inferred that there is no significant difference in the Political Participation (sig. = 0.109 > 0.05), Earnings and Spending (sig. = 0.249 > 0.05), Team Management (sig. = 0.729 > 0.05), Business Skills (sig. = 0.111 > 0.05) and Social Commitments (sig. = 0.646 > 0.05) between the respondents having various educational qualification and so we accept the null hypothesis.

TABLE – 13: DESCRIPTIVES

	N	Mean	Std. Deviation
Political participation <5000	32	14.1875	5.46211
5000 – 10000	46	15.8043	4.70281
>10000	22	16.9545	4.08805
Total	100	15.5400	4.89985
Earning & Spending <5000	32	10.9375	2.74670
5000 – 10000	46	11.9348	2.12291
>10000	22	11.5455	1.84461
Total	100	11.5300	2.30702
Team Management <5000	32	12.1563	2.54139
5000 – 10000	46	12.1739	2.07958
>10000	22	12.0909	1.60087
Total	100	12.1500	2.12904
Business Skills <5000	32	15.5000	2.09454
5000 – 10000	46	15.2174	2.78817
>10000	22	14.9545	2.29860
Total	100	15.2500	2.46337
Social Commitment <5000	32	11.4688	1.98355
5000 – 10000	46	13.1304	7.87008
>10000	22	12.0000	1.69031
Total	100	12.3500	5.52748

Source: Primary data

Table 13 gives the mean and standard deviation of each factor based on their demographic variable, monthly income of family of the respondents.

TABLE – 14: ANOVA

	Sum of squares	Df	Mean square	F	Sig.
Political participation					
Between Groups	105.771	2	52.886	2.259	0.110
Within Groups	2,271.069	97	23.413		
Total	2,376.840	99			
Earnings and Spending					
Between Groups	18.776	2	9.388	1.792	0.172
Within Groups	508.134	97	5.238		
Total	526.910	99			
Team Management					
Between Groups	0.104	2	0.052	0.011	0.986
Within Groups	448.646	97	4.625		
Total	448.750	99			
Business Skills					
Between Groups	3.969	2	1.985	0.323	0.725
Within Groups	596.781	97	6.152		
Total	600.750	99			
Social Commitment					
Between Groups	55.564	2	26.782	0.908	0.407
Within Groups	2,969.186	97	30.610		
Total	3,024.750	99			

Level of significance $\alpha = 5\%$

From the table 14, it is inferred that there is no significant difference in the Political Participation (sig. = 0.110 > 0.05), Earnings and Spending (sig. = 0.172 > 0.05), Team Management (sig. = 0.989 > 0.05), Business Skills (sig. = 0.725 > 0.05) and Social Commitments (sig. = 0.407 > 0.05) between the respondents having various income groups and so we accept the null hypothesis.

TABLE – 15: DESCRIPTIVES

	N	Mean	Std. Deviation
Political participation SC/ST	12	16.5000	7.22999
MBC	45	14.6222	5.15350
BC	33	15.9697	3.55743
Others	10	17.1000	4.06749
Total	100	15.5400	4.89985
Earning and Spending SC/ST	12	11.0833	3.05877
MBC	45	11.5778	2.33052
BC	33	11.4545	2.23734
Others	10	12.1000	1.44914
Total	100	11.5300	2.30702
Team Management SC/ST	12	13.1667	1.89896
MBC	45	11.8889	2.33766
BC	33	12.2121	2.05787
Others	10	11.9000	1.37032
Total	100	12.1500	2.12904
Business Skills SC/ST	12	15.2500	2.80016
MBC	45	15.6222	2.46142
BC	33	14.5758	2.47526
Others	10	15.8000	1.75119
Total	100	15.2500	2.46337
Social Commitment SC/ST	12	12.2500	2.13733
MBC	45	12.7778	7.98831
BC	33	12.0000	2.01556
Others	10	11.7000	1.49443
Total	100	12.3500	5.52748

Source: Primary data

Table 15 gives the mean and standard deviation of each factor based on their demographic variable, community.

TABLE – 16: ANOVA

	Sum of squares	df	Mean square	F	Sig.
Political participation					
Between Groups	79.393	3	26.464	1.106	0.351
Within Groups	2,297.447	96	23.932		
Total	2,376.840	99			
Earnings and Spending					
Between Groups	5.934	3	1.978	0.364	0.779
Within Groups	520.976	96	5.427		
Total	526.910	99			
Team Management					
Between Groups	16.224	3	5.408	1.200	0.314
Within Groups	432.526	96	4.505		
Total	448.750	99			
Business Skills					
Between Groups	24.262	3	8.087	1.347	0.264
Within Groups	576.488	96	6.005		
Total	600.750	99			
Social Commitment					
Between Groups	16.622	3	5.541	0.177	0.912
Within Groups	3,008.128	96	31.335		
Total	3,024.750	99			

Level of significance $\alpha = 5\%$

From the table 16, it is inferred that there is no significant difference in the Political Participation (sig. = 0.351 > 0.05), Earnings and Spending (sig. = 0.779 > 0.05), Team Management (sig. = 0.314 > 0.05), Business Skills (sig. = 0.264 > 0.05) and Social Commitments (sig. = 0.912 > 0.05) between the respondents belonging to various communities and so we accept the null hypothesis.

TABLE – 17: DESCRIPTIVES

	N	Mean	Std. Deviation
Political participation 0 – 2 yrs	12	13.9167	5.51788
3 – 5 yrs	51	16.1373	4.62610
Above 5 yrs	37	15.2432	5.05198
Total	100	15.5400	4.89985
Earning & Spending 0 – 2 yrs	12	10.9167	2.31432
3 – 5 yrs	51	11.4314	2.33457
Above 5 yrs	37	11.8649	2.27501
Total	100	11.5300	2.30702
Team Management 0 – 2 yrs	12	12.8333	2.82307
3 – 5 yrs	51	11.9216	2.19857
Above 5 yrs	37	12.2432	1.75445
Total	100	12.1500	2.12904
Business Skills 0 – 2 yrs	12	14.7500	2.26134
3 – 5 yrs	51	15.4314	2.49203
Above 5 yrs	37	15.1622	2.52227
Total	100	15.2500	2.46337
Social Commitment 0 – 2 yrs	12	11.8333	1.74946
3 – 5 yrs	51	11.7647	1.86106
Above 5 yrs	37	13.3243	8.75929
Total	100	12.3500	5.52748

Source: Primary data

Table 17 gives the mean and standard deviation of each factor based on their demographic variable, duration of membership in the groups.

TABLE – 18: ANOVA

	Sum of squares	Df	Mean square	F	Sig.
Political participation					
Between Groups	53.073	2	26.537	1.108	0.334
Within Groups	2,323.767	97	23.956		
Total	2,376.840	99			
Earnings and Spending					
Between Groups	9.159	2	4.580	0.858	0.427
Within Groups	517.751	97	5.338		
Total	526.910	99			
Team Management					
Between Groups	8.586	2	4.293	0.946	0.392
Within Groups	440.164	97	4.538		
Total	448.750	99			
Business Skills:					
Between Groups	4.963	2	2.482	0.404	0.669
Within Groups	595.787	97	6.142		
Total	600.750	99			
Social Commitment					
Between Groups	55.799	2	27.899	0.912	0.405
Within Groups	2,968.951	97	30.608		
Total	3,024.750	99			

Level of significance $\alpha = 5\%$

From the table 18, it is inferred that there is no significant difference in the Political Participation (sig. = 0.334 > 0.05), Earnings and Spending (sig. = 0.427 > 0.05), Team Management (sig. = 0.392 > 0.05), Business Skills (sig. = 0.669 > 0.05) and Social Commitments (sig. = 0.405 > 0.05) between the respondents having different duration of membership and so we accept the null hypothesis.

FINDINGS OF THE STUDY

1. Majority of the respondents belong to the age group of 20 – 40, the working population.
2. The educational qualifications the respondents having are ranging from primary to higher secondary level.
3. The monthly income group Rs.5,000/- and Rs.10,000/- comprise majority of the respondents.
4. 3/4th of the respondents belong to MBC and BC community.
5. Half of the respondents have joined the SHG within 3 – 5 years of duration.
6. The members of the SHGs, respondents belonging to various age groups have same level of improvement in various skills such as political participation, earnings and spending, team management, and social commitments.
7. The respondents belonging to various age groups have significant difference in the level of improvement in business skills after joining the SHGs and 20 – 40 age group have acquired more business skills than the other groups, <20 and >40.
8. The members of the SHGs having various educational qualification and various monthly income have same level of improvement in various skills such as political participation, earnings and spending, team management, and social commitments.
9. The members of the SHGs belong to varied communities and different duration of membership have same level of improvement in various skills such as political participation, earnings and spending, team management, and social commitments.

CONCLUSION

To conclude, the role of SHGs in the empowerment of women in the study area is progressive. The active participation and regular practice in the movement will certainly upgrade their position and status not only in the family and society but also in the national development. Provision of proper and suitable training programmes for the members and sustained support from the supporting agencies further kindle their interest to venture for further entrepreneurial activities. Constant encouragement from the governments without political interference and personal favourableness will definitely help the members to utilize their full potential to reach the optimum level of empowerment.

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RECENT TRENDS IN INDIAN AGRICULTURAL DIVERSIFICATION

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ABSTRACT

Approximately, one-third of the world's population were employed in agriculture in 2007. The word agriculture has been derived from the Latin language from *ager* (which means a field) and *cultura* (which means cultivation). Hence, agriculture is the production, processing, marketing and use of foods, fibers and by-products from plants, crops and animals. India is still characterized by a dominance of small and marginal farmer (almost 68 percent) and 75 percent of the farm holding are below 2 hectares. The first Green Revolution was launched to ensure food security. Today, our food supply is well secure. Meeting the growing needs is within reach. Therefore, the second Green Revolution should aim at promoting sustainable livelihood, enabling the poor to come out of poverty by generating gainful self-employment. There are many opportunities of crop diversification both in the irrigated and non-irrigated vast areas in the rural India. We need to launch the second Green Revolution through promotion of agriculture diversification, with a special focus on generation of gainful self-employment for the poor and weaker sections of the society. With the globalization of markets in the WTO era, diversification in agriculture is one means to increase the total production and productivity in terms of quality, quantity and monetary gains under diverse agro-climatic situations of the country. The main objective of this paper is to study the different forms of diversifications, to examine the trends and patterns in Indian agricultural diversifications and also analysis the opportunities and threats related to diversifications.

KEYWORDS

Agriculture, Diversification, Foodgrains, Genetic Engineering, Green Revolution.

INTRODUCTION

Agriculture has played a predominant role in the development of human civilization either in advance countries or in backward countries. In 2007, one-third of the world's population were employed in agriculture. The services sector has overtaken agriculture as the economic sector employing the most people world wide. The word agriculture has been derived from the Latin language from *ager* (which means a field) and *cultura* (which means cultivation). Hence, agriculture is the production, processing, marketing and use of foods, fibers and by-products from plants, crops and animals. The advancement in space and nuclear technologies will soon take India to the group of developed nations. India has already established its leadership in information technology and heavy engineering. The challenge now is to sustain the growth and ensure economic prosperity, particularly in rural areas. Rural development in India requires priority because more than 65 percent of the population are still living in villages and over 85 percent of the rural people are dependent on agriculture for their livelihood. More than 75 percent being small and marginal holders, most of their earnings are utilised to ensure food security. To achieve prosperity, the development strategy should focus on improved agricultural production while generating gainful self-employment for small farmers and weaker sections of the society. Agriculture is the main source of rural employment, but being deprived of irrigation facilities, a majority of the small and marginal farmers are heavily under-employed for 6-8 months in a year. Even under well established irrigated conditions, the growth of the agriculture sector itself has been almost stagnant for the last 8-10 years. Therefore, the policy makers and agriculture experts have been urging for the second Green Revolution to accelerate growth in the agriculture sector. In the 70's, India was successful in creating a Green Revolution which gave a boost to the agriculture sector across the country. Green Revolution accelerated the yields of major food crops such as paddy, wheat, rice and oilseeds, particularly in the states of Punjab, Haryana, some parts of Uttar Pradesh and Rajasthan. We need to create a similar revolution in the near future (www.baif.org.in, www.enwikipedia.org).

OBJECTIVE OF PRESENT STUDY

The objectives of present study are

- To study the different forms of diversifications,
- To examine the trends and patterns in Indian agricultural diversifications and
- Also analysis the opportunities and threats related to diversifications.

NEED OF DIVERSIFICATION IN INDIAN AGRICULTURE

We have already started experiencing stagnation in growth in agricultural production, particularly in the regions which had contributed significantly to the success of the first Green Revolution in 1967-68. Hence, we need to reinforce our technologies and infrastructure to create another Green Revolution. The first Green Revolution was launched to ensure food security. Today, our food supply is well secure. To meet the growing needs is within reach. Therefore, the second Green Revolution should aim at promoting sustainable livelihood, enabling the poor to come out of poverty by generating gainful self-employment. No doubt due to first Green revolution, India's output in agriculture sector was increased but impact of this revolution was only on few food crops like wheat, rice, jowar and there was no significant increase has place in the growth of commercial crops like jute, cotton, tea etc. India is still characterized by a dominance of small and marginal farmer (almost 68 percent) and 75 percent of the farm holding are below 2 hectares. Income of farmers cannot be raised upto the desired level to remove poverty in the India unless existing crop production systems are diversified. Hence following are the needs of diversification in Indian agriculture-

- To increase the income of smallholders.
- To generate additional employment.
- To stabilize farm income over the seasons.
- To conserve natural resource.
- To meet export market demand.
- To meet the changing consumer demand.
- To adopt new farming techniques to meet the higher level of demand not in Indian but also in world.
- To increase community food security.
- To improve fodder for livestock.
- To minimize environmental pollution
- It will help to develop rural infrastructure, which facilitates efficient utilization of local resources (www.enwikipedia.org; www.ap_tokyo.org; (www.baif.org.in))

DIFFERENT FORMS OF DIVERSIFICATION

Different forms of diversification are as following -

1. Supplementing farm income with non-farm income.
2. Increasing the number of crops grown and types of livestock reared and
3. Use of resources in diverse farm enterprise

To encourage the diversification of agriculture a multi-purpose strategy needs to be designed. The concept of 5-Is is helpful to get this objective and the 5-Is are

- i) Incentives – it is concern with the production of those commodities which argument income and generate environment.
- ii) Innovation – related to technology.
- iii) Inputs – availability of inputs required for cultivation
- iv) Institutions – refers to the development of appropriate institutions for new crops eg. , a strong seed sector, credit and insurance institution etc. must exist.
- v) Infrastructure – it refers to the presence of required infrastructure (www.en. Wikipedia. org.)

PATTERN AND TRENDS IN INDIAN AGRICULTURAL DIVERSIFICATION

Diversification becomes necessary for developing countries like India because cereals alone cannot support the economic development. Further diversification can be designed to help poverty alleviation, employment generation and environmental conservation. Pattern of agricultural diversification is as following –

1. **Agricultural Income Diversification** – As per CSO, the aggregate agriculture income consists of income from crop outputs (field and plantation crops), livestock, fisheries and forestry. The sub-sector wise composition of income generated from agriculture, which indicates the degree of diversification, is presented in table 1.

TABLE 1: SHARE OF DIFFERENT SUB-SECTOR IN TOTAL INCOME FROM AGRICULTURE AND ALLIED ACTIVITIES (Percentages)

Agriculture and Allied activities	1950-51	1960-61	1970-71	1980-81	1990-91
Crop Sector	79.50	81.91	79.64	74.77	73.90
Livestock	8.36	8.23	9.71	16.27	19.00
Forestry & Logging	10.91	8.31	8.91	6.99	4.73
Fishing	1.23	1.55	1.74	1.97	2.37
Total (Rs. Crore)	100 (23471)	100 (31995)	100 (40214)	100 (46649)	100 (65653)

Source: www. Nabard.org.

In 1950-51 crop and livestock sectors together contributed 87.86 percent of the income from agriculture, followed by forestry and logging (10.91 percent) and fishing (1.23 percent). By 1990-91 the composition had changed such that the share of crop sector and livestock together increased to 92.90 percent of the income. The share of forestry and logging drastically declined to 4.73 percent. Fishing has gained prominence by nearly double of its share to 2.37 percent (www. nabard org).

TABLE 2: ANNUAL COMPOUND GROWTH RATE OF AGRICULTURE AND ALLIED SECTORS

Period	Crop Output	Livestock	Agriculture	Forestry	Fisheries	Aggregate Agriculture	Overall Economy
1975 / 76	1.8	3.7	1.92	-0.62	2.04	1.72	3.39
1985 / 86	2.21	4.8	3.04	-0.26	5.51	2.93	5.04
1995 / 96	2.98	3.72	5.42	0.95	5.22	3.28	5.87
2003 / 04	2.04	3.5	3.16	1.3	3.27	3.09	7.51

Note : Computed from figures as available from National Statistics

Source: www.iegindia.org

Table 2 depicts that in 2003-04 the annual compound growth rate of agriculture and allied sectors in Indian economy is 7.51 percent. The growth of fisheries has been increased among all sub-sectors.

2. **Diversification Across Sub-sectors of Agriculture** - Sub-sectors of agriculture and their contribution is as following -

a) **Crops-led Diversification** – The crop sector is the principle generating source in agriculture. The share of crop sector in agricultural GDP is 74.60 percent in 1998-99. The crop sector is depicted a steady diversification in India with replacement of foodgrain crops with non-foodgrain crops.

TABLE 3: SHARE OF FOODGRAIN AND NON-FOODGRAIN CROPS IN CROPPING PATTERN AND VALUE OF OUTPUT IN INDIA AT CONSTANT PRICES (PERCENT)

Region	Share of Foodgrain and Non-Foodgrain Crops							
	TE 1981-82				TE 1998-99			
	Foodgrain Crops		Non-foodgrain Crops		Foodgrain Crops		Non-foodgrain Crops	
	Area	Value	Area	Value	Area	Value	Area	Value
Eastern	81.63	51.73	18.37	48.27	73.83	43.04	26.17	56.96
North Eastern	70.11	44.43	29.89	55.77	65.06	35.80	34.94	64.20
Northern	77.42	54.92	22.58	45.08	76.86	53.74	23.14	46.26
Southern	62.86	41.82	37.14	58.18	53.08	28.20	46.92	71.80
Western	71.92	44.44	28.08	55.56	61.85	36.10	38.15	63.90
All – India	70.34	48.05	29.66	51.95	65.44	39.85	34.56	60.15

Source: www.adb.org.

Above table shows that 1998-99, the value of non-foodgrain crops has increased near about 60.15 percent as compare to foodgrains crops (www. adb. org).

b) **Horticulture-led Diversification** – India has great potential in the production of horticulture crops which includes fruits, vegetables, spice, floriculture and plantations. India is the second largest producer of both fruit and vegetables in the world. India occupies first position in the production of cultiflower and second in onion. Trends in production of horticulture crops have been given below.

TABLE 4: TRENDS IN PRODUCTION OF HORTICULTURE CROPS

Crops	2002-03		2003-04		2004-05		2005-06*	
	Area Million Hectare	Production Million Tones	Area Million Hectare	Production Million Tones	Area Million Hectare	Production Million Tones	Area Million Hectare	Production Million Tones
Fruits	4.80	49.20	5.10	49.80	5.30	52.80	5.90	54.40
Vegetables	5.90	84.80	6.70	101.40	7.10	108.20	7.20	113.50
Spices	2.40	3.80	5.20	4.00	3.20	4.90	3.20	5.90
Plantation Crops	3.10	13.10	3.30	9.40	3.10	10.40	3.20	9.80
Flowers	0.10	0.20	0.20	0.60	0.10	0.70	0.10	0.80
Others	0.90	0.90	0.10	0.30	0.40	0.40	0.40	0.50
Total	17.2	152	20.6	165.5	19.2	177.4	20	184.9

Source – National Horticulture Mission

Table 4 conveys that among different crops such as fruits, vegetables, spices, plantations, flowers and others production of vegetables is highest which is near about 113.5 million tonnes in 2005-06. Total production horticulture in 2005-06 is near about 184.9 million tones.

c) **Livestock-led Diversification** – Livestock is often considered as a new source of agricultural growth in the country. CSO presents information related to livestock output separately for milk, meat, egg and wool. India possesses the second largest livestock population in world.

TABLE – 5: STRUCTURAL CHANGES IN THE LIVESTOCK

Items	1970s	1980s	1990s	2000s
Milk Group	59.05	64.23	67.14	69.13
Meat Group	18.14	17.05	17.99	17.83
Eggs	2.21	3.01	3.44	3.68
Wool & Hair	0.62	0.27	0.22	0.20
Dung	18.93	14.23	9.98	8.14
Silkworm	1.04	1.21	1.23	1.02

Note : All values are in percent; figures are the average of particular decade like 1970s is the average of 1970-71 to 1979-80, while 2000s is average of years 2000-01 to 2007-08.

Table 5 shows, that the share of eggs, milk and meat group in total livestock output is increasing while the share of dung, silkworm, wool and hair has decreased (www. iegindia.org).

d) **Fishery** – Fishery is a source of livelihood to over 14 million people and a major source of foreign exchange earner. In 2005-06, this sector contributed about one percent of GDP and 5.3 percent of GDP from agriculture sector.

e) **Agroforestry** - Increasing amounts of land are being degraded while demands for timber, fuelwood and grass for fodder are increasing. The central issue in agroforestry, therefore, is to restore degraded lands. It is an essentially ecofriendly practices that permit gainful exploitation of land to meet the fuel, fodder and timber needs of the population without impairing land productivity. The newly launched Greening India project to extend forest cover to 33 percent in all the states by 2012 is the first step in this direction. It is novel in several respects. The trees to be planted in a particular area are to be selected with their market and value-added potential in view. The target area is 107 million ha of degraded land, including 64 million ha categorized as wasteland.

f) **Genetic Engineering** - It is a powerful tool for improving the yields and quality of both plant and animal foods. Both macro- and micro-nutrient content can be enhanced with the now available and evolving biotech tools. However, safety aspects of GMO foods have become an area of concern and debate, globally. More recently, genetic engineering is being employed in various parts of the world, to create crops with other beneficial traits (www. en.wikipedia.org.)

3. **Agriculture Output Diversification** – It is related to diversification with agricultural production data. Diversification in it is across states. The share of states in the production of selected commodities as presented in table 6.

TABLE 6: THE CHANGES IN STATE'S SHARE IN TOTAL PRODUCTION OF INDIA

States	Rice			Wheat			Total Cereals			Pulses		
	2006/07	2002/04	1982/84	2006/07	2002/04	1982/84	2006/07	2002/04	1982/84	2006/07	2002/04	1982/84
Andhra Pradesh	12.71	10.02	15.31	-	0.02	0.03	7.32	6.02	8.45	9.51	8.94	4.57
Assam	3.31	4.77	4.87	0.09	0.11	0.28	1.47	2.18	2.12	-	0.48	0.42
Bihar	5.34	6.48	7.42	5.16	5.79	5.88	5.25	5.63	6.02	3.10	4.91	5.74
Jharkhand	3.18	2.80	-	0.17	0.16	-	1.68	1.48	-	1.83	1.10	-
Gujarat	1.49	1.13	1.15	3.96	2.07	3.38	2.91	2.51	3.53	4.15	3.55	4.20
Haryana	3.61	3.28	2.46	13.27	13.39	10.04	7.18	7.05	5.05	0.99	0.86	2.75
Himachal Pradesh	-	0.13	0.17	0.66	0.73	0.79	0.61	0.69	0.77	-	0.14	0.09
Jammu & Kashmir	-	0.58	1.09	0.65	0.43	0.51	0.49	0.70	0.92	-	0.16	0.25
Karnataka	3.70	2.96	4.07	0.28	0.20	0.44	4.29	3.38	4.78	6.27	5.46	4.54
Kerala	0.67	0.84	2.43	-	0.00	0.00	0.31	0.37	1.22	-	0.06	0.17
Madhya Pradesh	1.47	1.57	7.63	9.67	8.31	8.97	5.19	5.41	8.79	22.54	21.89	21.61
Chhattisgarh	5.40	4.82	0.00	-	0.15	0.00	2.56	2.31	0.00	3.45	3.14	0.00
Maharashtra	2.75	2.88	4.12	2.15	1.37	2.20	5.09	4.93	7.00	16.20	15.97	9.03
Orissa	7.31	6.08	7.40	-	0.01	0.28	3.42	2.78	3.63	2.46	1.83	8.04
Punjab	10.86	11.58	8.20	19.26	20.93	21.13	12.45	13.41	11.23	-	0.28	1.05
Rajasthan	-	0.14	0.27	9.31	7.82	8.25	6.16	6.13	5.89	10.42	9.80	13.17
Tamil Nadu	7.08	5.75	7.44	-	0.00	0.00	3.92	3.12	4.11	2.04	1.90	1.89
Uttar Pradesh	11.91	12.95	11.67	33.02	35.86	32.32	19.24	21.04	19.83	13.94	17.26	20.52
Uttaranchal	-	0.65	0.00	1.06	1.09	0.00	0.56	0.90	0.00	-	0.24	0.00
West Bengal	15.80	18.21	11.89	1.06	1.37	1.65	7.76	8.68	5.61	1.06	1.46	1.80
All India	100	100	100	100	100	100	100	100	100	100	100	100
All India Prod'n (in lakh tones)	930.36	804.69	534.42	750.81	686.02	439.71	2030.9	1807.8	1282.75	140.20	130.41	122.56

Cont.

States	Oilseeds			Cotton			Sugarcane		
	2006/07	2002/04	1982/84	2006/07	2002/04	1982/84	2006/07	2002/04	1982/84
Andhra Pradesh	1.36	7.36	13.36	9.63	13.04	11.50	6.10	5.91	6.06
Assam	0.13	0.80	1.27	-	0.01	0.03	0.30	0.37	1.16
Bihar	0.15	0.61	1.04	-	0.00	0.01	1.68	1.71	2.27
Jharkhand	-	0.09	-	-	0.00	-	-	0.05	-
Gujarat	2.57	16.79	18.58	38.84	24.18	21.24	4.40	5.17	3.95
Haryana	0.83	4.31	1.23	8.00	11.02	9.94	2.69	3.39	3.13
Himachal Pradesh	-	0.04	0.05	-	0.00	0.01	-	0.03	0.02
Jammu & Kashmir	-	0.41	0.46	-	0.00	0.02	-	0.00	0.01
Karnataka	1.13	5.75	7.91	2.70	3.26	7.70	8.06	9.10	7.72
Kerala	-	0.01	0.11	-	0.05	0.13	-	0.11	0.45
Madhya Pradesh	5.81	20.99	8.89	3.67	4.55	3.81	0.79	0.83	0.99
Chhattisgarh	-	0.57	0.00	-	0.00	0.00	-	0.01	0.00
Maharashtra	3.72	13.56	10.99	20.42	26.00	19.61	22.10	12.26	15.77
Orissa	0.18	0.69	5.63	-	0.59	0.04	0.36	0.31	1.64
Punjab	0.08	0.51	1.11	11.84	11.54	13.45	1.69	3.04	3.14
Rajasthan	5.17	13.72	6.84	3.31	4.00	8.07	-	0.14	0.80
Tamil Nadu	1.08	5.37	9.08	0.97	1.53	3.92	11.57	9.53	8.11
Uttar Pradesh	1.03	4.73	11.54	-	0.05	0.34	37.68	44.41	43.78
Uttaranchal	-	0.14	0.00	-	0.00	0.00	1.72	2.98	0.00
West Bengal	0.65	2.87	1.61	-	0.01	0.00	0.36	0.49	0.71
All India	100	100	100	100	100	100	100	100	100
All India Prod'n (in lakh tones)	240.29	201.74	114.05	220.63	112.91	70.58	3550.52	2594.41	1832.63

Source: www.adb.org.

Table 6 conveys an average share of states in the production of commodities like rice, wheat, cotton, sugarcane etc. Table shows that West Bengal accounted for the highest production of rice, Punjab accounted for wheat, Madhya Pradesh accounted for pulses, Rajasthan accounted for oilseeds, Gujarat accounted for cotton and Uttar Pradesh accounted for sugarcane in 2006-2007 (www.adb.org).

4. **Diversification Towards Secondary Sector** - Diversification into secondary sector has been taking place in rural economy. Rural non-farm sector includes agro-based industries. Table 7 shows that agro-based industries such as food products, followed by beverages, Tobacco, wood and wood products registered high growth rate during the eighties.

TABLE 7: GROWTH OF AGRO BASED INDUSTRIES

Sr. No.	Industry	Register Sector		Unregister Sector	
		Growth in Gross value of Output		Growth in Net Domestic Product	
		1971-72* 1981-82	1980-81@ 1990-91	1971-72* 1981-82	1980-81@ 1990-91
1.	Food Products	5.0	16.7	3.5	3.4
2.	Beverages and Tobacco	6.8	12.7	5.1	1.3
3.	Textiles	5.3	2.1	5.5	2.6
4.	Wood and Products	-0.7	12.2	0.2	-1.5
5.	Paper and Products	4.8	6.5	8.4	6.6
6.	Leather and Products	1.8	8.6	1.4	1.5
7.	Economy level growth of manufacturing	6.3	7.8	4.2	5.1

Source: Y.K. Alagh (1995), *Agro-based industrialisation in India *in Harish Nayyar and P. Ramaswamy ed., (1995), Globalisation and agricultural marketing. Jaipur: Rawat Publications.
Note: * with 1970-71 base; @ with 1980-81 base.

Table 7 conveys that registered sector has shown impressive growth in all the agro-based sectors during the eighties compared to the previous decades. Food products, followed by beverages and tobacco, wood and wood products registered high growth rate during the eighties. In contrast, in respect of unregistered sector the growth rates in net domestic product registered a deceleration during the eighties (www.baif.org.in).

DIVERSIFICATION CAN BE A RESPONSE TO BOTH OPPORTUNITIES AND THREATS

Opportunities which arise due to diversifications are as following -

- **Changing consumer Demand** - As consumers in developing countries become richer, food consumption patterns change noticeably. People move away from a diet based on staples to one with a greater content of animal products (meat, eggs and dairy) and fruits and vegetables. In turn, more dynamic farmers are able to diversify to meet these needs.
- **Changing Demographics** - Rapid urbanization in developing countries has an impact on consumption patterns. Moreover, a smaller number of farmers, in percentage terms at least, have to supply a larger number of consumers.
- **Export Potential** - Developing country farmers have had considerable success by diversifying into crops that can meet export market demand.
- **Adding Value** - The pattern witnessed in the West, and now becoming widespread in developing countries, is for consumers to devote less and less time to food preparation. This provides the opportunity for farmers to diversify into value addition, particularly in countries where supermarkets play a major role in retailing.
- **Changing Marketing Opportunities** - The changing of government policies that control the way in which farmers can link to markets can open up new diversification possibilities. For example, in India policy changes to remove the monopoly of state "regulated markets" to handle all transactions made it possible for farmers to establish direct contracts with buyers for new products.
- **Improving Nutrition** - Diversifying from the monoculture of traditional staples can have important nutritional benefits for farmers in developing countries.

THREATS

Threats are as following -

- **Urbanization** - This is both an opportunity and a threat, in that the expansion of cities places pressure on land resources and puts up the value of the land. If farmers are to remain on the land they need to generate greater income from that land than they could by growing basic staples. This fact, and the proximity of markets, explains why farmers close to urban areas tend to diversify into high-value crops.
- **Risk** - Farmers face risk from bad weather and from fluctuating prices. Diversification is a logical response to both. In fact, farmers often do the opposite of diversification by planting products that have a high price in one year, only to see the price collapse in the next, as explained by the cobweb theory.
- **External Threats** - Farmers who are dependent on exports run the risk that conditions will change in their markets, not because of a change in consumer demand but because of policy changes.
- **Domestic Policy Threats** - Agricultural production is sometimes undertaken as a consequence of government subsidies, rather than because it is inherently profitable. The reduction or removal of those subsidies, whether direct or indirect, can have a major impact on farmers and provide a significant incentive for diversification or, in some cases, for returning to production of crops grown prior to the introduction of subsidies.
- **Climate Change** - The type of crop that can be grown is affected by changes in temperatures and the length of the growing season. Climate change could also modify the availability of water for production. Farmers in several countries, including Canada, India, Kenya, and Sri Lanka have already initiated diversification as a response to climate change (www.en.wikipedia.org).

CONCLUSION AND POLICY IMPLICATIONS

Diversification in agriculture has tremendous impact on the agro-socio-economic impact and uplifting of resource-poor farming communities. It generates income and employment for rural youth year round for the ultimate benefits of the farmers in the country. It implies the use of local resources in a larger mix of diverse cropping systems and livestock, aquaculture and other non-farm sectors in the rural areas. With the globalization of markets in the WTO era, diversification in agriculture is one means to increase the total production and productivity in terms of quality, quantity and monetary gains under diverse agro-climatic situations of the country. There are many opportunities of crop diversification both in the irrigated and non-irrigated vast areas in the rural India.

Demographic factors, technology, infrastructure, political environment and global economic set up are the prime factors that influence the process of diversification. Perpetual inefficiency in agricultural marketing, non-availability of inputs - especially for hi-tech ventures, inadequate priority to research and development, lack of roads, cold storage, pre-cooling facilities, processing, grading and packaging services are few among those factors that constraint the pace of diversification. We need to launch the second Green Revolution through promotion of agriculture diversification, with a special focus on generation of gainful self-employment for the poor and weaker sections of the society. The programme should enhance agricultural production by involving a large number of small farmers and integrate with women empowerment, literacy and development of community organisations, for ensuring its success.

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INVESTMENT BANKING - A COMPREHENSIVE OVERVIEW

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ABSTRACT

Over the decades, investment banking has always fulfilled the requirements of the finance community and thus become one of the most energetic and thrilling part of financial services. Investment banking, as a segment of financial services sector has assumed greater significance, with the intensified financial market and the fast-paced flows of global trade and capital. Globally investment banking deals with both fund-based business of their own in the capital market and non-fund based service portfolio. Investment banking channel the country's wealth into fruitful activities that generate employment opportunities and improve the growth rate of economy, bringing together the users of money and providers of capital, and serving people to save for retirement or a child's education. Despite of its importance and need, most of the consumers often confused with the term investment banking, hence this article is designed to cover the basic concepts such as evaluation, meaning, services, merits and demerits, of investment banking, best ways to seek the service, criteria to be considered for selection, list and rating, performance, challenges current and future scenario of investment banking so as to facilitate better understanding of the concept.

KEYWORDS

FDI, retail, investment banking, reforms, Merger& Acquisition.

EVOLUTION OF INVESTMENT BANKING CONCEPT

In the words of John .F. Marshall and M.E. Eills , "Investment banking is what the investment banks do."The investment banking concept is originated in America. It has come up to fulfill the financial need of the civil war. To meet the financial need of civil war, the federal government in- trusted the task of raising funds from the public through the floatation of securities to the modern day father of investment banking, Jay Cooke and he distributed the securities throughout the US and Europe by means of salesman. Thereafter, during the last quarter of 19th century number of private investment banking houses emerged in US, notably JP Morgan and company in New York and N.W. Harris & Co in Chicago.etc. Meanwhile investment banking is termed as merchant banking in UK which had restricted them to capital market intermediation activities until, the US banks entered U.K and European countries. But later the scope of business is expanded and in the US the Glass-Steagall Act of 1933 prohibited the banks from rendering both commercial banking services and investment banking services. In 1999, Gramm –Leach-Bliley Act repealed the Glass-Steagall act. In India, the origin of investment banking can be traced back to 19th century. In 1967, ANZ Grind lays bank established merchant banking division separately to deal with the fresh capital issue matters. In 1972, the banking committee advised the commercial banks and financial institutions to establish merchant banking division and to undertake investment banking activities to overcome the monopolized services of foreign banks. State bank of India has established a separate bureau in 1972, and ICICI bank was the first bank which started to provide merchant banking service in 1972.

MEANING OF INVESTMENT BANKING

It is the traditional aspect of the investment banks which assists the government and corporate to augment funds from the capital market through underwriting arrangements and facilitate mergers and acquisition and divestitures matters. Generally, the investment banking activities are divided into industry coverage and product coverage groups. Industry coverage groups concentrate on a specific industry such as retail, oil, Financial Institution Group (FIG) or Technology, Media and Telecommunications (TMT). Product coverage groups focus on financial products, such as mergers and acquisitions, leveraged finance and equity. The product coverage activities are different from the commercial banking activities which accept deposits and lend loans and advances. But nowadays, the difference between these banks is distorted and commercial banks have also started to provide investment banking services. Further, although brokerage, broker – dealers and investment banking are often assumed to be similar; investment banking is different from these entities. Their line of business is classified into sell side and buys side. If, trading of securities is undertaken for cash or securities or promotion of securities then it is known as sell side whereas, buy side refers to dealing with mutual fund, pension fund, hedge funds.

CORE INVESTMENT BANKING ACTIVITIES/ SERVICES

Investment bank is divided in to front office, back office and middle office.

FRONT OFFICE

- **Investment Banking:** It lends a hand to customers for raising funds from the capital market and provides advisory services on merger and acquisition matters. This division is otherwise known as corporate finance. The investment banking division is generally classified into industry coverage groups and product coverage groups. Industry coverage groups concentrates on specific industry and secure business by keeping the relationship with the firms in the same industry, whereas, the product coverage groups concentrates on financial products such as, merger and acquisition , leasing , equity, debt etc.
- **Sales and Trading:** The most important function of investment banking is buying and selling of products on behalf of its clients. This is considered to be the revenue generating area. In case of sales, the sales force invite institutional and high net worth investors to propose trading ideas and take orders ,which will be executed by the concerned desk on the recommendation of sales desk.
- **RESEARCH:** This division reviews firms and makes report on the future aspects of the firm, with buy or sell ratings.

MIDDLE OFFICE

- **Risk management:** Risk management division is responsible for the task of analyzing and evaluating the risk of market and credit assumed by front office employees while conducting their daily trading . This is possible by setting the limit on the amount of money on hand for trading purpose. Further, middle office provides the assurance for addressing the risk.
- **Corporate treasury:** It involves the activities of observing liquidity risk, managing capital structure and funding investment banks.
- **Financial control:** This division provides valuable advice to the senior management on essential matters related to risk exposure, profitability etc. Further it helps in tracking and analyzing the capital flow of the firm.
- **Compliance:** This division is responsible for the compliance of government regulations by the firm.

BACK OFFICE

- **Operations:** It engages with the checking of data, ensuring the correctness of entry and transacting transfers which are demanded.
- **Technology:** It means information technology used for sales and trading, and for various purposes.

FUNCTIONS PERFORMED BY INVESTMENT BANKING

Investment banking extends multi-dimensional services such as raising capital, merger and acquisitions, sales and trading and general advisory services. Let's see in detail about the above mentioned services.

- **Raising capital:** Investment banks facilitate firms to augment funds through Initial Public Offering, private placement, underwriting etc., to attain the various objectives of the firm.
- **Mergers & Acquisitions:** Investment banking facilitates firms in buying or selling of a company, identifying and implementing merger. Further, it presents detailed analysis of the firm, valuation range, etc.
- **Sales and trading:** In this kind, investment banking offers service such as publishing research reports, issuing fresh shares, market making. Etc.,
- **General Advisory services:** In this category, investment banking extends its valuable advisory services on correctness of proposed action, capital restructuring, valuation of business, etc.,

MERITS AND DEMERITS OF INVESTMENT BANKING

MERITS

- ✓ In addition to the service it offers, investment banking through its good image can increase the value of the firm by creating competition over the firm, so as to create interest among the probable purchaser to buy the firm which intends to sell.
- ✓ Moreover good personal relationship can be established between the buyer and seller during the delegation.

DEMERITS

- ✓ Investors especially shareholders need to spend lot of money i.e. up to 2% of the sale, by means of commission to investment bankers.
- ✓ In case if any new company decides to utilize the services of investment banking in their project like, raising of capital etc, it needs to spend a huge money i.e., from 1% to 5% by means of commission to obtain their service. So, generally it is considered to be costly one.
- ✓ Investment banking used to represent the small companies to the big corporations with whom they maintain long lasting good relationship. But big corporations may not like this kind of involvement by investment banking.

Investment banks effectively extend their helping hand in the areas of financing sales, merger and acquisition activities of business firms. But the investment community often used to misinterpret their role and functions. Hence, to improve the benefits of investment banking, and to reduce the demerits, one or investment community should understand how to utilize their services in an effective manner. Here, the best ways to seek the service of investment banking are described below.

WAYS TO SEEK THE SERVICE

- Have a clear idea of the functions or services offered by the investment bankers from their menu list.
- Try to find out the necessity of the involvement of investment banking, since, if the business is small in size, the investment bank may refuse to take up the assignment as they always have desire to deal with big business concerns.
- Scrutinize the experience, success, of investment banking in handling similar kind of transactions, after deciding the services required from them.
- Select and finalize the kind of service required from investment banker and negotiate the terms and conditions, like the fees, time limit, duties to be done, contribution level etc.,
- Furnish all the required data to the investment banker to perform the assigned task productively. Never hide any data, and try to be honest.
- Immediately after settling all the things, try to implement the plans without any further delay, as it affect the plan.

WHAT TO LOOK FOR IN INVESTMENT BANKING

Most of the firms seek investment banking services such as analysis of industry and finance, documents preparation, preparing accounts, negotiation of transaction terms, and helping all the stages of their project which are considered to be very important, and any minor mistake in any of these will seriously affect the productivity of the plan. The execution of the plan in an effective manner and without committing any mistake is truly in the hands of the investment banks to which the task is entrusted. Hence, due care should be shown in selecting the investment bank. To get better served the client firms or individuals have to consider the factors such as active involvement of senior persons in the execution of project, experience of the firm in the exact industry, extensive network of links, the record of success, its ability to complete the work before the deadline, suitability of fee structure with the firm, etc., before selecting the investment bank. Let's have an idea about the popular investment banks in India.

INVESTMENT BANKS IN INDIA

Investment banking industry has seen lot of change all over the world during the last three decades and it is considered to be a booming industry in India. It has started to attract the attention of firms by executing the task successfully. Commercial banks have started to realize the need to establish a separate division for providing investment banking service to attract and fulfill the needs of their clients and formed. A few popular banks which are offering investment banking service in India are listed below.

- ✓ JP Morgan (Mumbai & Bangalore)
- ✓ UBS(Hyderabad & Mumbai)
- ✓ Goldman Sach(Bangalore)
- ✓ Lehman Bros
- ✓ ANZ
- ✓ ABN
- ✓ Morgan Stanley (Mumbai)
- ✓ Citigroup (Not in India)
- ✓ BNP Paribas(Not in india)
- ✓ Deutsche Bank (delhi, Bangalore , bom)
- ✓ HSBC (Blr)
- ✓ Merrill Lynch
- ✓ Enam
- ✓ Kotak Mahindra
- ✓ SBI Capital Markets
- ✓ Ambit Corp Finance
- ✓ IICI Securities

RANKING OF INVESTMENT BANKS

The customers of investment banking needs to identify the best bank for entrusting their task such as raising capital, asset and wealth management and helping to carry out the merger and acquisition function to attain productive results, without committing any mistake. But it becomes decisive for any budding customer of any service industry to obtain an unbiased 'true and fair' independent judgment of the investment bank's ability to serve and satisfy the demands of investors. Thus, the credit rating agencies provides rate and rank of investment banks which are evaluated on the basis of various parameters such as market penetration of the bank, customer satisfaction, association and workforce. In this way, Global finance has announced the world's best investment banks for the year 2011. In addition to the above said parameters, it has also considered the parameters such as, deal completed in the previous year, efforts to tackle the

problem of changing market situation, structuring capabilities, distribution networks, innovation, pricing after-market performance of underwritings and market reputation. The best banks as per global finance report are listed below.

GLOBAL WINNERS

Best Investment bank	Morgan Stanley
Best Equity Bank	Morgan Stanley
Best Debt Bank	Barclays winners
Best M&A Bank	Morgan Stanley
Best Up-and-Comer	QInvest
Most Creative	Bank of America Merrill Lynch
COUNTRY AWARDS	
INDIA	Morgan Stanley

Source: <http://www.gfmag.com/tools/best-banks/11097-worlds-best-investment-banks-2011.html>

PERFORMANCE OF GLOBAL INVESTMENT BANKS

The crucial role occupied and will be played by investment banks on behalf of investors, firms and government cannot be easily ruled out. However, at present, these banks which had been considered as the king of Wall Street once are teetering on the border of firmness owing to the bankruptcy of Lehman brothers, a top concern, due to the financial crisis happened in the year 2008. This has resulted in a major economic recession in the world during the second part of the year 2008. Under these circumstances, another top investment bank Goldman Sachs has been charged for purportedly selling the securities that were formed to be unsuccessful. These things have deeply affected the reputation of investment banks which will in turn affect the income and profit of the industry also. Despite of all these issues, the investment banks in the world were managed to remain strong in terms of finance and constructive characteristics during the year 2010. But, the year 2011 was observed as particularly tough for all investment banks in the world due to uncertain global economy, stock market volatility, euro zone debt crisis and US economic woes, and these factors put many deals on ice. The product-wise volume of business carried out by the global investment banks in the year 2011 comparatively to the year 2010, has been given below:

PRODUCT -WISE VOLUME OF INVESTMENT BANKING IN WORLD					
PRODUCT	PERIOD	2011	2010	CHANGES IN AMOUNT	CHANGE IN %
M & A	VOLUME IN BILLIONS (\$)				
	Q1	665.091	616.44	48.651	7.89
	Q2	729.818	584.839	144.979	24.79
	Q3	607.713	747.908	-140.195	-18.74
	Q4	609.164	709.522	-100.358	-14.14
	Total	2611.786	2658.709	-46.923	-1.76
DEBT	Q1	1867.317	1860.87	6.447	0.35
	Q2	1574.466	1299.984	274.482	21.11
	Q3	1177.366	1614.722	-437.356	-27.09
	Q4	1149.824	1325.837	-176.013	-13.28
	Total	5768.973	6101.413	-332.44	-5.45
EQUITY	Q1	208.011	176.303	31.708	17.98
	Q2	219.238	165.919	53.319	32.14
	Q3	103.13	202.853	-99.723	-49.16
	Q4	97.945	351.024	-253.079	-72.10
	Total	628.324	896.099	-267.775	-29.88
LOAN	Q1	907.284	543.023	364.261	67.08
	Q2	1168.425	789.353	379.072	48.02
	Q3	985.182	728.324	256.858	35.27
	Q4	961.304	880.891	80.413	9.13
	Total	4022.195	2941.591	1080.604	36.74

Source: Investment Banking Scorecard created by the Wall Street Journal and Dealogic

http://graphicsweb.wsj.com/documents/INVESTMENT/InvestmentBankQuarterly_1007.html

It is obvious from the above table that the volume of deals regarding Mergers & Acquisitions, Debt, and Equity has got considerably reduced during the third and fourth quarter of the year 2011 comparatively to the year 2010. In total, the volume of merger & acquisition, Debt, and Equity went down by 1.76%, 5.45%, and 29.88% respectively in the year 2011 when compared to the previous year 2010 as a result of uncertain global economy, stock market volatility, euro zone debt crisis and US economic woes. But, Loan deals rose by 36.74% in the year 2011 comparatively to the year 2010. Similarly, Indian Investment banks have also exposed to global shocks. For instance, Mergers and acquisitions (M&As) have declined from \$60.7 billion in the year 2010 to \$43.9 billion in 2011 i.e., by 28% according to the data released by Dialogic report. It also states that the debt capital market volume went down by 13% to \$39.48 billion. Further, the equity capital market transactions have declined by 67.26% to \$9.76 billion as against the previous year performance.

In spite of unsuccessfulness in volume of business, the total revenue of Global investment banks has not gone down much and it can be observed with the help of table below:

TABLE SHOWING THE CHANGES IN GLOBAL INVESTMENT BANKING REVENUE (in Billion)			
	2011	2010	% Change
Quarter- 1	20.235	15.757	28.42
Quarter -2	21.792	14.963	45.64
Quarter -3	14.34	15.736	-8.87
Quarter -4	13.366	3.466	285.63

Source: Investment Banking Scorecard created by the Wall Street Journal and Dealogic

http://graphicsweb.wsj.com/documents/INVESTMENT/InvestmentBankQuarterly_1007.html

It is apparent from the above table that the total revenue of global Investment banks has increased in each quarter to a greater extent irrespective of many issues raised except in the third quarter. This decline was due to the reduced volume of deals as a result of stock market fluctuations, the European debt crisis and the U.S. budget happened in the third quarter of 2011. In contrast to this global trend, Indian investment bank's revenue has decreased from \$741 million in the year 2010 to \$515 million in 2011 i.e., to an extent of 30%, according to data from Dealogic Holdings Plc., a UK-based research organization that tracks deals.

The above presented facts had made it clear that, Investment banks in India as well in world are now in tough phase, facing complex challenges emerged from global meltdown. In addition to this, more stringent rules and regulations which has been imposed recently in order to retain their reputation and to protect them from failure will also affect the performance of these banks. The challenges ahead for investment banks are presented below in three broad categories:-

CHALLENGES FOR GLOBAL INVESTMENT BANKS

1. Adherence of stringent regulations

Basel –III was developed on July 2010 by Basel Committee on Banking Supervision (BCBS) with the intention of strengthening the banking regulation and supervision. It has upgraded the standards with regard to capital, leverage, and liquidity regulations. As per the Basel-III capital standards, Banks are required to maintain a common minimum equity ratio of 7% of RWA, plus a new capital conservation buffer of 4.5% and the total capital at the rate of 10.5% (previously it was 8%) of RWA etc. These tightened norms are expected to consume high capital, cost and resources. These stringent regulations are difficult for investment banks to implement, because of limited timescale.

2. Embedded risk management

The Basel -III has tightened the norms on risk management system to protect the investment banking industry from recession. As per this more stringent norms, I- banks are required to evolve from the traditional system of risk management (where risks are identified as a factor of interruption to routine activities) to the Enterprise risk management which identifies the threats and opportunities in advance. The implementation of enterprise risk management system requires deep enterprise-wide collaboration and feedback loops that reinforce proactive discussion and implementation, standardized data and reports.

3. Focus on customer needs

Post-crisis, a number of trends are forcing all investment banks to reapply client focused approach of services. A thorough understanding of clients' requirements and their service history would assist investment banks to build strong client insights. But the wide-ranging needs of different client segments (institutions versus hedge funds, for example) limits the ability to integrate the customer relationship management effectively in to the investment banking system.

4. Implementation of fluid architecture

The application of innovative technologies has so far been restricted to front office level in investment banks. But in the wake of financial crisis, now investments banks are started to infuse service oriented architecture (SOA) across the enterprise. However, developing the technology to a new level is practically unfeasible due to the challenges such as the perception that SOA cannot keep up with the speed of business change, lack of commitment from senior persons, insufficient capital to adopt new technology, limited reuse of new technology across various functional areas, requirement of new way of thinking by banks.

5. Cost reduction

The combination of new regulatory norms on capital limits, leverage, and increasing regulatory cost are deemed to have a serious impact on revenue of Investment banks. Therefore, I-banks, to ensure the same level of return are required to create cost awareness culture amongst the employees. Moreover, they need to shift from the old strategy of slashing costs to consistently reviewing costs and reduction strategy. The abandonment of old cost culture and knee-jerk response to changes in profit would be a great challenge for these banks.

6. Other challenges

- Claw back provision which requires repayment of bonus by those who made loss in their Transaction has been made more tighten.
- Treatment of commodities in asset class
- Investment bankers are acting as fund arrangers, processors and distributors rather than investors.
- More pressure on fund managers to perform the task at low - cost

These challenges along with uncertain economic condition would not allow investment banks to ensure success. Despite, global investment banks are continue to chase towering performance. Moreover, it is expected that, the tougher regulations and stringent norms will influence and take small investment banks on par with their giant counterpart after the improvement of economy. Optimism is a good thing; however, it is worth bearing in mind that adoption of competitive strategy will not turn out sufficient positive results. Therefore, to ensure success, investment banks should concentrate on implementing the following points in their organization.

- Build refined strategic planning and commercial targets to face the complex challenges.
- Build creative and efficiently engaging team from cross functional departments such as Trading, Sales, Operations, Risk, Compliance, IT, Legal, Financial Control.
- Conduct competitive and market research.

CONCLUSION

Investment banking has faced fabulous transform during the last three decades. The sudden unexpected fall of big investment bank Lehman brothers, and the decision of the Goldman Sachs and Morgan Stanley to enter into commercial banking activities have given a likely picture that investment banking industry has attained the saturation stage. Moreover, global economic problems, changes in rules and regulations, technology and lot of other issues have also affected the shape of this industry. However, many analysts opine that the investment banking industry will again develop towards towering performance by meeting its challenges through numerous effective strategies. In spite of that, the service of investment banking is badly required by the clients. Hence, it can be concluded that, the industry can be successful by rebuilding the confidence of this strong capital base and developing the strategic skills to execute the task efficiently.

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PREVENTION OF INVENTORY SHRINKAGE IS BETTER THAN SHRINKING THE PROFIT – A GLOBAL ORGANISED RETAIL CONFRONTATION

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ABSTRACT

Shrinkage within the retail sector runs in to billions every year against an economic backdrop of reduced consumer spend and ever increasing pressure on margins through reduced sales and increasing costs. Inventory Shrinkage is the difference between your inventories on hand and what it should be according to sales records and purchase orders. This difference can be substantial - between 2% to 5% annually, according to retail industry studies. To combat shrinkage, companies often need to implement tighter security measures. Depending on the nature of the business, this may involve hiring plainclothes or uniformed security guards to patrol the premises and monitor the activities of employees and customers. They may need to install security cameras and other electronic devices. Combine customer service techniques with good store design to combat shoplifting. The business may also need to install strict internal control measures to monitor bookkeeping and inventory control. The presence of more security may exacerbate the feeling of mistrust between management and employees. And also well-designed store layout will not eliminate all shoplifting but will help reduce it.

KEYWORDS

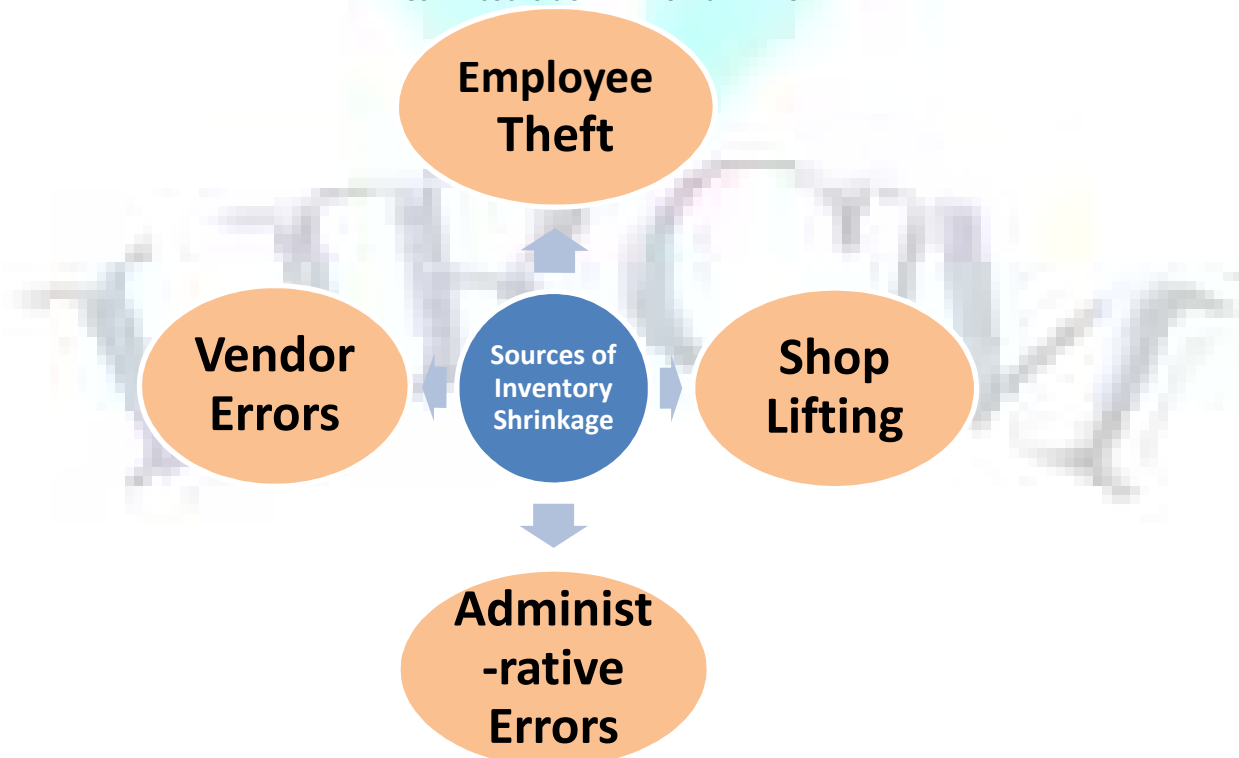
Employee Theft, Inventory Shrinkage, Organised Retail Crime (ORC), Point of Sale (POS), Shop Lifting.

INTRODUCTION

Inventory is a critical area in business that can easily impact the business financial stability. Appearing as an asset on the business financial statements, the stored inventory is the goods a business uses to generate income. Inventory shrinkage depletes the business potential income, and thus, potential profit. Shrinkage is caused by two things and two things only - theft and error. If you take action to account for a change to your inventory, such as removing an item from stock for store use, or reducing the sell price of an item because of its condition, or donating an item to a charity, it will not show up as shrinkage because you have accounted for it.

There are three categories of theft - theft by employees, theft by customers and theft by vendors. Error, on the other hand, is the unintentional loss of inventory value, with no dishonesty involved. Mistakes such as mispricing, entering inaccurate data into the IMU file, or neglecting to adjust the inventory when actions take place such as removing an item from display for store use or donating an item to a local charity, are all examples of shrinkage caused by an error. Shrinkage can result in business changes, such as increased prices, decreased employee bonuses and overall loss of sales. An important issue facing store management is reducing inventory losses (Figure 1: Sources of Inventory Shrinkage) due to 1) Employee theft 2) Shoplifting 3) Administrative errors in record keeping and 4) Vendor errors.

FIGURE 1: SOURCES OF INVENTORY SHRINKAGE



Employee mistakes are failing to ring up an item when it is sold and miscounting merchandise when it is received or during physical inventories. Inventory shrinkage due to vendor mistakes arises when vendor shipments contain less than the amount indicated on the packing slip. Although shoplifting receives the most publicity, employee theft accounts more inventory loss. A year ago, hopes of continued improvements in the global economy gave rise to optimism that shrink was coming under control. But as economic growth has stagnated in many regions retailers have continued to come under pressure in their attempts to confront and overcome the causes of shrink. A big challenge for retailers is the increased diversity of threats contributing to shrink. Theft related factors make up nearly 3/4th of shrink.

GLOBAL RETAIL SHRINK TRENDS

The 2011, Global Retail Theft Barometer (GRTB) notes that shrink exceeded \$119 billion presently, representing 1.45 percent of total retail sales. This shrink rate is the highest ever recorded by the annual GRTB, and reflects an annual increase of 6.6% (See Table:1). The countries suffering the highest rate of shrink included India (2.38%), Russia (1.74%) and Morocco (1.72%). The lowest rates of shrink were found in Taiwan (0.91%), Hong Kong SAR (0.95%), and Japan and Austria (both 1.04%). Asia-Pacific rate was 1.22%.

TABLE1: GLOBAL RETAIL SHRINKAGE

	Total Shrinkage U.S. \$ billion*	Total Shrinkage U.S. \$ billion*	Total Shrinkage U.S. \$ billion*
North America	\$45,321	1.58%	6.0%
Latin America	\$6,053	1.67%	4.4%
Middle East/Africa	\$0.815	1.71%	5.6%
Asia-Pacific	\$18,288	1.22%	0.8%
Europe	\$48,615	1.39%	7.8%
Global	\$119,092	1.45%	6.6%

* U.S. \$1 billion* is U.S. \$1,000 million

Source: Global Retail Theft Barometer – 2011, Press release.

NEED OF THE STUDY: WHAT IMPACT CAN SHRINKAGE HAVE TO A COMPANY?

Shrinkage is a term used to identify merchandise or inventory that a business records as being present but is not actually on hand or is unsalable. Shrinkage can occur due to employee or customer theft, damage or a bookkeeping miscue. Shrinkage can affect virtually any type of business, but is a problem most commonly associated with the retail industry. When an annual inventory is conducted and a shortage is discovered, there is, unfortunately, no verifiable means of determining exactly what percentage of the loss was caused by theft out the front door by customers; theft out the back door by employees; cash embezzled at the POS terminal by employees; theft by a vendor who has access to your inventory; or errors resulting from mistakes by employees with no criminal intent.

REDUCED PROFITS: Shrinkage takes a bite out of a business's bottom line. Retailers typically must operate with razor-thin profit margins to remain competitive, so any event that cuts into profits is likely to have a significant negative effect. (See an Assumed Illustration in Table 1, which depicts the direct impact on profits of an organisation due to Inventory Shrinkage.)

PRICES AND WAGES: To account for the lost sales, business owners often must resort to raising their prices. In businesses where shrinkage is problematic such as the grocery industry, this means consumers must pay more for products they need to survive. For businesses which sell highly price-sensitive goods, higher prices can place them at a competitive disadvantage. Businesses may also have to offer lower wages and hold the line on wage increases, making it more difficult to attract and retain high-quality employees.

TABLE1: ASSUMED ILLUSTRATION

Situation : 1	(In US \$)		
Stock as on 01.04.2011	10000000		
Sales : (Assume company registered 100% sales by 31.03.2012)	10000000		
a) Assume Expected Profit @ 10% on sales		1000000	
Situation : 2			
Stock as on 01.04.2011	10000000		
b) Inventory Shrinkage @1.45% *	145000		
Net Stock available for sale	9855000		
Sales: (Assume company registered 100% sales by 31.03.2012)	9855000		
c) Assume Expected profit @ 10% on sales		985500	
d) Loss on Sales (a-c)		145000	
Net loss to the company (b + d)			290000

* Global Retail Shrinkage is at 1.45% on sale

Source: GRTB-2011.

OBJECTIVES OF THE STUDY

- 1) To focus on implications faced by Retail firms due to inventory shrinkage.
- 2) To highlight the importance of control measures/strategies to reduce the inventory shrinkage in retailing.

PREVENTIVE MEASURES TO CONTROL INVENTORY SHRINKAGE

The retail industry reports that 50 percent of inventory loss is due to external theft, 30 percent is due to internal theft, and 20 percent is due to poor paperwork. While retail percentage figures may not apply exactly to all industries, the categories remain valid. One needs to look for a system that monitors all three of these areas.

1) EMPLOYEE THEFT: "DO, EMPLOYEES UNDERSTAND THE TRUE COST OF LOST MATERIAL?"

Many retailers find it hard to believe that their employees or customers would steal. But unfortunately stealing, especially petty theft is a very common reason for "inventory shrinkage." And a retailer, who doesn't admit that theft is a problem, or a potential problem, is just burying his or her head in the sand. In fact, many employees don't realize the value of your stock inventory and may "borrow" products or take samples for their personal use.

Did the employees think they were stealing? Probably not. These were good people who never would have thought of taking money out of the cash register. But they didn't appreciate the true value of inventory. They didn't see the direct relationship between the inventory in the store, turning that inventory into cash by selling it to customers, and using that cash to pay employees and other expenses. Employees must see all inventory shrinkage as an expense that reduces the amount of money available to pay wages and benefits. It takes money out of their pockets.

Some retailers install security cameras and other theft-deterrent devices. While they are important tools in a retail environment, the effectiveness of these "hi-tech" solutions in a store, distribution warehouse is questionable. True, they may be a deterrent to some theft, but employees who are also thieves usually put considerable thought and effort into getting around these systems and continue to steal. At the same time, honest employees often feel intimidated and resentful as "big brother" continually watches their every move. These feelings often discourage good and loyal employees from giving their all for the company. A better way to discourage theft is for management to create an atmosphere that encourages effective control of major source of Inventory shrinkage, 'Employee Theft'. How?

LIMIT ACCESS TO THE WAREHOUSE: A Retailer cannot hold warehouse employees responsible for the material in warehouse if customers, truckers, salespeople, and other individuals can walk through the aisles, unescorted, at any time. Only the people receiving, moving, picking, and packing material should be allowed in the area where merchandise is stocked. Salespeople may complain that they need to run out to the warehouse to check material availability because the stock balances in the computer are inaccurate. This may be true. Unfortunately, one of the major reasons why computer stock balances are inaccurate involves the number of people who have access to the warehouse. This is truly a "chicken and egg" situation: Salespeople need access to the warehouse because your stock balances are inaccurate. Stock balances are inaccurate because salespeople (along with customers, vendors, truckers, and others) have access to the warehouse. This is a vicious cycle that won't be broken until implement business policies that are designed to maintain accurate stock quantities.

Some retailers can't keep salespeople out of their warehouse. Maybe they don't have enough help, or maybe salespeople are responsible for providing after-hours service to customers. If so, be sure to implement a tool that allows salespeople to easily record any material they remove. In fact, many companies allow the salespeople themselves to develop the system to record the products they remove for emergencies, samples, or other valid reasons. This "system" is often just a clip-board hanging by the warehouse door, the following information is noted for each item taken.

PAY YOUR EMPLOYEES WELL: If a retailer pays the employees more than they could earn at other retailers, and pay them based on how well they perform, then probably be able to get the best people available in the workforce. When employees can see a direct correlation between performance and their compensation, they usually tend to work hard. When the accuracy of on-hand quantities affects the compensation of all employees that have access to warehouse inventory, then employees are motivated to treat employer's inventory as if it was their own. It's like having management constantly watching over your warehouse operations.

RECOGNIZE THE ORGANISED RETAIL CRIME (ORC): If someone steals, they are stealing from everyone who works for your company. After all, the money used to buy replacement merchandise is money that could have been used to pay higher wages or provide additional benefits. If a retailer overlook certain indiscretions or continually give people a "second chance," i.e., condoning behaviour that is detrimental to the well-being of the company and its employees.

MAINTAIN A STRICT EMPLOYEE THEFT POLICY

- Explain fully that theft is a fireable offense and that there are no second chances. If employees think they can get away with theft, they are much more likely to attempt to steal than if there is a strictly enforced employee theft policy in place.
- Make examples out of previous employees to affirm the management's seriousness.

PROVIDE GOOD EMPLOYEE TRAINING

- Thwart register errors by ensuring each employee fully understands the POS terminal and his or her duties at the register. Non-criminal cash register errors account for a considerable percentage of inventory shrinkage.
- Train your packagers and warehouse employees how to properly lift and handle product. Damage to products is almost entirely preventable.

FEW REPUTABLE PRACTICES

- ✓ **Pantaloon's People Management System:** with over 18,000 employees, the Pantaloon's People Management System initiative in building five pillars of people based growth – Culture Building, Performance Management, People Processes, Management Process and Leadership Brilliance. A competent Learning & Development team is responsible for training employees at all levels across the country, focusing on various aspects of retailing and assessment of training needs across knowledge, Skills and "Attitude" areas.
- ✓ **Pragathi, Spencer's Centre for Retail Excellence:** RPG retail's "Training for Operational Excellence" aimed at Manpower, trained in Product Knowledge, Customer Acquisition skills, Store Economics and Nurturing a "Professional Culture" etc., which ultimately ensuring total alignment to business goals and growth to both the individual and the organisation.

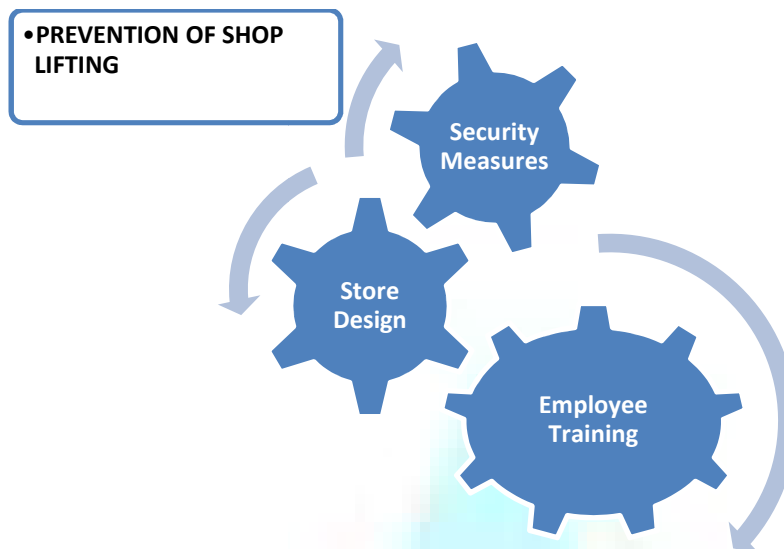
2) SHOPLIFTING

Second major source of inventory shrinkage after employee theft is 'Shoplifting', combined account for the largest source of property crime committed annually. The easiest way for retailers to discourage theft in a store is by taking away opportunities to steal. A little thought into the store's layout and design can prevent theft before a loss occurs. Here's How:

- **CHECKOUT:** Designing the store lay out so customers must pass the register area and staff to exit the store. Never leave the register unlocked or unattended. Do not display merchandise near the store exits.
- **TIDY UP:** Keeping the store neat and orderly. Full displays and straightened shelves allow employees to see at a glance if something is missing.
- **VIEW ALL:** Using mirrors to eliminate blind spots in corners that might hide shoplifters. Maintain adequate lighting in all areas of the store; keep fixtures and displays low for better visibility.
- **UNDER LOCK AND KEY:** Placing small, expensive items in locked cabinets or behind the counter. Rest rooms and dressing areas should be watched at all times. Keep dressing rooms locked and limit the number of items taken in by each customer. Use alarms on unlocked exits and close or block off unused checkout aisles.
- **SIGNAGE:** Signs and posters reinforcing security messages should be used. Post anti-shoplifting signs like 'Shoplifters Will Be Prosecuted' in clearly visible locations.
- **SECURITY:** Using security equipment such as closed circuit television, security tags and two-way mirrors. Uniformed security guards are also powerful visual deterrents to the shoplifter.

A well-designed store layout will not eliminate all shoplifting but will help reduce it. Combine customer service techniques with good store design to combat shoplifting. (See Figure:2)

FIGURE 2: COMBINATION OF SHOP LIFTING PREVENTION TOOLS



3) ADMINISTRATIVE ERRORS AND VENDOR ERRORS

Inventory accuracy is a necessary element in any effective replenishment system. If buyers don't know how much of a product is in retailer's warehouse and available for sale, there is no way they can accurately determine when to replenish stock and how much to order. Retailer will end up with a loss, due to shortage of products (Stock-Out Situation), and not readily available to pick, when customer is tend to purchase.

TIE SALES TO INVENTORY COUNTS: A point of sale system ties every sale to inventory count and costs. Every time a clerk, ring up a sale, the inventory numbers reflect the change. This tells exactly how much inventory should be coming off the shelves in the back room. If 1,000 units are sold and have a reduction in inventory of 1,100, then, need to examine backroom security measures.

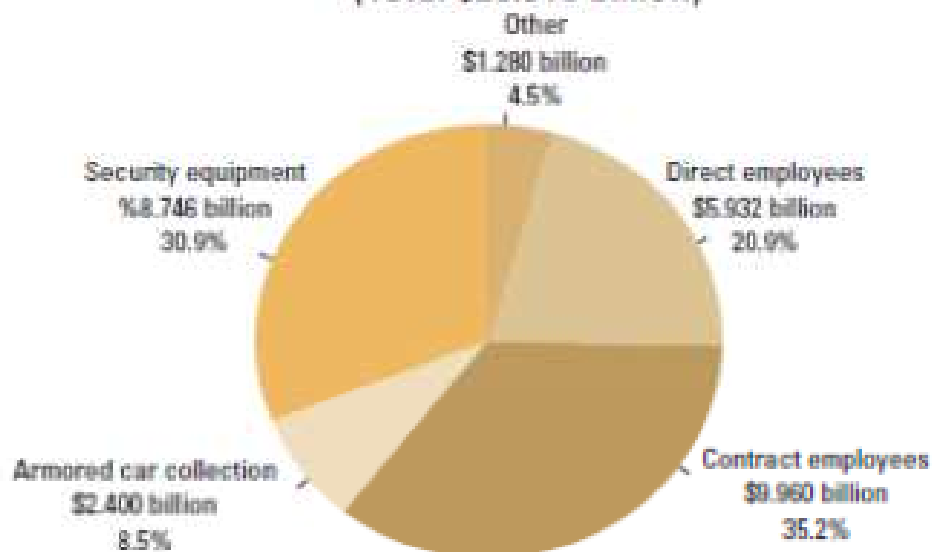
EXAMINE PROFIT MARGINS REPORT: A good information system gives a profit margins report in each category of product. If one area has a reduced margin, retailer need to investigate what is going on in the warehouse. A retailer will plunge into reduced margins because of buying more inventory than selling.

CHECK ACTUAL INVENTORY AGAINST VENDOR CLAIMS: Using an information system to log in actual products ordered and received from vendors. Does not using the vendors' packing slips, because packaging errors occur? And may not have received the number of products the vendor claims to have shipped. Run your actual inventory numbers against vendor claims once a month, can identify areas where retailers are paying for inventory which they never received.

DISCUSSION

Shrinkage is rarely a good thing, and in a small business it can be costly. Inventory shrinkage is the reduction of inventory value between production and retail. This is the cost of goods being lost, stolen or misplaced. Tracking the percentage of inventory shrinkage allows you to see how much value is being lost. Ideally, you want to keep the figure as close to zero as possible. Ernst & Young's Study of Retail Loss Prevention examines how retailers manage one of their most significant costs Inventory Shrinkage, which includes employee theft, shoplifting, administrative and paperwork errors, and vendor errors/issues. In addition to the financial impact of "shrink," the survey provides new insight on the effectiveness of the programs and tools employed by retailers to combat it. Companies are placing a renewed emphasis on managing shrink to help improve profitability in this difficult economic environment. In 2011, retailers increased their spending on loss prevention and security by 5.6% over 2010 to US\$28.3 billion globally, loss prevention equipment's share of total loss prevention expenditures actually declined slightly (See Figure:3).

FIGURE 3: GLOBAL LOSS PREVENTION EXPENDITURE
(Total \$28.318 billion)



Source: Checkpoint systems (www.checkpointsystems.com)

The region with the sharpest decline in loss prevention equipment's share of expenditures was Europe, down 6.25%. Notably, shrink in Europe increased 7.8%, topping the global average. Shrinkage within the retail sector runs in to billions every year against an economic backdrop of reduced consumer spend and ever increasing pressure on margins through reduced sales and increasing costs.

RECOMMENDATIONS

"Many retailers are using security technologies such as anti-shoplifting, digital video and point-of-sale systems to help their staff zero in on theft problems."

- Point-of-sale data mining software solutions that detect potential theft problems at the cash register and alert appropriate personnel in real-time. These data mining packages can be tied to digital video recorders to provide crisp, clear images of who sold what to whom with a click of a button and can be delivered to any location around the world.
- Source tagging programs where tiny anti-theft labels about the size of a paper clip are placed inside an actual product or product package, effectively hiding it from view.
- Self-alarmed anti-theft tags that broadcast an audible alarm throughout the store when a shoplifter attempts to improperly remove it from merchandise.

Technology also allows employees to focus more time on assisting customers and less on patrolling the aisles. **"Retailers are going High Tech"** - Many supermarket retailers are installing "self-checkout lanes". This technology offers benefit to both retailers and their customers. 90% of the cost of maintaining a checkout line is the cashier. Thus, eliminating the cashier can reduce costs and/or enable the store to open more checkout lines. To limit the potential theft in the self-checkout lanes, retailers are using various techniques. Like these deterrents are psychological, such as displaying customers on a video screen as they scan their merchandise. In addition, an electronic scale beneath the shopping bags knows what's just been scanned and how much it is supposed to weigh. So if a shopper scans toothpaste while slipping a toothbrush in the shopping bag, the system beeps and asks that the item be entered again.

CONCLUSION

Reducing and eliminating inventory shrinkage requires due diligence from every business employee, from the customer associate to accounting and executive professionals. Though mistakes happen, continuous attention to details and quality care of the inventory will help eliminate unnecessary and avoidable shrinkage.

MANAGEMENT FOCUS: Businesses with high shrinkage often require that management place more focus on loss prevention. To encourage managers to be more vigilant, some retail organizations include loss prevention incentive programs as part of a manager's compensation program. While these programs can help to reduce shrinkage, it may require managers to devote more attention to loss prevention at the expense of other important tasks like training, staffing, promotions and other day-to-day operations.

Perceptibly, being able to put at least 2% of your annual inventory costs back in your pocket allows to maximize business investment and better grow the company. It can even pay for Point of Sale (POS) software system, allowing for even greater savings from improved efficiencies and increase customer satisfaction. "In developing a loss prevention program, retailers confront a trade-off between providing shopping convenience and a pleasant work environment on the one hand and, on the other hand, preventing losses due to shoplifting and employee theft. The key to an effective loss prevention program is determining the most effective way to protect merchandise while preserving an open, attractive store atmosphere and a feeling among employees that they are trusted".

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A STUDY OF CUSTOMER RELATIONSHIP MANAGEMENT PRACTICES IN HOTELING SECTOR**V. P. DESHMUKH****ASST. PROFESSOR****BUSINESS ADMINISTRATION DEPARTMENT****BHARATI VIDYAPEETH DEEMED UNIVERSITY****PUNE****N. R. JADHAV****ASSOCIATE PROFESSOR****BUSINESS ADMINISTRATION DEPARTMENT****BHARATI VIDYAPEETH DEEMED UNIVERSITY****PUNE****S. P. SHINDE****ASST. PROFESSOR****COMPUTER APPLICATIONS DEPARTMENT****BHARATI VIDYAPEETH DEEMED UNIVERSITY****PUNE****ABSTRACT**

In a present scenario in order to succeed under existing conditions, hotels will have to perceive the needs of its customers and devise better means of fulfilling them therefore hotels will have to formulate marketing strategies in a way to not only increasing new customers toward them but also retain them for lifetime. Customer Relationship Management has emerged as a popular business strategy in today's competitive environment. It is a discipline which enables the Hotel sector to identify and target their most profitable customers. It involves new and advance marketing strategies which not only retain the existing customers but also acquire new customers. It has been invented as a unique technique capable of remarkable changes in total output of companies. Services are then provided in a timely manner using the channels that are preferred by the customers. Effective Customer Relationship Management focuses on the development of business strategies and aligns an organization to serve customers.

KEYWORDS

Aligning, Customer Relationship Management, Discipline, Lifetime, Perceive Strategies, Target, Unique.

INTRODUCTION

The field of Customer Relationship Management is becoming popular in service sector. With more and more companies adopting customer-centric strategies, programmes, tools, and technology for efficient and effective customer relationship management, the need for. They are realizing the need for in-depth and integrated customer knowledge in order to build close cooperative and partnering relationships with their customers. Hotel sector is one of the leading service sectors where customer needs and wants have top priority. The emergence of new channels and technologies is significantly altering how hotels interface with their customers, a development bringing about a greater degree of integration between marketing, sales, and customer service functions in organizations. For hotel sector, CRM represents an enterprise approach to developing full-knowledge about customer behavior and preferences and to developing programmes and strategies that encourage customers to continually enhance their relationship with the respective hotel.

REVIEW OF LITERATURE

This section deals with the gist of the available literature related to CRM or Relationship Management in Hospitality services or service sector written by both national and international authors and published in research journals, magazines, white papers, bulletins, books, etc. Hokey Min, Hyesung Min and Ahmed Emam (2002) in their published research article titled "A data mining approach to developing the profiles of hotel customers" are of the opinion that to stay competitive, hotels need to develop a viable customer retention strategy. Since the key to the successful development of such a strategy rests with customer relationship management, hotels should identify the most profitable ways to build and maintain a loyal customer relationship. Diana Luck and Geoff Lancaster (2003) in their research article titled "ECRM: Customer Relationship Marketing in the Hotel Industry" have explored the degree to which hotel groups have exploited the medium of electronic customer relationship marketing (E-CRM). They have investigated whether hotels made use of the Internet and verified whether customer relationship marketing was being implemented within online operations or it was being used to provide information and hotel reservations. Yonggui Wang (2004) in their research article titled "An Integrated Framework for Customer Value and Customer-Relationship-Management Performance: A Customer-Based Perspective from China" have highlighted that in the modern customer-centered era, customer value is a strategic weapon in attracting and retaining customers. Mark Xu and John Walton (2005) in their research article titled "Gaining Customer Knowledge through Analytical CRM" have found that the current CRM systems are dominated by operational applications such as call centers. The application of analytical CRM has been low, and the provision of these systems is limited to a few leading software vendors. Madhavi Garikaparthi (2006) "CRM in Hospitality Industry", is a case that focuses on many Indian and Global players in the hospitality industry. It emphasizes the changing scenario and the cutthroat competition and various aspects of implementation of CRM in hospitality industry. Yuksel Ekinci (2008) in their research article titled "An extended model of the antecedents and consequences of consumer satisfaction for hospitality services" has examined the impact of self-congruence on consumer satisfaction with services and to develop and test a conceptual model of the antecedents and consequences of consumer satisfaction in the hospitality industry. Jane Moriarty (2009), in their published article have highlighted the need for marketing expertise in SME sector hotels or hotels belonging to the lesser grades (that is 2 star and below). Their study, aimed at developing marketing expertise for the hospitality executives, categorizes hotels on the basis of their involvement in various marketing activities for example marketing intelligence and promotion.

NEED AND IMPORTANCE OF THE STUDY

Customer Relationship Management (CRM) has become a globally recognized business practice and yet it is still loosely defined and rarely well defined. CRM means many different things to different people. It is possible to develop a greater understanding of it by looking at its origin and principles that drove its development. It was in 1990's that relationship marketing emerged when true value of retention and the use of lifetime value as a business case were

recognized. The present shows many practitioners in the CRM marketplace who understand the key concepts of CRM. However the feedback from the clients and what we see in the marketplace paints a slightly different picture. In terms of what the future holds can be summarized as follows:

- Customer will play a significant role in managing the relationship
- Service model will continue to change
- The Web will create globalization
- Technology will consolidate
- Do we have what it needs to get there?
- Can end to end customer processes be developed?
- Is the best use of customer knowledge being made?
- Need to be proactive instead of reactive
- Recognize customer individuality

STATEMENT OF THE PROBLEM

In a market driven economy, the consumer has occupied the central position. A large number of activities are directed towards attracting the customers. All industries are paying special attention towards customer relationship and have changed their mode of operation of dealing with their customers. Customer Relationship Management (CRM) gained recognition in the mid-1990's, primarily driven by its perception as Information Technology (IT). However not enough attention has been given to the fundamental drivers of CRM success: Strategy, metrics and the organization. Hence this research study titled **"A Study of Customer Relationship Management Practices in Hotel Sectors in Maharashtra State"**, which strives to explain how successful CRM works and why it is important to give customer utmost importance. It establishes a relationship and explains how customer loyalty affects profitability.

OBJECTIVES OF THE STUDY

1. To determine the approach being adopted by the selected service organizations in the state of Maharashtra, for relationship marketing.
2. To find out whether the different service organizations believe that their processes are customer centric.

HYPOTHESIS OF THE STUDY

There is a significant difference in the customer centricity of the CRM processes implemented by different hotels. (2 Star hotels, 3 Star hotels, 4 Star hotels and 5 Star hotels)

RESEARCH METHODOLOGY

In view of the objectives and hypotheses presented earlier the methodology adopted for the present study is elaborated as under:

Survey Method: The survey method was adopted in order to elicit relevant information pertaining to the CRM practices implemented in the Hotel sector i.e. Hospitality. To begin with a pilot survey was conducted to clarify and finalize the key issues. After the pilot survey the selected hotels were visited and responses were collected. A well designed comprehensive questionnaire was the research instrument that was self administered. A separate survey of the customers was also conducted. Information from the customers of these hotels was also obtained with the help of a well designed self-administered questionnaire.

Observation Method: Since the interviews took place in the interviewee's place of work, this gave the researcher the opportunity to directly observe the CRM environment and programmes. Thus to enable the researcher to have a close and clear view of the CRM practices implemented the observation method was also adopted. The aim of the observation method was to cross examine the information provided by the employees of respected hotels in form of responses related to CRM infrastructure, technology and practices implemented by the selected hotels.

Sources of data: The researcher adopted the survey method to collect the required information for the study. Information from the concerned hotels was collected on one hand and on another the customers of these selected hotels were also surveyed with the help of a questionnaire, which was used as the main research instrument. Both, primary and secondary sources of data were utilized for the study.

Primary Sources of Data: The primary data was collected from the Managers and the customers of the selected hotels through two separate well structured direct questionnaires, which were administered by the researcher and in some cases they were mailed to the respondents. In addition personal observation and informal discussions were also held with the concerned hotel managers to elicit the required information.

(a) **Questionnaires:** Two sets of structured direct questionnaires one for the managers of the selected hotels and the other for the customers of these organizations were prepared in consultation with experts in the field, later they were suitably amended after pre-testing through a pilot survey. The questionnaires were administered to the concerned hotel managers and the customers of the selected hotels. In some cases the questionnaires were self administered by the respondents. The types of questions in the questionnaires included: Open-ended questions, Dichotomous questions, and multiple choice questions. All the questions were applicable to the hotels and its customers.

(a) **Structured and Unstructured Interviews and Informal Discussions:** Certain information required to fulfill a few objectives could not be elicited with the questionnaires alone. Further the questionnaire included several open-ended questions. Hence responses to such questions required further investigation and clarifications. Therefore, in such cases, in-depth interviews and informal discussions were taken up by the researcher.

(b) **Observation:** During the survey the researcher personally visited to the selected hotels and observed the infrastructure, physical setting, procedures and activities, services in these hotels.

Secondary Source of Data: The sources for secondary data comprised of existing published and unpublished literature, which was used for laying the conceptual foundation, review of literature relevant to the study and statistical data with respect to the study. Large number of published text and reference books were referred for clarifying the theoretical concepts. Previous research in the field of the present study was reviewed by referring to research journals, trade magazines and publications of the hospitality and tourism sector.

The below named libraries were the main sources of secondary data:

1. BVDU, Yashwantrao Mohite Institute of Management, Karad.
2. BVDU, Institute of Management and Entrepreneurship Development, Pune.
3. Shivaji University Kolhapur, Library.
4. Jayakar Library, Pune.
5. Magazines of Maharashtra State Tourism Corporation.
6. Magazines of Maharashtra State Forest Department
7. Research papers published in various journals.
8. Websites.

SAMPLE DESIGN

This study pertains to the study of CRM practices in the hotels i.e. 2 Star hotel, 3 Star hotels, 4 Star hotels and 5 Star hotels) The geographical scope of the study being the entire state of Maharashtra, the state was divided into following regions:

- a) Metropolitan area of the state i.e. Mumbai city
- b) Cosmopolitan area of the state i.e. Pune city
- c) Marathwada area i.e. Aurangabad city
- d) Vidarbha area i.e. Nagpur city

Using Convenience sampling method, five commercial banks were selected for the study as shown in table 1.1 and using Random sampling method 250 customers from each selected banks from all the five cities totaling to 1250

TABLE NO. 1.1: SELECTION OF SAMPLE FOR SURVEY OF HOTELS

Category	Total No. of Hotels	No. of Hotels Selected (Sample Size)	No. of Regions (Cities)	Sample size
2 star hotels	92	06	05	25
3 star hotels	84	05		
4 star hotels	78	07		
5 star hotels	65	07		
Total	319	25		

Total Number of Hotel Managers surveyed: 25

TABLE NO. 1.2: SELECTION OF SAMPLE FOR SURVEY OF CUSTOMERS

Category	No. of Hotels Selected (Sample Size)	No. of Customers Selected	No. of Regions (Cities)
2 star hotels	06	250	05
3 star hotels	05	250	
4 star hotels	07	250	
5 star hotels	07	250	
Total	25	1250	

Total Number of Customers surveyed: 1250

VALIDITY OF SAMPLE

1. The customer rating scale reliability was tested during the pilot survey of 100 customers using SPSS version 16.0 software. The results are: Cronbach alpha value = 0.8855, Correlation between 1st half and 2nd = 0.7758, Split half reliability = 0.8739
2. Similarly for the management rating scale reliability was tested during the pilot survey of 10 managers/officers. The results are: Cronbach alpha value = 0.8930, Correlation between 1st half and 2nd = 0.9161, Split half reliability = 0.9561

From the above results it can be seen that the Cronbach alpha value is greater than 0.70. Hence the primary statistical data is reliable and valid for further analysis.

RESULTS AND DISCUSSIONS (TESTING OF HYPOTHESIS)

Hypothesis: There is no significant difference between customers belongs to different hotels (2 Star hotels, 3 Star hotels, 4 Star hotels and 5 Star hotels) with respect to their customer centricity scores.

To achieve this hypothesis, the one way ANOVA test was applied and the results are presented in the following table.

TABLE 2: RESULTS OF ANOVA TEST BETWEEN CUSTOMERS BELONGS TO DIFFERENT HOTELS (2 STAR HOTEL, 3 STAR HOTEL, 4 STAR HOTEL AND 5 STAR HOTEL) WITH RESPECT TO THEIR CUSTOMER CENTRICITY SCORES WITH RESPECT TO CUSTOMER CENTRICITY SCORES

Source of variation	Degrees of freedom	Sum of squares	Mean sum of squares	F-value	P-value
Between hospitalities	3	14637.33	4879.109	87.1500	0.0000*
Within hospitalities	1246	69757.56	55.985		
Total	1249	84394.89			

*p<0.05

From the results of the above table, it can be seen that, the customers belongs to different hotels (2 Star hotel, 3 Star hotel, 4 Star hotel and 5 Star hotel) differ statistically significant with respect to their customer centricity scores ($F=87.1500$, $p<0.05$) at 5% level of significance. Hence, the null hypothesis is rejected and alternative hypothesis is accepted. It means that, the customers belongs to different hotels (2 Star hotel, 3 Star hotel, 4 Star hotel and 5 Star hotel) have different customer centricity scores.

If F is significant, to know the pair wise comparison of customers belongs to different hotels (2 Star hotel, 3 Star hotel, 4 Star hotel and 5 Star hotel) with respect to their customer centricity scores by applying the Tukeys multiple post hoc procedures and the results are presented in the following table.

TABLE 3: PAIR WISE COMPARISON OF DIFFERENT HOTELS (2 STAR HOTEL, 3 STAR HOTEL, 4 STAR HOTEL AND 5 STAR HOTEL) WITH RESPECT TO CUSTOMER CENTRICITY SCORES BY TUKEYS MULTIPLE POST HOC PROCEDURES

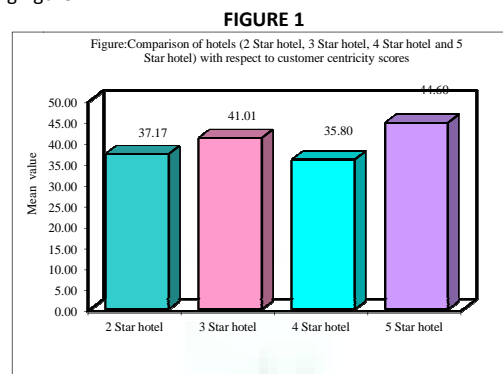
Hospitality	2 Star hotel	3 Star hotel	4 Star hotel	5 Star hotel
Mean	37.1670	41.0140	35.8000	44.6020
2 Star hotel	1.0000			
3 Star hotel	0.0000*	1.0000		
4 Star hotel	0.3284	0.0000*	1.0000	
5 Star hotel	0.0000*	0.0000*	0.0000*	1.0000

*p<0.05

From the results of the above table, it can be seen that,

1. The customers belong to 2 Star hotels and 3 Star hotels differ statistically significant with respect to their customer centricity scores at 5% level of significance. It means that, the customers belongs to 3 Star hotel have higher customer centricity scores as compared to 2 Star hotels.
2. The customers belong to 2 Star hotels and 5 Star hotels differ statistically significant with respect to their customer centricity scores at 5% level of significance. It means that, the customers belongs to 5 Star hotel have higher customer centricity scores as compared to 2 Star hotels.
3. The customers belong to 3 Star hotels and 4 Star hotels differ statistically significant with respect to their customer centricity scores at 5% level of significance. It means that, the customers belongs to 3 Star hotel have higher customer centricity scores as compared to 4 Star hotels.
4. The customers belong to 3 Star hotels and 5 Star hotels differ statistically significant with respect to their customer centricity scores at 5% level of significance. It means that, the customers belongs to 5 Star hotel have higher customer centricity scores as compared to 3 Star hotels.
5. The customers belong to 4 Star hotels and 5 Star hotels differ statistically significant with respect to their customer centricity scores at 5% level of significance. It means that, the customers belongs to 5 Star hotel have higher customer centricity scores as compared to 4 Star hotels.

The mean scores are also presented in the following figure.



Above figure shows that the Customer Relationship Management practices of five star hotels are more customers centric.

FINDINGS

1. Based on the customers' survey it was found that the CRM processes of hotels with five star rating are most customer centric as compared to the hotels of lesser rating. The processes of 3 star hotels are more customer centric than 2 star and 4 star hotels.
2. It was observed that all the selected hotels have implemented the CRM programme with the following top three objectives
 - i) Customer satisfaction
 - ii) To increase customer loyalty
 - iii) To enhance the service quality
3. The CRM organization structure in all the selected hotels is limited only to the hotel itself because each hotel is considered as an independent organization. Therefore in all the 5 star, 4 star, and 3 star hotels the CRM responsibility lies with the guest relations officer of the hotel and in case of the 2 star hotels the CRM responsibility is with the front office staff.
4. It was observed that unlike other service sector organizations the hotel industry has not implemented any CRM technology. The only technology implemented is limited to the hotels website for online reservations and inquiry. Some of the hotels are also members of some web portals, which help the member hotels in bookings and providing information to visitors of the web portal.
5. Although the hotel industry has not made a significant investment in any technology, they have a CRM programme in the form of the CRM concept clearly spelt out to the sales and marketing staff. This is reflected in their duties and responsibilities. Therefore the hotel managements look at certain benefits of the CRM programme, which are customer retention, customer loyalty and customer satisfaction.
6. It was observed in case of the hotel industry that none of the hotels use CRM application software whereas, they make use of the operations software installed in the front office for reservations, booking and billing for their CRM needs. The operations software provides the marketing/sales staff with a customer database. Thus the hotels practice database marketing by analyzing the database without using any specialized technological tool.
7. It was observed that the most popular operations software used by most of the 5 Star hotels is 'Opera', which also helps the management in their CRM needs like database marketing. The investment in this software package is less than Rs. 50 lakhs. The investment and the CRM efforts of the hotels are justified by the management on the grounds that it helps in creating loyal customers resulting in assured business and customer value. Thus return on investment.
8. It was observed in the hotel industry that it does not have to cope up with a huge size of customer data. However the rate of growth of customer data is the highest among the four selected service organizations, which stands at 19.90%.

SUGGESTIONS

1. The managers and marketing executives in the hospitality industry should adopt a continuous strategy for collecting customer information. Unlike other services, in hospitality the opportunity to come in direct contact with their customers are high. Therefore, it is natural for hotels to collect customer information on a regular basis. But information collection is just the first step in generating customer knowledge. This information has to be combined with experiences to develop consumer insights, which help them serve their customers better.
2. The hotel managements are recommended to run loyalty programmes. Customers who become members of the loyalty clubs by the virtue of their value to the hotel, are important people not only on the premises of the hotel but also have privilege to flash their loyalty membership cards at the locations of the hotels' channel partners like travel agents, airlines and other allied service providers. This gives the customer a sense-of-belonging to the hotel. This is the feeling that bonds the relationship which not only gives the hotel the customer's life-time-value but will definitely lead to referrals.

CONCLUSION

This research would like to conclude that Hotel sector is also a forward looking sector since the customer centricity and CRM dimension scores of lesser rated hotels are not lagging in any way, which indicates the outlook of the managements of these hotels. The above research stated that 2 star hotels 3 star hotels and 4 star hotels need to adopt CRM strategy very effectively.

SCOPE FOR FURTHER RESEARCH

There is a scope for further research by comparing CRM practices adopted by five star hotels and other types of hotels, and the analysis of the practices and the relationship between the different parameters of CRM.

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APPENDIX

QUESTIONNAIRE

1. Questionnaire for Customers of the Organization

Name of the Customer: Age: Sex: M/ F Qualifications: Occupation: Contact details: Phone: e-mail ID:

1. How long have you been associated with the organization?

.....

2. Frequency of your visit to the organization?

a) Once a week b) Once in a fortnight c) Once in a month d) Twice or thrice in a year e) As and when the need arises

3. How often did you have to make complaints about the products & service offered by the organization?

a) Several times b) Once or twice c) Do not remember d) Never

4. Whether at any time you did not get service at all or were delayed or did not get proper attention at all?

a) Several times b) Once or twice c) Do not remember d) Never

5. Frequency of customer meets organized by the bank?

a) Once in a year b) Twice a year c) On special occasions d) Never

2. Questionnaire for high-ranking Marketing/Sales/Customer Relationship Managers of the Hotels

1. Name of the Organisation:

2. Name of the Respondent:

3. Respondent's Designation:

4. What are the top three objectives of your CRM programme?

a).....

b).....

c).....

5. How would you describe the CRM organization structure?

.....

6. What type of CRM technologies have you implemented for interacting with your customers?

a) Call Centre b) Campaign Management c) Contact Management d) Personalization e) Marketing Automation f) Data Warehousing g) Sales Force Automation e) any other please specify

.....

7. What are the benefits achieved from implementing the CRM system?

a).....

b).....

c).....

d).....

e).....

8. Is the CRM application package Off-the-shelf or Custom built?

Off-the-shelf Custom-built

Who is your vendor?.....

9. Approximate investment made in the CRM application?

Below Rs.50 lacs Rs.50 lacs to 1Crore Rs.1 to 2 Crores Rs.2 to 3 Crores 3 to 4 Crores Above Rs. 4 Crores

10. How do you justify the investment in the CRM programme.

a).....

b).....

c).....

d).....

11. What is the time period between the investment in the CRM programme and the perceived benefits?

Less than 6 months 1year 1 to 2 Years 2 to 3 years more than 3 years

12. What information do you need in your database so that you can develop your CRM strategy?.....

.....

.....

13. What are the difficulties/constraints of maintaining the customer database?

.....

.....

.....

14. What is the rate of growth of data (speed at which the data gets generated every month?)

.....

15. What are the different ways of obtaining customer information?

a).....

b).....

c).....

d).....

16. Which department or unit is responsible for the analysis and distribution of data?

.....

17. Is senior management actively involved in the CRM program?

Yes No

18. Is the staff that comes in direct contact with the customers encouraged to give suggestions to improve the quality of service offered?

Yes No

19. Do senior managers accept and discuss ideas offered from staff about improving the system?

Yes No

20. How do you evaluate the success of the CRM programme (mention your evaluation metrics)

a).....

b).....

c).....

d).....

21. How do you get to know your customers expectations about your product or service?

a).....

b).....

22. How do you know if your customers are satisfied?

.....

23. What do you do with customer complaints?

.....

24. Does your CRM strategy involve identifying 'loyal customers'?

Yes No

25. If yes how do you reward them?

.....

26. Are your loyal customers also profitable customers?

Yes No

27. Do you categorize your customers as more valuable or less valuable?

Yes No

28. If yes what is the criteria of identifying high value customers?

.....

29. What is the relation between customer loyalty and profitability?

a).....

b).....

c).....

30. Is your organization and its processes customer oriented?

Yes No

31. What do you do to acquire new customers?

a).....

b).....

c).....

32. What do you do to retain existing customers?

a).....

b).....

c).....

ROLE OF GOVERNMENT OF INDIA IN ENHANCING KNOWLEDGE MANAGEMENT PRACTICES IN MSMEs

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ABSTRACT

Micro, Small and Medium Enterprises (MSMEs) is the largest sector by its contribution to employment generation, exports and economic development. The dynamic globalised business environment poses many challenges to the sector. The traditional machine power no longer is considered to provide competitive edge and is replaced by human / intellectual power. Knowledge Management a new buzz word in the world of business and academia and its implementation is found to benefit the organization. Primary objective of this paper is analysing the contribution of Government of India to foster MSME sector from knowledge management perspective. An analytical research is done by collecting and analyzing secondary data through books, journal articles and websites. An elaborate study undertaken reveals that government of India through its ministries and offices is taking tremendous effort to aid the growth of MSME sector and also to tackle the impediments to it. There is very little research on Role of Government in enhancing MSMEs from Knowledge Management Perspective especially in India. This paper will throw light on this aspect.

KEYWORDS

Government of India, Intellectual capital, Knowledge Management, MSMEs.

INTRODUCTION

Micro, small and medium enterprises (MSME) is the largest sector in terms of providing employment and exports. When MSMEs are characterized by (Dr. A.P.Pandey & Shivesh, 2007) low cost of production, high propensity to adapt technology, greater operational flexibility, the sector also faces challenges in the globalised economy. Industrial policy 1991 opened the gates to products and services from other countries and subsequent policies have increased this trend. Domestic industries, especially Small scale sector faced heightened level of competition in terms of quality, features, prices and the like. The welfare of the MSME sector lies with adaptability to the new situation which warrants the firms to follow innovative practices. One of the major impediments to MSME sector to focus on innovative practices is finance. It is vital that Government should protect and support the wellbeing of MSMEs by policies, subsidies and schemes (Ross Levine, 2005).

Knowledge management is accepted worldwide as one such innovative practice for MSMEs. This paper analyses the government's role in enhancing knowledge management practices for MSMEs. Paper has three sections: i) Current status of MSMEs , ii) Knowledge management and its need iii) Role of government and other related organizations in enhancing knowledge management practices in MSMEs.

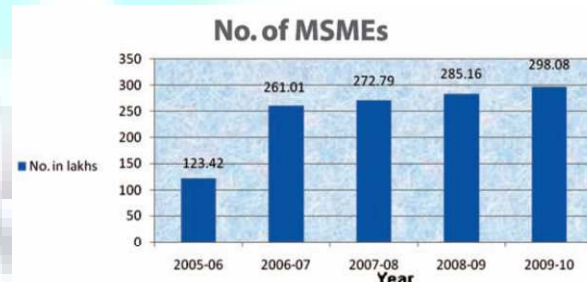
1. CURRENT STATUS OF MSMEs IN INDIA

The fourth census on MSME shows that the size of MSME sector is 2.98 million, the largest employment provider in the country. A comprehensive picture on the size of MSME is shown in the table 1. The recent years have witnessed a steep increase in the number of MSMEs, from 123.42 million in 2005-06 to 298.08 million in the year 2009-10.

TABLE 1: MSME SECTOR IN INDIA

Number of MSMEs	29.8 million
Contribution to India's GDP	17%
Employment provided	69.54 million
Contribution to exports	40%

(Source: MSME Annual Report,2011)

**2. KNOWLEDGE MANAGEMENT**

For several decades the world's best-known forecasters of societal change have predicted the emergence of a new economy in which brainpower, not machine power, is the critical resource. But the future has already turned into the present, and the era of knowledge has arrived. --"The Learning Organization," Economist Intelligence Unit. Globalization led to an increased level of competition for SMEs internationally in terms of quality and innovation, uncertainty as shown by fluctuations in economic conditions, proliferation of ICT, technological advancement in manufacturing practices etc. , make SMEs to hone their skills even for survival and then for sustainable development. As Economic intelligence unit rightly says that the traditional factors of production land, labour and capital can no longer guarantee sustainable competitive advantage. The place is duly claimed by intellectual capital or knowledge.

The world is undergoing a knowledge revolution and it is time for India to make a transition to knowledge economy. Knowledge economy was erroneously considered to be more apt for high technology or ICT industries. The role played by knowledge concept covers any industrial segment or economy which uses new or existing knowledge to improve productivity like agriculture, industry and services and increase overall welfare. World Bank report released in 2005 states,To get the greatest benefits from the knowledge revolution, the country needs to press on with the economic reform agenda that it put into motion more than a decade ago and continue to implement the various policy and institutional changes needed to accelerate growth. India undoubtedly has many critical ingredients for becoming knowledge economy like largest domestic market It has a large and impressive Diaspora, creating valuable knowledge linkages and networks. The list goes on: macroeconomic stability, a dynamic private sector, institutions of a free market economy, a well-developed financial sector, and a broad and diversified science and technology (S&T) infrastructure....

Hence, this paper analyses the government's role in enhancing knowledge management practices for MSMEs. Paper has three sections: i) Current status of MSMEs, ii) Knowledge management and its need iii) Role of government and other related organizations in enhancing knowledge management practices in MSMEs.

2A. KNOWLEDGE AND KNOWLEDGE MANAGEMENT DEFINED

From a practical perspective, APQC defines *knowledge* as information in action. Until people take information and use it, it isn't knowledge. In a business context, knowledge is what employees know about their customers, each other, products, processes, mistakes, and successes, whether that knowledge is tacit or explicit.

Several definitions have been in use for knowledge management and a few are given below:

1. As early as 1949, Mayo defined KM as a management concept which involves processes like managing the generation of new knowledge; capturing, storing and retrieving knowledge and experience; sharing, communication, collaborating and transferring; and using and building on what is known.
2. Nonaka and Takeuchi, 1995 definition of KM is the process of applying a systematic approach to the capture, structure, management, and dissemination of knowledge throughout an organization in order to work faster, reuse best practices, and reduce costly rework from project to project.
3. Grey, 1996 defined KM as a collaborative and integrated approach to the creation, capture, organization, access and use of an enterprise's intellectual assets.
4. O'Dell and Grayson (1998) defined KM as a conscious strategy of getting the right knowledge to the right people at the right time; it is also helping people share and put information into action in ways that strive to improve organisational performance.
5. Levinson, 2004 defined KM as the process through which organisations generate value from their intellectual and knowledge-based assets. Most often generating value from such assets involves codifying what employees, partners and customers know, and share that information among employees, departments and even with other companies in an effort to devise best practices.
6. APQC definition of knowledge *management* (KM) - KM is a systematic effort to enable information and knowledge to grow, flow, and create value. The discipline called KM is about creating and managing the processes to get the right knowledge to the right people at the right time and help people share and act on information in order to improve organizational performance.

There are two types of knowledge: Tacit and Explicit. Explicit knowledge is comparatively easy to harness but harnessing tacit knowledge which resides in the minds of the individuals is a challenge. In 1990s, knowledge and knowledge management became the buzz word in the world of academia and industries. Numerous research works are undertaken and surprising findings are published.

Few of such findings are given below:

S.No.	Author (Year)	Findings
1	Alavi and Leidner (2001)	Useful organizational resource
2	Michael Zack, James McKeen and Satyendra Singh, 2009	KM practices were found to be directly related to organizational performance which, in turn, was directly related to financial performance.
3	Davenport and Grover, 2001	Competitiveness hinges on the effective management of intellectual resources
4	Yannis Caloghirou, Ioanna Kastelli, Aggelos Tsakanikas, 2004	Knowledge is a significant resource of innovative capacity of firms
5	Pang-Lo Liu ^a , Wen-Chin Chena, Chih-Hung Tsai ^b , 2005	There is a positive effect on new product development performance for those companies that strongly implement knowledge management method
6	Vic Gilgeous and Kaussar Parveen, 2001	Knowledge capture, storage, transfer as the Core competency for manufacturing effectiveness
7	Research report, Griffith University-School of Management & BML Consulting, 2002	Long term benefits like revenue growth, enhancing competitive advantage, employee development, product innovation and short term benefits like reducing costs, improving marketing strategies, enhancing customer focus and facilitating profit growth may be achieved by KM practices.
8	Rajesh K. Pillania, 2008	knowledge management initiatives lead to high performance in industries
9	Pang-Lo Liu ^a , Wen-Chin Chen ^b , Chih-Hung Tsai ^a , 2005	Knowledge has currently become a main part of manufacturing resources and a prerequisite for success in the production environment.
10	Arnaldo Camuffo ^a ; Anna Comacchio ^b Venice, 2005	The increasingly fierce competition deriving from globalization and ICT has challenged this approach calling for new ways to develop, diffuse and retain knowledge in SMEs.
11	Daniel Palacios Marque's and Fernando Jose' Garrigo's Simo'n, 2006	firms that adopt knowledge management practices obtain better results than their competitors.
12	Uwe Cantner, Kristin Joel and Tobias Schmidt, 2009	innovation strategy targeted at consumers and continuous R&D activities are positively related to knowledge management usage by innovative German firms.

Hence, knowledge management can be considered to provide a sustainable competitive advantage.

2B. NEED FOR KNOWLEDGE MANAGEMENT IN MSMEs

It is imperative to understand that the world is transforming from an independent and lightly linked society to one of inclusion with a larger, more deeply interconnected global community. This poses challenges to organizations in general and SMEs in particular in terms of survival, sustainability and growth. Knowledge Management practices will be able to provide solution to some of the deep rooted problems faced by MSMEs.

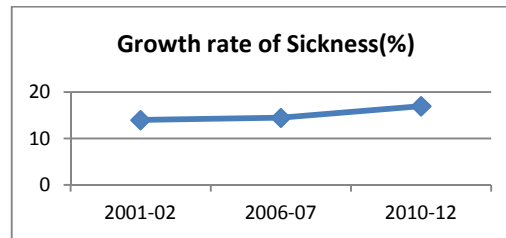
While on one side, new policies and schemes are formulated to strengthen MSMEs, on the other end, they face challenges and limitations which are unique to MSMEs are low capital base, concentration of management functions in one/ two persons, inadequate exposure to international environment, inability to face impact of WTO regime, inadequate R&D and lack of professionalism. In addition, accessing technology and maintaining competitiveness poses a serious problem to the growth of MSMEs. The problems mentioned above lead to following challenges.

CHALLENGE 1: SICKNESS IN MSMEs

Like any other economy, Indian economic development lies with the growth of MSMEs and is evident from the growth of the sector over the period of years. But at the same time, we cannot ignore the fact that sickness in SMEs are also growing astronomically as given in fig. MSMEs are essentially at risk and have been struggling to stay upright for quite some time now. This is borne out by the Fourth Census of MSMEs (2006-07) which reveals that as many as 480,946 units have closed down over the five year period while another 77,723 MSMEs have been declared sick by March 2010. The malaise has not been confined to traditional sectors alone but is more widespread across industry. An immediate question that arises is: What causes sickness in MSMEs? According to an AIMA Study – August 2003, the constraints faced by the Indian SSI Sector has been observed as follows:

CAUSES FOR SICKNESS

- | | |
|----------------------------------|--------|
| a. Market related | 25% |
| b. Finance related | 70% |
| c. Government Policy related | 12.78% |
| d. Power related/ Infrastructure | 14.0% |
| e. Technology | 14.6% |

**CHALLENGE 2: LACK OF COMPETITIVENESS**

The Global competitiveness Index (GCI) 2011-12 (world economic forum, 2011) shows India in 51st position in 2010-11 among 142 countries. India slides down to 56th position in the year 2011-12. The GCI is the indicator of the performance of the economy in terms of ten variables viz. status of public institutions & private institutions, Infrastructure, macroeconomic environment, Health and primary education, higher education and training, labour market efficiency, goods market efficiency, financial market development, technological readiness and market size. In addition, business and innovation are also taken as variables. It is stated that the basic drivers for competitiveness are not improved at all and India fails miserably in terms of public and private institutions. Even though, Competitiveness is an indicator of the overall nation's performance it affects the MSMEs as they form the pillar of the economy.

CHALLENGE 3: LACK OF INNOVATION

Similarly, The Global Innovation Index (GII) rates India in 41st, 56th and 62nd position in the years 2009, 2010 and 2011 respectively. GI is a study conducted by experts from INSEAD and its Knowledge Partners to put into perspective the new trends and practices in innovation across the world. The indexing of countries on innovation parameters will not only showcase the excellence of lead countries but also help in finding the gaps for the laggards. GI provides insight into the innovation gaps that need be filled, which makes it a readily available guide for National policy makers.

The decline in the position gives an alarm that the country failed to analyse and bridge the gap as well as to make progress in innovation. The report further adds that India doesn't find a place in top R&D generators but is one of the top R & D users and R & D importers.

Research studies that are carried out in MSMEs and large organisations be it project, service or manufacturing organizations across the globe emphasize the importance of knowledge and knowledge management. Competitiveness and innovation activities need large amounts of new knowledge. Knowledge is inextricably linked to core competence. Knowledge management should be considered seriously by MSMEs not only to improve innovation and competition but also to avoid falling prey to sickness due to various reasons.

3. ROLE OF GOVERNMENT IN ENHANCING KM PRACTICES IN MSMEs

"We need systematic work on the quality of knowledge and the productivity of knowledge--neither even defined so far. The performance capacity, if not the survival, of any organization in the knowledge society will come increasingly to depend on those two factors. But so will the performance capacity, if not the survival, of any individual in the knowledge society." - **Peter F. Drucker**, *The Age of Social Transformation*, *The Atlantic Monthly*, November, 1994.

Key condition for ensuring long term sustainability of MSMEs is to continuously improve their processes and role of Governments in helping them to tackle the challenges is significant. The programs designed by the Governments should focus on promoting technology in line with competitiveness orientation. (Denis Lagace, 2003). Knowledge management is considered important and several governments have taken initiatives in studying the status of KM in organizations like OECD survey. Similarly Indian Government also funded projects on Knowledge management. Government of India has taken many measures to enhance MSMEs in the country. It strives hard to thrive the MSME sector by industrial policies, five year plans, subsidies, Creating SEZs & EOZs, tax concessions etc. We attempt to explore the role of Indian government in enhancing the KM dimensions for MSMEs.

Government of India formed the "Ministry of MSMEs" in the year 2007 by merging Ministry of Agro and Rural Industries and Ministry of Small Scale Industries with a sole objective of developing MSMEs. The Government also established the National Board for Micro, Small and Medium Enterprises (NBMSME) for monitoring, analyzing and reviewing the effectiveness of policies and programmes and suitably recommend the Government in formulating the policies for the growth of MSMEs. The other institutions that formed exclusively with the same objective are given in the table 2:

TABLE 2: INSTITUTIONS FOR THE WELFARE OF MSMEs

Central Government/ Institutions/ PSUs	State Government / Institutions / PSUs
<ul style="list-style-type: none"> Chief Controller of Accounts Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) Small Industries Development Bank of India (SIDBI) Ministry of Food Processing Industries Ministry of Rural Development Ministry of Textiles National Manufacturing Competitiveness Council (NMCC) Department of Information Technology Department of Heavy Industry Department of Industrial Policy & Promotion Department of Commerce 	<ul style="list-style-type: none"> State Directorate / Commissionerate of Industries State Khadi Boards Andhra Pradesh State Financial Corporation Delhi Financial Corporation Gujarat State Financial Corporation Himachal Pradesh Financial Corporation Jammu & Kashmir State Financial Corporation Madhya Pradesh Financial Corporation Orissa State Financial Corporation Uttar Pradesh Financial Corporation Pradeshya Industrial & Investment Corporation of Uttar Pradesh (PICUP)
Industry Associations	International Organisations
<ul style="list-style-type: none"> SME India National Bank for Agriculture & Rural Development (NABARD) Laghu Udyog Bharati (LUB) SME Network - Network of Small and Medium Enterprises Associations & Members Federation of Indian Chambers of Commerce and Industry (FICCI) Confederation of Indian Industry (CII) The Associated Chambers of Commerce and Industry of India (ASSOCHAM) Federation of Indian Micro and Small & Medium Enterprises (FISME) World Association for Small and Medium Enterprises (WASME) India Trade Promotion Organisation (ITPO) Technology Innovation Management and Entrepreneurship Information Service Technology Bureau for Small Enterprises (TBSE) 	<ul style="list-style-type: none"> International Network for SMEs WIPO Small and Medium-Sized Enterprises United Nations Industrial Development Organization World Trade Organisation European Commission - Enterprise & Industry Innovation - SMEs Canadian International Development Agency Small and medium-sized enterprise information center, Canada SME Centre, Hongkong Small and Medium Enterprises in Ireland SME Information of Japan Ministry of Economy, Mexico World Trade Centre, Mumbai Small and Medium Enterprise Development Authority, Pakistan Swedish International Development Agency Small and Medium Enterprises Development, Washington, USA Department for International Development, UK

Source: <http://msme.gov.in/msme-links.htm>

These institutions facilitate the KM practices viz, Knowledge Creation, Knowledge Capture, Knowledge Storage, Knowledge Transfer and Knowledge Application in MSMEs. Planning Commission has identified twelve strategic challenges while formulating XII five year plans. Out of the twelve, the Ministry of MSME has substantive role to play in the following areas (MSME Annual Report 2010-11). All these four areas are related closely to knowledge management:

- a) Enhancing the Capacity for Growth
- b) Enhancing Skills and Faster Generation of Employment
- c) Markets for Efficiency and Inclusion
- d) Technology and Innovation

3A) KNOWLEDGE CAPTURE / ACQUISITION / TRANSFER

Knowledge is the whole essence of any activity and it is a hub of business activities. Data and information about various organizational routines reside with the individuals either tacitly or explicitly and with the organizations in the form of documents, manuals etc. But interpreting the information in the right sense for the organizations improved performance is a skill.

Knowledge capture or acquisition is the first process in the KM cycle. The impediments of this phase is the accuracy of the information collected in terms of scope, breadth, depth, credibility, timeliness, relevance, cost, control, and exclusivity. Source of data must be of highest quality and should not lead to information overload. GoI, through ministry of MSME provides sustenance for the welfare of MSMEs through various schemes. It is important to note that while knowledge capture happens simultaneously the next phase i.e knowledge transfer also take place among the participants. Conferences, trade fairs, exhibitions, workshops, seminars and the like provide an excellent platform for an individual and the organizations to share and capture knowledge hand-in-hand.

MEMORANDUMS OF UNDERSTANDING (MOU)

Ministry of MSME entered into many MoUs with international bodies of various countries across the globe. This will facilitate the Indian MSMEs to have an international exposure, a better understanding of business environment and also to establish networks/clusters. The details of MoUs entered by MoMSME with other partner ministries/ organizations are given below:

- Ministry for Cooperatives and Small and Medium Enterprises of the Republic of Indonesia
- The Ministry of Industry and Commerce, Republic of Mozambique
- Small and Medium Business Administration of the Republic of Korea
- Government of the Republic of Botswana on Cooperation in the field of Small, Medium and Micro Enterprises
- Ministry of Trade and Industry of Arab Republic of Egypt
- Government of the Republic of Tunisia
- The National Agency for Small and Medium-Sized Enterprises and Co-Operatives of Romania
- The Ministry of Commerce, Industry, Investment Promotion, Tourism and Cooperatives, Republic of Rwanda
- The Secretariat of Economy of the United Mexican States
- The Government of Republic of Uzbekistan
- The Government of the Republic of Lesotho
- Democratic Socialist Republic of Sri Lanka
- Ministry of Small and Medium Size Enterprises and Handicraft in the People's Democratic Republic of Algeria
- Government of the Republic of Sudan

CONFERENCES/TRADE FAIRS/SEMINARS

- i) International cooperation scheme paves way for technology upgradation and infusion for modernizing and promoting MSMEs. Under the scheme, MSME business delegates are deputed to participate in international exhibitions, trade fairs; buyer-seller meets in India and abroad. They are also deputed to visit other countries for exploring potential areas for technology infusion and upgradation, facilitating joint ventures, foreign collaboration etc. Assists MSMEs to conduct international conferences and seminars on topics and themes of interest to the MSME.
- ii) Scheme of surveys, studies and policy research probes into the issues, challenges and opportunities for MSMEs by empirical and analytical studies. These studies in turn help the policy makers to suitably assist the growth of MSMEs. Agencies that are involved in surveying are leading management, technical, and consulting and research institutes such as IIMs, IITs, CSIR, CIPET, IISc, CRISIL, EDI etc. A complete list of agencies is available with Ministry of MSME, India website.
- iii) NSIC provides marketing assistance to MSMEs. The objectives of the scheme in Knowledge Capture are to facilitate formation of consortia of MSMEs, to provide platform for interaction with large buyers, to enrich marketing skills, to enhance marketing capabilities and competitiveness of the MSMEs. NSIC also conducts MSME international tradefairs.
- iv) Schemes under coir board, India provide assistance in enhancing efficiency of conversion of husk to fiber and yarn which is currently at 40% due to traditional methods and un(der) skilled labour. The coir board through its scheme, facilitate technology upgradation and thus improve productivity and quality. It also conducts various skill development programmes exclusively for coir workers.
- v) Through office of development commissioner,
 - National Manufacturing Competitiveness Programme (NMCP) Schemes focuses on strengthening MSME operations and sharpen their competitiveness.
 - Micro & Small Enterprises Cluster Development Programme (MSE-CDP) – The primary objective of this programme is to build capacity of MSEs through formation of consortia and associations, to build common facility centres (for testing, training centres, raw material depot, effluent treatment, complementing production processes etc.). Clusters can provide a common platform for all MSEs for interaction and knowledge capture pertaining to their industries.
 - MSME MDA (Market development assistance)- main focus is on funding MSMEs to capture knowledge by visiting exhibitions and trade fairs.

TRAINING & SKILL DEVELOPMENT

NSIC provides technical support to SSIs through 'NSIC Technical Services Centres(NTSC)' and a number of extension and sub centres spread across the country. The range of technical services provided through these centres include training in Hi-Tech as well as conventional trades, testing, common facilities, toolkits, energy audit, environment management etc. NTSCs are established in different location across the country which provides specialized training in specific areas.

- NTSC, OKHLA - Machine Tools, Design & Testing, Rural Technology and Computer Applications.
- NTSC, HOWRAH - Plastic Machinery and Instrumentation
- NTSC, RAJKOT - Diesel Engine Development & Testing, Energy Conservation, Energy Audit, Sheet Metal and Wood Working Machinery
- NTSC, CHENNAI – CAD/CAM/CAE training, CNC programming, VLSI design, Hardware maintenance, CISCO routing, energy audits etc.
- NTSC, HYDERABAD - Electronics and Computer Application.
- NTSEC, ALIGARH – CAD , CAM, CAE, Computer courses, ISO audit training etc.
- NTSEC, RAJPURA - Domestic Electrical Appliances.
- NTSEC, GUWAHATI - Training on Sheet Metal, Leather Wear, Energy Audit & Enterprise Building.
- FFDC (Fragrance & Flavour development center) was established in the year 1991, by SIDO(Small industries development organization) conducts exclusive training programmes on Commercial Cultivation of Aromatic crops, its processing and marketing, Value Addition in Essential Oils and Aroma Chemicals and Creation Methodology for Fragrances and Flavours, Comprehensive training programme covering all aspects of essential oil, fragrance & flavour

industry including information on policies, finance, management aspects etc., Fragrance & Flavour Creation and its Application, Quality Assessment of Essential oils/aroma chemicals using modern instrumental techniques and Essential Oils, Perfumery & Aromatherapy.

- Indian Institute of Entrepreneurship conducts training and skill development programmes regularly. To name a few, jute diversified products, food processing, bamboo product manufacturing, handloom, electrical house wiring, woolen garment making, beauty products, steel fabrication, weaving and the like.
- MoMSME has also been supporting the efforts of State Governments/ Union Territories, Industry Associations, Financial Institutions, Technical/ Management Institutions, other Non-Governmental Organisations (NGOs), etc. for establishment of new training institutions as well as strengthening of the infrastructure of existing training institutions.
- National Institute of MSME (ni-MSME) has 4 theme-focused Schools of expertise, under which 14 Centres of Excellence and 5 Cells are functioning cumulatively to pursue specific activities. These centers provide customized/tailor made/collaborative programmes for the client organizations.

In addition to this access to latest information in connection with technology up gradation and its transfer is provided to SSIs through the 'Technology Transfer Centre' at New Delhi.

3B) KNOWLEDGE CREATION

GII report, 2011 brought out the fact that India is one of the largest R & D importers and users but not R & D generator. The statement implies that India doesn't create knowledge extensively but only use. The measures taken by Gol on this particular issue is tremendous.

- In 2011, two milestone events which focus on knowledge creation in MSMEs took place viz. Foundation stone of NSIC Business Park was laid at the NSIC Complex in Okhla Industrial Estate, New Delhi and MSMEs INTELLIGENCE PORTAL was launched for disseminating Marketing Intelligence to MSME sector in the country.
- Coir board's Science and Technology scheme facilitate The Research and Development activities through the twin research institutes; the Central Coir Research Institute, Kalavoor and Central Institute of Coir Technology, Bangalore. The R & D units strives on identifying new user areas for utilisation of coir and coir waste (coir pith), modernisation of production infrastructure for elimination of drudgery in manual operation thereby attaining higher productivity and improvement in quality are integral parts of the research efforts. Collaborative research with research organisations, institutes, universities are also undertaken on varied applications of coir, development of new products, new machinery, product diversification, development of environment friendly technologies, technology transfer, incubation, testing and service facilities are the areas which are given priority consideration.
- MoMSME undertakes research and development programmes to provide competitive edge to MSMEs through its schemes and partner organizations/institutions.

3C) KNOWLEDGE STORAGE AND DISSEMINATION

It is a paradox to call data and information storage as knowledge storage. According to Peter F. Drucker in The New Realities, "Knowledge is information that changes something or somebody—either by becoming grounds for actions, or by making an individual (or an institution) capable of different or more effective action". Data is raw and has no significance unless given meaning. It becomes information. Knowledge is the appropriate collection of information that it's intent is to be useful. (Ackoff). Knowledge management is not data management, information management, human resources management, information technology or intellectual property rights management (Rajesh K Pillania, 2009).

But one cannot deny that a reliable database is a key input to policy decision making process. This is true for MSMEs in view of the sector size and wide disparity among the enterprises within the sector. Ministry of MSME facilitates the data storage through many measures as given under:

- Office of the development commissioner conducts periodic census for strengthening and updating the data base on MSME sector. So fact the office has conducted four censuses in the year 1971-72, 1992-93, 2002-03 and 2006-07.
- A feature "SME Showcase" from office of the development commissioner offers information resources like yellow pages(Information on SSI clusters), project profiles for new entrepreneurs and provides the links to other important trade resources.
- NSIC has launched "Infomediary Services", a unique scheme which provides a one-stop, one-window bouquet of aids like information on business, technology and finance. The site also exhibits the core competence of Indian SMEs in terms of price and quality-internationally, as well as domestically. NSIC's Infomediary Services use a professionally managed HR base and modern technology for dissemination of vital information-websites, sector-specific newsletters (both print and electronic), and e-mails.
- NSIC introduced ISO 9000/ISO 14001 Certification Reimbursement Scheme with a sole motive of urging the MSMEs to acquire Quality management system (QMS) ISO 9000 certification/environment management (EMS) ISO 14001 certification. The scheme reimburses the expenses incurred to the extent of 75% or Rs. 75,000/- whichever is lower. QMS and EMS are the systems that establishes a good data base of the activities and also the action plan for further improvement.
- In addition, MoMSME, its offices and all the partner organizations publish news bulletins, books, magazines, brochures etc. which also serve as a knowledge bank to MSMEs.
- Offices of MoMSME, training institutes also have a library with abundance of information related to MSMEs waiting to serve the seeker of knowledge.

3D) KNOWLEDGE APPLICATION

This is the last phase of the KM cycle. Knowledge gained or created will not be meaningful unless applied. Applying such knowledge in the operations of MSMEs is found to deliver the following benefits:

1. Lift Productivity and Efficiency
2. Increase revenue by lowering costs, avoiding wastages and duplication
3. Improve quality
4. Open new markets
5. Improve the Service and Support of Customers (CRM)
6. Improve the ability of the organization to Manage Change
7. Attract, and retain motivated, loyal, and committed Talent
8. Improve Decision-Making
9. Help the enterprise to grow more Network Connections
10. Extend the global Reach, Richness, and Scope of the enterprise
11. Enhance creativity and innovation in organizations
12. Lead to better competitive position

Government of India fosters MSMEs' innovative skills for competitive advantage by providing financial assistance for technology up gradation. Technological environment is dynamic and there is a pressing need for MSMEs to acquire state-of the art technology to strive for innovation. Gol motivates the firms to innovate, to be competitive and to be more productive by awards and rewards every year.

FINANCIAL ASSISTANCE FOR TECHNOLOGY UPGRADATION, QUALITY UPGRADATION

- MoMSME offers Credit Linked Capital Subsidy Scheme which aim at facilitating technology upgradation by providing 15% upfront capital subsidy to manufacturing MSEs, on institutional finance up to Rs.1 crore under the scheme.

- Technology and Quality Up gradation Support to MSMEs: The scheme facilitates Capacity Building of MSMEs Clusters for Energy Efficiency/Clean Development Interventions, Implementation of Energy Efficient Technologies in MSME sector, Setting up of Carbon credit aggregation centres and encouraging MSMEs to acquire product certification licences from National/International bodies.

AWARENESS ON INTELLECTUAL PROPERTY RIGHTS

To develop competitiveness, National Manufacturing Competitiveness Programme (NMCP), launched a programme "Building Awareness on Intellectual Property Rights for the Micro, Small & Medium Enterprises (MSMEs)". The primary objective of the programme is to create awareness through Sensitization Programmes on IPR, to provide financial assistance for Grant on Patent / GI Registration and to set up IP Facilitation Centre (IPFC). The programme aims to enable MSMEs to attain global leadership position and to empower them in using effectively the tools of Intellectual Property Rights (IPR) of innovative projects.

AWARDS

Ministry of MSMEs awards the innovative firms (Successful knowledge application) and R & D firms (successful in Knowledge creation) every year. These awards and rewards motivate and stimulate the organizations to be more innovative and productive.

1. National awards for quality products in various segments of manufacturing companies like knitwear, ceramic, plastic, furniture, electric power etc.
2. National award for R & D efforts in Micro & Small Enterprises

3E) PARTNER ORGANISATIONS

It is understood by the fact that the MSME sector is the largest by size and contribution. It is essential to acknowledge the significance of MSMEs and the need of the hour is to hone and foster the sector by various measures. Government of India through its ministries is doing an appreciable contribution to the welfare of the MSMEs. But Government alone cannot provide all due to constraints on time and distance. It is a herculean task to cater to the requirements of the enterprises across the nation. Hence MoMSME has partnered with other organizations like CII, FICCI etc. (mentioned elsewhere) to facilitate the knowledge management practices of MSMEs.

CONCLUSION

The paper attempts to analyse the measures taken by Government of India to nourish and flourish MSME sector from knowledge management perspective. All the schemes and measures described are directly given by MoMSME. The contribution by partner organizations, state governments, international organizations and industry associations is beyond the scope of this paper. It is an attempt to comprehensively study the role of Government of India in enhancing knowledge management practices in MSMEs.

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APPENDIX**ABBREVIATIONS USED**

CIPET	:	Central Institute of plastic Engineering & Technology
CRISIL	:	Credit Rating and Information Service of India Limited
CSIR	:	Council of Science and Industrial Research
GoI	:	Government of India
IISc	:	Indian Institute of Science
IIT	:	Indian Institute of Technology
MSME	:	Micro, Small and Medium Enterprises
MoMSME	:	Ministry of Micro, Small and Medium Enterprises
NIMSME	:	National Institute of Micro, Small and Medium Enterprises
NSIC	:	National Small Industries Corporation
NTSC	:	NSIC Technical Service Centre
R & D	:	Research & Development

CRM IN VARIOUS DIMENSIONS

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ABSTRACT

Customer Relationship Management is a multi-disciplinary concept. It is no longer a consulting buzzword but reality for many MNCs. As competition in business sector increases and excellent service is a critical success factor, therefore importance of CRM increases. This paper highlights the various dimensions of CRM and contributes to some successful factors in CRM application. It covers E-commerce, WAP mail services and short message services for mobile; E-business, E-business environment, electronic CRM, data mining, education and power supply industry. Firstly, we discuss some basics of CRM integration and its importance for corporate performance. It gives the information that how CRM is useful in the various fields of life. It also focuses on enhancing the e-business aspects of interactions to provide a consistent customer experience. Store of previous data and its mining is very important in the application of CRM. At last, it gives some guidance for future study on CRM, its scope and research area left behind.

KEYWORDS

Customer Relationship Management, E-commerce, power supply enterprise, short message system, wireless application protocol.

INTRODUCTION

A person who enquires and buys the goods and commodity from the same place is a customer. ISO 9000 standard defines the term "customer" as an organization or a person that receives a product. Example of a customer is Consumer, client, end-user, retailer, beneficiary and purchaser. A customer can be internal or external to the organization. Furthermore, ISO 9000 standard also defines a "customer satisfaction". It is a customer's perception of the degree to which customer's requirements have been fulfilled. Term defining the activities to achieve customer satisfaction is "customer care". It is a customer service that seeks to acquire new customers, provide superior customer satisfaction and build customer loyalty. Today, the term customer care is known as "customer relationship management". The network which interacts with the customers is relationship management. The interaction of customer's is due to different reasons in various dimensions. The relationship management plays a vital role in interacting the customers. Today's customers expect expert supports assistance from the companies anytime, anywhere and anyhow. And also they dream for seamless transactions in every field. Anyhow the demands, dreams and expectations of the customers are in measurable extent, because these imaginations are possible in practical in today's world. These imaginations are in measurable extent. So these are dimensions and are in various fields. As the term CRM suggests, there are three main areas of focus: (1) the Customer, (2) the Relationship, and (3) the Management of the relationship [6]. Loyal customers are valuable assets for a business. Studies have shown that a 5% increase in customer retention can lead to a 25-100% increase in customer value [7]. Relationships with customers are driven primarily by the value the customers perceive from the relationship. Heskett et al. [8] have offered a model of customer value as shown below:

$$\text{Value} = \frac{\text{Results + process quality}}{\text{Price + acquisition cost}} \quad (1)$$

The CRM is defined as:

ACCORDING TO WALTON O. ANDERSON "Having the technology to provide in integrated view of all customer interactions and changing the corporate culture to leverage this information to maximize the benefits to the customer and the company."

ACCORDING TO PETER COFFEE "For buyer and seller both, CRM enables a return to win-win thinking, transforming information into services that can lower the buyer costs without erasing vendor's profits."

The various dimensions of CRM are:

E-COMMERCE

It is not only a transaction but it is customer service which duplicates the store-shopping experience through internet. It joins all the customer to a central point. The web-based buying and selling experience of shares, good and commodities have become successful through e-commerce.

On the other hand e-commerce lacks the personal contact quality with the customers. Most of the e-commerce based companies lack both audio and video. If this combination is present then it can cover the communication gap. CRM fulfill this gap. Most of the customers do not read web-page word by word. They only read the bold and highlighted words. If they click on an icon then they will be in direct connection with the live agent of company for their further assistance. To make this possible to the finest level multimedia standards, real time protocol (RTP) and digital audio have to be maintained in the proper and perfect way.

WAP MAIL SERVICE AND SHORT MESSAGE SERVICE FOR MOBILE

Wireless Application Protocol (WAP) like pager, walky-talky for audio messages and short messages through internet to various mobiles plays an important role in customer relationship management. Due to high mobility and multi functions property of mobiles it is very useful device. Any store can invite the people and old customers at clearance sale and discount sale by sending them short messages.

Wireless internet infrastructures emerge in 1997. WAP has played a key role in the inception of wireless internet. Due to this universal access of information has become possible. Wireless handheld device screen are small, therefore the information size should be tears down for such devices. Because long information's and fancy pictures cannot be displayed on the small screens.

WAP Protocol structure shows the five (5) different layers in which WAP gateway does most of the jobs. The basic element of WAP protocol is the structure which is similar to pages in HTML document.

SMS (Short Message System) is very useful to send the message to mobile users. Initially it was restricted to GSM mobiles only. But now it is possible in CDMA also. In north Europe SMS is widely used and even users are ready to pay for the service. Users are having drink from vending machine by sending the SMS. For this they are charged on their mobile bills. Now a day in India also many AC users are switching on the AC before reaching the office or home through SMS. People are using mobile phones to control the garage gate. There are different varieties of services for users. Whatever services are useful for the people for that they are ready to pay. SMS are of two basic types. They are

- (1) One-way
- (2) Two-way

In one-way SMS just information is passed by the users. Whereas two-way SMS the result of passed information is send back to users.

The above argument shows that CRM can be handled by the SMS. Wireless internet with CRM supported should improve customer service and boost productivity and increase operation efficiency. It helps in financial services, health care, transportation, Enterprise resource planning (ERP) and customer relationship management (CRM).

When a person submit the form in municipality office or e-seva centers for his child birth certificate / income certificate / caste certificate / residential certificate then immediately he receives the SMS in his mobile regarding submission and registration no. Of form. After the required enquiry when certificate is printed in municipality office then again the person gets SMS that his/her certificate is ready and he/she can collect it. This complete system shows CRM through SMS.

E-BUSINESS

In 1998 there were 55 billion online sales, whereas in 1999 I was 145 billion. But by the end of 2005 it increased to \$3 trillion. This big change becomes possible due to electronic commerce (EC). E-commerce has become very common due to high performance and cost effective technology. Now there are many web sites like amazon.com and del.com for web shopping. Even commodities are less priced by the companies in which mediators i.e. wholesaler and retailer charges are not included. High performance and cost effective integrated circuits (IC) made affordable web services even for middle class people. People are deviating from the traditional commerce and taking the advantages of information system (IS). Day to day SDMs are developing new business models to exploit the full potential of electronic commerce (EC).

In e-business system there are five basic building blocks.

- (1) An electronic storefront (e-store).
- (2) An automatic order management system.
- (3) An automatic scheduling system.
- (4) A product customization process.
- (5) A network core business functions.

These basic building blocks play the role in CRM and it becomes customer centric e-business model. In the all above semiconductor industry is very important due to which high performance ICs are vital.

E- BUSINESS ENVIRONMENT

The e-business environment emerged due to high expectations of customers. With the rise in the expectations the companies started working more on it. Cable and telephone companies have aggressively improved their infrastructure and they succeeded in providing digital broadband communications. Now they are providing new services to the customers by upgraded facilities. Both the incumbent and competitive local exchange companies are offering DSL high speed digital service.

There are seven (7) market drivers for the telecommunication companies which makes them to think of their present style of doing business and how to improve it.

- (1) Rising customer expectations.
- (2) Deregulation.
- (3) Consolidation.
- (4) Convergence.
- (5) Technology innovation.
- (6) Economy viability.
- (7) Accelerating demand for bandwidth.

To meet above challenges companies need huge investment. The investment should not be too large that the services become costly. It is to avoid the cut throat price competition. Most of the investments are used in technology innovation.

More expectations generate more environments which lead to innovation of sophisticated technology and can be affordable by everyone. In this way a firm, company or an organization interacts the people easily and vice versa. This is customer relationship management software application captures the customer interactions which are provided by CRM. Business analysis and competitor analysis lead by marketing campaigns and database marketing. The database which is used by the service people in the company is used in pre-sales and post sales opportunity management, account management, activity tracking, forecasting and sales reporting etc. comes under pre sales information which is stored in same database. After the close of sale or close of customer contact with company the post sale process start in which order entry, provisioning implementation services, service activation, billing, incentives, compensations and sales reporting comes. The up sell and cross sell opportunity is present always whenever customer contacts the company. The existing customers can demand for the promotion of new service offerings through a customer service representative (CSR). It is possible if the customer's data is present with the company.

Billing inquiries, service trouble and orderings are more with telecommunication companies via internet. Most of the customers regularly encounter the problems while trying to conduct online business.

During the customer care, service delivery and operation processes there are many challenges associated to these like

- With the challenge of legacy i.e. front-end and back-end, business operations are inefficient and costly.
- Customer expectations are high.
- High investment of time and many on unprofitable and low value customers.
- Customer acquisition is costly.
- Most of the business models are product centric instead of customer centric.

These challenges are addressed by CRM transformation and CRM implementation. CRM software enhances the customer facing portion. The transformations become successful only in the corporate culture.

THE CRM TRANSFORMATION

1. Become functional.	2. Gain operational excellence.	3. Mass customization.	4. Achieve customer intimacy.
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Source: IBM Global Service

These are the four different aspects of the transformation. For a new organization, the CRM must address all four aspects of the transformation. Each aspect provides an input to organization design.

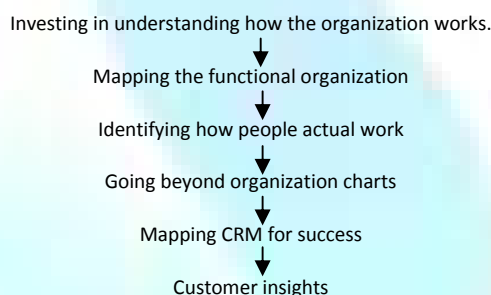
Customer needs and desires can be responded by multi channel approach of CRM and even customers can be distributed based on their value. Lower cost channels are provided for less valued customers and higher cost channels are provided for more valued customers. The possible channels for CRM are

1. Web
2. IVR (Integrated Voice Response)
3. CSR (Contact Center Representative)
4. Email
5. Direct mail
6. Direct sales force
7. Direct retail
8. Indirect retail
9. Fax
10. Field service
11. Interactive TV.

ELECTRONIC CRM

One of the first applications of eCRM has been is call centers. Multimedia technology provides more effective sales and customer services. Web collaboration, text chat and Voiceover Internet Protocol (VoIP) telephony are multimedia technologies, which are integrated with conventional voice only call centers. The internet call Manager provide the service between the Web callers and existing call center system.

Web services are also a model for eCRM. These services are internet applications which perform the particular tasks to carry out the business transactions. Web services operate in a language i.e. HyperText Markup Language (HTML) and data exchange occur by using eXtensible Markup Language (XML). XML provides a framework for creating HTML.

CRM PROCESS MAPPING

The process and people gap should be analyzed first. In chosen groups, mapping can be done in parallel stream. CRM priorities always remain for the corporate world. The eCRM market is still young. Still high quality multiple channel services are required for corporate world to provide more mature and feature rich solution.

DATA MINING

Data mining technology plays an important role in the formulation of business strategies for different customer bases more precisely. Many of the high complexity problems are solved by using an emerging technology of computational intelligence. With the population of e-commerce the electronic means are also gaining importance.

As computer use started in the business field to store data, then a new approach of assigning navigation through the data base evolve in data mining technology. Purpose of data mining in businesses is to help in the extraction of required, important and useful information from stored large database. In this previous known situations are used to build a new model and which is applied on unknown situations.

Customers are different with each other in many aspects. Even in sub small groups customers need to be identified as individuals. It is due to personalization. Data mining not only helps in the interest finding of small groups but it also helps to find out the interest of an individual. Lack of customer focus and less adaptation of their unique requirement results in dissatisfaction of businesses with the current CRM. It can be solved by data mining. Data mining formulate specific customer focused strategies more easily and scientifically. It can enhance the understanding of different components of customer value. Customers are sub-divided into segments. First customer segments should be identified for the relationship enhancement. In marketing research it is known as market segmentation. In each segment there are many heterogeneous groups in which each group is cluster of many homogeneous groups. Then the homogeneous groups comprises of many individuals. In CRM customer base segmentation of market is prepared. To understand a customer the relevant data must be analyzed. Thus data mining is the intelligence behind a successful CRM strategy. Data mining is of two main types.



It generates information about data.

It predicts the future information based on previous data.

The data mining solutions can be implemented successfully in the following five (5) steps.

1. Setting goals.
2. Data collection.
3. Data preparation.
4. Analysis and prediction.
5. Measurement and feedback.

To study the wants and needs of the customers from the past and existing customer's first knowledge is collected for a data mining model. Then customers are segmented within the data warehouse which makes possible to identify smaller subsets. The subset data pool is more homogeneous in each segment which is more suitable for target analysis. There must be two data warehouses, one to maintain the customer profile and another to store the information about products or services provided by the company. Based on same basic rules a data analyst should match the products from a segment to prepare the data marts.

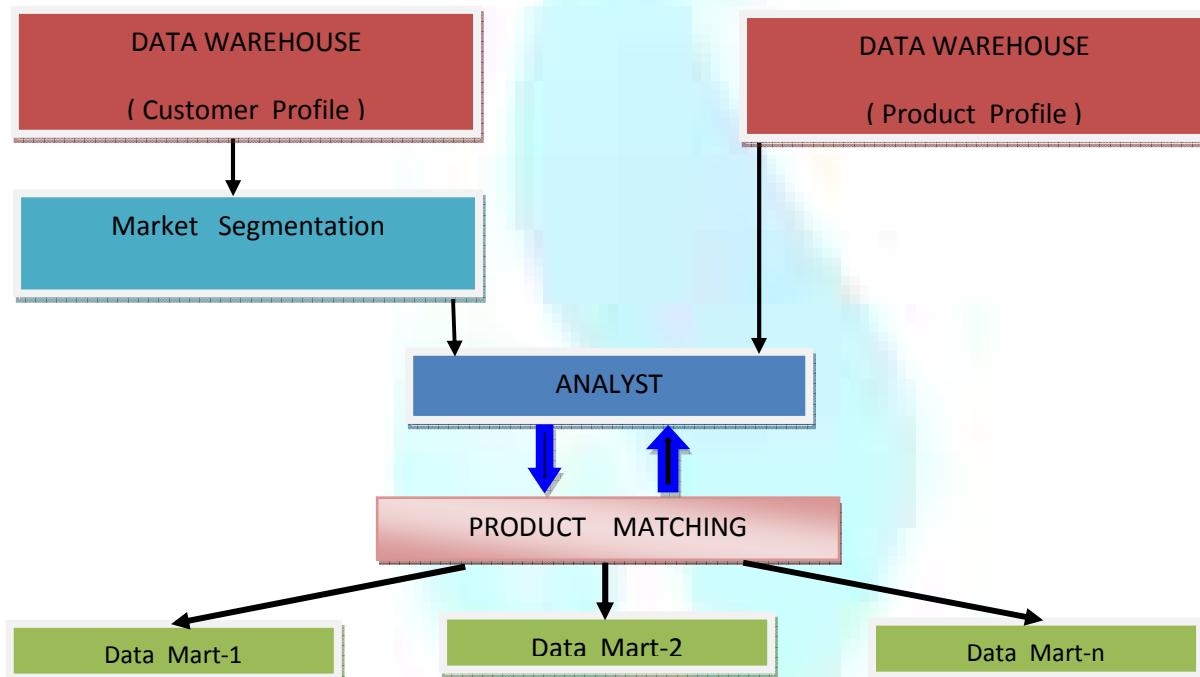
Based on data mining customer value increases. CRM is product centric to customer centric. In CRM customer value is also equally important as customer segmentation. Marketing management is most important in today's competition. Business management evolved from product centric to a market centric, to the current customer centric process of dynamic change. The success deciding factor of any company is to develop and maintain the clients. It is customer focused management philosophy. CRM is based on customer respect and customer life cycle understanding and company enhance the more efficient services for customer satisfaction and loyalty. CRM is a new concept of precision marketing. It emphasis on analyze the dynamic point of view changes in customer demands.

Customer segmentation is the base of any effective customer relationship management and it is the core concept of CRM. Even though segmentation is meaningful to a company's management, but cannot answer some of the important issues of CRM to which customer is more valuable.

Business to provide superior customer value capacity is considered the most successful. Customer value is a tactical marketing and strategic issues. According to Kenichi Ohmae "the strategy based on customer value will be a non-zero-sum game."

Many companies treating the marketing as business discipline and taking scientific approach for it. Companies are applying more sense to capture, analyze and manipulate the customers data to resonant with customers specific wants and needs. This process is called precision marketing. It evaluates the segment deeply and treats different customers with different marketing models to meet their specific wants and needs. According to GAO JIE of Shanghai University precision marketing can be regarded as a "solder uncertain situation, the water has no fixed form."

DATA MINING FOR THE CRM MODEL



EDUCATION

CRM is the term which covers almost all the mode of customer interaction. If enables the companies to acquire more knowledge of their customer to improve the business. Educational institutes, universities and research institutes also need to cater to the needs of their clients. Their directions of relationship are general society, students, researchers, collaborates and government etc. CRM provide an environment to manage all kinds of relationships in various scenarios.

The concepts of CRM emerge with the customer centric thoughts of business. They need to have the profile of customers. It is easy with small no. of customers. By knowing customers well the businesses could avoid financial wastage. They will not stock the product and will not develop such services which are not demand by the customers.

In olden days there was communication gap between company and client. But in the mid 80s direct communication path with the client was developed via mail and phone for which specific data was not available to reply the customers. After words with the development of technology the data storage become possible which help in replying the specific client. Their strategies got the name of CRM.

Educational institutes, universities, colleges and research institutes are generally non-profitable organizations. Often it is assumed that for such organizations client satisfactions do not need to be adopted. But for the success to the peak level and accreditation of "A" grade, such organizations do also need to attempt the client satisfaction. In such organizations there is scientific environment, innovations and high quality standards are present. To maintain all this CRM plays on important role.

The survival of any research institute is mainly based on financing of research. In most of the cases it is done by the government. For every need and satisfaction is use of money then the financial aid will not be sufficient. If there are proper relationships of an educational organization with other necessary organizations then needs can be achieved even in less expense. The time gap is also a problem for the universities. If they have the complete information of their students and researchers then thy can overcome this. A scientific CRM contribute to

- 1- Formation of research groups.
- 2- Creation of successful partnerships.
- 3- Keeping the contact among professionals and the institutions where they had studied.
- 4- Identification of new possible relationship and
- 5- Through time, the fortification of profitable relationship among others.

All these create a healthy completion among the educational institutes.

As in the business customer centric strategies are needed, similarly customer has a prominent space in the scientific environment. In educational organizations the types of customers are

- 1- Students.

- 2- Collaborates.
- 3- Institutions.
- 4- Researchers.
- 5- Teachers.
- 6- Society.

The types of relationships for the scientific environment customers are

- 1- Class
- 2- Evaluation of quality of education
- 3- Evaluation of the institution
- 4- Evaluation of the professional
- 5- Collaboration
- 6- Consultant
- 7- Co-supervising
- 8- Employee
- 9- Training
- 10- Financing of research projects
- 11- Education
- 12- Supervising
- 13- Partnership in academic works
- 14- Partnership in research project
- 15- Participation on thesis examination
- 16- Participation in research projects

Managing the above customers and relationships is the scientific CRM. It improves the quality of educational organizations due to which a quality output is possible.

The CRM plays the role even in adult education. In adult education the CRM requirement is more than the education of a regular student. If a person does not meet his/her goals based on present knowledge and education, he/she desire to study more. In such cases there are less chances of deviation from the goal. Because adult always dream to meet their requirement as early as possible. Therefore they need goal oriented studies, for which an institute or educational organization require to have perfect plan. In that case the major role of CRM starts.

In a company private/govt. organization for the up gradation of employees knowledge orientation training programs are conducted with the collaboration of organization and training providing institutes. If the institute to have CRM the degree of success of training program increases. The objectives of training institute to implement CRM to achieve maximum balance between adult's requirement value and training benefits so that they can achieve "win-win" of adults and training institutes.

In the same way CRM implies on distance education, which fulfill the requirements of non-formal students in distance mode, through contact classes or online program. The directorates for distance education use CRM to more extent to inform the students at every occasion through transformation of information with mode of mail.

POWER SUPPLY ENTERPRISES

The end users of power and alternative energy sources exert a great pressure on power supply industry. By applying CRM the industry can overcome the pressure, through which they can discover the effective solutions from the customers' feedback. The common existing issues of power supply enterprise are analyzed to put forward the practicing CRM with the assistance of modern management system. To integrate the enterprise resources CRM is strengthen which promotes the core competitive ability of the enterprise and leads to sustainable development.

Traditional marketing modes are facing severe challenges. It is due to the quick knowledge development of the customers and the improvement in their economy. "Customers are God" comes true in the present world. For any company the customers are the most important resources. To maximize the benefits of company it is must to provide perfect customer services by deep analysis of the customers. This can satisfy the demand of their customers and realize the maximization of benefits.

Earlier the power industry was in monopolization state. But now power supply companies not only face the pressure from suppliers of other energies, it also has threat from other power selling companies, retailers and even independent power plants. Like other public industries the power supply companies should come into CRM in their marketing. The Pharmaceutical, Hospital, Star hotels and manufacturing industries etc. are the big retailers for power supply enterprises. The meeting of their wants and needs from a power supply company make them to retain. Otherwise they look for other alternatives. Always up gradation in the services according to the requirement of customers leads to the retention. General problems with the power supply companies are,

1. Lack of "human care" during the electricity marketing process and of customers.
2. Ignorance of right to learn the truth of their customers.
3. Partition of target customers by user's quality and voltage.
4. Demographic partiality.

In power supply enterprises CRM implementation can be obtained by adopting the following factors.

1. Improving the supply chain of services.
2. Improving customer satisfaction.
3. Improving customer loyalty.
4. Cut the cost of services.
5. Innovation of marketing concept.
6. Designing the CRM system.

Unless there is no proper supply system of electricity, the production is not useful, for which a perfect supply system is needed. To improve the supply system and leading the position as supplier, installation of quality equipments, systems and services in the field of conversion is required. The values for supply system must be

- ✓ Meeting commitments made to external and internal customers
- ✓ Foster bearing, creativity and speed of response
- ✓ Respect for dignity and potential of individuals
- ✓ Team paying
- ✓ Zeal to excel
- ✓ Integration and fairness in all matters

For the goal of CRM customer satisfaction is necessary. Some comments about the customer satisfaction are,

Philip Kotler, who is the very famous scholars in marketing, said in 1994 that satisfaction is a level of persons' feelings which derives from the compare between the imagined results and output of a product and people's expectation.

Richard Oliver(1997) defines satisfaction as follows: satisfaction is the feedback of customers'

content, which is the appraisal of products and services themselves, it has given or is giving a level of happiness related to customers' satisfaction, whether it's lower or higher.

Domestic scholars YongXin Wang and Yi Wang (1994) defined customer satisfaction as the degree of happiness experienced by customers briefly and directly, they also emphasized the prominent influence of customer satisfaction on the profits of companies.

Based on above comments it is necessary to meet the expectations of customers to improve the business. The faithfulness of customers to companies called loyalty of customers. The proper CRM improves the customer loyalty which has close relation with customer satisfaction. Retaining of old customer is easier than the attraction of new ones. The percentage (%) of profit depends on the loyalty of customers. Even less increase in the loyalty of customers maximizes the profit of the company. 60% of new customers are introduced by the old customers due to their loyalty towards the company. As Americans are famous for recognition of feelings of people, we should design corresponding modes in CRM system, by taking advantage of

Information of customers, we should send gifts and regards to VIP customers to please them. By providing long term and outstanding services the company should develop customer satisfaction, which leads to loyalty of customers.

Cutting cost is also one of the marketing strategy in power supply industry. By the integration of scattered information in different sections of company there may be quick responses to demand mechanism.

Customers are the most important resources in power supply companies. It creates the CRM concept in the companies. CRM improves the relationship between power supply power supply companies and their customers. The power supply companies must deviate from the old traditional marketing conceptions.

The use of CRM software and marketing transform conception are keys to successful implementation of CRM. The emerging of power supply company management system is due to the development of Internet and computer technology. CRM in power supply companies includes Customer Information Management (CIM), Customer Service Management (CSM), Marketing Management (MM), and Grand Customer Management (GCM). Based on different functions the CRM is divided into following three (3) types in power supply companies.

1. Operative CRM System – To realize share of customer resources and to improve working efficiency of employees.
2. Annalistic CRM System – It includes data digging.
3. Cooperative CRM System – Communicates the information between companies and customers.

SUCCESSFUL PRACTICES IN CRM

Study of customer relationship management is not sufficient to improve the business strategy of any enterprise, company and industry. Unless CRM does not come in practice, there is no use of data collection and data maintenance. For effective CRM by data mining the data should be analyzed to achieve proper and perfect results. The probability of customer satisfaction and customer loyalty increases with the practice of CRM in production and service industries. Success of products and services of an industry mainly based on the successful practices of CRM, which initially emphasize and analyze the data mined and then rule forming for the CRM in current situation and finally practiced. For the goal oriented practices in following things has to be done by the company.

1. Collection of customers data.
2. Collection of present products and services.
3. Maintenance of collected data in data warehouse.
4. Mining of required and specific data from data warehouse.
5. Analyzing the data.
6. Improving the products and services based on data analysis to achieve the customer satisfaction.
7. Acknowledging the production of improved products and services to the customers who enquired about such products and services in the past.
8. Informing the old and new customers about the new products and services.
9. Adopting various and appropriate modes of marketing.
10. Announcing the incentives and cost cutting at different occasions.
11. Providing guaranty and warranty of products for some period of time.
12. Provision of cost cutting on repetition of services from a service industry.

RESEARCH AREAS OF CRM

Inquiry and careful search of any information of anything in any field is research. Twentieth century ends with revolution of science and technology and twenty first century starts with the zeal of further new technology development. Customers are most important in business for its improvement, therefore any company need to attain the customer satisfaction by adopting various modes. Firstly there must be good and strong relationship with the customers for their satisfaction and loyalty towards the company, which develops with the heart winning services.

As in North Europe SMS services play a big role in buying the soft drinks from the vending machines, it can also be applicable in other countries of the world. But there is need to develop such environment by the study of economical conditions of the customers and the taste and interest of the people. For the application of such practices in the other parts of the world, it requires to do the research in CRM.

In most of the shopping malls and hypermarkets there is more rush at the cash counters particularly on the weekends. Some time it becomes very difficult to control the rush, even the number of cash counters are more. With the invention of bar-code reader trolleys, super malls and hypermarkets can overcome this problem. As the customers pick items from racks and put them into the trolley, immediately bar-code reader of trolley should read the code of item and should display the cost and name of the item on the digital screen of trolley. Before taking the exit of customer, the total amount should transfer to the mall from the customer with the help of customers mobile. By providing good and effective services it saves the time of customers.

Now a day's medical and hospital services are becoming a big industry. CRM in hospitals and medical services plays a vital role in its success. Particularly the metro cities of India are becoming medical hub. It is due to maintenance of good and perfect CRM by the hospital industry. Patients and their attendants are like customers for hospitals. But still further improvement of CRM is needed for the growth of industry, which can be achieved by doing the research.

In context of booking LPG gas cylinder even now most of the countries have manual system. If they offer online booking system then also it is not so effective to the level of customer satisfaction. Further research in this field can put forward the more effective system by sending SMS and short messages and the booking no. can be received through acknowledge message from gas company.

In future, research has to further assess our results. More details are needed to conceptualize CRM integration in a way that can be applied to practice. Case study research can help to obtain a better view of real life challenges and help to find the set of questions for further quantitative research. The systematic assessment of the questions relating to which theories of the firm support which parts of the CRM integration model provides a logical next step. Finally, there is room for further investigation in CRM.

FUTURE SCOPE OF CRM

CRM emerge and enhance in early nineties and develop to maximum extent in the present situation. With the current uses and benefits of CRM it looks that in future it will play the key role in every field of life. As "Customers are God" come true in the business and customer relationship management got the prominent position, similarly in future CRM will occupy the further high and base position in every business. The transactions will become so easy that one can save the maximum time of bill payments of services and products. As CRM is not only a set of software and technology, but also a management concept, therefore its scopes will increase with the development of software, invention of technology and improvement in management skills.

CONCLUSION

According to Howard Berg, (4) "Corporate investment in customer relationship management (CRM) products and services shows no signs of a slowdown. In fact, it would be hard to find a CEO of a Global 2000 company who isn't consumed by improving customer relationships. . . . Implementing CRM is tough, particularly for companies looking to integrate all points of customer contact with the Web."

True, CRM will significantly improve customer interactions, reduce operations costs and grow revenue by providing more cross-sell and up-sell opportunities. CRM is as important that it is widely used in every direction of the business. Data collection and its maintenance is the bases for CRM implementation. Its role in e-commerce is to duplicate the store shopping experience on internet. In WAP mail services and short message services for mobile plays a vital role in sudden and outdoor shopping of customers and passing the merge information to many customers at a time. Due to high performance and cost effective technology e-commerce is very common in e-business due to which online sale increased to maximum extent. This environment generated to fulfill the high expectations of customers. Emerge and enhancement of call centers is due to CRM technology. Multimedia technology provide more effective sales and customer services. Business strategies are derived based on data mining technology. CRM is the initiative for data collection, maintenance and mining technology. Even it gives the solution for many high complexity problems.

In power supply industry, textile industry and also in manufacturing industry there is broad role of CRM. Here made its own place by vanishing the old traditional marketing methods. Educational institute and universities are of the people, for the people and by the people. Use of sophisticated technology in Universities and Research Institutes (URIs) minimize the administration time and maximize the satisfactory facilities to students.

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WI-FI DEPLOYMENTS IN CONJUNCTION WITH WI-MAX FOR NEXT GENERATION HETEROGENEOUS NETWORK

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ABSTRACT

In the past few years the Wireless Local Area Network (WLAN) has been the most popular choice of communication amongst users. WLAN, which is based on the IEEE 802.11 standard, also known as Wireless Fidelity (WiFi), offers mobility and flexibility with a relatively low cost to users. In addition, wireless technology is providing easier internet access to areas that are too difficult and expensive to reach with traditional wired infrastructure. IEEE 802.16, also known as Worldwide Interoperability for Microwave Access (WiMAX), is another standard with similar general principles as WiFi with the main advantages being it covers a larger area and has a higher data rate. Although WiMAX greatly outperforms WiFi, user devices such as desktops, laptops and cell phones need to have WiMAX capability to be able to connect to WiMAX sources. Currently, not many user devices have WiMAX capability, the majority has WiFi capability. The best way to enjoy the advantage of the WiMAX system is to combine the WiMAX and WiFi systems together. This paper shows the logical model for usage of both together. Here, the scenario turns out to be the viable model for using WiMAX in a Wi-Fi world. Consider the usual configuration of a Wi-Fi access point: it provides service to Wi-Fi clients, and connects to the Internet by a wired Ethernet connection. The alternative, whether in a corporate or metropolitan network, would be to use a mesh Wi-Fi connection. This can be useful but requires access to different locations to complete the mesh and connect at a wired Internet hub. If a cellular data or WiMAX connection is available, it is possible to use this for the backhaul connection. As broadband mobile data rates increase and coverage expands, it becomes viable to incorporate a cellular NIC card into a Wi-Fi access point and build a highly-mobile Internet service. Just power-up the access point and it provides Wi-Fi coverage for local clients while connecting to the outside world or similar connection. This paper shows the advantages of using both wimax/wifi together by combining the usage of both. It explores the complementary nature of wifi/wimax as well as illustrates how users can leverage these technologies to use wireless broadband internet connectivity and compelling new services at affordable prices and in more locations.

KEYWORDS

Ad-hoc Network, DSL, NIC, Wireless Network, WLAN.

INTRODUCTION

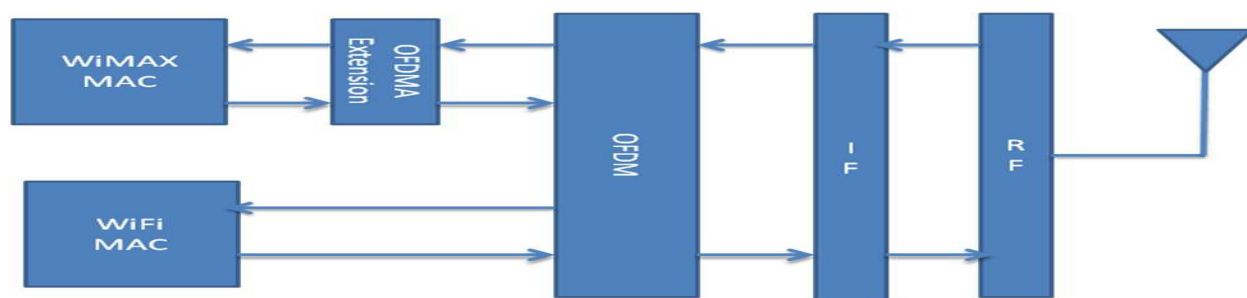
Many people in the world today have the need for unlimited access to the Internet. Unlimited Internet access is actually no issue. All you really need to do is subscribe to a good broadband or cable connection and you are good to go. This is only applicable when talking about 24/7 Internet access. Network integration for Next generation wireless networks, where the diverse of the technologies available and optimized for different usages models. WiMAX and WiFi are the most promising techniques for future wireless networks; internetworking between these technologies is inevitable for better usability of the network infrastructure and support for seamlessly mobility and roaming. The unique similarities between WiFi and WiMAX networks that make the proposed synergy promising and meaningful that both technologies are fully packet switching uses IP based network approaches provide compelling benefits to service providers to collaborate between these technologies. By Digital Subscriber Line (DSL) and other fixed broadband connections within wireless hotspots, WiFi has dramatically increased productivity and Convenience. WiFi delivers high speed WLAN connectivity to millions of offices, homes and public locations. The integration of WiFi into notebooks or other devices has accelerated the adoption of WiFi to the point where its nearly a default feature in these devices. On other hand WiMAX takes wireless internet access to the next level and overtime could achieve similar rates to devices as WiFi. WiMAX can deliver internet access miles from the nearest WiFi hotspot and cover large area called WLAN, be they metropolitan with multi megabit per second mobile broadband internet access. This standards and IP based network approach provides compelling benefits to service providers to collaborate between these technologies.

- ✓ Wireless broadband services which enable for attaining rapid user adoption.
- ✓ Any WiMAX or WiFi devices are able to connect to any WiMAX or WiFi network that supports the same network settings.
- ✓ It provides certification profiles, facilitating volume production & global economies of scale.
- ✓ All IP based networks infrastructure, enabling cost effective deployments for operators and open internet services for users.[1]

LAYER INTEGRATION

There are many similarities between WiFi and WiMAX at PHY and MAC Layers. At the MAC Layer the media independent handover protocol developed which enables the handover of IP sessions from one layer to access technology to another to achieve the mobility of end use devices. At PHY layer OFDM transmission concepts and mobile WiMAX is using OFDMA techniques. The convergence at physical layer will reduce the base station cost significantly where the base station can use the same IF, RF and antenna parts for both technologies. The integration at PHY level needs a change on the silicon chip which increases the complexity of baseband chip. This can be realized by implementing software defined radio technique to switch between the two techniques at baseband and RF levels where components that have typically been implemented in hardware instead of implemented using software on the base station baseband.

FIGURE 1: INTEGRATION OF WIMAX AND WIFI PHY LAYER AT BASEBAND LEVEL



INTEROPERABILITY OPPORTUNITIES & CHALLENGES

The WiFi and WiMAX have fundamental differences in their MAC layer. WiMAX is a frame based centrally coordinated MAC protocol. WiFi allows distributed control and a contention free centrally controlled access to the channel. Both have a similar OFDM based transmission scheme and channelization which facilitates their internetworking.

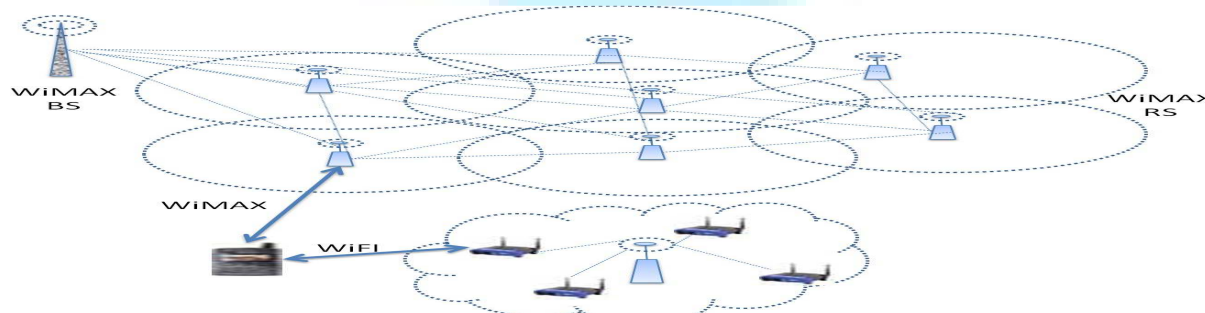
The integration of both implies internetworking between similar and different types of devices in a common protocol. The network is coordinated by central coordinator which combines WiMAX BS with the point coordination function of WiFi. This integration is capable of operating in the both mode. It's also known as Base station Hybrid Coordinator where internetworking is based on an integration of WiFi transmission sequences into the MAC frame structure of WiMAX. The common framework was introduced that allows the operation of WiFi and WiMAX with optimal bandwidth sharing. Game theory and genetic algorithm have been used to analyze and obtain the optimal pricing for bandwidth sharing between a WiMAX BS and WiFi APs.

The integration and convergence can be done in OSI model. The easiest way is to go for upper layer where all the implementation will be based on software. [3]

INTEGRATED SERVICES

WiFi specifying standards for WiFi WLAN and WiMAX specify the standard for WiMAX MMR networks. The next generation network architecture consists of optical networks, WiMAX relay networks and WiFi mesh networks as per shown in figure.

FIGURE 2: WIFI – WIMAX NETWORK



The wavelength division multiplexing optical ring forms the core of MAN. WiMAX BS and RS form WiMAX MMR network that passes traffics to core network. WiFi mesh network provides direct high data rate connection to end user. Different transmission points serves as bridge between networks for traffic distribution. The WDM ring have optical switch node which are portal nodes in WiMAX MMR networks and responsible for traffic transformation. Same as WiMAX BS and RS serve as portal node in WiFi mesh networks.

This integration enabling the sharing of silicon blocks at the baseband level to reduce die size and cost. It shares the antennas so saves component cost and device real estate. It provides common platform level approach for interfacing the operating system's power management utilities optimizes power consumption and maximizes battery life. At the user interface level, a common connection manager coordinates and displays available WiMAX and WiFi networks, and compatibility-tested software drivers work harmoniously together. It provides common user experience for access network and also optimizes the traffic.

WIFI – WIMAX INTEGRATED SYSTEM

The main aim of this integration is to defining an efficient user-driven mechanism which does not require any change on network and protocol architecture that can be easily applied in current integrated WiFi/WiMAX systems. The WiMAX addresses Non-Line-Of-Sight operations and it has about 400 meters of radius when used at 3.5 GHz with a maximum 20Mbps data rate when using a 7MHz bandwidth. Whereas WiFi, well developed and commercialized at this day, operates in the 2.4GHz unlicensed band and offers coverage of about 70-80 meters with a maximum data rate of 54Mbps.

FIGURE 3: WI-FI -WIMAX COMPARISON

Technology	Wi-Fi 802.11 n	WiMAX
Application	Wireless LAN, Internet	Metro Area Broadband Internet Connectivity
Frequency Range	2.4 GHz	2.11 GHz
Typical Range	100m	50 km.
Data Rate	108-600 mbps	75 mbps
Modulation	DSSS	QAM
Network	IP & P2P	IP
IT Network Connectivity	Yes	Yes
Network Topology	Infrastructure(Ad-hoc also)	Infrastructure
Access Protocol	CSMA/CA	Request/Gant
Key Attribute	Wider Bandwidth Flexibility	Throughput, Coverage

The WiFi and WiMAX networks are deployed considering their complementarities in terms of data rate performance and coverage: we assume that the WiMAX network guarantees users mobility in a large area and is accessible everywhere, while the WiFi APs are selectively deployed in locations with a concentration of mobile users and heavy network traffic (Hot Spot). User equipment that embeds two MAC interfaces with different IP addresses assigned respectively by the AP

and the WiMAX Base Station (BS). These two MAC interfaces work independently and periodically monitor several metrics as link quality, channel occupancy, error rate. This information is then forwarded to a "mobility management" process implemented at the top of the MAC layer: this entity controls continuously the behavior of each stack and triggers when required. Link quality parameters are reported by the MAC layer to the mobility management process for analyzing connection performance. The measurement of these parameters is required to satisfy the properties continuously monitoring the access network condition, currently unused interface traffic, no need for special AP and BS cooperation and use measured parameters indicators in terms of performance.

FIGURE 4: WIFI – WIMAX INTEGRATION [6]



The integration of WiFi & WiMAX requires two key elements as per figure 4, Multi-mode subscriber devices that can communicate on both WiMAX and WiFi networks and ability to provide service across WiMAX and WiFi networks when users move between them. This is generally implemented through a controlling Access Service Network Gateway (ASN GW) and common Authentication, Authorization, and Accounting (AAA) service functionality located in the service provider network. [6]

In WiFi and WiMAX the method of estimating bandwidth occupation is not same since they rely on different medium access mechanisms. WiFi Uses CSMA/CD for continuously listen the channel before competing for the access. The MAC process records the channel busy time, then periodically calculates the channel occupancy percentage. Whereas WiMAX uses access to the channel is synchronized and network resource usage is controlled by the BS. [5]

CONCLUSION

WiMAX will be useful for providing intermediate-distance backhaul for Wi-Fi access points, sometimes a preferable arrangement to Wi-Fi mesh technology. The inter-working capabilities between WiMAX and WiFi enable service providers to deliver consistent, transparent, and user-friendly broadband services to their subscribers. WiMAX extends the benefits of WiFi networks to deliver the next-generation mobile Internet. Integrating of WiMAX and WiFi provides affordable broadband connectivity that brings new deployment models for service providers, as well as new usage models for subscribers. The ability to be connected to the Internet and to have access to real-time information in more places is of high value to Business professionals and consumers. It provides portable services.

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A CASE STUDY ON PERFORMANCE APPRAISAL WITH REFERENCE TO INDIAN BANK, CHITTOOR DISTRICT (A.P)

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ABSTRACT

Performance appraisal "is the process of obtaining, analyzing and recording information about the relative worth of an employee". The focus of performance appraisal is measuring and improving the actual performance of the employee and also the future performance. It is a systematic way of reviewing and assessing the performance of an employee during a given period of time and planning for his future. Designing and implementing appraisal in the organization is to improve the performance among the employees. In the eyes of Human Resources Management practitioners, there could be standard form for performance appraisal. 'Job Description', 'Performance Level', 'Performance Factors', 'Appraiser's Additional Comments', Appraisee's Feedback are usual elements incorporated into such a standard form. The performance appraisal is essential to understand and improve the employee's performance through human resource development. The performance appraisal activity is viewed to decide upon employee promotion/transfer, salary determination. It indicates the level of actual performance and the desired performance gap. This gap should be bridged through human resources development techniques like training, executive development etc. The Performance appraisal is a method of evaluating the behavior of employees in the work spot, normally including both the quantitative and qualitative aspects of the job performance. The study aims at determining the performance appraisal activities adopted at Indian Bank, Chittoor.

KEYWORDS

Appraiser and Appraisee, Feedback, Development, Job performance & Organizational control.

INTRODUCTION

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

DEFINITIONS

According to **Flippo**, "Performance appraisal is the systematic, periodic and an impartial rating of an employee's excellence in the matters pertaining to his present job and his potential for a better job."

According to **Douglass**, "Performance appraisal is a method of acquiring and processing the information needed to improve an individual employee's performance and accomplishments."

ABOUT THE STUDY

The study highlights the importance of "Performance Appraisal in Banking Sector", with special reference to Indian Bank in Chittoor District. The scope of the study is extended to the branches in Chittoor, Tirupathi, Madanapalli and Palamner. In this study we strive to find out the need of "Performance Appraisal" for banks, and try to understand how the "Performance Appraisal" is done in banking sector.

STATEMENT OF THE PROBLEM

The study aims at identifying the Performance Appraisal in Indian Bank, Chittoor(A.P). The study is conducted by approaching employees in the banks and to know the criteria for evaluating the performances of the employees in order to enhance the employee performances for a better outcome. Hence the present study has been undertaken to find out the answers for the following questions.

- What are the factors that influence the strengths and weakness of the present performance appraisal system?
- What are the problems faced by the employees to reach their desired performance

OBJECTIVES OF THE STUDY

- To analyze the Performance Appraisal in Indian Bank, Chittoor.
- To review the performance of the employees over a given period of time and to judge the gap between the actual and the desired performance.
- To diagnose the strengths and weaknesses of the individuals so as to identify the training and development needs of the future.
- To provide feedback to the employees regarding their past performance.
- To help the management in exercising organizational control.

LIMITATIONS OF THE STUDY

- There may be the chance of personal bias in the responses of the employees in the questionnaire.
- Some of the workers may not be interested to answer the questions.
- The climate cannot be analyzed with little samples out of huge populations.
- Since the respondent's chosen are busy they find little time to answer the questionnaire.

RESEARCH METHODOLOGY

Sample size: A total of 150 respondents in Indian Bank, Chittoor was selected for the study.

Sampling technique: Convenience sampling method has been followed for collecting the response from the respondents.

Sources of data: The study is based on both primary and secondary data. Primary data has been collected by using a questionnaire. Secondary data has been collected from books, manuals and internet.

Tools for collection of data: The questionnaire is the major tool administered for collecting primary data from the respondents.

Tools for analysis: The statistical tools used for the purpose of analysis of this study are Simple percentage technique, Weighted average method, Chi-square test, Co-relation co-efficient and F-Distribution test.

TABLE 1: AWARE OF EXISTING PERFORMANCE APPRAISAL PROCESS

S.No	Opinion	No. of Respondents	Percentage (%)
1	Partly aware	45	30
2	Aware	43	28.6
3	Fully aware	62	41.4
	Total	150	100

Interpretation & Analysis: The above table indicates that 30% of the respondents are partly aware, 28.6% are aware and 41.4% are fully aware about the existing performance appraisal process.

TABLE 2: DISCUSSION OF GOAL SHEET

S.No	Opinion	No. of Respondents	Percentage(%)
1	At the beginning Period	84	56
2	At the end period	66	44
	Total	150	100

Interpretation & Analysis: The above table indicates that with 56% of the respondents had discussed about the goal sheet at the beginning of the period and 44% of respondents had discussion about the goal sheet at the end of appraisal period.

TABLE 3: OPINION ON APPRAISEE SATISFACTION AFTER RECEIVING THE GOAL SHEET

S.No	Opinion	No. of Respondents	Percentage (%)
1	Highly Satisfied	54	36
2	Satisfied	32	21.4
3	Neutral	20	13.4
4	Dissatisfied	25	16.6
5	Highly Dissatisfied	19	12.6
	Total	150	100

Interpretation & Analysis: The above table indicates that 36% of the respondents are highly satisfied, 21.4% are satisfied, 13.4% are neutral, 16.6% are dissatisfied and 12.6% respondents are highly dissatisfied after receiving the goal sheet.

Weighted Average Method

The general formula for Weighted Average Calculation

$$\text{Weighted Average} = (x_1w_1 + x_2w_2 + \dots + x_nw_n) / (w_1 + w_2 + \dots + w_n)$$

$$= \sum_{i=1}^n (X_i W_i) / \sum_{i=1}^n W_i$$

Here X_i = Values of quantity whose weighted average is being calculated, while w_i is the values of corresponding weights.

So, for calculating weighting average, you must multiply values of the quantity with their corresponding weights, all them up and divide them by the sum of the weights.

By giving ranks to the no. of respondents we get the following table.

From the above table weighted Average = $(5*54) + (4*32) + (3*20) + (2*25) + (1*19)$

$$= 270 + 128 + 60 + 50 + 19$$

$$= 527/150$$

$$= 3.51$$

In the above table, the rank 3 corresponds to the response "Neutral"

Result: So, it is noticed that the appraisee's are "Neutral" in satisfaction on receiving the goal sheet.

TABLE 4: OPINION ON SATISFACTION WITH DISCUSSION/ REVIEW HELD DURING APPRAISAL

S.No	Opinion	No. of Respondents	Percentage(%)
1	Highly Satisfied	35	23.3
2	Satisfied	44	29.3
3	Neutral	25	16.7
4	Dissatisfied	30	20
5	Highly Dissatisfied	16	12.7
	Total	150	100

Interpretation & Analysis: The above table indicates that 23.3% of the respondents are highly satisfied, 29.3% are satisfied, 16.7% are neutral, 20% are dissatisfied and 12.7% respondents are highly dissatisfied with the discussion held during appraisal.

TABLE 5: APPRAISAL PROCESS MEETING ITS OBJECTIVES PURPOSEFULLY

S.No	Opinion	No. of Respondents	Percentage(%)
1	Strongly Agree	40	26.6
2	Agree	52	34.6
3	Neutral	15	10
4	Disagree	24	16
5	Strongly disagree	19	12.8
	Total	150	100

Interpretation & Analysis: The above table indicates that 26.6% of the respondents are strongly agreed, 34.6% are agreed, 10% are neutral, 16% are disagreed and 12.8% respondents are strongly disagreed with the appraisal process meeting its objectives purposefully.

TABLE 6: OPINION ON GETTING INPUTS ON STRENGTHS AND AREAS OF IMPROVEMENT AFTER APPRAISAL

S.No	Opinion	No. of Respondents	Percentage (%)
1	Strongly agree	44	29.3
2	Agree	56	37.3
3	Neutral	21	14
4	Disagree	16	10.7
5	Strongly Disagree	13	8.7
	Total	150	100

Interpretation & Analysis: The above table indicates that 29.3% of the respondents are strongly agreed, 37.3% are agreed, 14% are neutral, 10.7% are disagreed and 8.7% respondents are strongly disagreed with getting inputs on strengths and areas of improvement.

F-DISTRIBUTION TEST WITH TABLE 5 & 6

Let 'x' be the no. of respondents opinion about meeting the objectives in appraisal process.

S.No	Opinion	No. of Respondents	Percentage (%)
1	Strongly Agree	40	26.6
2	Agree	52	34.6
3	Neutral	15	10
4	Disagree	24	16
5	Strongly disagree	19	12.8
	Total	150	100

Let 'Y' be the no. of respondents getting inputs on strengths and areas of improvement after appraisal

S.No	Opinion	No. of Respondents	Percentage (%)
1	Strongly agree	44	29.3
2	Agree	56	37.3
3	Neutral	21	14
4	Disagree	16	10.7
5	Strongly Disagree	13	8.7
	Total	150	100

X	40	52	15	24	19
Y	44	56	21	16	13

Null Hypothesis (Ho):

$$\sigma_x^2 = \sigma_y^2$$

$\sigma_x = \sigma_y$ i.e. two samples have the same variance.

Alternative Hypothesis (H1):

$$\sigma_x^2 \neq \sigma_y^2$$

$\sigma_x \neq \sigma_y$, (Two tailed test)

COMPUTATION OF TEST STATISTIC

X	$x - \bar{x}$ = x - 30	$(x - \bar{x})^2 = (x - 30)^2$	Y	$y - \bar{y}$ = y - 30	$(y - \bar{y})^2 = (y - 30)^2$
40	10	100	44	14	196
52	22	484	56	26	676
15	-15	225	21	-9	81
24	-6	36	16	-14	196
19	-11	121	13	-17	289
$\Sigma x = 150$		$\Sigma (x - \bar{x})^2 = 966$	$\Sigma y = 150$		$\Sigma (y - \bar{y})^2 = 1438$

$$\begin{aligned}\text{Now } \bar{x} &= \frac{\Sigma x}{n} \\ &= \frac{150}{5} \\ &= 30\end{aligned}$$

$$\begin{aligned}Y &= \frac{\Sigma Y}{n} \\ &= \frac{150}{5} \\ &= 30\end{aligned}$$

$$\sigma_1^2 = \frac{\Sigma (x - \bar{x})^2}{n_1 - 1} = \frac{966}{4} = 241.5$$

$$\sigma_2^2 = \frac{\Sigma (Y - \bar{y})^2}{n_2 - 1} = \frac{1438}{4} = 359.5$$

$$F = 1.48$$

Critical Value: The table value of F at $\alpha = 0.05$ for 4 and 4 degrees of freedom is

Fo.05 = 9.12

Decision: The computed value of F = 1.48 < table value Fo.05 = 9.12.

So null hypothesis is accepted. The two samples have the same variance.

TABLE 7: DISAGREEMENTS WITH YOUR APPRAISER ON PERFORMANCE RATINGS

S.No	Opinion	No. of Respondents	Percentage (%)
1	Yes	65	43
2	No	85	57
	Total	150	100

Interpretation & Analysis: The above table indicates that 43% respondents have said yes and 57% of the respondents have said that they don't have any disagreements with their appraiser on performance ratings.

TABLE 8: TRAINING PROGRAMME IN IMPROVEMENT OF EMPLOYEES PERFORMANCE

S.No	Opinion	No. of Respondents	Percentage (%)
1	Yes	97	65
2	No	53	35
	Total	150	100

Interpretation & Analysis: The above table indicates that 65% respondents have said yes and 35% of the respondents have said that they didn't identify positive changes after getting feedback from superiors.

Chi-Square Test with Table 7 & 8:

Disagreements with appraiser on performance ratings and Training programme helps the employees in improving their performance.

STEP – 1

Setting up of hypothesis

Null hypothesis (H0): There is no significance difference between disagreements with appraiser on performance ratings and training programme helps the employees in improving their performance.

Alternative hypothesis (H1): There is significance difference between disagreements with appraiser on performance ratings and training programme helps the employees in improving their performance.

Observed frequency [O_i]

Disagreements with appraiser \ Training programme helps the employees	YES	NO	Total
Yes	29	41	70
No	55	25	80
Total	84	66	150

Step – 2: Computation of expected frequency [E_i]:

Expected frequency = Row total X Column total \ Total sample

Disagreements with appraiser \ Training programme helps the employees	YES	NO	Total
Yes	39	31	70
No	45	35	80
Total	84	66	150

Test statistics

$$\text{Chi square} = \sum_{i=1}^n \frac{(O_i - E_i)^2}{E_i}$$

Calculation of chi-square test

O _i	E _i	O _i -E _i	(O _i -E _i) ²	(O _i -E _i) ² /E _i
29	39	-10	100	2.56
55	45	10	100	2.22
41	31	10	100	3.23
25	35	-10	100	2.86
Total				10.87

$$\psi^2 = 10.87$$

Step – 3: Level of significance: Z α = 0.05

Degree of freedom: (R-1) (C-1)

$$(2-1) (2-1) = 1$$

Step – 4: Critical value

The table value of ψ^2 for 1 degree of freedom at $\alpha = 0.05$ is

$$\psi^2 = 3.841$$

0.05,4

Step – 5: Decision

The calculated value of $\psi^2 = 10.87$ is greater than the table value of

$$\psi^2 = 3.841$$

0.05,4

So the Null Hypothesis is rejected.

RESULT

Therefore the Alternative Hypothesis is accepted. There is a significance difference between disagreements with appraiser on performance ratings and training programme helps the employees in improving their performance.

TABLE 9: IDENTIFYING POSITIVE CHANGES IN EMPLOYEES AFTER GETTING FEEDBACK FROM SUPERIORS

S.No	Opinion	No. of Respondents	Percentage (%)
1	Yes	87	58
2	No	63	42
	Total	150	100

Interpretation & Analysis: The above table indicates that 58% respondents have said yes and 42% of the respondents have said that they didn't identify positive changes after getting feedback from superiors.

TABLE 10: SATISFACTION WITH RECOGNITION FOR YOUR WORK

S.No	Opinion	No. of Respondents	Percentage (%)
1	Highly Satisfied	55	36.7
2	Satisfied	46	30.7
3	Neutral	20	13.3
4	Dissatisfied	19	12.7
5	Highly Dissatisfied	10	6.6
	Total	150	100

Interpretation & Analysis: The above table indicates that 36.7% of the respondents are highly satisfied, 30.7% are satisfied, 13.3% are neutral, 12.7% are dissatisfied and 6.6% respondents are highly dissatisfied with the recognition for their work.

TABLE 11: SATISFACTION WITH RELATIONSHIP MADE BY THE SUPERVISOR

S.No	Opinion	No. of Respondents	Percentage(%)
1	Highly Satisfied	40	26.6
2	Satisfied	60	40
3	Neutral	15	10
4	Dissatisfied	19	12.7
5	Highly Dissatisfied	16	10.7
	Total	150	100

Interpretation & Analysis: The above table indicates that 26.6% of the respondents are highly satisfied, 40% are satisfied, 10% are neutral, 12.7% are dissatisfied and 10.7% respondents are highly dissatisfied. It indicates that employees are satisfied with the relationship made by the supervisor.

CORRELATION COEFFICIENT**Correlation of Table 10 and 11**

Let 'X' be the number of respondents satisfied with recognition got from the management.

S.No	Opinion	No. of Respondents	Percentage (%)
1	Highly Satisfied	55	36.7
2	Satisfied	46	30.7
3	Neutral	20	13.3
4	Dissatisfied	19	12.7
5	Highly Dissatisfied	10	6.6
	Total	150	100

Let 'Y' be the number of respondents satisfied with relationship made by their supervisor.

S.No	Opinion	No. of Respondents	Percentage (%)
1	Highly Satisfied	40	26.6
2	Satisfied	60	40
3	Neutral	15	10
4	Dissatisfied	19	12.7
5	Highly Dissatisfied	16	10.7
	Total	150	100

X	55	46	20	19	10
Y	40	60	15	19	16

X	Y	(X) ²	(Y) ²	XY
55	40	3025	1600	2200
46	60	2116	3600	2760
20	15	400	225	300
19	19	361	361	361
10	16	100	256	160
150	150	6002	6042	5781

$$\begin{aligned}
 \text{Correlation coefficient, } r &= \frac{N \sum XY - \sum X \cdot \sum Y}{\sqrt{N \sum X^2 - (\sum X)^2} \cdot \sqrt{N \sum Y^2 - (\sum Y)^2}} \\
 &= \frac{5 \times 5781 - 150 \times 150}{\sqrt{5 \times 6022 - (150)^2} \cdot \sqrt{5 \times 6042 - (150)^2}} \\
 &= \frac{30110 - 22500}{\sqrt{30010 - 22500} \cdot \sqrt{30210 - 22500}} \\
 &= \frac{7610}{\sqrt{7510} \cdot \sqrt{7710}} \\
 &= \frac{7610}{86.66 \times 87.80}
 \end{aligned}$$

$$r = \frac{7610}{7690} = 0.98$$

RESULT

There is correlation between respondents satisfied with recognition got from the management and respondents satisfied with relationship made by their supervisor.

TABLE 12: PERFORMANCE APPRAISAL INCREASES PRODUCTIVITY

S.No	Opinion	No. of Respondents	Percentage (%)
1	Yes	114	76
2	No	36	24
	Total	150	100

Interpretation & Analysis: The above table indicates that 76% of respondents have said yes and 24% of the respondents are not agreed with the appraisal process increases productivity.

TABLE 13: SUPERIOR LEVEL OF ACCEPTANCE FOR YOUR IDEAS/OPINIONS

S.No	Opinion	No. of Respondents	Percentage (%)
1	Low Extent	60	40
2	Moderate	55	37
3	High Extent	35	23
	Total	150	100

Interpretation & Analysis: The above table indicates that 40% of respondents accepted to a little extent, 37% of the respondents accepted at moderate level and 23% of respondents accepted to a great extent. However, the employees are not satisfied with the superior level of acceptance for their ideas and opinions.

TABLE 14: RATING OVERALL EXISTING APPRAISAL PROCESS

S.No	Opinion	No. of Respondents	Percentage (%)
1	Excellent	35	23
2	Good	70	47
3	Average	41	27
4	Poor	4	3
	Total	150	100

Interpretation & Analysis: The above table indicates that 23% of the respondents rate the appraisal process as excellent, 47% of respondents rate the process good, 27% of the employees rate the process average and remaining 3% of the employees rate the process poor in the banks.

FINDINGS

- 29.3% of the respondents are satisfied with review/discussion held during appraisal process.
- 37.3% of the respondents agreed that they get inputs on strengths & areas of improvement after appraisal process.
- 57% of the respondents disagreed with appraiser on performance ratings.
- 40% of the respondents are satisfied with the relationship made by the supervisor during appraisal process.
- 40% of the respondents to a low extent satisfied with the superior level of acceptance for their ideas and opinions.
- 47% of the respondents opinioned that the appraisal process is good in the bank.

SUGGESTIONS

- Superiors need to maintain a proper appraisal process which increases the inputs on strengths and areas of improvement.
- Steps should be taken to ensure one on one discussion between all appraisers and appraisee's during appraisals.
- Superiors need to maintain proper relationship with the appraisee's during the appraisal process.
- Superiors have to encourage the employees in achieving their given targets and to accept their ideas and opinions.
- The entire performance appraisal process should be effective by making some changes in the system, in order to yield good results.

CONCLUSION

Performance appraisal activities are one of the best methods of evaluating and motivating the employees to do the job effectively for development and achievement of the organization's objectives in a perfect manner. The study was conducted by the researcher, which plays a vital role in analyzing the ability and worthiness of its employees. It reveals that most of the employees are satisfied and must be very much satisfied with the employers respond level, good relationship, motivation, merit based promotion. It was found that the effective performance appraisal activity carried by the banks motivates the employees to do their job performance effectively and efficiently. Thus the performance appraisal activities carried by the banks helps the management to identify, to understand and to solve the problems and queries faced by the employees.

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STRATEGIC TRAINING FOR NON-LIFE INSURANCE COMPANIES' OF INDIA**CHIRAG DHANJI PATEL****ASST. PROFESSOR****SHRI JAIRAMBHAI PATEL INSTITUTE OF BUSINESS MANAGEMENT & COMPUTER APPLICATION
(FORMERLY KNOWN AS NATIONAL INSTITUTE OF COOPERATIVE MANAGEMENT)
GANDHINAGAR****ABSTRACT**

With the rapid growth of the industry the demand for trained workforce with specific skills in sales, operations and product design and management has increased. The future growth of the industry will to a large extent depend on the supply of trained manpower. Thus the paper tries to give a framework for the non-life insurance companies to guide the employees for a systematic training program. The paper tries to explain various strategic steps which can be taken by the non-life insurance companies to improve the standard of its employees through systematic implementation of these frameworks. With the implementation of the framework towards the training of employees the organization will be able to achieve a better satisfaction from its stake holders

KEYWORDS

Training, strategy, Non-life Insurance, framework.

NON-LIFE INSURANCE INDUSTRY OF INDIA

The world Insurance history can be traced in Emperor Hamurabi's Babylonya 3000 years B.C in the primitive form of Marine Insurance through contracts providing security to the traders undertaking risks of importing goods from Eastern countries like India, China, etc. during the then globalised trade period. In India Insurance history is traced in 1000 years B.C. in the form of the practice as recorded in the Manusmriti – the social code of ancient India. Insurance Industry which is the offspring of socio-economic, political and technological evolution of human society has become the subject matter of discussion, debate and deliberation for all segments of the society today in India after liberalization of Indian Insurance sector and formation of insurance regulatory body ie IRDA. Before that this sector was monopolized by Govt. of India for about 3 decades. At present about 21 MNCS and private players are competing with the state-owned insurance companies in India bringing the total transformation of Indian Non-life Insurance Industry. Despite the total transformation Indian Insurance has been still lagging behind in comparison with the world wide insurance development which has brought the convergence of insurance markets with money markets and capital markets.

General Insurance in India has its roots in the establishment of Triton Insurance Company Ltd., in the year 1850 in Calcutta by the British. In 1972 with the passing of the General Insurance Business (Nationalisation) Act, general insurance business was nationalized with effect from 1st January, 1973. 107 insurers were amalgamated and grouped into four companies, namely National Insurance Company Ltd., the New India Assurance Company Ltd., the Oriental Insurance Company Ltd and the United India Insurance Company Ltd. The General Insurance Corporation of India was incorporated as a company in 1971 and it commence business on January 1st 1973.

India is the fifth largest general insurance market in Asia with annual premiums of \$6.3 billion in FY09. It is projected that from 2006-2026 the working class population is expected to increase from 675.8 million to 795.5 million. India, with a more than 1.2 billion population, has a very low insurance penetration (0.60%) of insurance premium as a percentage of Gross domestic products; and an insurance density of \$ 6.2 per capita premium. Compared to the world insurance market, India's contribution seems to be negligible. The Non-Life insurance industry underwrote a total premium of Rs.4425.09 Crore in June 2011 as against Rs.3593.06 in June 2010 registering a growth of 22 percent

The Swiss Re report reveals that the insurance penetration in India is 4.74 % in 2008-09 consisting of 0.57% from Non-life business and rest 4.17 coming from Life business. Non-life premium income has increased by 106% since initial liberalisation in 2000, consistently outstripping global growth. It indicates ample scope that the Indian non-life insurance market has to offer. Further, since developed economies are showing signs of saturation, the Indian market has become even more attractive for global insurance majors who can foresee the development and rise of economy in the times to come. Despite the welcome of the reforms between 2000 to 2006 the non-life insurance market has to some extent being regulated. The latest change is the health insurance portability from October 2011

Considering the unlimited extent of market potential, there is a need to spread insurance education to general population advising on the benefits of general insurance and guiding them on assessing their need requirements. It is equally important to impart quality insurance education to the personnel of the insurance companies to ensure right selling and quality service deliveries to clients.

TRAINING

Training is a Organized activity aimed at imparting information and/or instructions to improve the recipient's performance or to help him or her attain a required level of knowledge or skill

Training is a planned effort by a company to facilitate employees learning of job related competencies. These competencies include knowledge, skills or behaviors that are critical for successful job performance. The goal of training is for employees to master the knowledge, skill and behaviors emphasized in training program and to apply them to their day-to-day activities. For a company to gain a competitive advantage, its training has to involve more than just basic skill development. Training should be used by the company to use the competitive advantage through intellectual capital. Intellectual capital includes basic skills, advanced skills, an understanding of the customer or manufacturing system and self-motivated creativity.

High leverage training is linked to strategic business goals and objectives, uses an instructional design process to ensure that training is effective, and compares or benchmarks the company's training programs against training programs in other companies

Continuous learning requires employees to understand the entire work system including the relationships among their jobs, their work units and the company. Employees are expected to acquire new skills and knowledge, apply them on the job and share this information with other employees.

Companies have lost money on training because it is poorly designed, because it is not linked to a performance problem or business strategy, or because its outcomes are not properly evaluated. Companies have been investing money into training simply because of beliefs that it is a good thing to do. The perspective that the training function exists to deliver programs to employees without a compelling business reason for doing so is being abandoned.

Today training is being evaluated not on the basis of the number of programs offered and training activity in the company but on how training addresses business needs related to learning, behavior change and performance improvement. In fact, training is becoming more performance focused. Training is used to improve employee performance, which leads to improved business results. Training is seen as one of several possible solutions to improve performance.

TRAINING IN NON-LIFE INSURANCE

Corporate training is very much necessary for the Non-life insurance companies. The companies should have customized and specialized training programs with contemporary industrial requirements in mind. The companies should have a varied training focusing on all the products like Health, property and liability insurance and in several other fields including automobile, engineering, and power, oil and energy sectors. India today witnesses a rapid pace of change in all

spheres. Globalization has brought in new challenges. Insurance industry, in particular, is at a new gateway of opportunity. Keeping this in mind, the non-life insurance companies should structured and customized training programs that inspire innovation, at every turn.

The training programs should be devised with an eye on providing the maximum leverage for complete and comprehensive understanding. These should include:

- Faculty led sessions
- Case studies
- Guest Lectures
- Group workshops
- Field visits
- On the job training

The training programs should also conduct seminars, conferences, workshops etc. to periodically enhance training effectiveness and also to serve as a window on development activities taking place in the insurance industry.

Many of the non-life insurance companies seeing to the importance of the training and learning are investing and providing around 40 hours of formal training per hour per year

But on the other hand there are some companies which do not give importance to training. These companies have made the mistake of considering employee training as discretionary when, in fact, it's not. Nearly every corporation's annual report talks about how people are their only sustainable, competitive advantage. Now this has got to mean that development of their people is vital to their success. Good employees need to feel valued. They want to know that development programs are available, so that they can have the skills needed to do their jobs and grow in their careers. They also want to know that their employers will help them remain marketable in case they have to find new employment.

FRAMEWORK FOR NON-LIFE INSURANCE COMPANIES

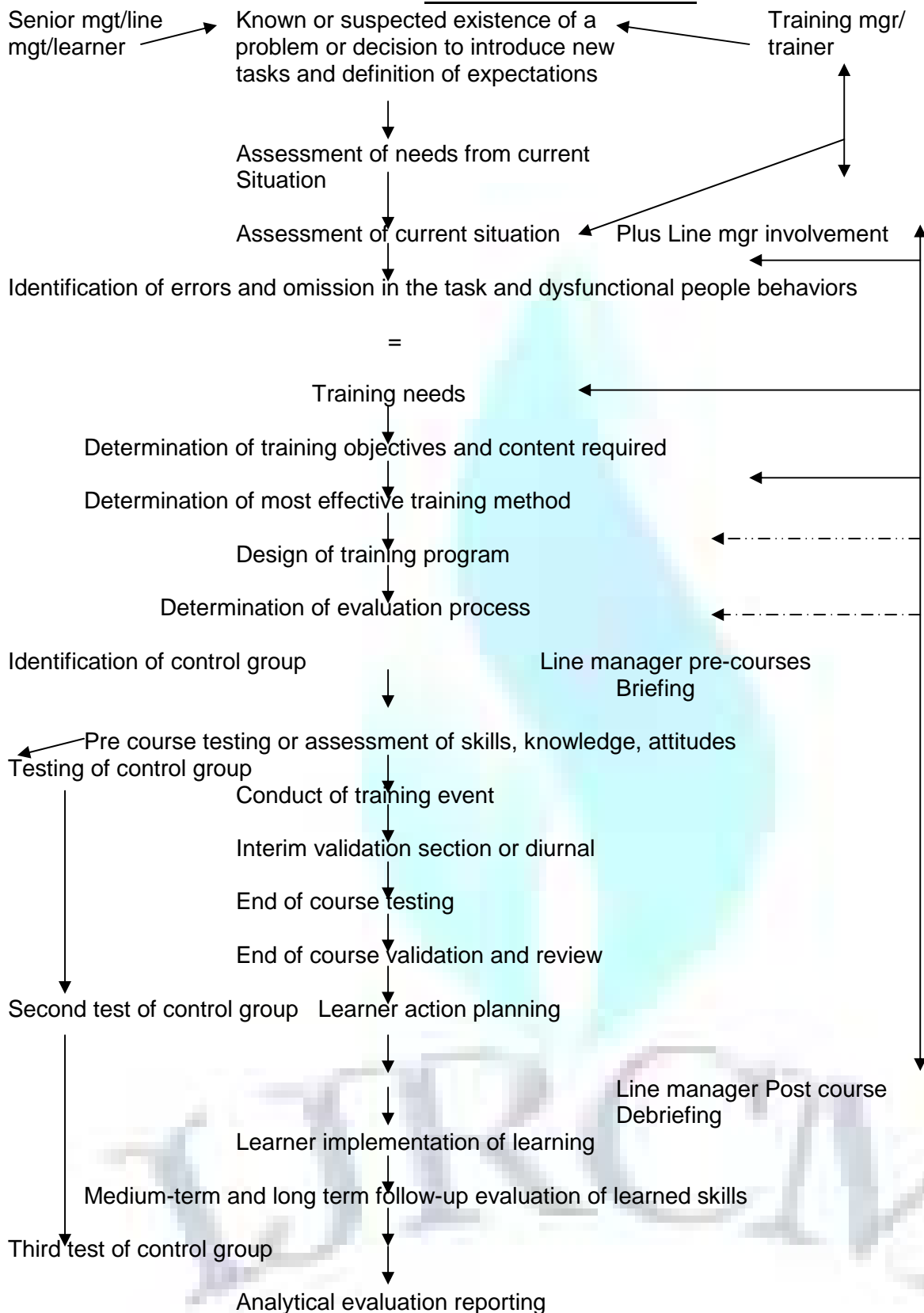
A SYSTEMATIC TRAINING CYCLE

There are two basic important events which will trigger the need for planning and designing of a training program:

1. The result of any investigation into needs based on suspicion of a problem;
2. The introduction of a new or revised operation of working

Both these initiates a training needs analysis and investigation which may be the precursor to the introduction of a training program.

Thus the training cycle is as under:

FIG 4.1.1 TRAINING CYCLE

Training need assessment forms the early part of the training cycle. It is seen that the planning and design section appears to be a relatively small, unimportant area of the full cycle but it is crucially important area.

Some organizations, feel that because the whole is related to training the training department must be responsible for carrying out the full spectrum of activities. This is a traditional attitude, but experience has shown that in many cases only a very small part is carried out by the training department. This can usually be attributed to the fact that trainers have insufficient time to carry out the full cycle; the argument generally proposed being that if they had to do it all there would be no time left for training. This is not only not an acceptable reason, but indicates a basic fault in the thinking – the trainer is not always the best person to carry out certain stages of the training cycle, whether or not they have time to do so. Other people should/must be involved and be given their own responsibilities that they should be carrying out

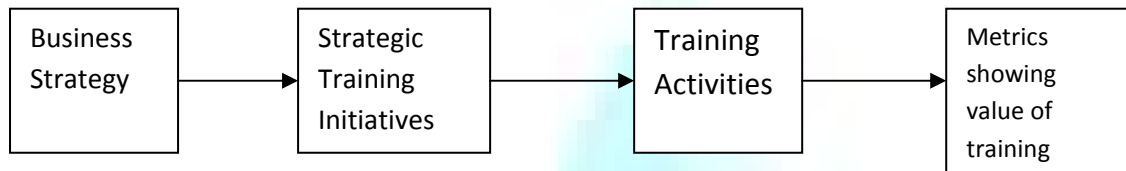
The first area, that is making the initial decisions about general training needs, must fall squarely on the shoulders of senior management; the decisions about who participates in what training on those of the line manager who is also responsible for certain activities prior to and after the training; and so on. There are specific areas where the knowledge, skill and expertise of the trainer decides that these are the areas in which they must be involved

STRATEGIC TRAINING

A business strategy is a plan that integrates the company's goals, policies and actions. The strategy influences how the company uses physical capital, financial capital. The business strategy helps direct the company's activities to reach specific goals. The goals are what the company hopes to achieve in the medium and long term future. Most companies' goals include financial goals, such as to maximize shareholder wealth. But companies have other goals related to employee satisfaction, industry position and community service.

There is both a direct and indirect link between training and business strategy and goals. Training can help employees develop skills needed to perform their jobs, which directly affects the business. Giving employees opportunities to learn and develop creates a positive work environment, which supports the business strategy by attracting talented employees as well as motivating and retaining current employees.

FIG. 4.2.1: STRATEGIC TRAINING PROCESS



The model shows strategic training process which can be utilized by the non-life insurance companies for implementing training in the organization. Business strategy life mission, values should be linked to the training activities so that the activities are systematically implemented and evaluated

The model shows that the process begins with identifying the business strategy. Next, strategic training initiatives that support the strategy are chosen. Translating these strategic training initiatives into concrete training activities is the next step of the process. The final step involves identifying measures of metrics. These metrics are used to determine if training helped contribute to goals related to the business strategy.

TRANSFER OF TRAINING

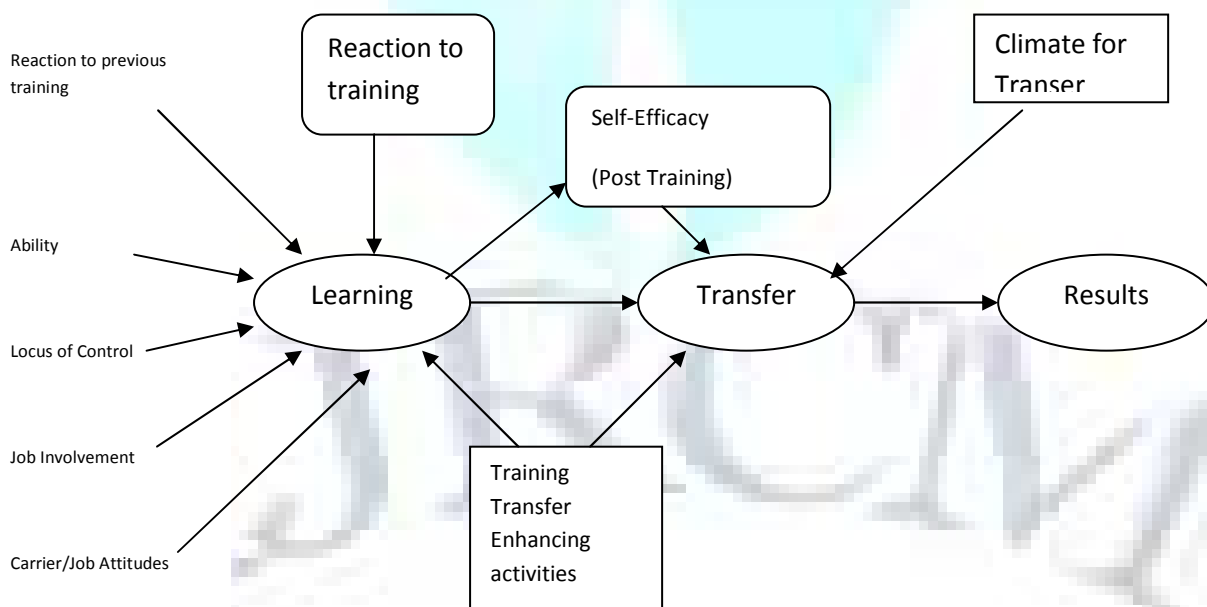
Transfer of training refers to the training effectively and continually applying what they learned in training to their jobs. Positive transfer of training is defined as the degree to which trainees effectively apply the knowledge, skills and attitudes gained in a training context to the. Transfer of training therefore, is more than a function of original learning in a training program. For transfer to have occurred, learned behavior must be generalized to the job context and maintained over a period of time on the job.

The factors that affect training transfer outcomes can be grouped into three broad areas:

1. Training design
2. Individual trainee characteristics
3. Environment and context in which training and transfer takes place.

All three areas can influence transfer outcomes directly. In addition, transfer environment and context often impact indirectly on transfer outcomes through trainee characteristics.

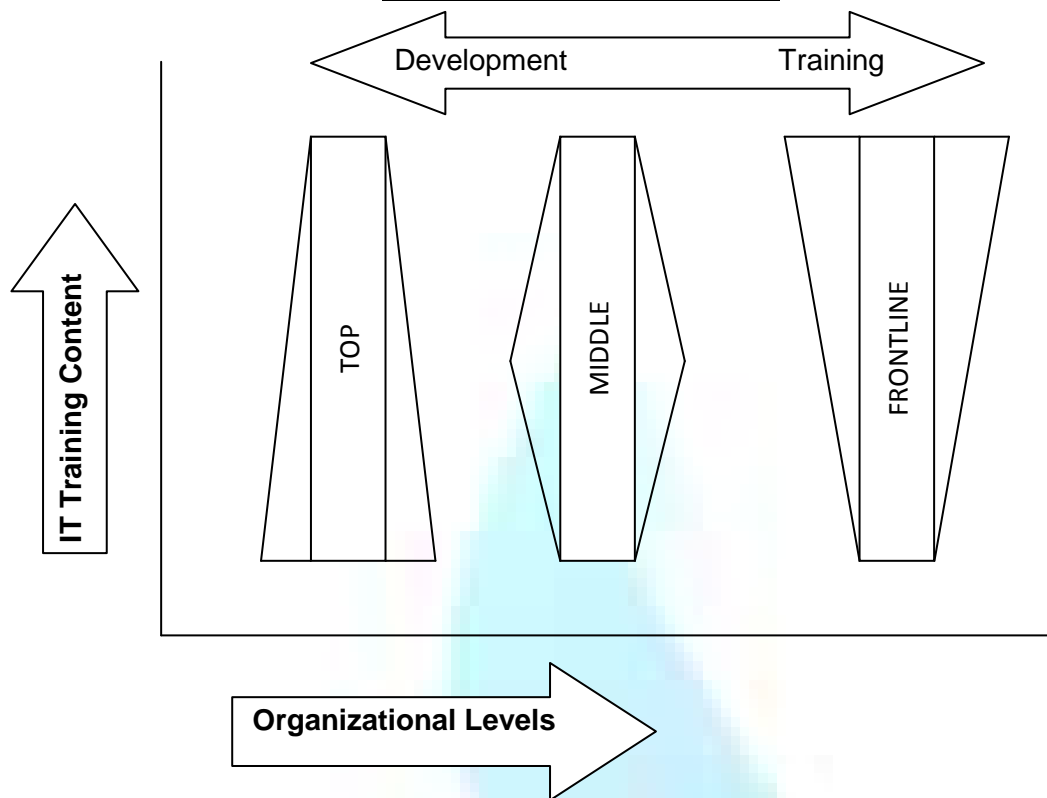
FIG 4.3.1 TRAINING TRANSFER MODEL



The above model can be utilized by the non-life insurance companies for their transfer of training purpose. The first factor concerned in the process is that the trainees' motivation and self-efficacy influence the training and transfer outcomes. The second factor is the impact of self-efficacy and motivation on trainees' implementation intentions and implementation activities. It was expected that higher levels of post-training self-efficacy and motivation would lead to higher self-set goals for transfer and stronger commitment to those goals, as well as stronger intentions to use implementation activities and greater actual use of implementation activities.

STRATEGIC IT TRAINING FRAMEWORK

Business strategy of insurance service providers has undergone massive changes in recent past. Risk evaluation and underwriting demands more scientific approach; policy creation and administration needs to be faster and efficient; claims processing needs to be sensitive towards customers with much lesser scope of error; customer relationship management demands regular innovation; and so on. Due to these changes, use of information technology is no more a matter of choice but it has become an urgent necessity.

FIG 4.4.1 IT TRAINING FRAMEWORK

The proposed framework explores IT training for different levels of organizational personnel with regard to training content. Training content expounds the broad parameters on which the planners should organize the training for the different levels of the employees. It is very important for the top level employees to have a positive and a favorable attitude towards IT and new technology adoption. These groups of people require an attitudinal training towards IT. Middle level of employees requires the training more on the knowledge. They require a thorough knowledge and understanding of the various systems of the firm and the IT capabilities and more importantly how they can be integrated. Frontline workers should have rigorous training in the actual systems and IT modules related to their jobs

CONCLUSION

Non-life insurance industry is growing at a very dynamic pace and thus it requires systematic formulation of training programs for the employees. The framework gives guidelines of the companies to frame the training for the employees. With systematic training modules companies can achieve a better satisfaction level from its stake holders. As the amount of mis-selling and non settlement of claim is high the training will help the companies to have a proper relationship with the customers.

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BIOMETRICS SECURITY SYSTEM IS A TOOL FOR DAILY LIFE SECURITY**MONALIKA SHARMA****ASST. PROFESSOR (CSE)****SHIVA INSTITUTE OF ENGINEERING & TECHNOLOGY****BILASPUR****ABSTRACT**

Biometric system is an important tool for security system. Biometrics is a rapidly evolving technology which is being widely used in forensics such as criminal identification and prison security and has the potential to be used in a large range of civilian application areas. Biometrics can be used to prevent unauthorized access to ATMs, cellular phones, smart cards, UID cards, desktop PCs, workstations (companies, industries, Educational institutes, shopping mall, railway stations, airports etc.) and computer networks. Biometric Recognition Systems helps to public and offer more secure and convenient process of identification compared to alternative methods of identification. The application of biometric system helps in daily life and strengthens the field of science and technology. The review article also explores applications in biometric system. Biometric security systems have been proved to be accurate and very effective in various applications.

KEYWORDS

Automated Teller Machine, BioAPI consortium, Biometric authentication systems Biometric security system, Personal Computer.

INTRODUCTION

Computer technology is more and more ubiquitous; the penetration of computer in society is a welcome step towards modernization but society needs to be better equipped to grapple the challenges associated with technology. The difficulties of staying up to date with security issues within the realm of IT education are due to the lack of current information (Ahmad et al., 2003). The recent research is focused on bringing quality security system and more reliable biometric security system.

Biometric security systems are automated methods of verifying or recognizing the identity of a living person. There are two types of biometric methods:

1. Physiological biometric methods: They are based on physiological characteristics such as fingerprints, hand geometry and retina patterns.
2. Behavioural biometric methods: They are based on some aspect of behaviour such as signature, voice, keystroke and pointing patterns.

As there is a diversity of needs in terms of the information handled, security requirements, and organizational factors, no one biometric method is likely to meet all these requirements but still helpful tool for daily life security (Deane et al., 1995).

Biometric security systems of identification are preferred over traditional methods involving passwords and PIN numbers for various reasons: the person to be identified is required to be physically present at the point-of identification; identification based on biometric techniques obviates the need to remember a password or carry a token. With the increased use of computers as vehicles of information technology, it is necessary to restrict access to sensitive/personal data. By replacing PINs, biometric techniques can potentially prevent unauthorized access to or fraudulent use of ATMs, cellular phones, smart cards, desktop PCs, workstations, and computer networks. PINs and passwords may be forgotten, and token based methods of identification like passports and driver's licenses may be forged, stolen, or lost. Thus biometric systems of identification are enjoying a renewed interest. A biometric system is essentially a pattern recognition system which makes a personal identification by determining the authenticity of a specific physiological or behavioral characteristics possessed by the user.

An important issue in designing a practical system is to determine how an individual is identified. Depending on the context, a biometric system can be either a verification (authentication) system or an identification system. The current security model for verification of identity, protection of information and authentication to access data or services is based on using a token or password, tied to and thereby representing an individual to either authenticate identity or allow access to information (Uddin et al., 2011).

ROLE OF BIOMETRICS

The physical characteristics of a person like finger prints, hand geometry, face, voice and iris are known as biometrics. Each biometric trait has its strengths and weaknesses. The suitable biometric can be selected depending upon the application in various computer based security systems. The important features of the various biometrics are discussed briefly in this section.

FINGER PRINTS

Fingerprint verification is one of the most reliable personal identification methods. Among all the biometric techniques, fingerprint-based identification is the oldest method which has been successfully used in numerous applications. Everyone is known to have unique, immutable fingerprints. A fingerprint is made of a series of ridges and furrows on the surface of the finger. The uniqueness of a fingerprint can be determined by the pattern of ridges and furrows as well as the minutiae points. Minutiae points are local ridge characteristics that occur at either a ridge bifurcation or a ridge ending. A finger print is the pattern of ridges and valley on the surface of a finger tip. The finger prints of the identical twins are different. It is affordable to scan the finger prints of a person and can be used in computer for number of applications. This method is traditional and it gives accuracy for currently available Fingerprint Recognition Systems for authentication (Jain et al., 1997). This fingerprint recognition system is becoming affordable in a large number of applications like banking, Passport, educational institution etc.

Advantages: Very high accuracy, most economical biometric PC user authentication technique, most developed biometrics, easy to use, small storage space required for the biometric template, reducing the size of the database memory required and standardized.

Disadvantages: For some people it is very intrusive, because it is still related to criminal identification. It can make mistakes with the dryness or dirtiness of the finger's skin, as well as with the age (children, because the size of their fingerprint changes quickly). Image captured at 500 dots per inch (dpi). Resolution: 8 bits per pixel. A 500 dpi fingerprint image at 8 bits per pixel demands a large memory space, 240 Kbytes approximately → Compression required (a factor of 10 approximately).

HAND GEOMETRY

The hand geometry recognition system depends on a number of measurements taken from the human hand, including its shape, size of palm, length and width of the fingers. This method is very simple and easy to use. As there is no effect of environment factors such as dry weather or dry skin, this does not appear to have dry negative effects on the authentication accuracy. Also hand geometry information may not be invariant during the growth period of the children (Ong et al., 2003).

Advantages: Though it requires special hardware to use, it can be easily integrated into other devices or systems. It has no public attitude problems as it is associated most commonly with authorized access. The amount of data required to uniquely identify a user in a system is the smallest by far, allowing it to be used with Smart Cards easily.

Disadvantages: Very expensive. Considerable size. It is not valid for arthritic person, since they cannot put the hand on the scanner properly.

SIGNATURE

Signature verification is the process used to recognize an individual's hand-written signature. Dynamic signature verification uses behavioural biometrics of a hand written signature to confirm the identity of a person. This can be achieved by analyzing the shape, speed, stroke, pen pressure and timing information during the act of signing. On the other hand there is the simple signature comparison which only takes into account what the signature looks like. So with dynamic signature verification, it is not the shape or look of the signature that is meaningful, it is the changes in speed, pressure and timing that occur during the

act of signing, thus making it virtually impossible to duplicate those features. Devices which enable dynamic signature verification store the behavioural factors and the captured signature image itself for future comparison in their database. These devices account changes in one's signature over time by recording the time and the dynamic features each time a person uses the system.

Advantages: Non intrusive, Little time of verification (about five seconds), Cheap technology.

Disadvantages: Signature verification is designed to verify subjects based on the traits of their unique signature. As a result, individuals who do not sign their names in a consistent manner may have difficulty enrolling and verifying in signature verification. Error rate: 1 in 50.

FACE

The human face plays an important role in our social interaction, conveying people's identity. Using human face as a key to security, the biometrics face recognition technology has received significant attention in the past several years due to its potential for a wide variety of applications in both law enforcement and non-law enforcement. As compared with other biometrics systems using fingerprint/palmprint and iris, face recognition has distinct advantages because of its non-contact process. Face images can be captured from a distance without touching the person being identified, and the identification does not require interacting with the person. In addition, face recognition serves the crime deterrent purpose because face images that have been recorded and archived can later help identify a person. The face is the commonly used biometric characteristics for person recognition. The most popular approaches to face recognition are based on shape of facial attributes, such as eyes, eyebrows, nose, lips, chin and the relationships of these attributes. As this technique involves many facial elements; these systems have difficulty in matching face images. The face recognition systems which are used currently impose a number of restrictions on how facial images are obtained. This face recognition system automatically detects the correct face image and is able to recognize the person (Uddin et al., 2011).

Advantages: Non intrusive. Cheap technology.

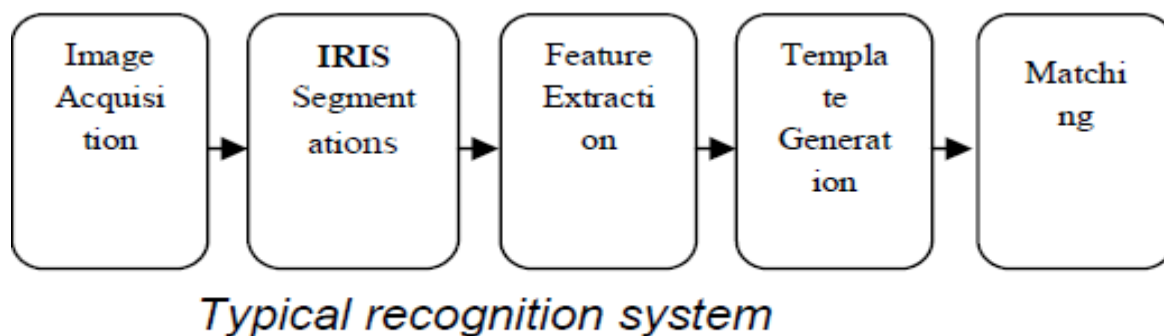
Disadvantages: 2D recognition is affected by changes in lighting, the person's hair, the age, and if the person wear glasses. Requires camera equipment for user identification; thus, it is not likely to become popular until most PCs include cameras as standard equipment.

IRIS

The iris is biological feature of a human. It is a unique structure of human which remains stable over a person lifetime. The iris is the annular region of the eye. The left and right irises of an individual can be treated as separate unique identifier. The iris information can be collected by iris image. The accuracy of iris based recognition system is promising. Each iris is believed to be distinctive and even the irises of identical twins are also different. The iris recognition system has become more users friendly and cost effective. The iris have a very low false accept rate as compared to other biometrics like finger print, face, hand geometry and voice. Iris recognition is treated as the most reliable biometrics and has been widely applied in public and personal security areas. However it is recommended that the users have to cooperate with the iris cameras to make their iris images well captured. The restricting factors of iris image acquisition are analyzed and the optical formulas are derived. The properties of the Iris that enhance its suitability for use in automatic identification include:

- Protected from the external environment
- Impossibility of surgically modifying without the risk of vision
- Physiological response to light.
- Ease of registering its image at some distance (Sharma and Kumar, 2011)

FIGURE 1: IRIS RECOGNITION SYSTEM



Advantages: Very high accuracy. Verification time is generally less than 5 seconds. The eye from a dead person would deteriorate too fast to be useful, so no extra precautions have to be taken with retinal scans to be sure that user is a living human being.

Disadvantages: Intrusive. A lot of memory for the data to be stored. Very expensive.

RETINA

Along with iris recognition technology, retina scan is perhaps the most accurate and reliable biometric technology. It is most difficult to use and requires well-trained, and is perceived as being moderately to highly intrusive. The users have to be cooperative and patient to achieve a proper performance. Basically the retina, a thin nerve on the back of the eye, is the part of the eye which senses light and transmits impulse through the optic nerve to the brain. Blood vessels used for biometric identification are located along the neural retina which is the outermost of the retina's four cell layers. Research has proven that the patterns of blood vessels on the back of the human eye were unique from person to person. It has been proved that these patterns, even between identical twins, were indeed unique. This pattern also doesn't change over the course of a lifetime. Retinal scanners require the user to place their eye into some sort of device and then ask the user to look at a particular spot so that the retina can be clearly imaged. This technology involves using a low-intensity infrared light source through an optical coupler to scan the unique patterns of the retina. The reaction of the vascular information is being recorded. Retina scanning works well in modes, identification and verification.

Advantages: Very high accuracy. There is no known way to replicate a retina. The eye from a dead person would deteriorate too fast to be useful, so no extra precautions have to be taken with retinal scans to be sure the user is a living human being.

Disadvantages: Very intrusive. It has the stigma of consumer's thinking it is potentially harmful to the eye. Comparisons of template records can take upwards of 10 seconds, depending on the size of the database. Very expensive.

VOICE

The voice recognition systems have been currently used in various applications. Voice is a combination of physical and behavioural biometrics. The features of person voice are based on the vocal tracts, mouth, nasal activities and lips movement that are used synthesis of sound. These physical characteristics of human speech are invariant for individuals. The behavioural part of the speech of person changes over time due to age, medical conditions, and emotional state. The speaker dependent voice recognition systems are text dependent; and the speaker independent systems are what he or she speaks (Swartz and Magotra, 1997). The speaker dependent voice recognition system is more difficult to design but provides more protection.

Advantages: Non intrusive. High social acceptability. Verification time is about five seconds. Cheap technology.

Disadvantages: A person's voice can be easily recorded and used for unauthorized PC or network. Low accuracy. An illness such as a cold can change a person's voice, making absolute identification difficult or impossible.

CHARACTERISTICS OF SUCCESSFUL BIOMETRIC IDENTIFICATION METHODS

The following factors are needed to have a successful biometric identification method:

- The physical characteristic should not change over the course of the person's lifetime.
- The physical characteristic must identify the individual person uniquely.
- The physical characteristic needs to be easily scanned or read in the field, preferably with inexpensive equipment, with an immediate result.
- The data must be easily checked against the actual person in a simple, automated way.

Other characteristics that may be helpful in creating a successful biometric identification scheme are:

- Ease of use by individuals and system operators.
- The willing (or knowing) participation of the subject is not required.
- Uses legacy data (such as face recognition or voice analysis).

Advantages to Biometric identification technology

- Biometric identification can provide extremely accurate, secured access to information; fingerprints, retinal and iris scans produce absolutely unique data sets when done properly.
- Current methods like password verification have many problems (people write them down, they forget them, they make up easy-to-hack passwords).
- Automated biometric identification can be done very rapidly and uniformly, with a minimum of training.
- Your identity can be verified without resort to documents that may be stolen, lost or altered.

BIOMETRIC AUTHENTICATION SYSTEMS

In general biometric authentication systems work in two modes:

1. **Enrolment mode:** In this mode biometric user data is acquired. This is mostly done with some type of biometric reader. Afterwards the gathered information is stored in a database where it is labelled with an user identity such as name, identification number to facilitate authentication (Jain and Ross, 2004).
2. **Authentication mode:** Again biometric user data is acquired RST and used by the system to either verify the users claimed identity or to identify who the user is. While identification involves the process of comparing the users biometric data against all users in the database, the process of verification compares the biometric data against only those entries in the database which are corresponding to the users claimed identity. In general one can consider the verification of the identity of a person as a two-class problem: either the person is who he/she claims to be (client) or the person fails to be the one he/she claims to be (impostor).

So we are basically dealing with a binary-decision scheme where we either accept or reject a person. Simple biometric systems usually consist of the following four components:

Sensor modules: This module acquires biometric user data. Examples of sensor modules would be retina-scanner or a fingerprint sensor.

Feature extraction modules: This module is responsible for extracting feature values of a biometric trait. If hand geometry would be used as a biometric trait then feature values would include width of fingers at various locations, width of the palm, thickness of the palm, length of fingers etc.

Matching modules: The matching modules compare the acquired biometric features against those stored in a database.

Decision-making modules: The user's identity is either established or a claimed identity is accepted or rejected.

This is based on the results of the matching modules. Since we are dealing with a binary decision scheme it is obvious that the decision-making module can make two kinds of errors. The errors, which can be made in the process of verification, are called: False Rejection (FR): when an actual client gets identified as an impostor.

False Acceptance (FA): when an actual impostor gets identified as a client.

PROBLEMS WITH BIOMETRICS

In theory collecting and verifying biometric data is no problem but in today's demanding real-world applications there are lot of problems with biometric systems. One of those problems is that biometric traits extracted from persons tend to vary with time for one and the same person and to make it even worse, this variation is itself very variable from one person to another. Most of the other problems are caused by extreme or constantly changing surroundings and the nature of certain biometric measures.

Noise: Noisy biometric data like a person having a cold (voice recognition), a simple cut on ones finger(fingerprint scan) or different lighting conditions(face detection) are some examples of noisy inputs. Other examples are misconfigured or improperly maintained sensors or inconvenient ambient conditions like dirt on a sensor for fingerprints or voice recognition with loud background noise. The problem with noisy biometric data is that authorised personnel may get incorrectly rejected (FR), if the noisy data affects the extracted features so much, that no match can be found in the biometric database. The other extreme situation would occur if noise would change the extracted features in such a way, that the result feature set would match to another person (FA).

Distinctiveness: While a biometric trait is expected to vary significantly across individuals, there may be large similarities in the feature sets used to represent these traits. Thus, every biometric trait has a theoretical upper bound in terms of discrimination capability (Jain and Ross, 2004; Jain and Ross, 2003).

Non-universality: The problem of non-universality arises when it is not possible to acquire certain biometric traits from all users. That means that even though a person has a fingerprint, it still may be impossible to acquire that trait because of the poor quality of the ridges which make up the fingerprint.

MULTI BIOMETRIC SYSTEMS

Most of the problems and limitations of biometrics are imposed by unimodal biometric systems. Unimodal biometric systems rely on the evidence of only a single biometric trait. Some of these problems may be overcome by multi biometric systems and an efficient fusion scheme to combine the information presented in multiple biometric traits. It is evident that problems like non-universal traits, distinctiveness and security problems are easier and better to deal with if more biometric traits are present. So if a person fingerprint can not be acquired by a sensor, other biometric methods like voice recognition and retina scans are taken into account and the resulting data is validated against the biometric database.

STANDARDS

The biometrics industry includes more than 150 separate hardware and software vendors, each with their own proprietary interfaces, algorithms, and data structures. Standards are emerging to provide a common software interface, to allow sharing of biometric templates, and to permit effective comparison and evaluation of different biometric technologies.

The BioAPI consortium has released an open system standard called the BioAPI. Today the BioAPI has been accepted as an ANSI standard - ANSI/INCITS 358-2002. The BioAPI is implemented in the C programming language and it is intended to provide a high-level generic biometric authentication model suited for any form of biometric technology. The BioAPI also provides primitives that allow the application to manage the capture of samples on a client, and the enrolment, verification and identification on a server (The BioAPI Consortium, 2001).

BIOMETRICS OF THE FUTURE

Many of the technologies discussed thus far are paving the way of the future. However, newer technologies (gait recognition, lip print identification, body odour) are gaining more and more acceptance.

1. In the medical field

Gait recognition, which measures body gestures and movements, is being used by physical therapists to help detect and remedy human movement patterns. This behavioural biometric technique recognizes the uniqueness in the ways people walk by scanning human movement, then digitalizing (via binary transfer) the data, and storing the data for a match. It can detect, classify, and identify humans from distances up to 500 feet away and under all weather conditions in both day and evening. Its accuracy remains a current drawback.

2. In the forensic science community

Lip Print identification: The use of Lip Print identification is gaining more acceptances. Similar in the logic of fingerprinting, lip prints provide an alternative form of identification. The hassle of reading ones lips and piercing issues prove to be challenges. The main drawback is the user effort required for authentication.

Body odour recognition: Body odour recognition (chemical odour analysis) is seen as another biometric. Yet still unproven, we know that certain breeds of dogs excel at using their sense of smell to track humans. At least one company is working on a device to identify people based on body odours. The scientific basis of the work is that the chemical composition of odours can be identified using special sensors. The Researchers and scientists has pioneered similar research that has application to drug and bomb detection technologies. The drawbacks of this technology include inconsistencies in chemical composition resulting from hormonal or emotional changes (Network Security Technologies, 2003).

Biometrics applies in network security: The biggest problem for network security is the authentication system. For most systems, they mainly use and rely on passwords which is a combination of letters, characters and/or numbers. However, passwords need to be renewed within a certain period of time to maintain a high level of security. Moreover, it might be copied and used by unauthorized users. To fix that problem, biometrics security system can be applied. The most use of biometrics security system in network is the logical access control method. It will verify person's identification for secure workstation logon or network logon to get access control to the system (Reid, 2004).

The main obstacles of biometrics will continue to involve complexity and privacy issues surrounding information abuse. Many of the biometric techniques are easy to fool such as the case of a fingerprint saved on a piece of candy; and systematic bypass of determined and creative hackers. In other words, today's hacker is becoming smarter than ever (Chaim, 2003). Physiological biometric technology and finger scan technology (36%) will continue to dominate the biometric market. However, other technologies such as hand 27%, signature 5%, iris 16%, voice 6%, and facial 11% recognition are all gaining popularity. And handwriting technology is becoming popular with banks and credit cards authorization.

Biometrics usage will continue to work in conjunction with security software (firewalls, antivirus, encryption) and security hardware (token and smart cards, and firewall/VPN devices); in security sensitive environments such as airports and casinos; with law enforcement; prisons, jails, amusement and theme parks, corporate time systems, in assisting the disabled and mentally challenged; with new technologies for laptops not communicating with a corporate network; on desktops communicating with a corporate network; and more vendor product and service line expansion. The popularity of e-business will continue to be the driving force behind advanced security needs.

When choosing a biometric system, the following items should be considered when deciding. Characteristics such as speed, accuracy, user-friendliness, low-cost, public acceptability, reliability, resistance to counterfeiting, acceptable storage requirements, and fast enrolment times should all be considered.

CONCLUSION

Biometric systems and especially multi biometric systems have a huge potential of growth. By using biometric technologies, access procedures should be made simpler, faster and more secure. Especially governments, law enforcement agencies, military and industrial companies, already make partial use of this technology. In the future biometric devices will surely become more involved in many civil areas. Maybe in a couple of years access to ones private home or car will be granted upon a successful iris scan, thus making the traditional house or car keys obsolete. Maybe money, credit cards and cheques will become obsolete by leaving ones fingerprint instead of a certain amount of monetary value. But in spite of all the advantages coming along with the broader usage of biometric technology in our everyday lives, this technology also brings up a whole new range of difficulties and problems. So it will not sufficient to study factors like cost versus performance tradeoffs, or usability and security issues before deploying biometric systems. Very special care must be taken what may be done with the acquired biometric data and who may use it for a certain purpose.

Biometrics technology is a new technology for most of us because it has only been implemented in public for short period of time. There are many applications and solutions of biometric technology used in security systems. It has many advantages which can improve our lives such as: improved security and effectiveness, reduced fraud and password administrator costs, ease of use and makes live more comfortable. Even though the biometrics security system still has many concerns such as information privacy, physical privacy and religious objections, users cannot deny the fact that this new technology will change our lives for the better.

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EFFECTIVENESS OF SOFTWARE METRICS IN FINDING THE FAULTY CLASSES**POOJA****M. TECH. STUDENT, UNIVERSITY SCHOOL OF I.T., GGS INDRAPRASTHA UNIVERSITY, DELHI****ASST. PROFESSOR****DRONACHARYA COLLEGE OF ENGINEERING****KHENTAWAS****ABSTRACT**

Low quality design leads to error-prone software that is difficult to understand, maintain and evolve. Thus, in order to improve its quality, software should be continuously inspected by examining the source code to identify potential flaws. Software metrics is a great tool in quality management of a complex software. This paper examines the effectiveness of software metrics in finding error-prone classes. The study is divided in two parts: - First part is the 'Implementation Part' which examined two different JAVA projects and study software metrics effectiveness in finding the error prone classes and analyze design of which project is better than the other. Second part is 'Survey Part' in which data was collected from various software firms and practical usage of software metrics in finding the faulty classes was studied.

KEYWORDS

Faulty Classes, Object Oriented Software Metrics, Software Metrics Effectiveness, Software Quality Management.

1. INTRODUCTION

1.1 We are living in 'Machine Age'. Given any task today's technology can build a machine to fulfill it and to run that machine we need complicated software. As in case of advance robotics, air traffic control, nuclear plants, banking operations etc etc. In order to develop and maintain these complex software we need to measure the level of complexity and then require to maintain it. The tool for measurement is known as software metrics. According to *Fenton and Pfleeger* (*Fenton and Pfleeger, 1997*) "Measurement is the process by which numbers or symbols are assigned to attributes of entities in the real world in such a way as to describe them according to clearly defined rules". The *IEEE* defines software metrics as "the quantitative measure of the degree to which a system, component, or process possess a given attribute" (*IEEE, 1990*). This means, that a software metric is a clearly defined rule, that assigns values to entities, that are part of a software system, e.g., components, classes or methods. Metric is the unit of measurement of software attributes like size, cost, time required, complexity etc. A lot of time and resource are required for the development of large software systems. So accurate planning and proper allocation of resources is mandatory for different software activities. Software metrics are necessary to identify where the resource is needed.

1.2 To release a zero defect product is the dream of every developer. In order to achieve defect less product, companies spend 50 to 80% of their software development effort on testing. Therefore reducing testing effort may increase productivity, reduce cost and optimize resources. Software design is the backbone of software development life cycle. Identification of faulty-modules in design phase reveals an effective and efficient test plan execution. Software metrics are the measurement tools to be used to assess software products or related process. Object Oriented Programming involves complex processes (encapsulation, inheritance, coupling and cohesion). A common observation in complex software is that they have errors. Software metrics quantitatively measures the software and predict where errors are likely to occur thence make the work of software tester more effective and efficient.

1.3 In the succeeding section software metrics evolution, types, features and threshold value concept is defined to have a better understanding of 'Effectiveness Of Software Metrics In Finding Error Prone Classes'.

2. SOFTWARE METRICS OVERVIEW**2.1 TYPES OF SOFTWARE METRICS**

The Software Metrics can be divided on the basis of what it measures *Fenton and Pfleeger* divided software metrics into four categories (*Fenton and Pfleeger, 1997*):

- I) Process Metrics: - It measures attributes of development of process. It is used to improve software development and maintenance
- II) Product Metrics: - Product metrics describe the characteristics of the product such as size, complexity, design features, performance, and quality level
- III) Resource Metrics: - Resources Metrics measures the resources, that were utilized as part of a process. Like people, hardware, or software needed for the processes
- IV) Project Metrics: - It measures overall productivity of project team like percentage of project completed in given time frame.

2.2 SOFTWARE METRICS EVOLUTION CRITERION

Several researchers have recommended properties that software metrics should possess to increase their usefulness. 'Weyuker' has developed a formal list of desiderata for software metrics and has evaluated a number of existing software metrics using these properties. He has given nine properties that provide a language for software metrics development. These are Noncoarseness, Granularity, Nonuniqueness (Notion of Equivalence), Design Details are Important, Monotonicity, Nonequivalence of Interaction, Permutation, Renaming Property and Interaction Increases Complexity.

The Metrics Evolution Criterion consists of following five models: -

- I) Unit Definition: - A unit is defined for all measures including ratio, scale, nominal, and ordinal. There are four types of the unit definition models - reference to a standard, reference to a wider theory, reference to conversion from another unit, and reference to a model involving several attributes.
- II) Instrumentation: - An instrumentation model determines the method to capture a measure. Instrumentation model is closely related to the unit definition model. The instrumentation model is used to take the measurements. There are two types of instrumentation models: the direct representational model and the indirect theory-based model.
- III) Attribute Relationship:- An attribute is composed of other attributes; the attribute relationship model defines the relationship among the attributes. There are two types of attribute relationship models: definition and predicative.
- IV) Measurement Protocol: - A measurement protocol model is concerned with how to measure an attribute consistently on a specific entity. Measurement protocol model determines the measurement method so that the measure of a specific attribute on a specific entity is consistent and repeatable.
- V) Entity Population: - The Entity population model sets the normal values of a metric.

2.3 FEATURES OF A GOOD SOFTWARE METRICS

A good software metrics must include theoretical base, empirical properties, must be practical (i.e. relevant to practitioners in organizations / institutes), must be evaluated, cost effective and robust (Robust means it must be relatively insensitive to (intuitively) insignificant changes in the process or product)

3. THRESHOLD VALUE

Thresholds are a simple method to separate values. The values that are greater than a threshold value are considered to be problematic, the values below are okay. Thus, by defining thresholds a simple analysis of measured values is possible. This mechanism can also be applied to software metrics. For example, by defining a threshold for a metric that measures the size of an entity, all metric values that are above the threshold mark the entity as too large. Thresholds for

software metrics are often used in the context of fault-proneness. Thresholds can also be used to define other aspects as problematic, e.g., the maintainability or the understandability. For simplicity, we assume that thresholds are upper bounds.

Let m a metric with threshold t that defines a lower bound, i.e., entities x are considered to be problematic if $m(x) < t$. This is equivalent to $1/m(x) > 1/t$ if $m(x)$ and t are non-negative, as metrics and thresholds usually are. By defining a new metric $m'(x) = 1/m(x)$ and a new threshold $t' = 1/t$ a new metric with the opposite order is defined and with t' a threshold is obtained that defines an upper bound.

Depending on the organization, the programming language, the tools used, the qualification of the developers and other factors that are project dependent a different threshold value might be better. This is a problem, as each organization – and maybe even each project – has to define thresholds that are chosen depending on its environment.

4. SOFTWARE METRICS AND ITS EFFECT

In this section some metrics for classes are defined along with their effect in finding the error proneness.

4.1 WEIGHTED METHODS PER CLASS (WMC)

WMC is a measure for the complexity of a class. The complexity of a class is measured indirectly using the sum of the complexity of its methods. For a class C that defines the set of methods M WMC is computed as

$$WMC(C) = \sum_{m \in M} \text{complexity}(m)$$

The WMC metric is intended to measure the combined complexity of a class' local methods

Effect of WMC in finding the faulty classes: -

- 1) The number of methods and the complexity of methods involved is a predictor of how much time and effort is required to develop and maintain the class.
- 2) The larger the number of methods in a class the greater the potential impact on children, since children will inherit all the methods defined in the class.
- 3) Classes with large numbers of methods are likely to be more application specific, limiting the possibility of reuse.

Threshold value for WMC is 100

4.2 CLASS METHOD COMPLEXITY (CMC)

The CMC metric is the summation of the internal structural complexity of all local methods, regardless whether they are visible outside the class or not (e.g. all the public and private methods in C++). The CMC metric captures the complexity of information hiding in the methods of a class. This attribute is important for the creation of the class in an OO design because the complexity of the information hiding gives an indication of the amount of effort needed to design, implement, test, and maintain the class.

Effect of CMC in finding the faulty classes:-

1. The CMC metric is directly linked to the effort needed to design, implement, test, and maintain a class. The more complex a class' methods are, the more effort is needed to design, implement, test, and maintain the methods.
2. The more complex a class' methods are, as measured by the internal complexity of the methods, the more effort is needed to comprehend the realization of information hiding in a class.

4.3 NUMBER OF LOCAL METHODS (NLM)

The NLM metric is the number of the local methods defined in a class which are accessible outside the class (e.g. public methods in C++). The total number of local methods that can be directly invoked from outside the class is the value of the NLM metric.

Effect of NLM in finding the faulty classes: -

1. The NLM metric is directly linked to a programmer's comprehension effort when a class is reused in an OO design. The more local methods a class has, the more effort is required to comprehend the class' behavior.
2. The larger the local interface of a class, the more effort is needed to design, implement, test, and maintain the class.
3. The larger the local interface of a class, the more influence the class has on its descendent classes.

The unit for the NLM metric is "method".

4.4 COUPLING BETWEEN OBJECTS (CBO)

Coupling describes the interdependence between modules. CBO relates to the notion that an object is coupled to another object if one of them acts on the other, i.e., methods of one use methods or instance variables of another. As stated earlier, since objects of the same class have the same properties, two classes are coupled when methods declared in one class use methods or instance variables defined by the other class. Coupling can be done through inheritance, abstract data type and message passing.

Effect of CBO in finding the faulty classes: -

- 1) Excessive coupling between object classes is detrimental to modular design and prevents reuse. The more independent a class is, the easier it is to reuse it in another application.
- 2) In order to improve modularity and promote encapsulation, inter-object class couples should be kept to a minimum. The larger the number of couples, the higher the sensitivity to changes in other parts of the design, and therefore maintenance is more difficult.
- 3) A measure of coupling is useful to determine how complex the testing of various parts of a design is likely to be. The higher the inter-object class coupling, the more rigorous the testing needs to be.

4.5 LACK OF COHESION METHOD (LCOM)

The LCOM is a count of the number of method pairs whose similarity is 0 (i.e., $\sigma()$ is a null set) minus the count of method pairs whose similarity is not zero. The larger the number of similar methods, the more cohesive the class. If none of the methods of a class display any instance behavior, i.e., do not use any instance variables, they have no similarity and the LCOM value for the class will be zero. The LCOM value provides a measure of the relative disparate nature of methods in the class. A smaller number of disjoint pairs (elements of set P) implies greater similarity of methods.

Effect of LCOM in finding the faulty classes: -

- 1) Cohesiveness of methods within a class is desirable, since it promotes encapsulation.
- 2) Lack of cohesion implies classes should probably be split into two or more subclasses.
- 3) Any measure of disparateness of methods helps identify flaws in the design of classes.
- 4) Low cohesion increases complexity, thereby increasing the likelihood of errors during the development process

4.6 RESPONSE FOR A CLASS (RFC)

This metric measures the size of the response set of a class. The response set consists of all methods that can be invoked by calling a method from the class.

The response set for the class can be expressed as :-

$$RS = \{M_i\} \cup \bigcup_{all\ i} \{R_i\}$$

where $\{R_i\}$ = set of methods called by method i and

$\{M\}$ = set of all methods in the class.

Effect of RFC in finding the faulty classes: -

- 1) If a large number of methods can be invoked in response to a message, the testing and debugging of the class becomes more complicated since it requires a greater level of understanding required on the part of the tester.
- 2) The larger the number of methods that can be invoked from a class, the greater the complexity of the class.
- 3) A worst case value for possible responses will assist in appropriate allocation of testing time

Threshold value for RFC is 100

4.7 DEPTH OF INHERITANCE TREE (DIT)

Depth of inheritance of the class is the DIT metric for the class. In cases involving multiple inheritance, the DIT will be the maximum length from the node to the root of the tree. DIT is a measure of how many ancestor classes can potentially affect this class. By observing the DIT metric for classes in an application, a senior designer or manager can determine whether the design is "top heavy" (too many classes near the root) or "bottom heavy" (many classes are near the bottom of the hierarchy).

Effect of DIT in finding the faulty classes: -

- 1) The deeper a class is in the hierarchy, the greater the number of methods it is likely to inherit, making it more complex to predict its behavior.
- 2) Deeper trees constitute greater design complexity, since more methods and classes are involved.
- 3) The deeper a particular class is in the hierarchy, the more methods and classes are involved.

Greater the potential reuse of inherited methods.

- 4) Designing a class is a relatively simple task, but the testing could become more complicated due to the high inheritance.

Threshold value for DIT is 6

4.8 NUMBER OF CHILDREN (NOC)

NOC = number of immediate subclasses subordinated to a class in the class hierarchy. NOC relates to the notion of scope of properties. It is a measure of how many subclasses are going to inherit the methods of the parent class.

Effect of NOC in finding the faulty classes: -

- 1) Greater the number of children, greater the reuse, since inheritance is a form of reuse.
- 2) Greater the number of children, the greater the likelihood of improper abstraction of the parent class. If a class has a large number of children, it may be a case of misuse of subclassing.
- 3) The number of children gives an idea of the potential influence a class has on the design. If a class has a large number of children, it may require more testing of the methods in that class.

Threshold value for NOC is 6

4.9 NUMBER OF ATTRIBUTES (NOA)

The Number Of Attributes metric is used to count the average number of attributes for a class in the model. Hence it is used to measure size of class. Attributes are the data members / variables / fields which stand for stored information.

Effect of NOA in finding the faulty classes:-

- 1) NOA measures class size. Hence larger the number of Attributes in a class the larger the no. of methods used thence the testing and debugging of the class becomes more complicated since it requires a greater level of understanding required on the part of the tester. So, the greater the complexity of the class.
- 2) It is desirable that classes communicate with as few others as possible and even then, that they exchange as little information as possible". So, larger the NOA value the more is complexity during coupling and inheritance. Hence it limits understandability and maintainability.
- 3) Attributes with Conflicting Names" i.e. In some cases overriding of attributes exists (If a subclass defines an attribute with the same name as a visible attribute of a its superclass). In such cases complexity of class increases. So, NOA should be kept low. A class with too many attributes may cause coincidental cohesion.

Threshold value for NOA is 20

5. IMPLEMENTATION WORK

In Object Oriented Programming inheritance among classes and the size of class are the main criterion to determine the complexity of a class. This section focuses on two metrics and their effect in finding the Faulty Classes i.e. Number Of Attributes (NOA) and Depth Of Inheritance Tree (DIT).

Two different JAVA projects (which in this paper will be referred as 'Project A' and 'Project B') were examined and analyzed through JAVA Codes for DIT and NOA metrics (i.e. DITFinder.java and NOAFinder.java respectively). The analytical evaluation is as follow: -

5.1 DATA COLLECTION AND INTERPRETATION FOR DEPTH OF INHERITANCE TREE (DIT)

The Java Code DitFinder was executed on both Projects and the observations are as follow: -

TABLE 1: OUTPUT OF Ditfinder.java FOR PROJECT A

DIT	No. Of Classes
1	41
2	14
3	6
4	3
5	29
6	25
Total	118

FIGURE 1: HISTOGRAM OF DIT METRICS FOR PROJECT A

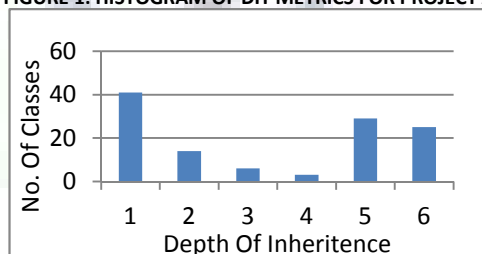
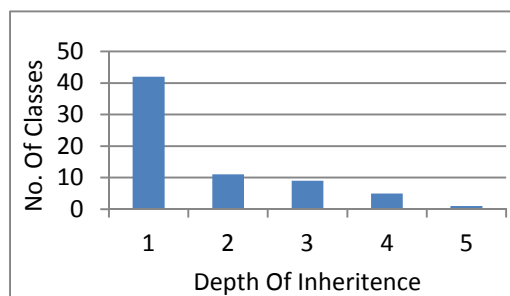


TABLE 2: OUTPUT OF Ditfinder.java FOR PROJECT B

DIT	No. Of Classes
1	42
2	11
3	9
4	5
5	1
Total	68

FIGURE 2: HISTOGRAM OF DIT METRICS FOR PROJECT B



As concluded from Table 1 and Table 2 the maximum value for DIT for 'Project A' is 6 and for 'Project B' is 5, respectively. Hence both are within threshold. So there exist no error-prone classes.

5.2 DATA COLLECTION AND INTERPRETATION FOR NUMBER OF ATTRIBUTES (NOA)

The Java Code NOAFinder was executed on both Projects and the observations are as follow: -

TABLE 3: OUTPUT OF Noafinder.java FOR PROJECT A

NOA	No Of Classes	NOA	No Of Classes
0	29	17	1
1	12	18	2
2	16	19	1
3	10	20	2
4	1	22	3
5	1	23	1
6	3	25	1
7	5	38	1
8	3	55	1
9	4	57	1
10	1	60	1
11	6	63	1
13	1	64	1
14	3	69	1
15	2	83	1
16	2	Total	118

FIGURE 3: HISTOGRAM OF NOA METRICS FOR PROJECT A

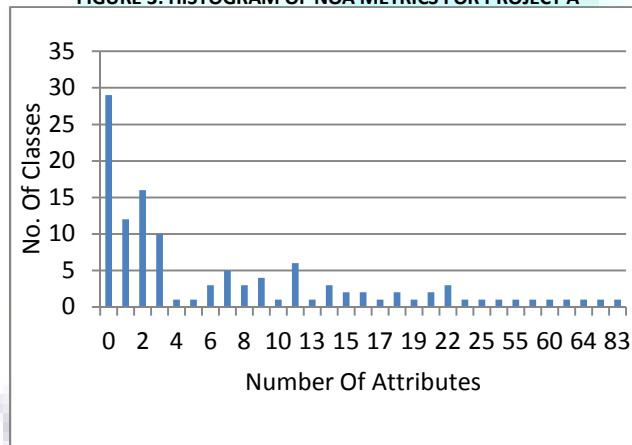
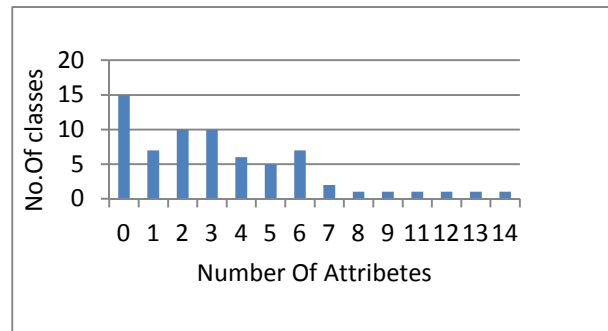


TABLE 4: OUTPUT OF Noafinder.java FOR PROJECT B

NOA	No.Of Classes
0	15
1	7
2	10
3	10
4	6
5	5
6	7
7	2
8	1
9	1
11	1
12	1
13	1
14	1
Total	68

FIGURE 4: HISTOGRAM OF NOA METRICS FOR PROJECT B



As observed in Table 3 'Project A' 13 classes are having NOA greater than 20 i.e. greater than threshold value. So, these are error prone classes and hence must be redesigned.

For 'Project B' as it can be observed from Table 4 $NOA_{max}=14$ i.e. below threshold. So, no alteration in code is required. Hence no faulty class found.

Comparing Figure 3 and Figure 4 it can be concluded that design of 'Project B' is better than 'Project A' and 'Project A' can be re-designed to remove the error prone classes.

Hence using NOAFinder.JAVA and DITFinder.JAVA (NOA and DIT metrics) 13 Faulty Classes were found and it was observed that design of 'Project B' is better than 'Project A'.

6. INDUSTRIAL SURVEY

To observe the practical application of software metrics in finding the faulty classes a questionnaire was prepared and data was collected from 45 software developers from 3 firms (15 each firm) i.e. a) Tata Consultancy Services, Gurgaon, b) IBM Gurgaon, c) HCL Noida. Through questionnaire data was collected about the type of metrics used in the organization, major advantage of using metrics, its effectiveness in resource planning, budgeting, scheduling, process improvement, staff performance and finding the faulty classes. After analyzing data it was observed that all three firms rely on Software Metrics for its software development and its a very cost effective tool to measure the productivity of project team. 42 out of 45 developers (93.33 %) Strongly Agree/Agree that software metrics is an effective tool in finding the faulty classes. 1 Developer is neutral on its Effectiveness and only 2 Developers disagree/strongly disagree on its effectiveness in finding fault prone classes. Software metrics is used in almost every software firm to develop fault prone software.

CONCLUSION

It was investigated that whether the object oriented metrics could predict the fault prone probability in the classes and through implementation (13 faulty classes were found using software metrics) and industrial survey (42 out of 45 i.e. 93.33% developers agree that software metrics is a great tool in finding the error prone classes) it was observed that software metrics is an effective tool in finding the faulty classes. Hence in present World where our daily life relies on complex software like banking, air traffic controls etc where flaws or defects costs a lot, software metrics is a great tool to control quality of large complex program and must be applied to each and every complex software for fault prone, easily maintainable and cost effective development.

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A COMPARATIVE STUDY ON PERFORMANCE OF SELECTED SBI SECTOR FUNDS

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ABSTRACT

The Indian mutual fund industry is one of the fastest growing industries in the Indian economy. In India has seen dramatic improvements in quantity as well as quality of products and services offering in recent years. Most of the studies are stating that in future most of the investors would prefer mutual funds as their investment destination rather than choosing stock markets to park their funds to obtain higher returns at low degree of risk. The current research study will focus on evaluating the performances of sector fund schemes, and find out the best sector fund in SBI Mutual Fund. SBI Mutual Fund is a public sector mutual fund in which most of the investors, even the small investors have started switching their investments into sector funds from various funds. This study is useful for the investors to take decision related to their investment in best equity sector fund by considering the past one year performance of each sector fund offered by SBI Mutual Fund.

KEYWORDS

Mutual funds, SBI.

INTRODUCTION

A mutual fund is a common pool of money in which investor place their contribution that is to be invested in accordance with the stated objective. The fund belongs to all the investors depending on the proportion of their contribution to the fund."

"A fund established in the form of a trust to raise money's through the sale of units to the public or a section of the public under one or more schemes for investing in securities, including money market instruments."

-Securities exchange board of India (SEBI)

A Mutual Fund is a trust that pools the savings of a number of investors who share a common financial goal. The money thus collected is then invested in capital market instruments such as shares, debentures and other securities. The income earned through these investments and the capital appreciations realized are shared by its unit holders in proportion to the number of units owned by them. Thus a Mutual Fund is the most suitable investment for the common man as it offers an opportunity to invest in a diversified, professionally managed basket of securities at a relatively low cost.

NET ASSET VALUE (NAV)

The net assets value of the Fund is the cumulative market value of the assets fund net of its liabilities.

NAV is calculated as follows:

$$\text{NAV} = \frac{\text{Market value of Fund investment} + \text{receivables} + \text{accrued income} - \text{liabilities} - \text{accrued expenses}}{\text{Number of Units outstanding}}$$

OPTIMAL PORTFOLIO THEORY AND MUTUAL FUNDS

One examination of the relationship between portfolio returns and risk is the efficient frontier, a curve that is a part of the modern portfolio theory.

STANDARD DEVIATION

The standard deviation essentially reports a fund's volatility, which indicates the tendency of the returns to rise or fall drastically in a short period of time.

BETA

While standard deviation determines the volatility of a fund according to the disparity of its return over a period of time, beta, another useful statistical measure, determines the volatility, or risk, of a fund in comparison to that of its index or benchmark.

EVALUATING THE PERFORMANCE OF THE MUTUAL FUND WITH RESPECT TO A BENCHMARK

Over the same period of the time, it is possible to observe how the returns of a benchmark and NAV of the mutual fund have behaved this will provide an indication of the extent to which the mutual fund portfolio has tracked the underlying benchmark.

These comparisons tell us whether a fund has done well as the benchmark, better or worse than a benchmark. In mutual fund industry, a fund that performs better than the benchmark is known to have out-performed; those that did worse are called under-performers.

SBI MUTUAL FUND –BACK GROUND

SBI Mutual Fund, the first bank sponsored mutual fund in India, was incorporated on 29 June, 1987 by SBI. SBI Mutual Fund is India's largest bank sponsored mutual fund and has an enviable track record in judicious investments and consistent wealth creation. The fund traces its lineage to SBI - India's largest banking enterprise. The institution has grown immensely since its inception and today it is India's largest bank, patronized by over 80% of the top corporate houses of the country.

MEASURES OF PERFORMANCE

A variety of technical and quantitative measures have been developed to assess and compare the financial performance of mutual funds as well as the performance of fund managers. The most popular and commonly used measures are the Sharpe's ratio.

- Treynor's Measure
- Sharpe's Measure
- Jensen Measure

OBJECTIVES OF THE STUDY

The study is primarily intended to scan the financial health of SBI Mutual Funds in India; to evaluate the package of measures to be taken up for its growth and to adopt effective investment strategies for their efficient performance. The following are the objectives of the present study:

- ✓ To measure the performance of selected sector funds offered by SBI mutual fund.

- ✓ To suggest the investors to select appropriate fund among the selected sector funds.

LIMITATIONS OF THE STUDY

- The present study is confined to a moderate period of one year from July 2009-June 2010.
- The suggestions given in the thesis are confined to SBIMF. They may not be generalized to any other mutual funds.

RESEARCH METHODOLOGY

Secondary data was collected from AMFI's, SBI MF web sites and BSE (last year index return of BSE-100, BSE-500, BSE-FMCG, BSE-IT, BSE-HC) & journals, Search engines and other reliable sources of information have been utilized.

The sector funds offered by SBI mutual fund.

CONTRA FUND

Investment Objective: To provide the investors maximum growth opportunity through equity investments in stocks of growth oriented sectors of the economy.

EMERGING BUSINESSES FUND

Investment Objective: To provide the investors maximum growth opportunity through equity investments in stocks of growth oriented sectors of the economy.

FMCG FUND

Investment Objective: To provide the investors maximum growth opportunity through equity investments in stocks of growth oriented sectors of the economy.

IT FUND

Investment Objective: To provide the investors maximum growth opportunity through equity investments in stocks of growth oriented sectors of the economy.

PHARMA FUND

Investment Objective: To provide the investors maximum growth opportunity through equity investments in stocks of growth oriented sectors of the economy.

TABLE1: RANKING THE PERFORMANCE OF SECTOR FUNDS OF SBI MUTUAL FUNDS

	ANNUAL RETURN	STANDARD DEVIATION	BETA	TREYNOR'S RATIO	SHARPE RATIO	JENSEN MEASURE	RANKS
CONTRA FUND	18.941	15.194	0.864	16.13	0.917	1.895	4
EMERGING BUSINESSES FUND	34.57	16.21	0.753	39.27	1.824	7.303	3
FMCG-FUND	41.2	10.14	0.474	76.37	3.57	19.04	1
IT-FUND	33.494	17.47	0.916	31.11	1.631	2.393	5
PHARMA-FUND	42.637	15.002	0.742	50.72	2.51	9.71	2

FINDINGS

- The FMCG Fund's performance is higher among all other sector funds offered by SBI Mutual Fund.
- The beta values for FMCG fund and IT fund are 0.474 and 0.916 respectively. It represents the FMCG fund is low volatile. IT fund is highly volatile.
- In terms of fund performance FMCG fund stands first with a Sharpe's ratio of 3.57, Treynor's ratio of 76.37 and Jensen measure of 30.09 and CONTRA fund stands last with a Sharpe's ratio of 0.917, Treynor's ratio of 16.13 and Jensen measure of 4.62.
- In performance Pharma fund stands second with a Sharpe's ratio of 2.51, Treynor's ratio of 50.72 and Jensen measure of 9.27.
- The investors are less aware about the investment pattern of SBI Mutual funds.
- During the year 2009-10 The IT sector was hit by recession due to that IT fund's performance was not good.

SUGGESTIONS

- It could be beneficial to the investor if SBI Mutual Funds provide the information regarding to investment patterns and fund performances.
- The investor should be aware about day to day performance of stock markets.
- For the investor it is not suitable for them to invest in IT Fund because of its less return and high risk.

CONCLUSION

The FMCG fund gives a high return and low risk the fund is less volatile than the Bench mark index over all other funds and the fund gives high return per unit of risk. It could be better if the investors invest in FMCG fund than investing in other funds.

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MICRO, SMALL AND MEDIUM (MSMEs) ENTERPRISES AND INDIAN ECONOMY: AN EMPIRICAL STUDY ON ROLE OF MSMEs

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ABSTRACT

The micro, small and medium enterprises (MSMEs) make significant contribution towards economic growth, balanced regional development, employment generation and overall poverty reduction. This sector is the second largest sources of employment, next to agriculture. This sector is stronger pillar of Indian economy. MSMEs sector contribute 8% of GDP approximately, 45 percent manufactured output and 40 percent of export. It employs more than 60 million people. MSMEs sector has emerged as an important vehicle for attaining inclusive growth of the country.

KEYWORDS

Micro, Small and Medium Enterprises (MSMEs), Economic growth, GDP, Contribution, Employment Generation.

INTRODUCTION

The Micro, Small and Medium Enterprises (MSMEs) continue to be a vibrant sector of the Indian economy. It is estimated that there are about 26 million units (over 90 per cent of total industrial units) in this sector employing nearly 59 million people in India. They not only create job opportunities at lower capital cost comparing to other sectors, but also require lower capital investment and play a vital role for proper utilization of local resources and talent. Organized industrial sector require an investment of Rs.6.66 lakh to generate employment of one person, whereas MSMEs sector generate employment of 1.27 persons with the same investment. This sector contributes nearly 45 percent manufactured output and 40 percent of the total export, it is estimated that MSMEs contribute around 15 percent of exports indirectly. In a span of over three decades, from financial year 1973-74 to financial year 2006-07, export from MSMEs has increased by more than 514 times. MSMEs sector has consistently registered a higher growth rate than the rest of the industrial sectors. There are over 6000 products ranging from traditional to high-tech items, which are being manufactured by the MSMEs. In India, after agriculture, the MSMEs sector provides the maximum opportunities for both self-employment and jobs in the country. The MSMEs sector in India holds great potential for further expansion and growth in the future. In fact, the employment potential of the sector is un-matched by any other sector of the economy.

As per results of the Fourth Census of MSMEs in 2006-07, the number of MSMEs was estimated at 261 lakh, employment at 597.29 lakh persons and 72 percent and 28 percent of the MSMEs are manufacturing enterprises and service enterprises respectively in the country. In terms of size of the enterprise, 94.67 percent are micro enterprises, 5.05 percent are small enterprises and the rest 0.25 percent are medium enterprises.

The MSMEs have shown an average growth of 18 percent over the last five years, around 98 percent of the production units are in the MSMEs sector. We know that Small-scale industries were the dream of our father of nation Mahatma Gandhi. He has supported the growth of small-scale industries in India, because he had the vision that it will help the poor people of India to come up.

"Small is beautiful" ---- E.F. Schumacher, Economist, (1911-1977)

OBJECTIVES OF STUDIES

The main objective of the study is to examine the role of Micro, Small and Medium Enterprises (MSMEs) in the growth of Indian economy.

DATABASE AND RESEARCH METHODOLOGY

Data are mostly collected through desk research of online resources, research papers, conference documents, and other publications. Data from Micro, Small & Medium Enterprises has been used. Annual report on MSMEs by SIDBI is also used and various annual reports of State Financial Corporation, various financial institutions have been used. The data have been compiled from three types of sources: published documents and reports, the World Wide Web and statistical agencies. All data sources are listed at the end of this note and Web links are provided where possible. Simple statistical tools have been used for analyzing data.

A BRIEF SURVEY OF EXISTING LITERATURE

Micro, small and medium enterprises play an important role in economic development. Many developed economy achieved their development through the proper development of this sector. This sector registered a rapid growth in India. Based on high importance of the sector, a large number of literatures are available. A brief review of such literatures is made here.

Ahmad, Nisar (1987) explores the various problems of small scale and cottage industries from the view point of micro and macro level in India with special reference to Jammu and Kashmir.

Jamuar, R.S (1992) in his study states the development of small- scale and cottage Industry in India and their role in Indian economy. He also discussed present position and problems of small-scale industry with special reference to industrial sickness, government policy and measure to develop small-scale and cottage industry.

The report of Economic Service Group, National Productivity Council (2004) had assessed the impact of dereservation on Production, Employment, and Technology up gradation etc. The case studies presented in this report cover various aspects of the small scale units like unit profile, the Products manufactured, infrastructure and manpower issues, SWOT analysis of the units, problems faced by the units and Government intervention required. These case studies would help us to understand unit specific issues emerged after de-reservation of the SSI unit.

Srinivas. Y (2005) in his study explains without adequate bank finance, SMEs cannot acquire or absorb new technologies or can they expand to compete in global markets or even strike business linkages with larger firms. At the same time banks cannot consider the financing of SMEs as a viable option unless their priorities are addressed by SMEs. SMEs should be assisted largely by public initiatives involving participation of the banking industry.

Basu.S.K (2007) tries to analyses the role and problems of small-scale industries. He emphasizes their importance in the economic development and their financial problems and also the role of state financial corporation in helping them.

Mohd. Saud Ilahi (2007) in his doctoral thesis states organizations providing non monetary support to small scale sectors, existing non monetary support system, firms which have availed themselves of non monetary support and their growth pattern, analyses the social, educational and economic background of entrepreneurs and problems involved in the effective utilization of non monetary support and the scope for evolving a better and more suitable support.

Ibrahim, Umar (2008) in his doctoral thesis examine the various strategic factors affecting the performance of Small and Medium Industries in Borno State of Nigeria" identifies the factors, problems, constraints, difficulties and challenges facing the small and medium industries (SMIs) in the State and the various macroeconomic policies and incentives provided for the development of small and medium industries in Nigeria,

Mehta, Om Prakash (2009) in his study explain the various challenges that have to face MSMEs are competitiveness in IT including internet, Computer based technology, productivity, quality, non-conventional methods of production in manufacturing, easy and timely availability of finance/credit at reasonable rate of interest, marketability of products in indigenous and global market.

A study conducted by Chakrabarty. K. C. (2010) States that with increasing competition, introduction of new products and stringent regulatory environment, the role of banks needs to change from mere lenders to partners in business. There is a need for greater participation of banks in the affairs of their constituents by convergence of credit services and non-credit services. The banks should not only provide differentiated products for MSMEs, but also provide counseling & guidance to new and established businesses, extending marketing support etc. Similarly, the Government and other institutions entrusted with development of the MSMEs sector need to focus providing an enabling environment, infrastructure and forward & backward linkages so that the credit function being discharged by the banks is adequately supplemented by their non credit functions.

Varma.U. K (2011) in his study on MSMEs recognized that while credit, marketing etc. are essential, the critical factor that drives growth is technology. In the present economic scenario of globalised competitiveness, it is the technological edge that will determine the winner.

CONCEPT OF MSMEs

MSME can be defined from the aspect of number of person employed and amount of investment in plant and machinery. From the viewpoint of number, micro enterprise is defined as an enterprise, which employs fewer than 10 persons, small enterprise is defined as an enterprise, which employs fewer than 50 persons, and medium-sized enterprise is defined as an enterprise, which employs fewer than 250 persons.

From the viewpoint of investment in plant and machinery and equipment the Micro, Small and Medium Enterprises Development Act, 2006 are defined Micro, Small & Medium Enterprises. The Act classified Micro, Small and Medium Enterprises (MSME) into two classes:

(a) Manufacturing Enterprises: The enterprises engaged in the manufacture or production of goods pertaining to any industry specified in the first schedule to the industries (Development and Regulation) Act, 1951. The Manufacturing Enterprise is defined in terms of investment in Plant Machinery.

Manufacturing Sector	
Enterprises	Investment in plant & machinery
Micro Enterprises	Does not exceed twenty five lakh rupees
Small Enterprises	More than twenty five lakh rupees but does not exceed five crore rupees
Medium Enterprises	More than five crore rupees but does not exceed ten crore rupees

(b) Service Enterprises: The enterprises engaged in providing or rendering of services and are defined in terms of investment in equipment.

Service Sector	
Enterprises	Investment in equipments
Micro Enterprises	Does not exceed ten lakh rupees:
Small Enterprises	More than ten lakh rupees but does not exceed two crore rupees
Medium Enterprises	More than two crore rupees but does not exceed five crore rupees

Contribution of MSMEs towards economic development can be analyzed from the viewpoint of:

- Growth trend of MSMEs,
- Contribution of MSMEs toward GDP,
- MSMEs and Employment generation,
- Contribution of MSMEs towards Export,
- MSMEs and country's total production,
- Fixed investment made by MSMEs in different sectors.

All of these contributions are briefly discussed below:

GROWTH TREND OF MSMEs

The MSMEs sectors registered a high growth rate comparing to other industrial sector. This is mainly due to its various advantages comparing to other sectors and Indian economy which is more close to MSMEs environment, like cheap local resources, local talent, cheap labour, high demand etc. Moreover the socio – economic policies adopted by India since the industries development & regulation Act, 1951 have laid stress more on MSMEs sectors as a vehicle to develop Indian economy. Second five-year plan also place more emphasis on industrial development and adopt various policies for proper development of this sector.

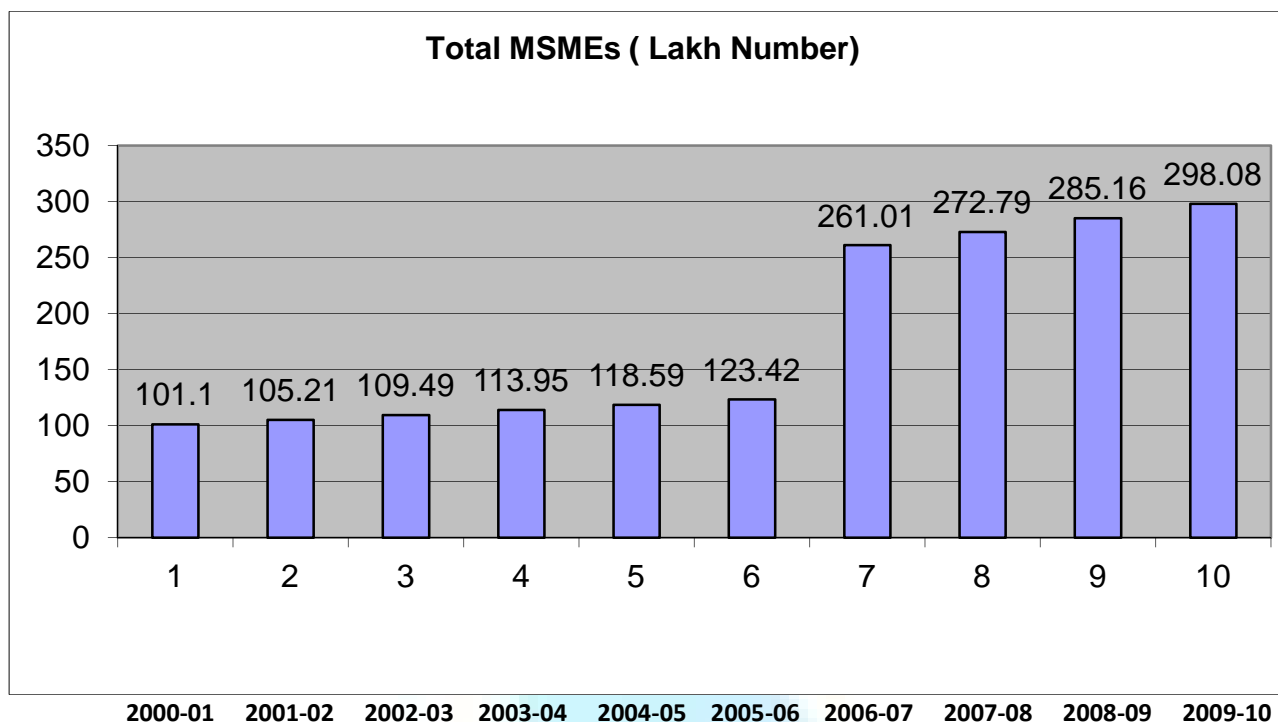
TABLE 1: NUMBER OF MSMEs IN LAST TEN YEARS

Year	Total MSMEs(Lakh number)	% Of Growth over the previous year
2000 - 01	101.1	-----
2001 - 02	105.21	4.07
2002 - 03	109.49	4.07
2003 - 04	113.95	4.07
2004 - 05	118.59	4.07
2005 - 06	123.42	4.07
2006 - 07	261.01	111.48
2007 - 08	272.79	4.51
2008 - 09	285.16	4.53
2009 -10	298.08	4.53

Sources: Annual Report on MSME, 2010- 2011, Govt. India, Ministry of Micro, Small and Medium Enterprises.

- The data for the period up to 2005 –06 is of SSI. Subsequent to 2005 – 06, data with reference to MSMEs are being compiled.
- Data for 2007 –08, 2008 –09, 2009 – 10 are of projected. (sources : S&D Division – office of DC(MSME).

BAR CHART SHOWING THE GROWTH TREND OF MSMEs OVER THE YEARS



CONTRIBUTION OF MSMEs IN THE GROSS DOMESTIC PRODUCT (GDP)

Contribution of MSMEs toward GDP is also remarkable. This sector contributes 8% of country's GDP. Average contributions in GDP by this sector in last ten year are 6.5% (1999-20 To 2008-09). The following table shows the contribution of MSMEs in total industrial production and GDP.

TABLE 2: CONTRIBUTION OF MSMEs IN GDP

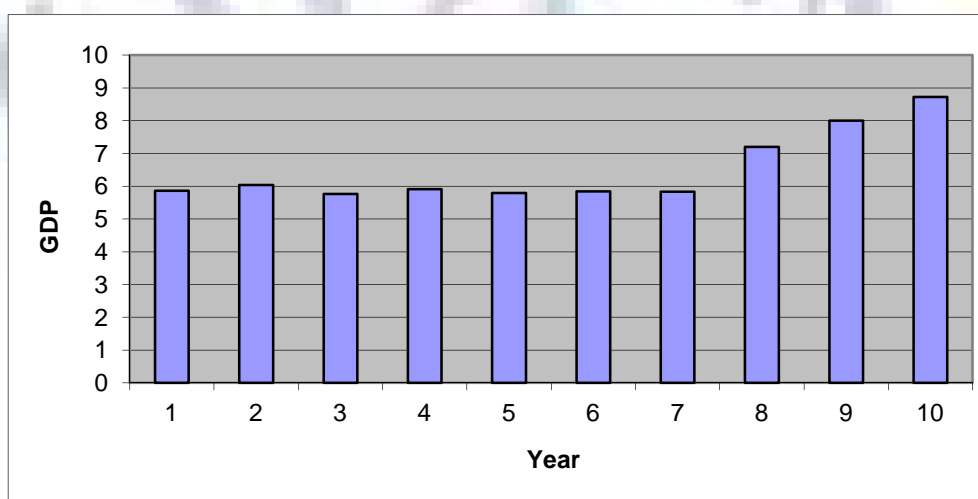
Year	Contribution of MSMEs (%) in GDP In	
	Total Industrial Production	Gross Domestic Product (GDP)
1999-2000	39.74	5.86
2000-2001	39.71	6.04
2001-2002	39.12	5.77
2002-2003	38.89	5.91
2003-2004	38.74	5.79
2004-2005	38.62	5.84
2005-2006	38.56	5.83
2006-2007	45.62	7.20
2007-2008	45.24	8.00
2008-2009	44.86	8.72

Sources: Annual Report on MSME, 2010- 2011, Govt. India, Ministry of Micro, Small and Medium Enterprises.

- The data for the period of 2005 –06 is of SSI. Subsequent to 2005 – 06 , data with reference to MSMEs are being compiled

If we analysis the above data it is clear that in last ten years the average contribution of MSMEs in total industrial production and GDP are 40.91% and 6.496%. Below given chart shows the increasing trend of GDP over the year.

BAR CHART SHOWING THE GROWTH TREND IN GDP (%) OVER THE YEARS



(Year starting from 1999-2000 and end to 2008-09)

CONTRIBUTION OF MSMEs IN EMPLOYMENT GENERATION

MSMEs's contribution towards employment generation is remarkable comparing to any other sectors employment generation capacity. Average employments generated by this sector in last ten year are 417.285 lakh. Growth rate in employment generation is also remarkable for the same period and it is 14.358%. It is clearer from below given table.

TABLE 3: EMPLOYMENT IN LAST TEN YEARS

Year	Total Employment (Lakh number)	% Of Growth over the previous year
2000 - 01	238.73	-----
2001 - 02	249.33	4.44
2002 - 03	260.21	4.36
2003 - 04	271.42	4.31
2004 - 05	282.87	4.11
2005 - 06	294.91	4.37
2006 - 07	594.61	101.62
2007 - 08	626.34	5.34
2008 - 09	659.35	5.35
2009 - 10	695.38	5.47

Sources: Annual Report on MSME, 2010- 2011, Govt. India, Ministry of Micro, Small and Medium Enterprises.

- The data for the period of 2005 –06 is of SSI. Subsequent to 2005 – 06 , data with reference to MSMEs are being complied

LINE CHART SHOWING THE GROWTH TREND IN EMPLOYMENT GENERATION OVER THE YEARS**CONTRIBUTION OF MSMEs IN EXPORT**

Export performance of MSMEs is also mentionable. 40 percent direct export and 15 percent indirect export is made by this sector. The average growth rates in export by MSMEs in last fifteen year (1992-93 to 2006-07) are 19.15%, a tremendous growth rate comparing to any other sectors. The product groups, which dominate the exports from MSMEs sector, include sports goods, readymade garments, woolen garments and knitwear, plastic products, processed food and leather products. Contributions of MSMEs towards Export in last ten years are shown below.

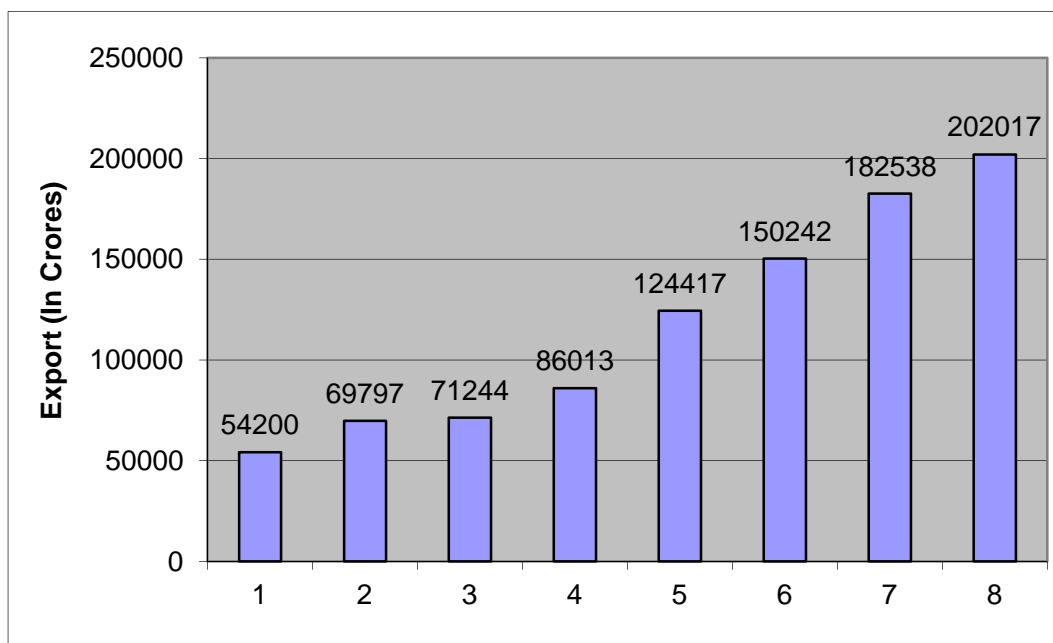
TABLE 4: CONTRIBUTION OF MSMEs IN EXPORT

Year	Exports (Rs. Crores)	% Of Growth over the previous year.
1999-2000	54,200	-----
2000-2001	69,797	28.78
2001-2002	71,244	2.07
2002-2003	86,013	20.73
2003-2004	1,24,417	27.42
2004-2005	1,50,242	20.76
2005-2006	1,82,538	21.50
2006-2007	2,02,017	10.67
2007-2008	NA	NA
2008-2009	NA	NA

Sources: Annual Report on MSME, 2010- 2011, Govt. India, Ministry of Micro, Small and Medium Enterprises.

- The data for the period of 2005 –06 is of SSI. Subsequent to 2005 – 06 , data with reference to MSMEs are being complied

BAR CHART SHOWING THE GROWTH TREND IN EXPORT OVER THE YEARS



(Year starting from 1999-2000 and end to 2006-07)

PRODUCTION OF MSMEs

Productions of MSMEs sectors (in value) are going to increases over the year. In 2000-2001 production of MSME was RS. 261297 Crore where in 2009-10 were Rs.982919 Crore, so increases in ten year are 276.17%. Percentage wise increase than the previous year is also remarkable, which is clear from below given table.

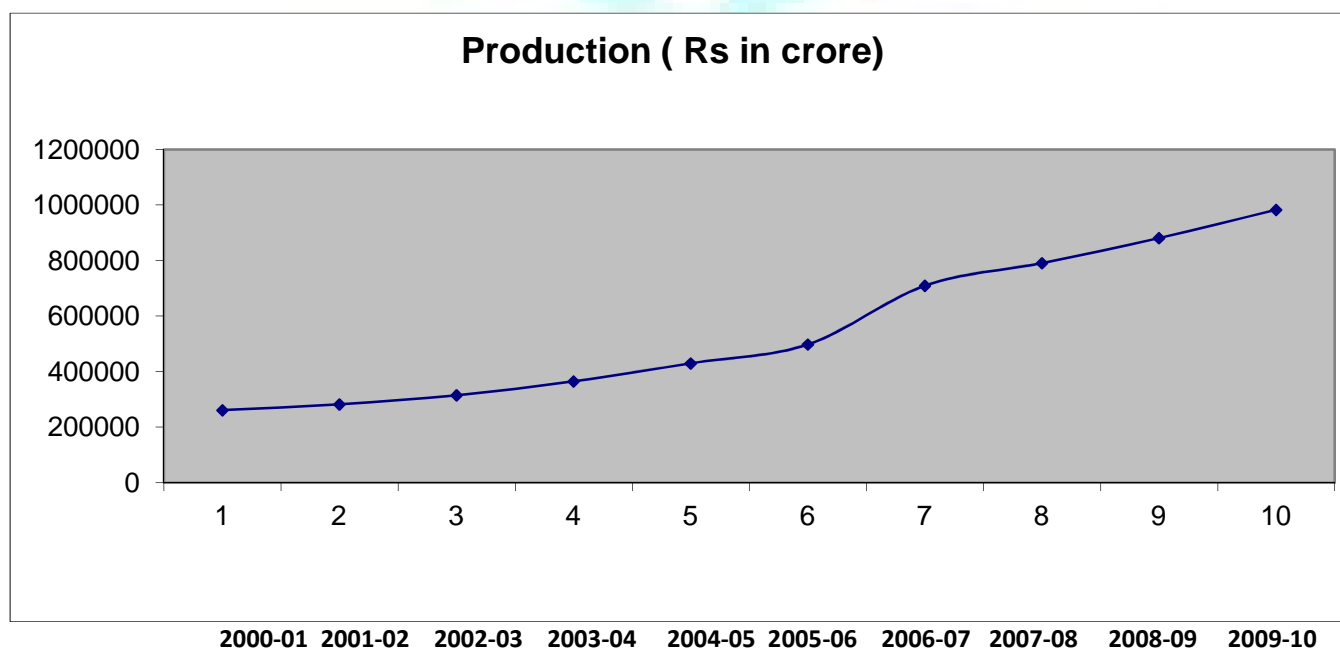
TABLE 5: CONTRIBUTION OF MSMEs IN PRODUCTION

Year	Production (RS Crore) Current Price	% Of Growth over the previous year
2000 - 01	261297	-----
2001 - 02	282270	8.03
2002 - 03	314850	11.54
2003 - 04	364547	15.78
2004 - 05	429796	17.90
2005 - 06	497842	15.83
2006 - 07	709398	42.49
2007 - 08	790759	11.47
2008 - 09	880805	11.39
2009 - 10	982919	11.59

Sources: Annual Report on MSME, 2010- 2011, Govt. India, Ministry of Micro, Small and Medium Enterprises.

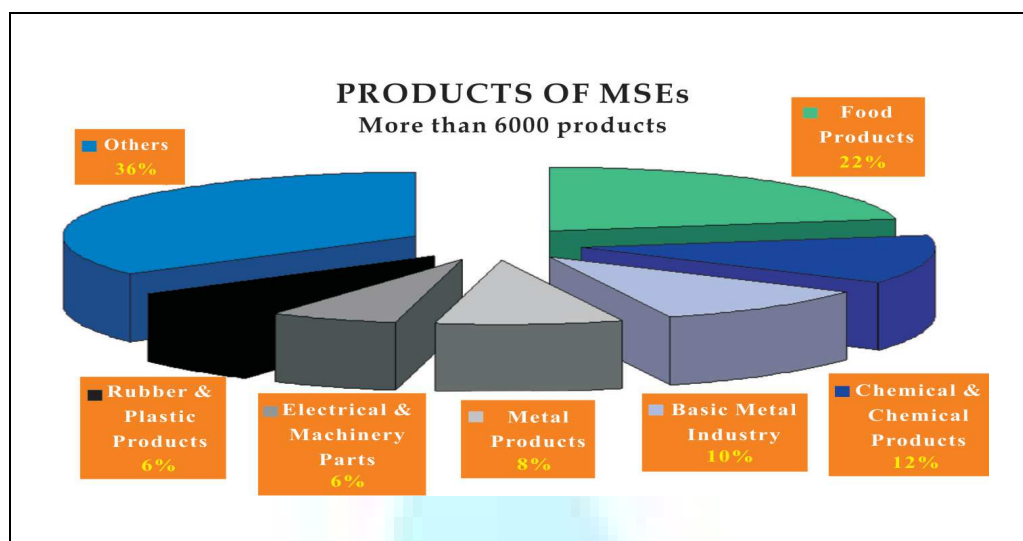
- The data for the period of 2005 –06 is of SSI. Subsequent to 2005 – 06 , data with reference to MSMEs are being complied

LINE CHART SHOWING THE PRODUCTION OVER THE YEARS



Different types of products are produced by the MSME ranging from traditional pen - refill to high tech product like mobile. Following pie chart is showing the different categories of products produced by MSME sector.

CLASSIFICATION OF PRODUCTS OF MSEs



Sources: Annual Report: 2010-11, Ministry of Micro, Small and Medium Enterprises.

FIXED INVESTMENT IN MSMEs

Investment and production are closely linked. More investment indicate more production or more production require more investment. Over the year investment in fixed Investment by MSMEs are remarkable, which is clear from below given table.

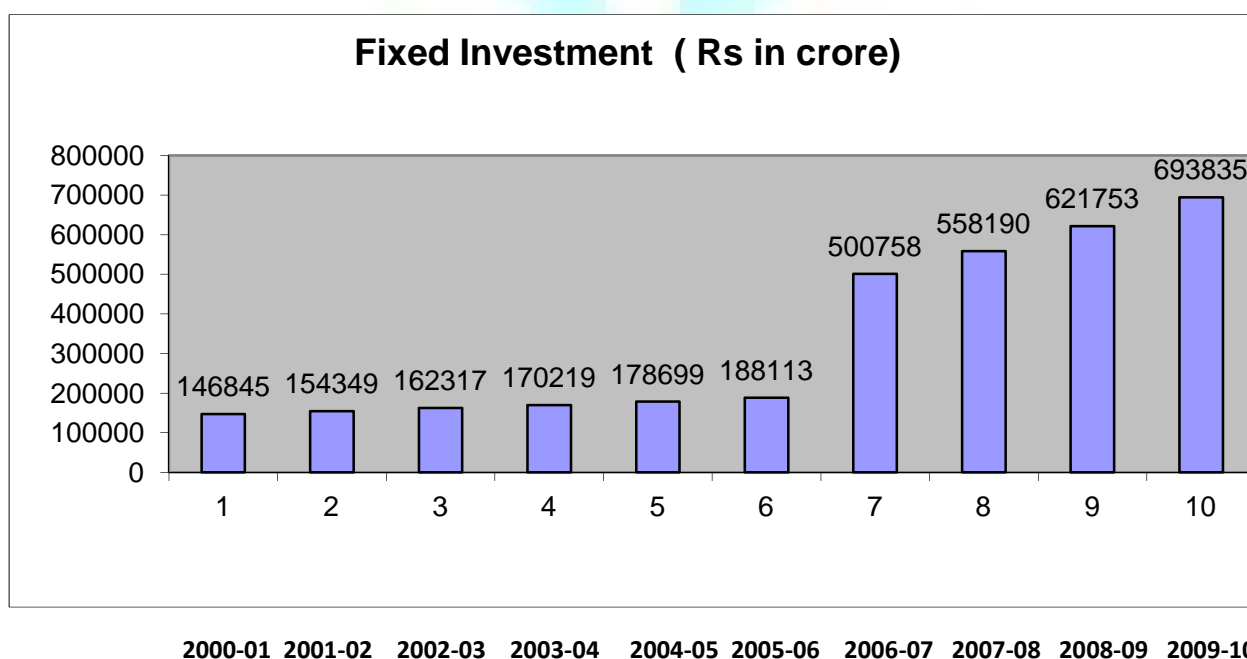
TABLE 6: INVESTMENT IN FIXED ASSETS BY MSMEs

Year	Fixed Investment (Rs Crore)	% Of Growth over the previous year
2000 - 01	146845	-----
2001 - 02	154349	5.11
2002 - 03	162317	5.16
2003 - 04	170219	4.87
2004 - 05	178699	4.98
2005 - 06	188113	5.27
2006 - 07	500758	166.20
2007 - 08	558190	11.47
2008 - 09	621753	11.39
2009 -10	693835	11.59

Sources: Annual Report on MSME, 2010- 2011, Govt. India, Ministry of Micro, Small and Medium Enterprises.

- The data for the period of 2005 –06 is of SSI. Subsequent to 2005 – 06 , data with reference to MSMEs are being complied

BAR CHART SHOWING THE GROWTH TREND IN FIXED INVESTMENT IN MSMEs SECTOR



CONCLUSION

The Micro, small and medium (MSMEs) enterprises constitute a very important segment of the Indian economy. MSME's contribution to the development of our economy is significant as it evident in terms of MSMEs being the major constituent sector in the production system, employment generation, GDP, Export, Rural industrialization etc. MSMEs also have an aptitude for innovation, creativity, and flexibility which enabling them to respond with more quickly to structural changes and to adapt the dynamic demand patterns of consumers. It is also clear that MSMEs sector has performed exceedingly well and enabled our country to achieve a wide measure of industrial growth and diversification. If government policies towards MSMEs are closer towards its various problems and prospect it can be nearer contributors with agriculture in all respect in future. To keep this growth engine at right way and right direction it is time to emphasis on formulation of MSMEs friendly policies, conducive operating environment, improvement of proper infrastructure, securing peace and security, arranging proper finance, efficient manager and arranging appropriate modern technology. Considering MSMEs contribution towards every side of economic development it should consider at equal recognition with agriculture.

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ENHANCING EFFECTIVENESS OF CRM THROUGH MOBILE CRM IN EDUCATION SECTOR**LAKSHMI KALYANI****SR.LECTURER & PROJECT LEADER****CENTRE FOR DEVELOPMENT OF ADVANCED COMPUTING****CDAC****NOIDA****DR. ABHISHEK SINGH****ASST. PROFESSOR****BIRLA INSTITUTE OF TECHNOLOGY****MESRA****ABSTRACT**

In recent years e-CRM has taken a step further from traditional CRM in implementing and effectively operating various CRM operations and services through electronic medium. Further, from using traditional CRM to e-or electronic CRM [1], the usage has now shifted to m-CRM due to its obvious benefits of any place, anytime, anywhere availability and accessibility of required information. While the use of m-CRM in market sector has been researched upon and even deployed, its usage in Education sector is quite novel. This study is being carried out to assess the benefits and possible adoption of mobile Customer Relationship Management (m-CRM) with respect to the various services and usability of technology in the targeted Education sector. This paper provides the details and findings of the study done through the conduction of a pilot survey. The study aims in establishing the usability of m-CRM in the Education sector for enhancing the effectiveness of overall CRM operations from Education perspective like on-the job training requirements etc. The study also proposes the use of m-Learning or mobile Learning as the m-CRM service for imparting educational CRM services.

KEYWORDS

CRM, e-CRM, mobile Customer Relationship Management (m-CRM), Customer services, m-Learning.

INTRODUCTION

 Evidence within the marketing literature has shown that organizations can aim for high levels only by constantly improving their operations via the exploration and embedding of newer and latest technologies.

From using traditional CRM to e-CRM or electronic CRM [1], the usage has now shifted to m-CRM due to its obvious benefits of any place, any time, any where availability and accessibility of required information.

If e-CRM allowed customers to access organizational services from more and more places, as the internet access points are increasing by the day, m-CRM has taken this one step further. This is so because m-CRM allows customers or managers to access the systems for instance form a mobile phone or PDA with internet access, resulting in high flexibility, mobility and timely implementation of various CRM operations –not only of marketing but also of on the job training requirements.

Mobile CRM or mobile Customer Relationship Management , in simple terms is nothing but communication, either one way or interactive, related to sales, marketing, customer services activities , training activities etc. conducted through mobile medium for the main purpose of building and maintaining customer relationships between an organization and its customers and thus enhance their organizational operations and activities.

The usage of m-CRM in market sector [2] has been mainly for enhancing business operations and for providing supportive on the job training and learning requirements, where the users of m-CRM in this sector would be internal employees of the organization such as sales representatives, managers, Head of the organization and other employees and of course the external users that is customers of the organization –both existing as well as prospective customers.

Though lot of research has been done for verifying the usability of mobile CRM in the market sector but majority of the research only focused on the usability of m-CRM for business purposes and not for handling the educational or training needs.

However, increasing number of Marketing and Educational institutions are in search of effective Learning tools for imparting effective and timely education and providing on the job training to its employees, students, officers etc. m-Learning or mobile Learning is identified as a possible m-CRM service for achieving the above successfully .

The usage of m-CRM in education sector is a novel view , but is being researched upon in the recent years[3] , where it is proposed to be used for educational and learning needs and for delivering and accessibility of required organizational information.

This paper presents the details and findings of the study done on the effectiveness of usage of m-CRM with respect to the Education sector, based on the exhaustive study of the recent education scenario and its requirements and through the conduction of a pilot survey.

LITERATURE REVIEW

The spread of mobile communication, which has become a global mega-trend, has opened up fresh opportunities to get to know the customer, attract new customers and cultivate customer relations (Silberer, 2004). Smith [2007] explored CRM in mobile technology and communication which showed the way mobile communication enhanced CRM prospects in any organization with the benefits of no downtime, increased sales, timely access to accurate customer info and many more . Today m-CRM is part of almost any successful business – whether banks, hospitals, financial institutions, food industry and other service industry like tourism, airline, railways etc. The successful adoption of m-CRM in various sectors led to the exploration of its usage in Education sector too. While CRM is a widespread concept in the corporate and business world, it is a relatively new phenomenon in the higher Education sector (Grant & Anderson, 2002). CRM as a concept is also relevant to the education industry (Seeman and O'Hara, 2006 and Burdt, 2005).

Educational institutions worldwide are undergoing fundamental shifts in how they operate and interact with their “customers” (students, alumni, donors, business community and staff members). This use of technology is affecting almost every area of society, including education (Pollara.P.et al, 2011). In view of corporate CRM activities, college student enrollment management activities of converting probable students to the admitted represent the marketing components of CRM ; the conversion of admitted students to enrollees represent the component of sales and the continuous enrollment and participation as alumni represent the retention and support components (Chitra Nair,2007) . As higher education institutions are “student centric”, organizations that encompass a wide range of student outreach and counseling activities such as admissions, academic advising, job placement and more. Universities and colleges may benefit from CRM by improving student facing processes (Chen and Ching, 2005),personalizing communications with students (Karimi et al,2001),sharing information among departments(Chen and Ching, 2005) and increasing student retention and satisfaction (Bradshaw and Brash, 2001).

So, CRM and thus mobile CRM is finding place in Education too, as an essential tool especially for those education centers that are working on the web as Virtual or distance universities, providing e-Learning mode of education. In fact many e-Learning tools provide specific CRM and m-CRM functionality such as WebCT or IBM learning space etc. In this context, the use of mobile learning or m-Learning has been highlighted as a m-CRM service for education. Combined with web 2.0

technologies, mobile devices are today seen as offering new learning possibilities which represent a dynamic change in the strategies employed by learners and their production and consumption of learning products (Conole et al 2008). Tait (2000) has argued strongly in favor of incorporating customer centered practices into approaches to learning support which take into consideration the demands of course programmes such as assessment. Robinson, Riche and Jacklin (2007) have also called for the integration of university led and non-university led support services which provide opportunities to develop supportive relationships in the formal and informal learning environments.

OBJECTIVES OF STUDY

The main focus of the study is to investigate the effectiveness of adoption and usability of m-CRM for enhancing the implementation and management of learning and training needs.

Taking into account the purpose of the study, a broad study of the market and education sectors is seen as appropriate. This is so because more and more business and educational institutions are focusing on providing effective learning services either for on the job training requirements for their employees or for others in general. The choice undoubtedly influences the generalizability of the results of the study.

Thus the main objective of the study is to assess how the effectiveness of CRM could be enhanced through mobile CRM in Education sector, where the targeted mobile CRM service is providing learning to customers of education sector that is students as well as providing on the job training to employees and other customers of education sector. To achieve the objectives of the study, m-learning is identified as the m-CRM technology for providing learning and training services.

METHODOLOGY OF STUDY

The study consisted of collection and analysis of various kinds of data. The objective was to get both rich primary data as well as studied and analyzed secondary data for arriving at a stronger relevant conclusion.

The study for the market sector for its educational and training needs is primarily based on secondary data collected from the study of existing literature which majorly include journals, conference proceedings, national and international marketing reviews and surveys etc. which are relevant to the topic. The study was also based on the reflections combined with inputs from informal discussions with several management educators, consultants, sales representatives and managers which have taken place at several meetings, seminars and conferences over the last few years.

As the main focus of the study is studying effectiveness of m-CRM in Education sector so it consisted of collecting primary data through a pilot survey carried out through structured questionnaire comprising of around 100 respondents. The organizations identified and surveyed included Academic and Training organizations which were a mix of all the categories of Public, Private, Deemed, Autonomous and Government organizations.

EFFECTIVENESS OF m-CRM IN EDUCATION SECTOR

In the Education sector, the customers have been identified as being students, instructors, administrators, Head of Departments etc. and Mobile Learning is considered to be the main CRM service that can be imparted in Education sector using mobile technology.

Mobile Learning in simple terms is nothing but provision of educational and learning services through the use of mobile devices. It has recently emerged as a possible solution for providing support for academic education as well as corporate trainings in Academic institutes and business organizations alike. This support would be in terms of the various services that are possible through m-CRM, which are identified as :

1. Training and Educational services
2. Information about the activities of the institute
3. Schedules, time plans etc.
4. Latest Notifications
5. Admissions and fee information and results
6. Examination schedules and results
7. Student records

These could be provided through SMS alerts, messages, and Discussion forums etc. accessible through mobile devices. These activities when done through traditional methods of web portals,

The successful adoption of mobile learning as m-CRM service in Education will depend upon the user's requirements, behavioral pattern and ability to adapt to the technology. To understand the same a pilot survey was carried out.

The pilot survey targeting the Education sector was conducted with random samples selected from institutes in and around Noida and NCR region comprising of Government, Autonomous and private educational institutions such as Amity, CDAC, IGNOU, and few engineering colleges.

A structured questionnaire was prepared with the main aim of assessing the benefits and adoption of mobile Learning as a m-CRM service in Education sector. The questionnaire was administered to over 100 people on pilot basis which majorly consisted of collection of students, and faculty from the above educational institutes.

The main purpose of the survey was to assess the user awareness, perception about e-learning, mobile learning, their primary reason to such tools, activities preferred in m-learning and the preferences over the existing traditional learning tools vis-a-vis the M-learning etc. The structured questionnaire was administered for the purpose of conducting the above exercise and the survey findings have been analyzed and tabulated.

RESULTS & FINDINGS

The results of the survey are as given below:

1. Preferred Type of Learning

The survey revealed more than 29% of the respondents preferring e-learning and 16% preferred m-learning and 39% preferred combination traditional, e-learning and m-learning which reveals that the education sector is in the transition phase and the future will be technology driven.

TABLE 1: PREFERRED TYPE OF LEARNING

Preferred Type of Learning	% of respondents
Traditional i.e classroom based	15.79
e-Learning	28.95
Mobile Learning or m-Learning	15.79
Combination of above	39.47

2. Usage of mobile Internet

More than 85% of the respondents use mobile on a regular basis, the respondents mobile usage levels are high. The challenge is of converting the above usage for the learning purposes through the use of cost-effective and user-friendly technologies.

TABLE 2: USAGE OF MOBILE INTERNET

Yes	No
84.4%	15.6%

3. Frequency of mobile Internet usage

The penetration of mobile and high usage is reflected by more than 2/3rds of the respondents use the mobile internet services on a daily basis which should help the planners to give a hint that acceptability of mobile as a learning tools would be easier option as it finds a day –to-day usage and occupies a vital role and the need to evolve converting the mobile from a communication tool to education tool.

TABLE 3: FREQUENCY OF MOBILE INTERNET USAGE

Using mobile Internet	% of respondents
Daily	65.63
Weekly	12.50
Monthly	6.25
Tried couple of times	9.38
Never used	6.25

4. Willingness to use mobile Learning services

More than 88% of the respondents were ready to adopt and use m-learning services for their learning purposes which reveals absence of any mind block for from traditional learning methods to the technology driven learning tools.

TABLE 4: WILLINGNESS FOR M-LEARNING

Yes	No
87.5%	12.5%

5. Adoption of Mobile Learning by every academic institute

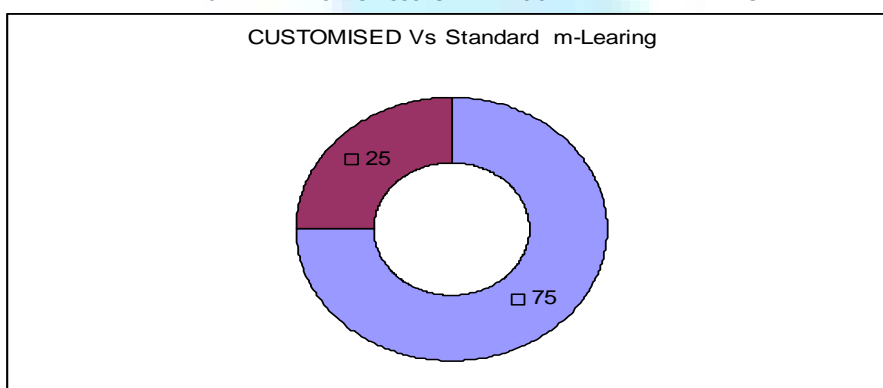
To a pointed question regarding introducing the m-learning in the academic institution 75% of the respondents agreed for immediate adoption while 25% did not agree for the same.

TABLE 5: ADOPTION OF m-LEARNING

Yes	No
75.0 %	25.0%

6. Preference for Customized Learning services to students

TABLE 6: PREFERENCE FOR CUSTOMIZED VS STANDARD M-LEARNING



75% of the respondents wanted a customized m-learning based on the learners requirements while 25% of the respondents preferred a standard m-learning tools.

7. Expected utility of m-learning tools

TABLE 7: EXPECTED UTILITY OF m-LEARNING TOOLS

Benefit of Learning through mobile	% of respondents
Send & Receive prompt response to queries	42.86
Just in time Learning support	14.29
On the move educational service	8.57
All of above	34.29

More than 43% of the respondents expected that m-learning should not only provide learning but also address the queries and other issues while 14% of the respondents viewed it as a just in time learning tool and 9% viewed it as learning tool on the move while 34% looked it as combination all.

8. Preferred Contents of learning through mobile

The preferred contents varied from glossary & definitions accounting for 44% while academic news& announcements for 28% class schedules exam schedules for 16%.

TABLE 8: PREFERRED MOBILE CONTENTS

Preferred contents mobile	% of respondents
Teacher notes	12.00
Supporting Learning content like glossary, definitions etc.	44.00
Academic news & announcements	28.00
Schedules like class schedule, exam schedule etc.	16.00

9. m-learning as anytime learning tool

More than 97% of the respondents viewed it as anytime learning tool while 3 viewed it otherwise.

TABLE 9: M-LEARNING AS ANYTIME LEARNING TOOL

Yes	No
96.9 %	3.1%

1. Preferred price for providing mobile Learning

TABLE 10: PREFERRED PRICE FOR MOBILE LEARNING

Price of mobile learning	% of respondents
At slightly higher prices than current	21.21
Same price	18.18
Low price	36.36
Flexible paying schemes	24.24

Thus, the above survey results draw the conclusion that

- i) Around 75% on average were preferring mobile learning as well as combined learning
- ii) 80-90% of the respondents have agreed that m-Learning as a m-CRM tool will enhance provision and access of various types of educational services.

Analyzing the survey results, it has been found that m-CRM definitely enhances the effectiveness of CRM usage. The deployment and sharing of educational activities as indicated above when done through traditional methods of web portals, or online support, depend on the availability of such access facility at the customer end as well. Whereas mobile devices are available with almost all people and with cost of these devices decreasing with each day. the business and training needs are improved for the organizations at the same time achieving highest possible customer satisfaction.

LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

The survey results and other research findings to some extent definitely prove that mobile CRM can be used for effectively enhancing overall CRM based educational services, which can get a big boost through mobile Learning and other training support services.

Still, the study has the limitations of collecting data from minimum sources only and that too from secondary informants. Future research need to include multiple primary informants for gaining confidence in the research findings. Further the questionnaire needs to be redesigned for the final survey so as to include relevant questions for drawing accurate inferences. Thus, the study in future is proposed to be done with a final survey encompassing bigger sample size in the Education sector for establishing and arriving at a factual conclusion of the above.

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A STUDY ON PROFITABILITY ANALYSIS OF SHIPPING COMPANIES IN INDIA

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ABSTRACT

Shipping is a service industry that by general acknowledgement provides the lifeline of international trade. Shipping plays a very vital and significant role in today's global economy. The transportation through sea routes is considered the most economical and cheapest mode of transport which gave rise to ship building and movement of trade by using available waterways internally for local transportation of goods and subsequently through sea for intercontinental trades. The trade has been growing steadily with each passing day from the inception and recognition of interdependence on each other's products, be it agricultural or industrial. Countries which are rich in raw materials and have surplus tend to export these resources to other countries which are industrialized and able to use these materials to produce finished material by value addition and re-export to the needy countries. Like-wise the countries having agro - based economy, depend upon agricultural produce for export of their surplus commodities, however, the countries do face a situation of trade imbalance when their imports out-weigh exports by value. To study the profitability analysis of shipping companies data used are Secondary data and the analysis is Mean, Standard Deviation, Co-efficient of Variance, compound annual growth rate and multiple regression.

KEYWORDS

Cheapest, Commodities, Profitability, Trade, Transportation.

INTRODUCTION

Within transportation, shipping industry is one of the most globalised industries operating in a highly competitive business environment that is far more liberalized than most of the other industries and is, thus, intricately linked to the world economy and trade. Shipping is the lynchpin of the global economy. Over 90 percentage of world trade is carried by the international shipping industry

The history of the Indian shipping industry dates back to 1919, when the first Indian shipping company, Scindia Steam Navigation Company, was established. The industry is seen as a symbol of national pride and sovereignty, with the result that the GoI has often intervened to promote shipbuilding and shipping activities. Nevertheless, the shipping industry is fundamentally global in nature, given that it is mostly engaged in international trade as opposed to coastal trade. Besides, historically, Indian tonnage has not grown in line with the country's trade requirements, a fact that explains the low market share of Indian liners.

The Indian seaborne trade has been growing at a CAGR of 11.38 % for the last 10 years from 1998-99 to 2008-09. For the year 2010-11, the GDP is expected to grow at a rate of 9 per cent, far better than the last two years. However, the CAGR for the period 1998-99 to 2007-08, i.e. prior to the global slowdown has been higher at 12.25%.¹

Considering the CAGR of 12.25%, the Indian seaborne trade can be expected to grow from the last year's level of 598.70 million tonnes to the level of 2,134 million tonnes by the year 2020 (in terms of cargoes loaded and unloaded in India) i.e. about 3.56 times the current trade.

The global seaborne trade during 2008 reached 8.17 billion tonnes (total cargo loaded). During the past three decades, the annual average growth rate of world seaborne trade is estimated to have been 3.1% per annum. At this rate of growth, UNCTAD expects global seaborne trade to increase by 44% by 2020 and double by 2031, potentially reaching 11.5 billion tonnes and 16.04 billion tonnes, respectively.²

ORIGIN

India's involvement in trade and commerce since time immemorial is the fundamental governing fact under Indian maritime history. Indian maritime history comprises the extensive dealings with foreign places. South India was along the trade routes for the export of spices like cinnamon and cassia which originated from China and South East Asia. During the Sultanate period, everyday usable articles as well as luxury articles were exported to Syria, Arabia and Persia from Bengal and Cambay. East Africa, Malaya, China and the Far East were other places where things were exported. Most Indian Ocean states have continued to export raw materials and import manufactured goods produced elsewhere.

Over the years Shipping in Indian Ocean has changed from dhows, dry-cargo carriers to containers. The importance of shipping, over the period, has also increased due to the technological developments in transport, especially in terms of containerization culminating in multimodal transportation on door-to-door basis, since majority of the containers move by this mode of transport.

Ancient people famous for their shipping enterprises include the Phoenicians, the Cretans, the Egyptians, the Greeks, and the Romans. The shipping routes of those highly civilized people were chiefly in the Mediterranean, but their voyages extended to India, along the Atlantic coast of Africa, and to Britain, where tin was secured. The goods shipped consisted largely of luxuries, including spices, perfumes, and such fine pottery as the famous Athenian ware; but shipments of grain became important as cities grew in size.

HISTORY

From about 1900 until World War I, Germany held second place in the world in both navy and merchant marine, and its challenge to Great Britain's domination of the sea was an important cause of the war. In the period between the two world wars the principal maritime nations were Great Britain and its dominions, the United States, Japan, Norway, Germany, Italy, the Netherlands, and France. The United States merchant marine steadily declined, and in order to stimulate shipbuilding the Merchant Marine Act of 1936 created the U.S. Maritime Commission. At the beginning of World War II in Europe, U.S. shipping was handicapped by the Neutrality Act; law passed by the U.S. Congress and signed by President Franklin Delano Roosevelt in Aug., 1935. It was designed to keep the

¹ Maritime agenda 2010 – 2020, Ministry of shipping, government of India, New Delhi, January 2011.

² Review of Maritime Transport, 2008, UNCTAD (UNCTAD/RMT/2008)).

United States out of a possible European war by banning shipment of war material to belligerent nations. American vessels were diverted to trade outside the war zones and many were transferred to other flags, mainly the Panamanian.

Since the 1960s, U.S. ports have modernized their facilities by automating operations, installing computerized tracking systems, and handling containers ("intermodal shipping") that can be transferred directly to truck trailers or rail cars. Older facilities that do not have the room to handle containerized shipping have declined. These changes have greatly reduced the number of jobs in the shipping industry.³

SIZE OF THE ORGANISATION

The term "size of the firm" refers to the scale of organization and its operation. Size is one of the important factors that determine the efficiency and profitability of a business. When selecting the size of the business firm, the firm must be very careful and try to find out the point at which the concern is likely to get the maximum gain. The size can be measured with the help of the following terms.

- Gross Block
- Sales
- Total Asset

REVIEW OF LITERATURE

Samuels and Smith (1968)⁴ in their study "Profit variability of profits and firm size", had analyzed the relationship between profitability (profit after tax on net assets) and size of the firm (net assets) had found that they were inversely related to each other for the years 1954-63.

Kumar.P (1985)⁵ in his study on "Corporate growth and profitability in the larger Indian companies", has examined the relationship between profitability and growth in 83 large companies in India's corporate sector during 1969-79. The study reveals a significant inter- study. The very low value of R^2 in all the cases shows that only a small fraction of the growth of firms in India corporate sector has been explained by profitability.

Agarwal, V.K (1978)⁶ in his study entitled "Size, profitability and growth of some manufacturing Industries", highlighted the relationship between profitability measures as profit/net assets and size expressed total sales for 7 Indian Manufacturing Industries viz. Cotton, Spinning and Weaving, Cement, Cotton ginning, Jute, Textiles, Paper and Pulp, Sugar and Aluminium for the period 1962-1972. The relationship between the size and profitability was observed in cotton spinning and aluminium industry, while in the case of cement and cotton spinning and ginning industry no such relationship was observed.

STATEMENT OF THE PROBLEM

The shipping business is marked by high capital intensity, volatile freight rates, commoditized product offerings, and a high level of fragmentation. The credit risk profile of the shipping sector is also affected by the generally high leverage adopted by ship owners to fund acquisition of new/second-hand ships. In general, ships are funded with a high leverage as lenders are usually comfortable with such a funding strategy, given the liquid nature of the collateral. A high leverage does translate into high financial risk from the credit perspective, since ratings seek to capture the timeliness of debt servicing more than ultimate recoverability. This has encouraged the researcher to study the Profitability Performance of Shipping Companies in India. The following is the research questions of this study:

- ★ How is the Profitability performance of shipping company in India?

OBJECTIVES OF THE STUDY

- ★ To analyse profitability of the Shipping Companies in India.

METHODOLOGY

SOURCES OF DATA

Secondary data is used for the study. The required data for the study are collected and compiled from "PROWESS" database of Centre for Monitoring Indian Economy (CMIE) for the period from 2000-2001 to 2009-2010 which is a reliable and empowered corporate database. In addition to this, supportive data are collected from the business world, business India, books, journals, library and various newspapers.

TECHNIQUES OF ANALYSIS

For analyzing profitability of the Shipping Companies in India, statistical tools like Correlation and Multiple Regression have been applied.

SAMPLING

As the complete source list of all the Shipping Companies is not available, the data for this study is selected based on convenience sampling method, among the companies listed with major stock exchange of India namely, Bombay Stock Exchange and National Stock Exchange of India; 11 companies are selected for this study. They are Chowgule steams ships Ltd (Chowg), Global Offshore Services Ltd (Global), Great Eastern Shipping Co Ltd (GE), Essar Shipping Ports (Essar), Mercator Lines Ltd (Mercat), Shipping Corporation of India Ltd (SC), SKS logistics (Sks), Seamec Corporation (Seamec), Scindia Steam Navigation (Scindia), Shreyas Shipping Ltd (Shreya), Varun Shipping Co Ltd (Varun).

HYPOTHESIS

The following hypotheses have been framed in consonance with the objectives of the study.

- ❖ There is no significant linear effect on net profit by the independent variables.

SIGNIFICANCE OF THE STUDY

The study focuses on profitability performance of selected Shipping Companies during the specific period based on the selected variables, which may create interest not only for the respective companies in the industry but also brings a process of development in operational aspects of the entire company. Shipping transport differs from other transports even though many studies in this direction have been conducted, the present one would be of greater significance to many. The study is expected to help the corporate management, the financiers, the investors and the government at large, to take valuable decision at their own. The study has academic relevance in new theoretical and practical knowledge undoubtedly. The present study will act as a masterpiece on the subject for further research and development.

³ See J. Hornell, *Water Transport: Origins and Early Evolution* (1946, repr. 1970); B. Landstrom, *The Ship: An Illustrated History* (1983).

⁴ Samuels and Smith, (1968) "Profits, Variability of profits and firm size", *Economica*, May 1968, Vol.35, pp. 127-139

⁵ Kumar, P., (1985) "Corporate Growth and profitability in the large Indian companies", *Margin*, July 1985, Vol. 17, No:4.

⁶ Agrwal, V.K. (1978) 'Size, Profitability and Growth of Some Manufacturing Industries', Unpublished FPM Thesis, Indian Institute of Management, Ahmedabad, India, 1978.

NET PROFIT

Table 1 Show the compound annual growth rate of Net Profit of Selected Shipping Companies during the period from 2000-2001 to 2009-10.

TABLE 1

Rs. In Crore

Year	Chowg	Essar	Global	GE	Mercat	Sks	Scindia	Seamec	SC	Shreys	Varun
2000-01	5.6	100.27	2.71	176.53	3.15	0.93	-22.51	3.67	382.56	2.73	16.21
2001-02	-23.87	172.3	1.01	197.19	7.48	0.65	-22.72	7.12	241.56	3.38	13.84
2002-03	-2.96	63.3	4.27	227.29	5.39	3.02	69.38	10.02	274.78	1.07	11.38
2003-04	8.69	129.55	6.58	471.13	49.85	7.15	-5.44	9.22	626.99	7.31	35.81
2004-05	30.21	288.62	12.36	808.79	174.42	6.24	-10.94	42.1	1419.91	35.73	81.69
2005-06	10.87	185.22	10.58	838.6	180.99	3.36	-17.66	19.32	1042.2	34.34	180.89
2006-07	7.17	133.98	15.58	883.31	71.2	4	45.64	58.57	1014.58	29.52	141.35
2007-08	24.34	241.67	40.84	1356.8	166.2	2.61	-14.9	37.03	813.9	8.38	225.78
2008-09	23.23	107.66	40.37	1384.8	181.1	0.08	-19.45	47.12	940.67	14.99	122.81
2009-10	40.89	90	40.72	395.75	6.4	8.19	-20.19	203.91	376.91	20.47	12.55
Mean	12.417	151.26	17.502	674.02	84.618	1.985	-1.879	43.808	713.406	11.698	84.231
SD	18.348	71.023	16.566	453.81	81.437	4.2459	32.2375	59.4466	395.094	17.468	79.238
CV	147.77	46.955	94.652	67.329	96.241	213.9	-1715.7	135.698	55.3814	149.33	94.072
CAGR	17.08	110.08	8.99	48.79	53.25	14.46	110.15	2.81	101.33	16.68	125.54

Source: Compiled and Calculated from the data published in CMIE.

The above table 1 shows the net profit of the selected Shipping Companies in India. The net profit shows a fluctuating trend during the study period. Profit measures the overall efficiency of a business. The higher profits more efficient are the business considered. Varun Shipping Co Ltd has the highest compound annual growth rate of net profit 125.54 per cent; followed by Essar Shipping Ports 110.08 per cent. Scindia Steam Navigation has the lowest compound annual growth rate of net profit 1.87 per cent.

Shipping Corporation of India has the highest mean of net profit at Rs.713.406 crores; followed by Great Eastern Shipping Company Ltd at Rs.674.02 crores. Scindia Steam Navigation has the negative mean of net profit at Rs.1.879 crores.

Great Eastern Shipping Ltd has the highest Standard Deviation of net profit at Rs.453.81 crores; followed by Shipping Corporation of India at Rs.395.094 crores and the lowest Standard Deviation is maintained by the Sks Logistics Ltd at Rs.4.24 crores and it is found to be stable in net profit.

Shreyas Shipping Co Ltd has highest co-efficient of variation of net profit at 149.33 per cent; followed by Seamec Corporation at 139.65 per cent. Scindia Steam Navigation shows the consistency of net profit more than the other companies because Scindia Steam Navigation has the lowest co-efficient of variation of net profit at 1715.7 per cent more than the other Shipping Companies.

TABLE 2: MULTIPLE REGRESSION ANALYSIS OF SHIPPING COMPANIES IN INDIA (Model Summary)

COMPANY	R	R Square	Adjusted R Square	Std. Error of the Estimate
Chowgu	.658(a)	.433	.150	16.91519
Essar	.863(a)	.744	.616	44.01593
Global	.959(a)	.920	.879	5.75310
GE	.985(a)	.970	.955	95.77753
Mercat	.972(a)	.944	.916	23.54014
Sks	.777(a)	.604	.405	3.27426
Scindia	.757(a)	.573	.359	25.81086
Seamec	.973(a)	.946	.919	16.93812
SC	.801(a)	.641	.461	289.93252
Shreys	.656(a)	.431	.146	16.14043
Varun	.952(a)	.907	.861	29.56489

A Predictors: (Constant), Total Assets, Sales, Gross Block

Table 2 represents the multiple regression analysis of Shipping Companies in India during the Study Period from 2000-2001 to 2009-2010. The Great Eastern Shipping Co Ltd statistical significance of the model. The R^2 value at .970 states that all the three independent variables that is Total assets, Sales, Gross block have 97 per cent influence on the dependent variable of Net profit is highly significant at 5 per cent level.

SUGGESTION

In order to increase the profitability, the Essar Shipping Ports, Great Eastern Shipping Ltd, Mercator Lines Ltd, Shipping Corporation of India Ltd and Varun Shipping Co Ltd should control their expenses for improving their profitability.

CONCLUSION

The Indian shipping industry has been growing in the last two decades; however the competitive position of the Indian shipping industry needs to be strengthened. The Government of India has been supporting the growth of the industry through various measures. The players in the shipping and associated sectors have also a role to play for the development of the industry. It is concluded from this study that during the study period, the efficiency of the Shipping Companies are satisfactory and there is a significant relationship between net profit by the independents variables such as Gross block sales and total assets.

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SCIENTOMETRIC MAPPING OF GREEN COMPUTING: THE GLOBAL PERSPECTIVE**M. PADMINI****LECTURER****DEPARTMENT OF MANAGEMENT STUDIES****V.S.B ENGINEERING COLLEGE****KARUR****T. R. SAJANI NAIR****LIBRARIAN****DEPARTMENT OF LIBRARY & INFORMATION SCIENCE****V.S. B. ENGINEERING COLLEGE****KARUR****R. SURYA****LECTURER****DEPARTMENT OF MANAGEMENT STUDIES****V. S. B. ENGINEERING COLLEGE****KARUR****T. SUHIRTHARANI****STUDENT****DEPARTMENT OF MANAGEMENT STUDIES****SRIMATHI INDIRA GANDHI COLLEGE****TRICHY****ABSTRACT**

An analysis of 2455 publications published by scientists on Green Computing during 1999– 2011 and indexed by Web of Science online Database indicates that the publication output in the Global Research Publication. University of Heidelberg, CNRS, MIT, University of Coimbra University of Tokyo, University of Washington and Indian level Indian Institute of Technology and institutes are the major producers of research output. Most of the prolific authors are from the highly productive institutions. This work is to provide a profile of research in Green Computing Research Publications of all over the world. This includes tracking the number of papers, scatter of papers over journals, and its effect on publication output, authors' institutional affiliations and authorship patterns.

KEYWORDS

Green Computing, Scientometrics, Scientometric Mapping.

INTRODUCTION

In the last one decade, there has been an increasing interest in using Scientometric Mapping for assessing or monitoring research activities. Assessment of research activity is considered to be one of the main instruments needed to maintain high standards of research performance in research centers and universities. Recently, ranking of Universities, departments, and even promotion and tenure decisions within departments seem to have been based, among other things, on the scientists' research productivity, h-index and impact of publications. This work is to provide a profile of Green Computing research and compare with universal countries. This includes tracking the number of papers, scatter of papers over journals, and its effect on publication output, authors' institutional affiliations and authorship patterns. Green computing is the environmentally responsible use of computers and related resources. Such practices include the implementation of energy-efficient central processing units (CPUs), servers and peripherals as well as reduced resource consumption and proper disposal of electronic waste (e-waste).

OBJECTIVES

The main objectives framed for the purpose of the study are to identify and analyse the rate of growth of research literature on Green Computing Research.

- Growth of output during 1999–2011;
- Distribution of output in different forms;
- Communication pattern of scientists as reflected by the country
- Identification of highly productive institutions, their activity of research
- Identification of prolific authors

METHODOLOGY

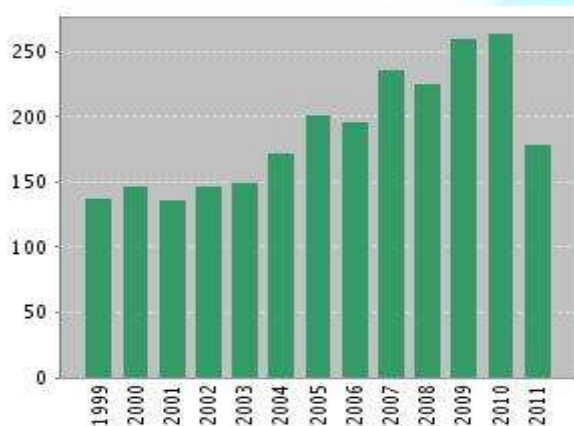
The present study attempts to find the pattern of information published by researchers on green computing Publication in all over the world. The study analyses the growth and development of publication output as reflected in Web of Science online database from 1999 to 2011. There are 2455 records that were retrieved from Web of Science, an abstract and citation database of research literature and web sources. The publications of scientists are mostly in the form of journal articles, Proceedings paper, review, editorial materials, Notes, Letters, and meeting-abstracts. The research papers published by scientists in Green Computing Research Publications covered in the annual version of Science Citation Index Extended were taken as the prime source for the present study. There were 107 papers by Indian scientists published from 1999 to 2011.

ANALYSIS AND INTERPRETATION**GROWTH OF LITERATURE**

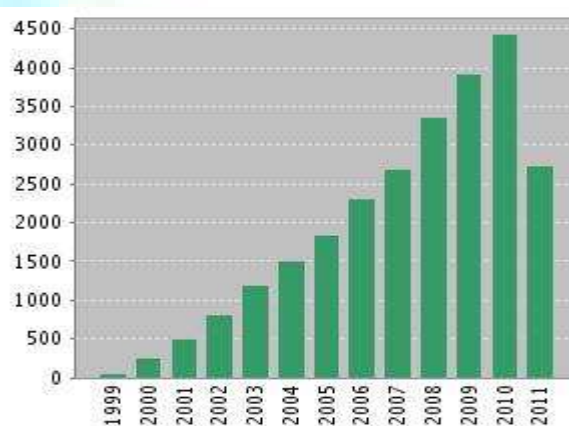
The highest number of publications in the years being studied was 264 in 2010. The average number of publications per year was 188.85. The lowest number of publications was 136 in 2001. The number of papers published from different countries during 1999–2011 is 2455. Indian Contribution is less than 5 percent. (107 Publications)

TABLE 1: SHOWS YEAR WISE DISTRIBUTION OF PUBLICATIONS

Year	Publications	%
2010	264	10.754
2009	260	10.591
2007	236	9.613
2008	226	9.206
2005	202	8.228
2006	197	8.024
2011	179	7.291
2004	173	7.047
2003	150	6.11
2000	147	5.988
2002	147	5.988
1999	138	5.621
2001	136	5.54
Total	2455	100



Published Items in Each Year



Citations in Each Year

H-INDEX OF GREEN COMPUTING PUBLICATIONS

The h-index is based on a list of publications ranked in descending order by the Times Cited. The value of h is equal to the number of papers (N) in the list that have N or more citations. 62 Papers have received more than 62 Citations.

Results found	: 2455
Sum of the Times Cited	: 25662
Sum of Times Cited without self-citations	: 24715
Citing Articles	: 22410
Average Citations per Item	: 10.45
h-index	: 62

AUTHORSHIP PATTERN

An attempt has been made to analyze the research performance of individual scientists in Green Computing research publications. The contributions of individual scientists are varies. The highest number of papers is 23 Papers by A. Tadeu and followed by Cederbaum, LS 19 Publications followed by other scientists. Top 20 authors with respect to the number of articles dealing with Green Computing research publication and published in the Web of Science source journals by Indian and Universal authors.

TABLE 2: SHOWS AUTHOR WISE DISTRIBUTION OF PUBLICATIONS (TOP 20)

Author	Publications	%
TADEU A	23	0.937
CEDERBAUM LS	19	0.774
KUMAR R	14	0.57
ANTONIO J	11	0.448
BARD PY	11	0.448
GODINHO L	11	0.448
SANCHEZ SESMA FJ	10	0.407
TSANG L	10	0.407
LUZON F	9	0.367
MARTIN OJF	9	0.367
CEDERBAUM LORENZ S	8	0.326
CORNOU C	8	0.326
LI J	8	0.326
MANSUR WJ	8	0.326
SIMONES N	8	0.326
ZHAO L	8	0.326
CAMPILLO M	7	0.285
LEONG MS	7	0.285
MAITI SANTANU K	7	0.285
MAITI SK	7	0.285

DOCUMENT WISE DISTRIBUTION OF PUBLICATIONS

More than 97 percent of the 2455 publications were journal articles were by Scientists. The publications of scientists are mostly in the form of journal articles, Proceedings paper, review, editorial materials, Letters, and correction.

TABLE 3: DOCUMENT WISE DISTRIBUTION OF PUBLICATIONS

Document Type	Publications	%
ARTICLE	2404	97.923
PROCEEDINGS PAPER	205	8.35
REVIEW	40	1.629
EDITORIAL MATERIAL	4	0.163
LETTER	3	0.122
CORRECTION	2	0.081

JOURNAL WISE DISTRIBUTION OF PUBLICATIONS

During the 13 years period (1999–2011), Scientists have produced a total of 2455 publications. More than 97 percent of the 2455 publications were journal articles were by Scientists. The highest number of publications was 121 in Physical Review B and Journal of Chemical Physics 55 Publications followed by Geophysical Journal international and so on.

TABLE 4: SHOWS JOURNAL WISE DISTRIBUTION OF PUBLICATIONS

Source	Publications	%
PHYSICAL REVIEW B	121	4.929
JOURNAL OF CHEMICAL PHYSICS	55	2.24
GEOPHYSICAL JOURNAL INTERNATIONAL	48	1.955
JOURNAL OF HIGH ENERGY PHYSICS	46	1.874
PHYSICAL REVIEW D	46	1.874
IEEE TRANSACTIONS ON ANTENNAS AND PROPAGATION	44	1.792
BULLETIN OF THE SEISMOLOGICAL SOCIETY OF AMERICA	38	1.548
ENGINEERING ANALYSIS WITH BOUNDARY ELEMENTS	26	1.059
PHYSICAL REVIEW E	26	1.059
IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES	25	1.018
MICROWAVE AND OPTICAL TECHNOLOGY LETTERS	24	0.978
PHYSICAL REVIEW A	22	0.896
JOURNAL OF APPLIED PHYSICS	21	0.855
JOURNAL OF THE ACOUSTICAL SOCIETY OF AMERICA	21	0.855
NUCLEAR PHYSICS B	21	0.855
GEOPHYSICS	20	0.815
JOURNAL OF COMPUTATIONAL PHYSICS	20	0.815
JOURNAL OF GEOPHYSICAL RESEARCH SOLID EARTH	20	0.815
JOURNAL OF PHYSICS CONDENSED MATTER	17	0.692
JOURNAL OF SOUND AND VIBRATION	17	0.692

INSTITUTION WISE DISTRIBUTION OF PUBLICATIONS

An analysis of 2455 publications published by scientists during 1999 – 2011 and indexed by Web of Science online Database indicates that the publication output in the Indian Green Computing. University of Heidelberg, CNRS, MIT, University of coimbra University of Tokyo, University of Washington and Indian level Indian Institute of Technology and institutes are the major producers of research output. 2455 papers were widely distributed over 656 different institutions and universities. University of Heidelberg contributed about 31 publications and followed by others. In Indian level Indian Institute of Technology has contributed 18 publications and followed by others.

TABLE 5: SHOWS INSTITUTION WISE DISTRIBUTION OF PUBLICATIONS (TOP 25)

Institution	Publications	%
UNIV HEIDELBERG	31	1.263
CNRS	29	1.181
MIT	29	1.181
UNIV COIMBRA	27	1.1
UNIV TOKYO	25	1.018
UNIV WASHINGTON	25	1.018
UNIV CALIF SAN DIEGO	24	0.978
UNIV ILLINOIS	24	0.978
CHINESE ACAD SCI	23	0.937
STANFORD UNIV	23	0.937
UNIV NACL AUTONOMA MEXICO	23	0.937
IST NAZL FIS NUCL	22	0.896
NATL UNIV SINGAPORE	21	0.855
RUSSIAN ACAD SCI	21	0.855
UNIV GRENOBLE 1	21	0.855
CALTECH	19	0.774
DUKE UNIV	19	0.774
NASA	19	0.774
OHIO STATE UNIV	19	0.774
UNIV TEXAS	19	0.774
INDIAN INST TECHNOL	18	0.733
OAK RIDGE NATL LAB	18	0.733
UNIV CALIF BERKELEY	18	0.733
UNIV CALIF SANTA BARBARA	18	0.733
UNIV SO CALIF	18	0.733

COUNTRY WISE DISTRIBUTION OF PUBLICATIONS

Authors of the 107 Indian Green Computing papers collaborated with scientists from a number of countries, including the USA, Germany, Japan, China, and so on. The number of papers published from different countries during 1999–2011 is shown in Table. The USA is the undoubted leader, followed by Germany, France, China, Italy, Japan, Canada, England, Spain and India.

TABLE 6: COUNTRY WISE DISTRIBUTION OF PUBLICATIONS (TOP 20)

Country	Publications	%
USA	835	34.012
GERMANY	248	10.102
FRANCE	210	8.554
PEOPLES R CHINA	181	7.373
ITALY	173	7.047
JAPAN	154	6.273
CANADA	128	5.214
ENGLAND	125	5.092
SPAIN	117	4.766
INDIA	107	4.358
SWITZERLAND	71	2.892
RUSSIA	57	2.322
BRAZIL	52	2.118
AUSTRALIA	49	1.996
NETHERLANDS	49	1.996
BELGIUM	46	1.874
PORTUGAL	43	1.752
SWEDEN	40	1.629
TAIWAN	39	1.589
GREECE	35	1.426

CONCLUSION

This paper has highlighted quantitatively the contributions made by the researchers on Green Computing during 1999-2011 as reflected in Web of Science online database. During 13 years period contributions in terms of number of publications is not significant. A comparison of Indian output in relation to the world output may help in understanding the contribution in a better angle. Though the records available in the Web of Sciences database reveal a small number, it is important that the Web of Sciences covers only the peer-reviewed journals. If a broader coverage database is available, it may provide a reasonable number of papers. We suggest for tracking citation record of papers so that the impact of publications in Green Computing may be visible.

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TESTING THE WEAK FORM EFFICIENCY OF COMMODITY MARKET IN INDIA

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ABSTRACT

The present study investigated the Weak form efficiency of Commodity Market in India with the help of efficient market hypothesis theory. The main Objective of the study is to analyze efficiency, Randomness and Stationary of Sample Commodities. The daily data consisted of closing spot rates from MCX for the period of 40 months from 19th Sep 2008 to 31st Jan 2012. Top three rank Commodities Silver, Gold, Copper, Natural Gas and Crude Oil were chosen as samples. Runs Test, Auto Correlation, Augmented Dickey Fuller test were used. It can be finally concluded According to Efficient Market Hypothesis, Past Prices cannot be used to predict the future Price. The study concludes the Commodity Market is efficient in Weak Form.

KEYWORDS

Commodity Market, Efficiency, Efficient Market Hypothesis, Spot Prices, Stationary.

INTRODUCTION

COMMODITY MARKET

The main aim of this study is about Commodity Market in India after the Global Financial crisis 2008. The gradual evolution of commodity market in India has been of great significance for the country's economic prosperity. The commodity futures exchanges were evolved in 1800 with the sole objective of meeting the demand of exchangeable contracts for trading agricultural commodities. For example, the cotton exchange located at Cotton Green in Mumbai was the one of the first organized commodity market in the country. A commodity may be defined as a product or material or any physical substance like food grains, processed products and agro-based products, metals or currencies, which investors can trade in the commodity market. One of the characteristics of a commodity is that its price is determined as a function of its market as a whole. A commodity market is a market where various commodities and derivatives products are traded. These contracts can include spot prices, forwards, futures and options on futures. The Indian commodity market offers a variety of products like rice, wheat, coal, petroleum, kerosene, gasoline; metals like copper, gold, silver, aluminum and many more. These days, a wide range of agricultural products, energy products, perishable commodities and metals can be sold under standardized contracts on futures exchanges prevailing across the globe. Commodities have gained importance with the development of commodity futures indexes along with the mobilization of more resources in the commodity market. In this paper Efficient Market Hypothesis were used test the Weak Form Efficiency of top three commodities were taken for research.

EFFICIENT MARKET HYPOTHESIS

'A market in which prices always "fully reflect" available information is called "efficient." Fama (1970), An efficient market will always "fully reflect" available information, but in order to determine how the market should "fully reflect" this information, we need to determine investors' risk preferences. Therefore, any test of the EMH is a test of both market efficiency and investors' risk preferences. For this reason, the EMH, by itself, is not a well-defined and empirically refutable hypothesis.

In weak-form efficiency, future prices cannot be predicted by analyzing prices from the past. Excess returns cannot be earned in the long run by using investment strategies based on historical share prices or other historical data. This implies that future price movements are determined entirely by information not contained in the price series.

REVIEW OF LITERATURE

A paper entitled "Do Precious Metals Markets Influence Stock Markets? A Volatility Approach" by Morales analyzed volatility spillovers between the major financial markets represented by the G-7 economies and the precious metals markets (gold, platinum and silver) with the help of EGARCH Model. On the otherhand A study entitled, "Commodity Derivative Market and its Impact on Spot Market", by Golaka C Nath and Thulasamma Lingareddy, studied the impact of Futures Trading in three important commodities which were banned by the Government from trading in Futures and their impact on Spot Prices. The studies found that Futures have increased the volatilities in the Spot Market for some of the commodities. "Econometric Modeling and Forecasting of Gold Futures Prices in India" was done by Prabina Rajib and Suraj Bhuwania, in this study; they forecast the Gold Futures Prices using ARIMA model. They check the validity of the best fitted model and then they use the fitted model for short term forecasting and concluded that this model gives superior forecasting result compared to other models. Another study 'A study on the accuracy of forecasts of gold prices in Australia' was done by Selvanathan (1991) under the research found that gold prices follow a simple random walk.

The previous studies were related to the Commodity Market in India. EGARCH, AR MA, ARIMA, Augmented Dickey Fuller test, Phillips Perron test, Auto correlation test, Runs Test, was used to measure the volatility and weak form efficiency. Auto Correlation test, Runs Test and Augmented Dickey Fuller test were used to examine Weak form Efficiency of Commodity Market in India. Very few studies have been carried out in India to analyze Weak form Efficiency of Commodity Market in India.

RESEARCH METHODOLOGY

The global volume of commodities contracts traded on exchanges increased by a fifth in 2010, and a half since 2008, to around 2.5 billion million contracts. During the three years up to the end of 2010, global physical exports of commodities fell by 2%, while the outstanding value of OTC commodities derivatives declined by two-thirds as investors reduced risk following a five-fold increase in value outstanding in the previous three years. The researcher used top three (1. Silver, 2. Gold, Copper and Natural Gas & 3. Crude Oil) world ranking commodities were used to analyze the weak form efficiency of Commodity Market in India.

OBJECTIVES OF THE STUDY

- To assess the efficiency of selected Commodity Values.
- To analyze the randomness in the movements of Commodity Values.
- To examine the stationary in the sample Commodity Values.
- To summarize the findings, suggestions and conclusion.

HYPOTHESIS OF THE STUDY

H0 1: Sample Commodities are not efficient in weak form.

H0 2: Silver, Gold, Copper, Natural Gas and Crude oil are not random.
H0 3: Closing spot prices of top three commodities are non stationary.

DATA

The daily closing spot value of commodities for this study was collected from the website "http://www.mcxindia.com/SitePages/HistoricalDataForVolume.aspx." For the present study the following three commodities are considered as samples which were in the top list of world ranking

- Rank 1. Silver,
- Rank 2. Gold, Copper and Natural Gas &
- Rank 3. Crude Oil

These Three commodities traded Volumes were taken in to consideration for analysis purpose for the period of after Global Financial crisis to till date i.e 19th Sep 2008 – 31st Jan 2012 (40 months)

TOOLS USED IN THIS STUDY

The information gathered was analyzed by using the following basic and Econometric Tools, appropriate for the purpose.

1. Auto Correlation Test used to test the randomness of commodities.
2. Runs Test were used to test the efficiency of Sample Commodities.
3. Augmented Dickey Fuller Test to decide whether the time-series is difference stationary or trend stationary, a necessary property for random walk process.

DATA ANALYSIS AND INTERPRETATION

1. Runs Test for Sample Commodities (Median & Mean Base)

Table 1A shows the analysis of Runs Test for Median and Mean Base in Commodities. All the calculated value for median base is -15.77, -8.97, -12.9, -12.9 & -12.4 and Mean Base is -20.37, -10.44, -12.37, -13.37 & -13.10 is less than the test critical value of ± 1.96 . The overall analysis clearly denotes that the runs did not follow the normal distribution. Hence, The Null Hypothesis H01 Sample Commodities are not efficient in weak form is rejected for median and Mean base of Sample Commodities. As per the theory of Efficient Market Hypothesis under the Weak form efficiency, the Price reflects all information found in the record of past prices and volumes.

2. Auto Correlation test results for Silver, Gold, Copper, Natural Gas and Crude Oil

Table 2 exhibits the autocorrelation results for world ranking top three commodities for the study period from 19th Sep 2008 to 31st Jan 2012. It is clear from the table, Silver, Gold and Natural Gas time series movements were great. The most of the lag comes under either positive significant or negative significant. But there were no continuous lower and upper movement in Commodity values. This implies that the null hypothesis H0 2: Silver, Gold, Copper, Natural Gas and Crude oil are not random was rejected. Hence it can be concluded that the past values cannot reflect the future values as per Efficient Market Hypothesis. That means the sample Commodities were efficient in weak form.

3. Auto Correlation Charts showing the movement of Commodity Market for the period of 19th Sep 2008 to 31st Jan 2012

Charts clearly show the movement of Sample commodities. Each and every sample commodity movement doesn't depend on other. The commodity values upper movements and lower movements occurred alternatively. But there were no continuous upper and lower movements in sampling period. Hence it denotes the weak form efficiency of Commodity Market follows the random walk

4. Augmented Dickey Fuller Test results for Commodities.

The results of Augmented Dickey Fuller Test for the Silver, Gold, Copper, Natural Gas and Crude Oil are displayed in **Table 3**. Since the Test statistical value for the Augmented Dickey-Fuller Test statistics is not more than the critical value at 1% level of significance, the null hypothesis H0 3: Closing spot prices of top three commodities are non stationary was accepted. Hence it is moved to test with first difference. The first difference of Test statistical value for the Augmented Dickey-Fuller Test is more than the critical value at 1% level of significance. The Commodity values are stationary at first differences both for intercept and intercept & trend. The Silver, Gold, Copper, Natural Gas and Crude Oil rates under non-stationary in their level and become stationary when they are first differenced.

FINDINGS & SUGGESTION

Runs Test indicates that the entire test statistical values were lesser than the test critical value. The overall Runs did not follow the normal distribution. Hence the past prices and volumes information cannot be used to predict the future price. It clearly denotes the sample commodities are efficient in weak form. The Auto Correlation test result reveals that the Silver, Gold, Copper, Natural Gas and Crude Oil rates were efficient in Weak form. It exhibits the random walk. Augmented Dickey Fuller indicates there is non-stationary in "Silver, Gold, Copper, Natural Gas and Crude Oil rates". It can be concluded that there is a healthy presence of stationary when it is first differenced.

The investors must aware of the publically available information. It plays a vital role in examining the market efficiency. The researcher suggested to investors that Silver, Gold and Natural Gas price movements were great. If investors, invest in these commodities means they may get good returns.

CONCLUSION

The present study investigated the Weak form efficiency of Commodity Market in India with the help of efficient market hypothesis theory. The daily data consisted of closing spot rates from MCX for the period (After Global Financial Crisis from Till Date) of 40 Months from 19th Sep 2008 to 31st Jan 2012. World Ranking Top Three commodities like "1.Silver, 2.Gold, Copper & Natural Gas and 3.Crude Oil" were chosen as samples. Runs Test, Auto Correlation Test, Augmented Dickey Fuller test were the primary tests for weak form efficiency among the three Commodities. The unit root tests confirmed that all the Commodity Prices are non stationary which means that past prices and volumes cannot be used to predict Future. From The overall results conclude that the Commodity Market was more incorporated by Global financial crisis. After the crisis, Commodity Market efficiency was improved gradually. But last 16 months from study period, the commodity market movements were good and efficient in weak form. It can be finally concluded that the Commodity Market is efficient in Weak Form.

SCOPE FOR FURTHER RESEARCH

The future research can focus on the following aspects:

The future study can focus on the Semi Strong Form and Strong form Efficiency of Commodity Market in India. It can also focus on analyzing future and option market. Further researchers can examine all the Commodity variables like Bullion, Plantations, Energy, Metals, Weather, Oil & Oil Seeds, Cereals, Spices, Fiber, Pulses and others that were traded in Commodity Market in India.

TABLES AND FIGURES

RUNS TEST FOR SAMPLE COMMODITIES

Median Mode	Silver	Gold	Copper	Natural Gas	Crude Oil
Test Value(a)	410045.16	712477.74	353662.42	76902.44	518579.94
Cases < Test Value	515	515	515	515	515
Cases ≥ Test Value	515	515	515	515	515
Total Cases	1030	1030	1030	1030	1030
Number of Runs	263	372	309	309	317
Z	-15.774	-8.978	-12.906	-12.906	-12.407
(2-tailed)	.000	.000	.000	.000	.000

Computed From: SPSS 11.5, Data from MCXIndia.com

RUNS TEST FOR SAMPLE COMMODITIES

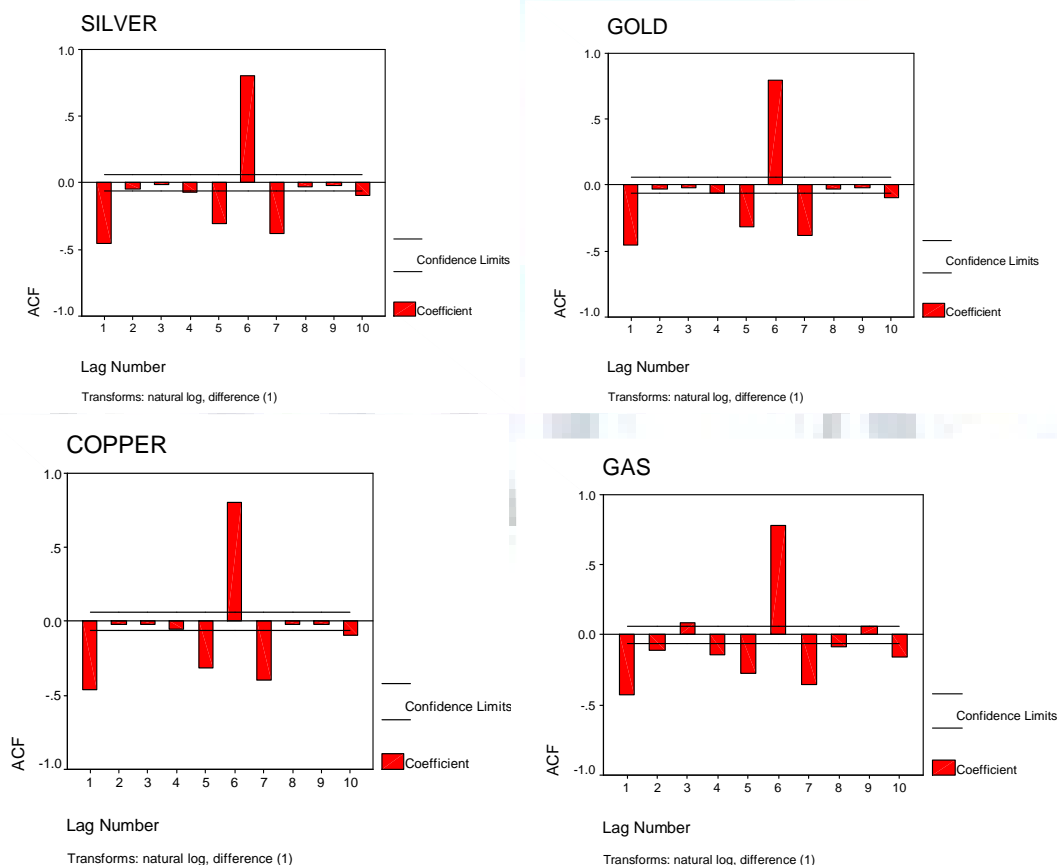
Mean Mode	Silver	Gold	Copper	Natural Gas	Crude Oil
Test Value(a)	669631.112	770831.12	333920.0869	80349.3394	538675.32
Cases < Test Value	692	573	469	530	541
Cases ≥ Test Value	338	457	561	500	489
Total Cases	1030	1030	1030	1030	1030
Number of Runs	167	344	315	307	305
Z	-20.376	-10.449	-12.375	-13.015	-13.107
(2-tailed)	.000	.000	.000	.000	.000

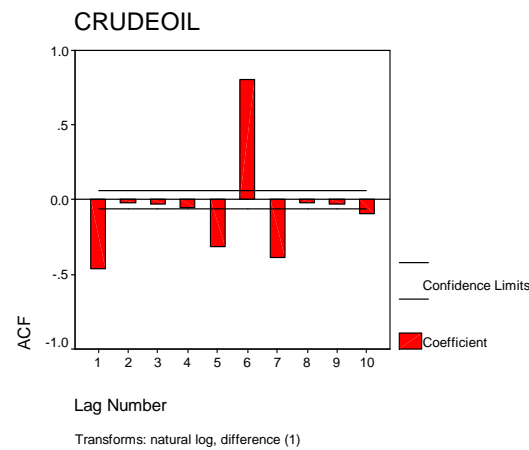
Computed From: SPSS 11.5, Data from MCXIndia.com

AUTO CORRELATION TEST RESULTS FOR SILVER, GOLD, COPPER, NATURAL GAS AND CRUDE OIL

Lag	Silver	Gold	Copper	Natural Gas	Crude Oil	Std. Error
1	-0.450	-0.457	-0.464	-0.429	-0.464	.031
2	-0.041	-0.032	-0.024**	-0.111	-0.021**	.031
3	-0.009**	-0.017**	-0.021**	0.086	-0.026**	.031
4	-0.072	-0.062	-0.056	-0.143	-0.056	.031
5	-0.309	-0.311	-0.317	-0.273	-0.312	.031
6	0.804	0.794	0.807	0.781	0.802	.031
7	-0.383	-0.379	-0.394	-0.356	-0.389	.031
8	-0.032**	-0.027**	-0.024**	-0.089	-0.022**	.031
9	-0.019**	-0.022**	-0.019**	0.058	-0.028**	.031
10	-0.098	-0.091	-0.094	-0.159	-0.090	.031

Computed From: SPSS 11.5, Data from MCXIndia.com, ** denotes Negative Correlation

AUTO CORRELATION CHARTS SHOWING THE MOVEMENT OF COMMODITY MARKET FOR THE PERIOD OF 19TH SEP 2008 TO 31ST JAN 2012

**AUGMENTED DICKEY FULLER TEST RESULTS FOR COMMODITIES**

Commodities	Trend		Trend & Intercept	
	Level	First Difference	Level	First Difference
Silver	-2.477783	-8.734271	-4.050233	-8.731045
Gold	-3.206875	-7.780983	-3.696133	-7.773948
Copper	-2.556254	-10.32972	-5.561275	-10.32410
Natural Gas	-2.702383	-9.222912	-2.790615	-9.218893
Crude Oil	-1.822029	-11.47925	-3.880948	-11.46638
1% level	-3.436625	-3.436625	-3.967160	-3.967160

Calculated from Eviews 5.1, Data from MCXIndia.com

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AGILE BUSINESS INTELLIGENCE FOR AGILE DECISION-MAKING

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ABSTRACT

The ability to respond to changes quickly is critical for an organization in the face of ever changing environment. There is a greater need for speed of decision-making and action as the pace of change has reached new heights. Agility in decision making drives organizational agility. Business Intelligence (BI) is a set of tools and methods, which enables organizations to make fact-based decision-making in an effective way. But traditional BI falls short of meeting the agile needs of the business users and hence emerged the new concept called "Agile BI". Agile BI intends to cater to the ever changing information requirements of the users as well as enable the users to take faster decisions in a volatile environment. The paper explores the concept of agility both in general and with respect to information systems development as a precursor to discussing Agile BI. Arguments for its need are highlighted and issues are identified. A checklist of desirable features for Agile BI solutions is provided and future directions are presented.

KEYWORDS

agility, agile information systems, Business Intelligence, decision-making, enterprise agility.

INTRODUCTION

 *Change is the only constant –Heraclitus"*
 The pace of change in today's environment has reached new heights and the organizations are forced to be agile in their operations in order to be successful.

The Merriam-Webster dictionary defines "agility" as "the quality of being agile" where the meaning of agile is given as "marked by ready ability to move with quick grace; having a quick resourceful and adaptable character".

However, agility has been defined in many different ways by researchers and industry analysts. "Agility is a business-wide capability that embraces organizational structures, information systems, logistics processes and, in particular, mindsets" (Christopher, 2000). It can be defined as "the continual readiness of an entity to rapidly or inherently, proactively or reactively, embrace change, through high quality, simplistic, economical components and relationships with the environment" (Conboy & Fitzgerald, 2004).

The term 'agile' was first used in 1991, describing a capability needed in modern manufacturing (Litsikas, 1997) and ever since has become popular in the manufacturing area and later extended to supply chain discipline. Agile manufacturing has its origins in flexible manufacturing system and lean manufacturing and can be thought of as the combination of these two. (Sarkis, 2001).

In fact, flexibility and leanness are the underlying concepts of agility. While flexibility refers to the ability to adapt to change, leanness implies elimination of waste and doing more with less (Conboy & Fitzgerald, 2004). A distinction is also made between leanness and agility. Where lean operations are usually associated with efficient use of resources, agile operations are related to effectively responding to a changing environment while at the same time being productive (Mathiassen & Pries-Heje, 2006). Speed is the corollary feature of agility in that quick response to change is imperative. Agility is a strategic response and a holistic concept and implies much more than speed and flexibility (Kidd, 1996). Speed alone, at the cost of focus and clarity, will only result in many flawed decisions and at the same time being too flexible or agile could make you lose sight of your core business and mission (Gandossy, 2003).

AGILITY IN INFORMATION SYSTEM DEVELOPMENT

Attempts to apply agile principles to other areas like marketing, selling, human resources have also been made (Poolton et.al, 2006; Chonko & Jones, 2005; Joroff et.al, 2003). The agile concept was introduced to the software development field in 2001 in the form of Agile Manifesto (Beck et.al, 2001) put forth by Agile Alliance, which values

- "Individuals and interactions over processes and tools.
- Working software over comprehensive documentation.
- Customer collaboration over contract negotiation.
- Responding to change over following a plan."

This has resulted in a rise in popularity of the agile philosophy in the software development field.

Several surveys of agile methods since 2003 have proved the benefits of agile methodology in terms of productivity, quality, job satisfaction, communication and, learning (Rico, 2008). With the advent of agile methodology, the failure rate of software projects has dramatically reduced over the years. Reported failure rates shrank 20% to 15%, and in cases where agile was used for everything, to close to 0% (Kernochan, 2011, "b"). These results seem to imply that agile software methodology is the wonder solution to all the project delays and failures. But there is no universally accepted definition of an agile method in the field of Information Systems Development and the reason for lack of general agreement is that there is an absence of management theory and philosophy grounding in the principles of agility expressed in the Agile Manifesto (Conboy & Fitzgerald, 2004). The manifesto draws more cynicism with regard to its emphasis on the items on right at the cost of the items on the left. While the items on the right are essential, those on the left serve only as easy excuses for hackers to produce code irresponsibly without any regard for engineering discipline (Ratkin, 2001). There is thus an immense need to apply agile methodology judiciously.

BUSINESS AGILITY

However, in order to leverage the agility concept to the maximum, it should not be confined to a particular functional area or stream within an organization but rather view it as a wholesome approach which enables business agility. Business agility is an organization's ability to rapidly respond to changing business or market conditions (Dove, 2005). Agile enterprise is one which is able to both manage and apply knowledge effectively, and in order to derive the maximum value from either of these capabilities, they must be in balance (Dove, 1999). Considering the fact that agility is basically about improving the cycle time for managerial action, three emerging prerequisites for corporate agility are (Prahallad et.al, 2005):

- "Access to information in context
- Capacity to create new knowledge and insights
- Resource reconfiguration"

This brings attention to the role of information systems in achieving business agility. Agile information systems are intended to enable agile enterprises. The desired characteristics of agile information systems reach far beyond the traditional information systems to truly enable agile decision making (Rouse, 2007).

AGILE DECISION MAKING

Agile decision making is a process aimed at achieving and exploiting agility. Helmuth Von Moltke, a German field marshal who is regarded as the one of the greatest strategists of the latter 19th century had an intuitive understanding of such concept when he said "the problem is to discover the situation in spite of the fog of uncertainty; to evaluate correctly what is known and to estimate what is unknown; to reach a decision quickly, and then carry it out powerfully and unhesitatingly." (Lovatt, 1986).

Agile decision making is being understood in two ways:

- Decision making in agile development environments
- Agility in the decision making process.

While the former perception is narrow in scope, it is being much discussed and studied by agile experts (Zannier, 2006). Given the decentralized and collaborative environment in which software deliverables are dished out regularly in a fast pace with little effort towards documentation, decision making concerning the design, resource management, and the like requires new approaches.

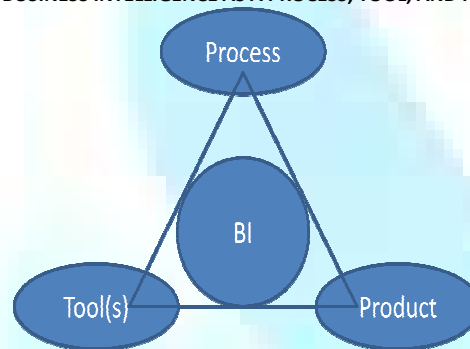
Far more sensible view is that applicable to the whole decision making process (es) in an organization. The Observe-Orient-Decide-Act loop concept developed by US Air Force pilot Colonel John Boyd, when applied to business requires one to see change signals, interpret the signals, formulate an appropriate response and execute the selected response (Haeckel & Nolan 1993). When changes occur in the business environment, enterprises that can complete OODA loops faster than competitors improve their ability to survive (Houghton et.al, 2007). Analyzing the decision making cycle in OODA terms can help organizations become more agile and gain competitive advantage.

Agility in decision making primarily calls for speed in the process of decision making. This requires the availability of the necessary facts and information for the decision makers in the shortest time possible. People need to be empowered to make decisions at the lowest practical level. Decision latency, so far commonly accepted as normal or even inevitable, is no longer admissible for organizations intent to achieve agility.

BUSINESS INTELLIGENCE

Before delving into what the term Agile Business Intelligence implies, let us first look briefly into what constitutes Business Intelligence (BI). The term was first coined by Howard Dresner of Gartner Group in 1989 and has become popular since the 90s (Ou & Peng, 2006). There are different perspectives from which BI can be viewed. It can be thought of as a process, a tool(s) or a product (Fig.1).

FIG. 1: BUSINESS INTELLIGENCE AS A PROCESS, TOOL, AND PRODUCT



BI is the process of collection, treatment and diffusion of information with the objective of reducing uncertainty in the strategic decision-making (defined by Revelli, 1998, cited by Zeng et.al, 2006).

BI is a term that collectively defines technologies and/or applications that generate and distribute dimensional analytics about a given segment of an enterprise (Barbusinski, 2002).

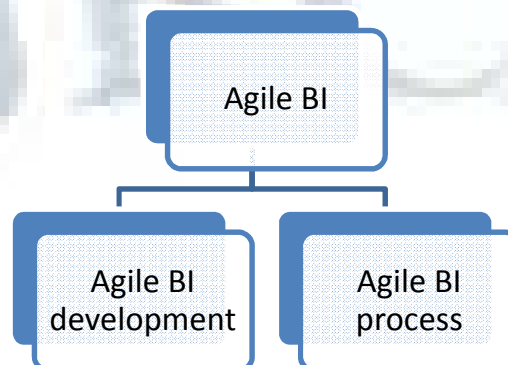
The resultant insight of the above mentioned process can also be thought of as Business Intelligence. BI is the result of in-depth analysis of detailed business data (Gangadharan & Swamy, 2004). It is what one gets out of the process enabled by a myriad of technologies. 'BI as a product' perspective is not the most popular one in use though and hence a comprehensive definition of BI as given by The Data Warehousing Institute, a provider of education and training in the data warehouse and BI industry, is

"The processes, technologies, and tools needed to turn data into information, information into knowledge, and knowledge into plans that drive profitable business action. Business Intelligence encompasses data warehousing, business analytic tools, and content/knowledge management." (Loshin, 2003, p6)

AGILE BUSINESS INTELLIGENCE (AGILE BI)

At the outset, there is no clarity about what exactly Agile BI means. Two different interpretations of this term can be perceived. One is the application of agile principles to the BI development/implementation projects. The other interpretation of the term Agile BI calls for agility in the process of business intelligence. These two perceptions arise out of two perspectives of BI – BI as a process and BI as a tool (Fig.2).

FIG.2: INTERPRETATIONS OF AGILE BUSINESS INTELLIGENCE



From the development perspective, an agile overall BI process involves three new characteristics (Kernochan, 2011, "a"):

- "It incorporates frequent input from the end user and from the environment;
- It "spiral in on" upgraded solutions, endlessly;

- It emphasizes integration with agile development and innovation.”

As business intelligence has become a decision-making tool of great importance to organizations, developing it in agile way makes all the more sense due to the inherent nature of decision support systems (DSS). DSS must evolve or grow to reach a “final” design because no one can predict or anticipate in advance what is required (Sprague & Carlson, 1982).

There are other reasons which emphasize the need for Agile BI though.

The enormous magnitude and diversity of data, people, places, and change pose great challenges, which the traditional BI hasn’t solved. There is a pressing need for companies to answer their business questions quickly in a changing world, which calls for agility in business intelligence. (Sonderegger, 2011).

According to Gartner, 70 to 80 percent of business intelligence projects fail. The solution could be a more agile development process — and organization (Kernochan, 2011, “b”). This is an alarmingly high rate of failure which needs to be addressed without any delay. BI projects are similar to any other general software projects and hence agile principles of the Manifesto can be used for their development to deliver better results.

Agile development actually leads to increased business agility. Using agile methodologies within IT reduces BI project failure and thereby increases the pace of introduction of effective new analyses that allow the enterprise to respond to a rapidly changing environment. It also results in instilling a culture of agility in the business users throughout the organization. (Kernochan, 2011, “b”).

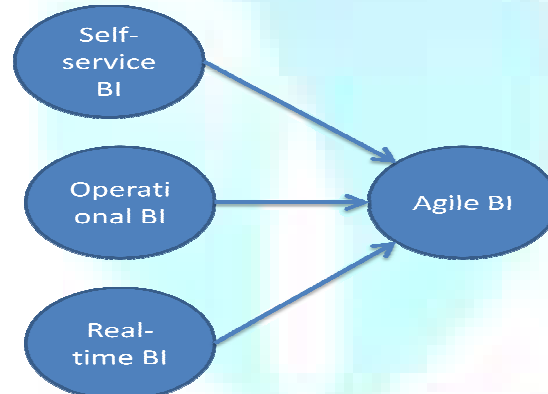
The assumption that more information yields better decisions forms the basis for traditional BI, which works well for highly routine decisions made in mature, stable environments but results in failure in other cases. In contrast, Agile BI focuses on the requirements of the decisions being made, instead of setting out to amass all available data. New data source requirements may emerge as the decision model changes and the information so far deemed as critical may fade in significance. BI must be able to quickly integrate and disintegrate this information for the decision maker in order to be agile (LogiXML, 2011).

The traditional view of BI calls for a single version of truth – the enterprise data to be stored in one place, most likely a data warehouse on the top of which suitable query, reporting and analytical tools are put in place to churn out insights. More often than not, traditional BI is falling short of meeting the information needs of the users in a timely manner. Apart from a few power users, others are required to rely on the IT department for their needs, which results in the inevitable delay in getting what they need. This can be attributed to the specialized skills needed to use the BI systems and also the inflexibility of BI systems to reach a wider pool of users. Though canned reports, dashboards and scorecards cater to the regular information needs, they fail to enable the users to perform further ad-hoc analysis on their own. This shortcoming has given rise to the new phenomenon called “Self-service BI”, which aims to empower the users with the ability to access enterprise data and perform their own analyses without having to request IT for the same. In fact, self-service BI is being adopted as the most common strategy for achieving agility (Fig.3) (White & Castellina, 2011).

Self-service BI is defined as the “facilities within the BI environment that enable BI users to become more self-reliant and less dependent on the IT organization” (Imhoff & White, 2011). Traditional BI is also being complemented by tools that provide much more visual and interactive user experience in an attempt to be more agile (White, 2011).

The decision latency inherent in traditional BI has led to the emergence of two other related concepts – Operational BI and Real-time BI. Operational BI views BI functionalities as daily operational transactions and thus involves a large number of decisions in contrast to traditional BI, which caters to strategic and tactical decision making where the decision-making cycle may span a time period of several weeks or months (Sandu, 2008). Real-time BI works on data that is extracted from operational data sources with zero latency, and provides means to propagate actions back into business processes in real-time (Azvine et.al, 2005). In fact, Operational BI evolves into Real-time BI (Sandu, 2008). It is evident that both Operational BI and Real-time BI improve the agility of the enterprise in that they enable faster decision making (Fig.3).

FIG.3: VARIANTS OF BI CONTRIBUTING TO AGILITY



Traditional or current BI is not designed for change. Once in place, it is extremely difficult to incorporate the changes that would inevitably occur in and around the organization. Needless to emphasize, this poses a serious problem in today’s rapidly changing environment. Agile BI enables capabilities to be added, changed, or removed without the need to completely re-architect the entire system, thus providing agility to the business (LogiXML, 2011).

There is a fundamental difference between what changes mean in traditional BI and Agile BI. While change in traditional BI involves evolution of previous insights, change in Agile BI implies altering BI processes and solutions constantly to fit the evolving information and decision needs (Kernochan, 2011, “a”).

ISSUES

Nevertheless, Agile BI comes with its own issues. By definition, agility requires an enterprise to take a quick decision or action in response to a change in the environment and this usually involves a quick fix. An agile decision expects only to gain limited control over short term situations about which it has relative certainty. Thus, to be agile, deciding must accept choices that involve risks (Lovatt, 1986).

Agility in BI implies that there is no single version of truth anymore, which poses as a threat to the whole BI concept. But in the light of the ongoing debate on whether such a thing exists and whether it is really needed (Bloor, 2010; Jonas, 2006; Chisholm, 2006; Harris, 2010), the absence of a single version of truth doesn’t seem so blasphemous. However, the resulting decentralization should not impede the efforts of IT towards achieving data governance⁷. Agile BI methods applied in the framework of BI strategy and governance can help in getting a grip on the situation (Busch, 2011).

AGILE BI SOLUTIONS

Many vendors are catching up with this new phenomenon and are offering solutions with the agile tag. Notable among them are Endeca (acquired by Oracle recently), Tableau and Oryx from Accountagility (Norris, 2011).

⁷ As defined by the Data Governance Institute, Data Governance is a system of decision rights and accountabilities for information-related processes, executed according to agreed-upon models which describe who can take what actions with what information, and when, under what circumstances, using what methods.

Endeca Latitude is an enterprise BI platform, which provides interactive analytic applications without the constraints of pre-determined drill paths and supports any type of data including structured, unstructured and semi-structured. It also enables fast enterprise data integration by very quickly and painlessly bringing together data sets of all sizes including data from multiple sources. Above all, it allows for IT governance. It allows IT to centrally manage security and data quality (Joseph, 2011).

However, Oryx is only a desktop BI tool. It provides a reliable and robust way for business users to address their information needs and seek out answers to their questions by themselves. It is seen as a valuable addition to the standard BI toolkit rather than a complete replacement (Norris, 2011). Oryx provides on demand analysis, high performance, agility and process automation whilst delivering unrelenting control to the user (Accountagility, 2011).

Tableau is a web browser based visual BI platform which supports huge data and varied data sources and enables easy integration. It offers self-service and collaboration capabilities to its users. Moreover, it provides data visualization capabilities for better analysis of information (Tableau, 2011).

From the above discussion, it is clear that Agile BI solutions should possess certain unique features to enable faster information access and decision-making.

Checklist of essential features of Agile BI:

- Easy interactive interface to enable business users to retrieve and analyze information without IT intervention (data visualization capabilities also help)
- Ability to support all types of data – structured, semi-structured, unstructured
- Ability to integrate with any and all types of data sources on the fly
- Provide In-memory-analytics⁸ for better query performance and fast analysis
- Enable IT governance
- Facilitate collaboration

LOOKING AHEAD

Today's competitive world with its accelerating pace of change compels the organizations to be agile. Agility involves not only being capable of identifying opportunities but also be able to deploy assets and resources to react faster than competition and seize the available opportunities. (Lui & Piccoli, 2007). An agile information system is a key enabler of enterprise agility by facilitating faster fact-based decision making. Agile BI is the new approach to legacy BI, which transforms the way information, is consumed throughout the organization. Agile BI promises to overcome the shortcomings of traditional BI in achieving the goal of "right information at the right time to the right person".

One should approach Agile BI not as doing things faster or simpler but as how BI helps in making the organization agile. In addition to focusing on improving the ability of the organization to respond proactively and reactively, real agile BI should focus on improving the ability of BI process to change direction in response to both user needs and environmental changes. Agile BI is far more than a delivery process; it is a way of thinking about every BI process, as well as BI's effects on the business as a whole (Kernochan, 2011, "a").

Even as Agile BI is envisaged as the new avenue for achieving competitive advantage, confusion exists among industry experts and analysts as to what it exactly implies and how to go about attaining it (Aucoin, 2010). More work needs to be done in the following directions:

- Obtaining more clarity about the concept
- Formulating a comprehensive definition
- Developing standard Agile BI processes

Agility in BI must be approached from both ways – BI development and BI usage, in order to derive the maximum benefit. Technology platforms that combine these two capabilities will be the need of tomorrow. Accordingly, more robust Agile BI tools, which offer an integrated solution to achieve agility, are required. Also, the implications of agile BI in terms of decentralization, kind of workforce needed; and its impact on other business functions needs to be properly comprehended.

Agility is a cultural concept and in order to be agile, the organization must think agile. Doing Agile BI is thus more than having the right technology in place.

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INFORMATION TECHNOLOGY: ITS APPLICATION AND IMPACT ON ORGANIZATIONAL CULTURE OF STATE BANK OF INDIA AND ITS ASSOCIATES WITH SPECIAL REFERENCE TO MODERNIZATION OF CORE PROCESSING SYSTEM

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ABSTRACT

The implementation of the Tata Consultancy Services(TCS) BaNCs Core Banking at the State bank of India (SBI) and its affiliate banks shows the biggest centralized core system implementation ever under taken . The overall effort incorporated the conversion of nearly 140 million accounts held at 14,600 domestic branches of SBI and its affiliate banks. This research paper studies regarding Information Technology, its Application as well as its impact on Organizational Culture of State Bank of India and its five Associates with special reference to Modernization of Core Processing System, the critical success aspects, and the conversion methodology implemented.

KEYWORDS

Information Technology, Organization Culture, Core Processing System.

INTRODUCTION

Information and communication technology (ICT) has considerably transformed the banking, financial services and insurance (BFSI) sector. According to Vij (2006), "I.T. has introduced new business paradigms and is increasingly playing an important role in improving the services in the banking industry." The foundation for introduction of computer technology in the Indian banking sector was laid by Dr. Rangrajan Committee's two report in the years 1984 and 1990s, banks started thinking on the subject of tying-up different branches together to facilitate information sharing . Entrance of private banks and foreign banks in banking dome with completely different strategies and vast IT budgets gave big boost to e-banking in India. An array of banking services offered to retail as well as wholesale customers via an electronic distribution channel is collectively referred to as e-banking. Naresh Wadhwa, vice president of west Cisco system (India) confirms that, "with the improved services and lowered costs of service providers such as DoT and VSNL, it became more practicable for banks to network their branches. This gave banks a momentum to network all the branches and establish a centralized database. With these developments it became plausible for operations such as Management Information System (MIS) to be truly automated and centralized." After the turn of consolidated data bases as well as networks come core banking applications. Core banking applications help offer complete front as well as backend automation of banks.

BACKGROUND

The State Bank of India is the oldest as well as the largest bank in India, with more than \$250 billion (USD) in assets. It is the world's second-largest bank in terms of number of branches; in recent times its 10,000th branch was opened in India in 2008. The bank has established 84 international branches that are located in 32 countries and nearly 8,500 ATMs. Furthermore, SBI has been controlling or complete interest in a number of affiliate banks, which has resulted in the availability of banking services at more than 14,600 branches and nearly 10,000 ATMs.

SBI traces its ancestry to British India, to the formation in 1806 of the Bank of Calcutta. In 1809, the bank was renamed as the Bank of Bengal and operated as one of the three premier "presidency" banks (the presidency banks had the exclusive rights to supervise and circulate currency and were provided with capital to establish branch networks). In 1921, three presidency banks were consolidated into the Imperial Bank of India by the government. The Imperial Bank of India continued until 1955, when it was renamed as the State Bank of India.

In 1959, The State Bank of India Act was passed by the Indian government, resulting in the attainment (majority shareholding) of eight state-affiliated banks as well as the creation of the State Bank of India Group (SBI Group). The SBI itself is now major share owned by the Indian government, which bought the shares held by the Reserve Bank of India.

PROFILE OF THE STATE BANK OF INDIA AND ASSOCIATE BANKS (MAY 2008)

Sr. no.	Bank Name	Headquarters(City, State)	Branches	ATM's
1	State Bank of India	Mumbai , Maharashtra	10,000	8,500
2	State Bank of Bikaner and Jaipur	Jaipur , Rajasthan	833	336
3	State bank of Hyderabad	Hyderabad , Andhra Pradesh	965	450
4*	State bank of Indore	Indore, Madhya Pradesh	301	235
5	State Bank Of Mysore	Bangalore, Karnataka	654	247
6	State bank of Patiala	Patiala Punjab	766	353
7*	State Bank of Saurashtra	Bhavnagar, Gujarat	452	190
8	State Bank of Travancore	Trivandrum, Kerala	706	33'1

Source: Unpublished Records of State bank Of india (2008)

Note: State Bank of Saurashtra and State Bank of Indore have been consolidated into the State Bank of India

Unlike private-sector banks, SBI has a twofold role of earning a profit and expanding banking services to the masses throughout the India. As a result, the bank built a wide branch network in India that included many branches in low-income rural areas that were considered unprofitable to the bank. Nonetheless, the branches in these rural areas resulted in introduction of the banking services to tens of millions of Indians who otherwise would have lacked access to economic services. This custom of "banking inclusion" recently made India's Ex-Finance Minister P. Chidambaram to comment, "The State Bank of India is owned by the people of India." The implementation of computerization at Indian banks during the 1970s and 1980s was hindered by the lack of reliable communications and power (predominantly in rural areas). Throughout this period, all the account information was typically maintained at the local branches with either manual or semi-automated ledger card processing. During the 1990s, the country's low labor costs, intellectual capital, and improving telecommunications technology resulted in beginning of a period of rapid growth of Indian economy. They allowed India to offer its commercial services around the world. This growth was also aided by government decision to allow the creation of private sector banks. This growth in Indian economy was also aided by the government's decision to permit the establishment of private-sector banks (they had been nationalized in the 1960s). The private-sector banks, such as ICICI Bank and HDFC Bank,

changed the landscape of banking in India. They started implementing modern centralized core banking systems and electronic delivery channels that helped them to launch new products and provide greater ease to their customers. As a result of it, the private-sector banks fascinated more middle as well as upper-class customers at the price of the public-sector banks. Furthermore, foreign banks such as Standard Chartered Bank and Citigroup used their highly developed automation capabilities to expand market share in the business and high-net-worth markets.

LITERATURE REVIEW

RajShekhar (2004) states that E-Banking is a mix of services which includes internet banking, mobile banking, ATM, Fund transfer system, Real Time Gross System (RTGS), National electronic funds transfer (NEFT), Electronic Clearing Services (ECS), credit/debit/ smart cards cash management services, and data warehousing, operational data for Management Information System (MIS) and Customer Relationship Management (CRM). While e-banking offers a lot of advantages in terms of convenience, ubiquity, speed of transaction, efficiency (in terms of cost and time) and effectiveness (in terms of scope of activity), it also poses lots of challenges in form of registration hassles, navigation difficulties and security & trust.

Varma (2006) states that a bank which moves fast and tries to capture the first mover advantage can think of succeeding in this sector. Another key success factor will be the value, which the online operations of the banks will be offering to the consumer. Shaw (2004) asserts that internet affected the competitive landscape of the banking industry by many ways. Firstly it changed the industry structure and in doing so, altered the rules of competitions. Secondly, it created competitive advantages for banks giving them new way to outperform their rivals and finally the internet had spawned the creation of new business that were beyond the traditional banking domains.

INFORMATION TECHNOLOGY INITIATIVES IN STATE BANK OF INDIA AND MODERNIZATION OF CORE SYSTEM

SBI had undertaken a massive computerization effort in the 1990's to automate all of its branches, implementing a highly customized version of Kindie Banking Systems' Bankmaster core banking system. However, because of the bank's historic use of local processing and the lack of reliable telecommunication in some areas, it deployed a distributed system with operations located at each branch. Although the computerization improved the efficiency and accuracy of the branches, the local implementation restricted customers' use to their local branches and inhibited the introduction of new banking products and centralization of operations functions. The local implementation prevented the bank from easily gaining a single view of corporate accounts, and management lacked readily available information needed for decision making and strategic planning.

The benefits in products and efficiency of the private-sector banks became increasingly marked in the late 1990s as SBI (and India's other public-sector banks) lost on hand customers and could not catch the attention of the speedily growing middle market in India. In fact, this technology-savvy market section viewed the public-sector banks as technology laggards that could not stand up to their banking needs. As a result, the Indian government required to have the public-sector banks modernize their core banking systems. In response to the competitive risks and appeals from the government, SBI engaged KPMG Peat Marwick (KPMG) in 2000 to develop a technology policy and a modernization road map for the bank.

In 2002, bank management accepted the KPMG-suggested strategy for a new IT environment that included the execution of a new centralized core banking system. This effort would include the largest 3,300 branches of the bank that were situated in city as well as suburban areas.

The State Bank of India's goal for its project to modernize core systems included:

- The delivery of new product capabilities to all customers, including those in countryside areas
- The amalgamation of processes across the bank to realize operational effectiveness and better customer service
- Provision of a single client view for all accounts
- The ability to combine the affiliate banks with the SBI
- Support for all existing SBI products
- Diminish customer wait times in branches
- Reversal of the customer attrition tendency

CHALLENGES FOR THE BANK

The bank faced numerous unexpected challenges in implementing a centralized core processing system. These challenges included searching for a new core system that have capability process approximately 75 million accounts daily — a figure greater than any bank on the earth was processing on a centralized basis. Furthermore, the bank lacked required experience in implementing centralized systems, and its huge employee base took great pleasure in executing complex transactions on local in-branch systems. This practice made some people to doubt that the staff would efficiently use the new system. Another challenge was meeting SBI's unique product requirements that would need the bank to make widespread alterations to a new core banking system. The products comprise gold deposits (by weight), savings accounts with overdraft rights, and an astonishing number of passbook savings accounts.

VENDOR CONSORTIUM SELECTION

Recognizing the call for large centralized system expertise, SBI sought proposals from variety of vendor consortium that were headed by the leading system integrators. From these proposals, the bank lessened the potential solutions to vendor consortiums led by IBM and TCS. Thus, it was approved that TCS would be responsible for the necessary systems modifications and ongoing software preservation for SBI. Additionally, scalability tests were conducted at HP's lab in Germany to confirm that the system was capable of meeting the bank's scalability requirements. These tests proved the capability of TCS BaNCS to bear the processing requirements of 75 million accounts and 19 million every day transactions.

TATA CONSULTANCY SERVICES AND TCS BANCs

Tata Consultancy Services, with its headquarters in Mumbai, India, is one of the world's largest companies in terms of technology with particular proficiency in systems integration and business process outsourcing. The company has more than 130,000 workers located in 42 countries and attained revenues of \$5.7 billion in fiscal 2008. Even though TCS has long been a leader in core systems integration services for banks, after it acquired FNS in 2005, the company also became a principal global provider of fundamental banking software for large banks.

INITIAL SBI CORE SYSTEMS MODERNIZATION PROJECT

The agreement for the initial project was finished in May 2002; 3,300 branches were to be converted by mid-2007. TCS without delay started a six-month gap analysis effort to determine the necessary software changes to the BaNCS system. The changes incorporated installing required interfaces with more than 50 other systems as well as making improvements to support the bank's product requirements. These product requirements were divided by customer segment to permit the vendor and bank to commence conversions before all the needed modifications were implemented. They placed a priority on the desirable changes that would permit branches with high-net-worth persons and then corporate accounts to be converted as early as possible.

INITIAL CONVERSION PROJECT

The conversion effort started in August 2003, when SBI transformed three pilot branches to the BaNCS system. The successful conversion and operation of these three pilot branches led to the conversion of 350 retail branches with high-net-worth customers between August 2003 and September 2004. At this point of time, the bank deliberately stopped the conversions to examine and resolve reported troubles. They examined, classified, and prioritized these problems by type

of resolution (e.g., software, procedural, training) and rigorousness. TCS managed software revisions for the significant software changes while the branch staff managed the required training and procedural changes.

After the implementation of software and procedural changes, SBI further converted 800 branches between December 2004 and March 2005. In contrast with the earlier conversions, this group of branches included primarily commercially driven offices. The conversion effort then again shifted its focus on retail branches until November 2005, when the bank halted again to resolve problems that came in front during this second group of conversions.

The system and processes were functioning efficiently, after the second round of changes, and management thought the branch conversion could be accelerated. An assembly line approach was then employed in April 2006 to speed the branch conversion process:

(a) Branch employees were responsible for data polishing as well as cleaning of their customer information on the existing system.

(b) Three months before their conversion date branches were notified to start "mock," or test, conversions using an exclusively formed test version of the BaNCs system.

(c) Several test conversions were performed by branches in order to ensure that the actual conversion went easily.

By implementing the assembly line approach for branch conversions, SBI was successful in converting 1,200 branches in April and May 2006, completing the early 3,300-branch conversion two months ahead of the decided schedule. The landmarks for the initial core systems implementation project are integrated in the SBI and affiliate banks core systems modernization time line.

STATE BANK OF INDIA'S AFFILIATE BANK'S CONVERSION

As the rollout plans for State bank of India were being finalized, the bank make a decision to expand the scope of the core banking implementation to embrace its seven affiliated banks at that time. Currently SBI has just five associate banks because State Bank of Saurashtra as well as State Bank of Indore has been combined into the State Bank of India. TCS has build a separate processing environment in the Mumbai data center employed to support SBI. The conversion effort for each one of the affiliate banks took 18 to 24 months; the first six months were used for planning, training and creating the processing environment for the banks. The branch conversions overlapped amongst the banks facilitating all the affiliate banks to be converted within 30 months. The project was started in July 2003 for the State Bank of Patiala and in 2004 for the other affiliate banks. The whole affiliate bank branches were converted to the Bancs system by the end of 2005.

Success of scalability test led SBI to take decision of conversion of the approximately 6,700 remaining SBI branches to Bancs system. The conversion of the left over branches started in June 2006, with the declared goal of finishing the conversion by year end 2008. Employing the assembly line conversion approach established in the primary phase, the bank was successful in converting 1,400 of these branches by March 2007.

For the reason that the conversion methodology as well as Bancs System was thoroughly verified and stable, the assembly line conversion approach allowed the bank to finish the conversion before the schedule. Between April 2007 and March 2008 (the bank's fiscal year end), SBI converted 4,600 of its branches to the new system. The left over branches were converted between April and July 2008.

CRITICAL SUCCESS FACTORS

Large –Scale core system implementations are typically the most costly and risky IT projects undertaken by banks. Failure of core system projects are not uncommon at large banks and result in both financial impact and lost business opportunities. Further, failed projects lead other banks to delay needed core systems replacements because they measure the risk of failure against the potential benefits of a new system.

Following factors contributed to the success of the SBI core implementation effort:

SENIOR MANAGEMENT COMMITMENT

The project was driven by the chairman of SBI, who met Information Technology (IT) as well as the business sector heads every month. Chairman keeps an eye on the overall status and ensured that adequate resources were allocated to the project and from time to time met the SBI Chairman to review the status of the projects.

STAFFING AND EMPOWERMENT OF PROJECT TEAM

The core banking team comprises of the bank's managing director of IT acting as a team leader and 75 business and IT people chosen by the bank. TCS also staffed the project with roughly 300 IT professional trained on the Bancs system. Prominently, the SBI business people were viewed not just as contributors to main projects but as bank leaders. This squad reported to the SBI Chairman and was authorized with all decision making authority.

OWNERSHIP BY BUSINESS HEADS

The regional business heads were responsible for the successful conversion of their respective branches and descript the status to the Chairman. Thus the business heads' aim was aligned with those of the project team.

FOCUS ON TRAINING

SBI employed its network of 58 training centers all over India to train employees on the new system. TCS employees first educated approximately 100 SBI professional trainers, who then further trained 100,000 SBI workforces at the centers; the remaining employees were trained at their respective job sites.

IMPACT OF NEW CORE SYSTEMS IMPLEMENTATION ON ORGANISATIONAL CULTURE OF STATE BANK OF INDIA AND ITS ASSOCIATES

The new core system has proved to be beneficial all over the bank for both the customers as well as the employees of SBI. For instance, the new core banking system has allowed the bank to redesign its processes. It set up 400 regional processing hubs for all metros and urban branches that have assumed functions earlier in the individual branches. The bank in recent times reported that business per employee has increased by 250% in the last five years.

The bank has accomplished its objective of offering its full variety of products and services to its rural branches. It delivers financial growth to the rural areas and offers financials inclusion for all the Indian civilians. Implementation of the TCS Bancs system has provided the bank with capability to combine the affiliate banks into SBI. In fact, consolidation of State bank of Saurashtra into SBI has been completed by the bank sometime back. The bank has reversed the trend of customer attrition and is now expanding new market share. Achievement of the core conversion project has also allowed the bank to carry out several new initiatives to further improve its service and support growth in future. These initiatives to offer better service in future and support future growth, these initiatives include the deployment of no less than 3,000 rural sales staff, redesign of over 2,200 branches in the last economical year, opening of ATM etc. to migrate customers to electronic delivery channels. The enhancement in productivity and expansion of business for the SBI Group is reflected as under:

SELECTED BUSINESS RESULTS FOR SBI GROUP (2002-07)

Category	(USD in Billion)						
	2002	2003	2004	2005	2006	2007	2002-07
Total deposits	\$72.0	\$82.5	\$99.6	\$115.7	\$121.9	\$146.4	103%
Total loans/advances	34.1	40.2	50.9	65.6	83.9	112.1	229%
Total operating expenses	2.00	2.25	2.87	3.30	3.95	4.60	130%
Staff expenses	1.29	1.56	1.82	1.97	2.41	2.44	89%
Total operating profits	1.81	2.38	3.33	3.47	3.44	3.31	83%

Source: SBI Group

CONCLUSION

The implementation of the Tata Consultancy Services (TCS) Bancs system at the State Bank of India (SBI) corresponds to the biggest core systems project that has ever been undertaken. The successful implementation of this project should encourage other large banks to start projects to modernize their core systems. The use of a UNIX –based platform to process more than 100 million accounts every day shows that tier-1 banks can make use of a mainframe as an alternative for their core processing.

Achievements of SBI show that consideration to critical factors is very important in implementing new core systems. The bank's senior management dedication, business line involvement project team staffing and empowerment, as well as extensive employee training all collectively contributed to the project. Management also identified the call for a proven system integrator that had in-depth knowledge in both business as well as technology core systems modernization has let the State bank of India to centralize computer processing and operations functions, offer new banking products and services to all civilians of India, reverse a tendency of customer attrition, and combined its affiliate banks. Furthermore, the bank can now further expand its products offering and enhance customer service.

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In this age of Commerce, Economics, Computer, I.T. & Management and cut throat competition, a group of intellectuals felt the need to have some platform, where young and budding managers and academicians could express their views and discuss the problems among their peers. This journal was conceived with this noble intention in view. This journal has been introduced to give an opportunity for expressing refined and innovative ideas in this field. It is our humble endeavour to provide a springboard to the upcoming specialists and give a chance to know about the latest in the sphere of research and knowledge. We have taken a small step and we hope that with the active co-operation of like-minded scholars, we shall be able to serve the society with our humble efforts.

Our Other Journals

