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## CONTENTS

Sr. No.	TITLE & NAME OF THE AUTHOR (S)	Page No.
1.	ONLINE COMMUNITY IDENTIFICATION AND CITIZENSHIP BEHAVIORS: INVESTIGATING THE EFFECT OF PERCEIVED VALUE <i>KUANG-WEN WU, MAY-CHING DING &amp; YUAN-SHUH LII</i>	1
2.	THE IMPACT OF GLOBAL FINANCIAL CRISIS ON AUDITING PRACTICES IN THE COMMERCIAL BANKS OF JORDANIAN <i>DR. BADI SALEM ALRAWASHDEH</i>	7
3.	FINANCIAL DIAGNOSIS: A CASE STUDY OF LANKA ALUMINIUM INDUSTRIES PLC IN SRI LANKA <i>ARULVEL, K.K, BALAPUTHIRAN, S &amp; DR. B. NIMALATHASAN</i>	10
4.	DETERMINANTS OF BASIC SCHOOL TEACHERS' LEVEL OF COMPUTER LITERACY IN GHANA <i>PAUL DELA AHIAATROGAH &amp; ELISHA D'ARCHIMEDES ARMAH</i>	14
5.	DATA MINING IMPACTS ON HIGHER EDUCATION <i>ROY MATHEW</i>	19
6.	CHALLENGES OF INTERNAL AUDIT FUNCTION IN PUBLIC SECTOR GOVERNANCE: EMPIRICAL EVIDENCE FROM ETHIOPIA <i>AGUMAS ALAMIREW MEBRATU</i>	23
7.	AN EXAMINATION OF LEADERSHIP STYLES OF SENIOR AND MIDDLE LEVEL MANAGERS IN SELECTED ORGANISATIONS IN MUSCAT, SULTANATE OF OMAN <i>NEELUFER ASLAM &amp; KUSUM LATA MISHRA</i>	33
8.	KNOWLEDGE AUDIT AS A SUCCESS FACTOR FOR KM IMPLEMENTATION <i>DR. C. S. RAMANI GOPAL &amp; DR. G. PALANIAPPAN</i>	37
9.	MEASURING THE LEVEL OF CUSTOMER SATISFACTION AND CUSTOMER LOYALTY IN BANKING AND INSURANCE SECTOR IN INDIA: A COMPARATIVE STUDY <i>CHARU UPADHYAYA &amp; DR. V. K. JAIN</i>	43
10.	A STUDY ON RETAIL SERVICE QUALITY SCALE (RSQS MODEL) APPLICATION WITH REFERENCE TO RELIANCE FRESH IN CITY OF BHAVNAGAR <i>DR. K. S. VATALIYA, KIRAN SOLANKI &amp; MALHAR TRIVEDI</i>	49
11.	ONLINE BUYING BEHAVIOUR OF CUSTOMERS: A CASE STUDY OF NORTHERN INDIA <i>VINOD KUMAR, DR. VERSHA MEHTA &amp; DR. ALKA SHARMA</i>	54
12.	DEALERS AND CONSUMER DURABLES (A STUDY BASED ON DEALERS PERCEPTIONS AS REGARDS SAMSUNG COLOUR TELEVISION) <i>DR. R. SAVITHRI</i>	61
13.	A STUDY ON THE INDIAN SMALL CAR MARKET AND FACTORS INFLUENCING CUSTOMERS' DECISIONS TOWARDS PURCHASE OF SMALL CARS' <i>THAMARAI SELVI N &amp; NITHILA VINCENT</i>	65
14.	LEAN MANUFACTURING SYSTEM: AN EFFECTIVE TOOL FOR ORGANIZATIONAL MANAGEMENT <i>S. K. RAJENDRA, R. SUPRABHA &amp; V. M. AKSHATHA</i>	70
15.	CUSTOMER SERVICE MANAGEMENT IN SELECT PUBLIC SECTOR BANKS IN RURAL VILLAGES IN SALEM DISTRICT, TAMIL NADU <i>DR. A. JAYAKUMAR &amp; G. ANBALAGAN</i>	75
16.	REVISITED 'THE IRREGULARITY OF INDIAN STOCK MARKET: AN OCTOBER EFFECT ANALYSIS' <i>RAJESH KHURANA &amp; DR. D. P. WARNE</i>	78
17.	ICT ENABLED DELIVERY SYSTEM AND CHALLENGES IN PUBLIC HEALTH SERVICES MANAGEMENT <i>GANESHKUMAR HIREGODDAR &amp; DR. H. RAJASHEKAR</i>	81
18.	SOCIAL MEDIA MARKETING AND BOLLYWOOD: RECENT TRENDS AND OPPORTUNITIES <i>DEEPMALA JAIN &amp; SONIA GOSWAMI</i>	86
19.	EFFECT OF FACEBOOK ON PURCHASING BEHAVIOR OF YOUTH <i>PREYAL DESAI, PRATIMA SHUKLA &amp; NIKUNJ THAKKAR</i>	93
20.	RESEARCH & DEVELOPMENT IN MANAGEMENT <i>DR. PULI. SUBRMANYAM &amp; S. ISMAIL BASHA</i>	98
21.	TREND IN EXPORT OF LEATHER PRODUCTION IN INDIA <i>DR. P. CHENNAKRISHNAN</i>	105
22.	CONCURRENCY CONTROL MECHANISM IN DBMS <i>GEETIKA</i>	109
23.	A STUDY ON OPERATIONAL CONSTRAINTS INVOLVED IN STEVEDORING TECHNIQUES AT SEAPOL LOGISTICS PVT. LTD., TUTICORIN <i>DR. A. MERLIN THANGA JOY</i>	111
24.	IMPACT OF MERGER AND ACQUISITION ON THE FINANCIAL PERFORMANCE OF SELECT PUBLIC SECTOR BANKS IN INDIA <i>DR. V. MOHANRAJ</i>	119
25.	NEUROMARKETING: INNOVATIVE FOCUS ON THE FEMALE BUYING BRAIN <i>DEEPA KEDAR RELE</i>	122
26.	CONSUMER SATISFACTION IN INDIAN CELLULAR INDUSTRY USING SERVICE QUALITY MODEL- AN EMPIRICAL ASSESSMENT <i>DR. MANMATH NATH SAMANTARAY</i>	126
27.	SECURITY STANDARDS IN SERVICED APARTMENTS – WITH SPECIAL REFERENCE TO BANGALORE AND CHENNAI (SOUTH INDIA) - AN ANALYSIS <i>DR. LEENA N. FUKEY</i>	130
28.	TO DISCUSS THE EFFECT OF SUPPLIERS' INVOLVEMENT, OPERATIONAL CAPABILITIES & SOURCING PRACTICES ON SUPPLY CHAIN FLEXIBILITY <i>PARDEEP SINGH BAJWA, KANWARPREET SINGH &amp; DOORDARSHI SINGH</i>	136
29.	INFORMATION AND COMMUNICATION TECHNOLOGY (ICT): NEW DEAL FOR INTERNATIONAL DEVELOPMENT SMEs SERVICES <i>VAHID RANGRIZ</i>	141
30.	HUMAN RESOURCE MANAGEMENT: BROADENING THE CONCEPT OF HUMAN RESOURCES <i>VISHU AGRAWAL &amp; DISHA AGRAWAL</i>	148
	REQUEST FOR FEEDBACK	153

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## ONLINE COMMUNITY IDENTIFICATION AND CITIZENSHIP BEHAVIORS: INVESTIGATING THE EFFECT OF PERCEIVED VALUE

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### ABSTRACT

*This study examines the perceived values (utilitarian, hedonic, social, epistemic, and conditional) of consumers participating in an online community and their influence on online community identification and citizenship behaviors. This study utilized Taiwan internet forums, which discuss mobile phones. Two hundred and forty-three valid responses were collected and structural equation modeling was applied to test the hypothesized relationships. Results show that all utilitarian, hedonic, and social values had a positive effect on online community identification. Social value had the strongest influence on community identification, followed by hedonic and utilitarian value. In addition, consumers experiencing high levels of epistemic value gained better utilitarian, hedonic, and social values rather than conditional value. As expected, a higher degree of online community identification, which benefits the community, was linked to stronger in-role and extra-role participants' responses.*

### KEYWORDS

Perceived value, online community identification, citizenship behavior, online community.

### INTRODUCTION

The Internet has revolutionized the lifestyles, patterns of communication, and information-seeking behavior of the communities and nations in which it is used, and has shifted the phenomenon of social interaction into cyberspace in what have become known as online communities. An online community is a virtual community both in that it exists in cyberspace and in that its members agree to the existence and continuation of the community by entering into and sharing a communal ritual of participation in it (Kim, 2000). Online communities exist in many forms, including online message boards on which participants can post their thoughts and ideas on various topics, and weblogs, in which only a limited number of people have the privilege of contributing postings.

The development of the Internet allows businesses to interact with and build relationships with their customers (Grönroos, 2000). An online community is an entity that is potentially beneficial to a business in that it can help strengthen these relationships in a more direct and economical manner than has been possible with prior means of communication. As a low-cost source of consumer information, an online community gives businesses insight into consumer needs and preferences (Godes and Mayzlin, 2004), and research has found that consumers' online product choices are affected to a greater degree by information and recommendations that they receive online than by traditional word of mouth (WOM) (Senecal and Nantel, 2004). Online consumer reviews have been found to influence consumers' online purchases of goods such as books (Chevalier and Mayzlin, 2006) and consumers use online discussion groups to actively assess and evaluate merchandise such as digital cameras before making a decision to purchase a particular item of this kind (Fong and Burton, 2006).

In view of the growing influence of online forums and blogs on consumers' decision-making processes, the study reported here was done to clarify understanding of the values that contribute to consumers' participation in an online community for sharing information and viewpoints about commercial products, and to help clarify how their identification with an online community affects their behavior as members of that community, as in the case of purchasing products suggested by the community, making product-related recommendations to other members of the online community, and engaging in positive WOM recommendations of products.

### REVIEW OF LITERATURE AND HYPOTHESES

#### CONSUMER-COMMUNITY IDENTIFICATION

An online community provides a social context for collective participation by individuals with diverse backgrounds, conferring on them a sense of belonging and allowing them to develop social ties, share common values, and develop personal relationships with others in the community (Muñiz and O'Guinn, 2001; Wiertz and Ruyter, 2007; Toral et al., 2010). Social identity theory suggests that to enrich their social identity, which serves to enhance their self-definition, individuals often associate with specific groups, including groups with which they have no direct interpersonal contact (Tajfel and Turner, 1985).

According to this theory, identity can be described as following a continuum ranging from definition of the self in terms of personal identity at one end to definition of the self in terms of social identity at the other. Personality identity refers to self-descriptions that reflect personality traits and other individualistic characteristics. By comparison, social identity refers to self-descriptions derived from formal and informal group memberships (Marques, 1998; Turner, 1984). When consumers identify with a specific online community, they view themselves as psychologically attached to that community and feel socially and emotionally connected with other members of the community (Ellemers et al., 1999; Pelling and White, 2009; Chou, 2010; Pfeil et al., 2011; Zhou, 2011). The following sections discuss elements of consumers' perceived values that may lead to their identification as members of a community.

**PERCEIVED VALUES GAINED FROM COMMUNITY**

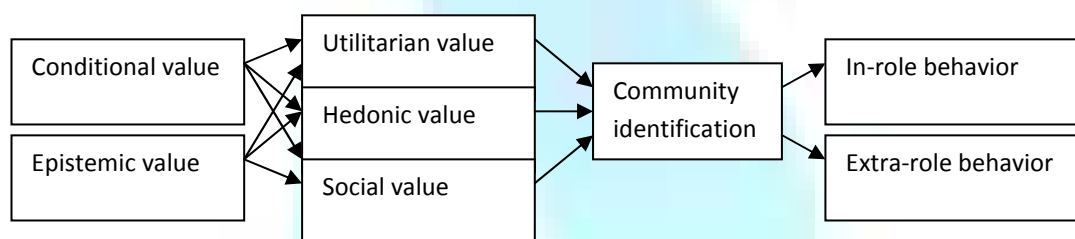
Consumers visiting an online community typically have a value-related motivation for doing so, such as gaining new knowledge, seeking social interaction and companionship, and deriving economic benefit (Kang et al., 2007). Consumers are more likely to conceive of themselves as members of a specific virtual community if they believe that that community can better realize their values than can other communities. In this situation, the values perceived as being derived from the community contribute to identification with the community (Koh and Kim, 2003; Dholakia et al., 2004; Lin, 2007; Zhou, 2011).

Sheth, Newman, and Gross, in one of the most comprehensive studies of perceived values (Sheth et al., 1991), introduced five values that affect behavior related to consumption, consisting of functional value, social value, emotional value, epistemic value, and conditional value. They defined functional value as the perceived utility acquired by a particular choice "as the result of its ability to perform its functional, utilitarian, or physical purposes"; social value as the perceived utility acquired by a particular choice "as a result of its association with one or more specific social groups"; emotional value as the perceived utility acquired by a particular choice "as a result of its ability to arouse feelings or affective states"; epistemic value as the perceived utility acquired by a particular choice "as a result of its ability to arouse curiosity, provide novelty, and/or satisfy a desire for knowledge"; and conditional value as the perceived utility acquired by a particular choice "as a result of the specific situation or context of the choice maker" (Sheth et al., 1991).

The five original value dimensions defined by Sheth et al. (1991) were designed for the purpose of analyzing purchasing decisions about traditional goods or brands of merchandise, and some modifications have been made to these values for use in studies of online behavior. Thus, for example, to convey the functional aspect of online behavior, Dholakia et al. (2004) used the term "purposive value," which accords with the pragmatic experience described by Nambisan and Nambisan (2008). In other studies, the concept of entertainment value was used in lieu of emotional value to measure consumers' fun, pleasure, and enjoyment in participating in an online community (Koh and Kim, 2003; Dholakia et al., 2004; Chitturi et al., 2008).

In most previous studies of perceived values among Internet users and members of online communities, conditional and epistemic values have attracted limited attention (Pihlström and Brush, 2008). In these studies, however, the five original value dimensions defined by Sheth et al. (1991) were adapted to reflect the distinctive value motives for identifying with an online community. In the literature on the consumption of goods or services so far published, each of the value dimensions utilized has been conceptualized as an independent variable having a direct influence on consumer choice behavior (Sheth et al., 1991). Various prior researchers' conceptions of perceived value have come to be reflected in a tripartite conceptualization of comprehensive online community value that incorporates the dimensions of utilitarian, social, and hedonic value as directly influencing consumers' identification with particular online communities, which in turn determines consumers' citizenship behavior in an online community (Pihlström and Brush, 2008; Duman and Mattila, 2005; Rintamaki et al., 2006; Sweeney and Soutar, 2001). The conditional and epistemic values defined by Sheth et al. (1991) were conceptualized as antecedents of the three value dimensions named above, influencing consumer's identification only indirectly, through these three value dimensions. Figure 1 is a conceptual model of the way in which motives related to each of these value dimensions affects identification with an online community.

**FIGURE 1: A VALUE-BASED MODEL OF ONLINE COMMUNITY IDENTIFICATION**

**PERCEIVED VALUE AND COMMUNITY IDENTIFICATION**

Utilitarian value is dominantly extrinsic, functional, and cognitive, and is often associated with rational motives having to do with needs of time, place, or possession (Babin et al., 1994; Chandon et al., 2000; Noble et al., 2005). Research has shown that consumers participate in a consumption-focused online community to acquire timely and economical pre-purchase information about items of merchandise (Goldsmith and Horowitz, 2006). Ridings and Gefen (2004) stated that the most frequently cited reason for joining a virtual community is to acquire information about a product, topic, or new development. Information of good quality and utility are conducive to participation in a community where such information is perceived as being available (Koh and Kim, 2003; Lin, 2006). When participants in an online community perceive that it can better serve or satisfy their utilitarian information needs than can some other modality, they are more likely to identify with that community. This leads to the following hypothesis:

**H1:** Utilitarian value has a positive effect on identification with an online community.

Hedonic value is experiential and affective, and is often linked to intangible attributes of an online community (Babin, 1994; Noble, 2005). Hedonic value can, for example, be derived from interaction with the participants in an online community by making them feel good or relaxed, and providing enjoyment and pleasure (Dholakia, 2004; Chitturi, 2008; Sherman et al., 1997). Accordingly, it would be expected that the greater the hedonic value of participation in a virtual community, the more likely a participant would be to feel a sense of belonging to that virtual community. This leads to the following hypothesis:

**H2:** Hedonic value has a positive effect on identification with a virtual community.

Social value refers to the social and relational benefits (for example, emotional support) derived from interaction with other members of a virtual community. An online community serves as a locus through which members can help one another to achieve goals, obtain rewards, and develop friendships and even intimacy with other members (Dholakia et al., 2004; Ridings and Gefen, 2004; Nambisan and Nambisan, 2008; Li, 2011). Riding and Gefen (2004) found that beyond having access to information, social support was the most frequently cited reason for joining a virtual community. Li (2011) examined factors influencing the willingness to contribute information to online communities and found that social approval was the strongest predictor of the willingness to contribute. Accordingly, it is proposed that greater social value will increase participants' sense of belonging to a virtual community and hence increase their identification with the community, as follows:

**H3:** Social value has a positive effect on identification with an online community.

Conditional value is the perceived utility of participating in a virtual community on the basis of the participant's specific situation or context. The conditional value of an online community depends on the location of the participants, the time available for their participation, their individual psychologies and viewpoints, and their social and technological milieu. Thus, for example, the perceived conditional value of an online community will be high in situations in which it can provide a rapid solution to a participant's pressing and accidental circumstance, such as the rapid resolution of a software problem. As a result, situation-specific factors, such as time constraints, affect participants' perceived value of an online community (Mael and Ashforth, 1992). In accord with Pihlstrom and Brush (2008), we posit conditional value as being antecedent to utilitarian, hedonic, and social value through the following three hypotheses:

**H4:** Conditional value has a positive effect on utilitarian value.

**H5:** Conditional value has a positive effect on hedonic value.

**H6:** Conditional value has a positive effect on social value.

According to Sheth et al. (1991), epistemic value refers to the perceived utility of participating in an online community to "arouse curiosity, provide novelty, and satisfy a desire for knowledge seeking." With respect to curiosity and novelty, the interactive nature of an online community allows its participants to exchange new and regularly updated or changing information. Previous research has indicated that participants are happy and experience delight with an online



community when it permits the exchange of novel information that arouses their curiosity (Cross Sales Report, 1995). Beyond this, such novel information satisfies the utilitarian nature of knowledge-seeking behavior. Participants who exchange new and regularly updated or changing information as members of an online community should also experience enhancement of their social value. In accord with prior research (Pihlström and Brush, 2008), we propose that novel information content can affect the utilitarian, hedonic, and social relevance of an online community, as follows:

**H7:** Epistemic value has a positive effect on utilitarian value.

**H8:** Epistemic value has a positive effect on hedonic value.

**H9:** Epistemic value has a positive effect on social value.

#### COMMUNITY CITIZENSHIP BEHAVIOR

The tendency to be an active consumer as a member of an online community, or demonstration of communal citizenship behavior, is explicated in the theory of organizational citizenship behavior, which according to Organ (1988) represents individual behaviors that are discretionary and not directly or explicitly recognized by a formal reward system. Consumer behaviors that are beneficial to an online community, such as becoming more involved in the community, are matters of individual personal choice, and can be categorized as in-role behaviors (Van Dyne et al., 1995). By comparison, voluntary and discretionary behaviors that are not expected or rewarded, such as making suggestions for improving an online community, making recommendations to other members of the community, or engaging in positive WOM about the community, are categorized as extra-role behaviors (Groth, 2005).

Research has consistently found that identification with an organization has a positive effect on members' loyalty to that organization (Adler and Adler, 1987; Mael and Ashforth, 1992) as well as having a positive effect on behavior related to citizenship in a community (Ahearne et al., 2005; Anderson et al., 2004; Bergami and Bagozzi, 2000; Bettencourt, 1997; Shen and Chiou, 2009) and loyalty to a particular brand of a commercial product (Peter and Olson, 1993). According to the concept of organizational citizenship behavior (Bateman and Organ, 1983), consumers who identify with an online community are more likely to express their support for the community by engaging in in- and extra-role behaviors that benefit the community, as expressed in the following hypothesis:

**H10:** The greater the degree of members' identification with a community, the more likely will the members be to exhibit (1) in-role and (2) extra-role behaviors that support the community.

## RESEARCH METHODOLOGY

### PARTICIPANTS AND DESIGN

The data used in the study were collected from Taiwan-based Internet forums that discuss mobile telephones. The telephones offer performance functions such as telephone calling and other modes of communication that permit their users, such as members of the Internet forums from which the study data were collected, to provide hedonic or enjoyable experiences to other user-members. The social status associated with various brands and models of the telephones has social value for forum members who lead discussions about the mobile telephones, in that it creates social collectivity with other members of the forum. Membership in the forum also has conditional value in providing information in real time when it is needed. Additionally, membership in the forum has epistemic value by providing knowledge about the functions and capacities of the mobile telephones discussed in the forum.

The study data were collected through an online questionnaire that was sent out after a pretest of the survey was conducted to ensure the appropriateness of the wordings used in the questionnaires and the measures provided by the constructs used in the study. The final questionnaire was modified on the basis of the feedback provided by the pretest samples ( $n = 61$ ). To obtain the final questionnaire responses, private messages were sent to 1,495 registered mobile-phone forum members that were used in the survey. This yielded 295 completed survey questionnaires, reflecting a 19.73% response rate (295/1,495). Incomplete questionnaires ( $n = 52$ ) were eliminated, reflecting 16.25% of the sample population (243/1,495).

### SCALE RELIABILITY AND VALIDITY

Perceived values, members' identification with their online communities, and behaviors related to community citizenship were measured on the basis of the items used in the studies described earlier. Responses to the survey questions were measured on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). The eight measurement items used in the study, and their sources, are shown in Appendix A.

A Cronbach's  $\alpha$  test for reliability was applied to assess the internal consistency of the constructs used in the study. Nunnally (1978) called a value of 0.60 acceptable as a general rule for showing reliability with Cronbach's  $\alpha$ , and all of the constructs used in the present study had values of Cronbach's  $\alpha$  exceeding 0.60 (see Appendix A). Tests of convergent and discriminant validity were applied to the constructs. Factor loadings and the average percentage of variance extracted (AVE) were used to measure convergent validity. As noted by Hair and colleagues (2006), factor loadings with estimates of 0.50 or higher are considered significant. All loadings on the constructs used in the study had values exceeding 0.50 (see Appendix A). To check for discriminant validity among the constructs, the study compared the interconstruct correlations with the square root of the AVE of each construct. Table 1 presents the means, standard deviations, correlations between constructs, and square roots of the AVEs of the eight constructs used in the study.

## RESULTS

### SAMPLE CHARACTERISTICS

Of the 243 valid samples that served as the basis for the findings in the study, 68% came from females and 78.1% were from respondents who had at least some college education. Most of the respondents who provided valid samples were under 30 years old, with 34% in the 21- to 25-year age range, 23% in the 26- to 30-year age range, 18% in the 18- to 20-year age range, and 13% in the 31- to 35-year age range. Most of the respondents were office workers (49%) and students (42%). The characteristics of the sample population reflect current Internet users in Taiwan. A report from the Market Intelligence Center of Taiwan (2008) revealed that most of the nation's Internet users are students and office workers ranging in age from 20 to 29 years, and that most of the active users of online blogs are young females.

### TESTING OF THE HYPOTHESIZED MODEL

A linear structural analysis was done to test the hypothesized model. The analysis showed that the final overall model adequately fit the study data ( $\chi^2 = 608.83$ ,  $df = 240$ ;  $P = 0.00$ ; goodness of fit index (GFI) = 0.83; root mean square error of approximation (RMSEA) = 0.04; normed fit index (NFI) = 0.89; comparative fit index (CFI) = 0.93). Table 2 gives the relationships hypothesized in the study and summarizes those that were supported. The standardized estimates of the model supported all 10 hypotheses tested in the study. According to the standardized estimates, both conditional value and epistemic value had a positive influence on all of the other value dimensions examined in the study, and epistemic value had a stronger such influence than did conditional value. Social value ( $\beta = 0.61$ ) had the strongest influence on community identification, followed by hedonic value ( $\beta = 0.35$ ) and utilitarian value ( $\beta = 0.10$ ).

TABLE 1: MEANS, STANDARD DEVIATIONS, AND CORRELATIONS

Constructs	Mean	S.D.	CV	EV	UV	SV	HV	ID	IR	ER
Conditional value (CV)	3.77	0.56	0.87							
Epistemic value (EV)	3.91	0.55	0.67	0.87						
Utilitarian value (UV)	3.80	0.56	0.67	0.64	0.91					
Social value (SV)	4.05	0.58	0.66	0.65	0.65	0.93				
Hedonic value (HV)	3.98	0.56	0.68	0.68	0.61	0.75	0.89			
Identification (ID)	4.17	0.46	0.61	0.64	0.66	0.79	0.72	0.89		
In-role behavior (IR)	4.04	0.61	0.62	.63	0.57	0.79	0.75	0.72	0.91	
Extra-role behavior (ER)	4.17	0.59	0.55	0.44	0.51	0.61	0.57	0.60	0.62	0.87

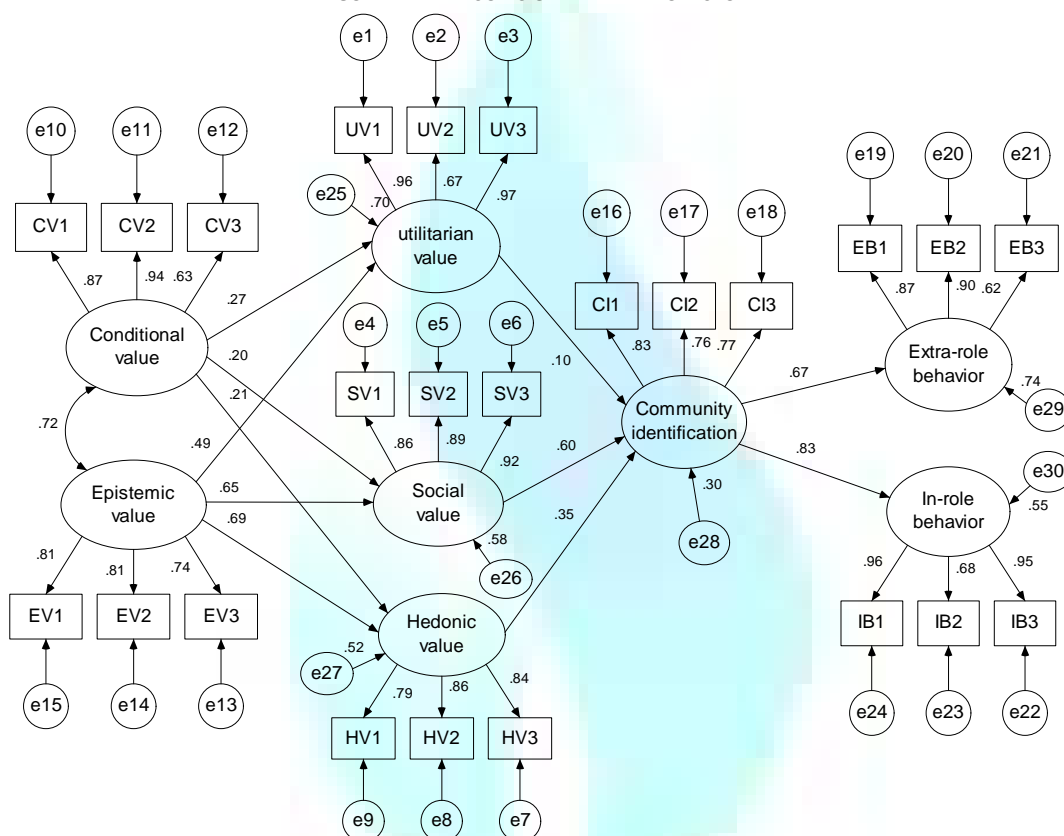
Notes: All correlations are significant at 0.01 level;  $N=243$  and square root of AVE is reported in parentheses in the diagonal.

TABLE 2: STRUCTURAL MODEL RESULTS

Hypothesized relationship	Standardized estimates	t-value	Hypothesis supported
H1: Utilitarian value → identification	0.10	2.25*	Yes
H2: Hedonic value → identification	0.35	5.73**	Yes
H3: Social value → identification	0.61	9.65**	Yes
H4: Conditional value → utilitarian value	0.27	3.21**	Yes
H5: Conditional value → hedonic value	0.22	2.70**	Yes
H6: Conditional value → social value	0.20	2.58**	Yes
H7: Epistemic value → utilitarian value	0.49	5.50**	Yes
H8: Epistemic value → hedonic value	0.69	7.33**	Yes
H9: Epistemic value → social value	0.65	7.14**	Yes
H10a: Identification → in-role behavior	0.83	14.70**	Yes
H10b: Identification → extra-role behavior	0.67	9.94**	Yes

\*p < 0.05 \*\*p < 0.01

FIGURE 2: THE RESULTS OF THE EMPIRICAL STUDY



DISCUSSION

Utilitarian, hedonic, and social values all have a positive effect on individual identification with an online community. Social appreciation appears to better develop such identification than does the hedonic experience or utilitarian benefit gained from membership in the community. One reason for this may be that social value can be seen as the quintessential precondition for seeking membership in an online community. The powerful needs for acceptance and a sense of belonging do not seem to be easily displaced by other values derived from membership in the community.

Notably, the study described here revealed that utilitarian value had the least predictive influence on community identification. A likely reason for this is that utilitarian value is often oriented toward task fulfillment and related to the efficient acquisition of information for making a decision (Jones et al., 2006; Overby and Lee, 2006), such as purchasing a new mobile telephone or contracting for a new service. Once the goal of obtaining such information is accomplished, the hedonic aspect of the mobile telephone would have to be explored. Prospective consumers might also feel that they already know the basic utilitarian functions of a mobile telephone (calling, short messaging service [SMS], etc.), with the result that the perceived utilitarian value of membership in an online community focused on mobile telephones does not play a dominant role in identification with the community.

Consumers often share with others hedonic experiences in consuming merchandise or services (Ragunathan and Corfman, 2006; Pihlström and Brush, 2008). Thus, for example, members of an online community often share views or anecdotes related to ringtones or sound effects for the purpose of entertainment. The online community gives consumers the opportunity to gather together and share information that provides such amusement or enjoyment, and even facilitates escape from daily routines.

In accord with the findings of Pihlström and Brush (2008), the present study found that consumers experiencing a high degree of epistemic value from membership in an online community will also experience better utilitarian, hedonic, and social value than conditional value from such membership. A possible reason for this is that an online community permits participants to disguise or hide their identities, which makes it relatively easy for them to express novel views that they would be unlikely to express in a direct face-to-face situation (Timms, 2007). The exchange of such novel views in turn enhances the participants' product knowledge (utilitarian value), enjoyment in participating (hedonic value), and sense of belonging to the community (social value). By comparison, the conditional value of participation satisfies only the need to pass time, entertain oneself, or resolve an immediate problem, and consequently consists mainly of convenience value (Pihlström and Brush, 2008).

As expected, the study found that a greater degree of identification with an online community was linked to responses indicating stronger in-role and extra-role contributions of benefit to the community. Participants' identification with an online community was related more strongly to their in-role behaviors, such as spending more time in contact with or in matters involving the community and less time in other communities than it was to their extra-role behaviors, such as test use of the mobile telephones discussed in the community or recommending the community to other prospective members. This finding can be explained by the concept that identifying with an online community increases a participant's perceived self-similarity to and liking for its other members (Brewer and Brown,

1998) which prompts the desire to enhance the welfare of the community as a whole by increasing the participant's in-role behaviors, such as participation in the community rather than seeking other communities (Batson, 1998).

Some limitations to the study should be noted. First, it used samples from Taiwan, which yielded results that might differ from those obtained in other Asian or Western countries. Future research could address these differences. Second, the study utilized a cross-sectional design, whereas a longitudinal study might provide more accurate results. Finally, the use of other factors than those examined in the study might alter its results. For example, more complex technologic products than the mobile telephones that were the topic of the online communities included in the study would probably affect the perceived utilitarian value of membership in an online community to a greater degree more than did these telephones.

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APPENDIX

APPENDIX A: CONSTRUCTS USED IN TESTING THE STUDY HYPOTHESES AND ITEMS USED IN DEVELOPING THE CONSTRUCTS

Construct	Item (each item was measured on 5-point scale ranging from 1 = strongly disagree to 5 = strongly agree)	Loadings
Perceived utilitarian value $\alpha = 0.84$ AVE = .82	Adapted from Gruen, Osmonbekov, and Czaplewski (2006)	
	The cell phones discussed in the forum offer a good value for the purchase price	0.95
	Overall, the cell phones discussed in the forum provide a good return on my investment of time	0.81
	Overall, the cell phones discussed in the forum provide a good return on the cost of the product.	0.95
Perceived hedonic value $\alpha = 0.97$ AVE = 0.79	Adapted from Sweeney and Soutar (2001)	
	Discussing cell phones with forum users gives me pleasure.	0.88
	Discussing cell phones with forum users makes me feel good.	0.92
	Discussing cell phones with forum users makes me feel relaxed.	0.88
Perceived social value $\alpha = 0.92$ AVE = 0.86	Adapted from Sweeney and Soutar (2001); Grace-Farfaglia et al. (2006)	
	Discussing cell phones with forum users would help me feel acceptable	0.91
	Discussing cell phones with forum users would let me feel like I belong to a group	0.93
	Discussing cell phones with forum users gives me social approval.	0.94
Perceived epistemic value $\alpha = 0.84$ AVE = 0.76	Adapted from Donthu and Garcia (1999)	
	The cell phones discussed in this forum often trigger my curiosity.	0.89
	I use the forum to receive and share new knowledge on cell phones.	0.90
	I used the forum to experiment with new ways of doing things.	0.83
Perceived conditional value $\alpha = 0.84$ AVE = 0.76	Adapted from Pihlström and Brush (2008); Pura (2005)	
	I value the information/entertainment this forum offers, with the help of which I get what I need in a certain situation (s).	0.90
	I value the real time information and interaction that this forum makes possible.	0.94
	I value the customized information according to my time that I get by participating in this forum.	0.77
Community identification $\alpha = 0.86$ AVE = 0.79	Adapted from Algesheimer, Dholakia, and Herrmann (2005)	
	I am very attached to the XYZ blog's online community	0.88
	The friendships I have with the XYZ blogging community's members mean a lot to me	0.90
	I see myself as a part of the online community's community.	0.88
In-role behaviors $\alpha = 0.89$ AVE = 0.83	Adapted from Pura (2005)	
	I intend to continue participating in the forum in the future.	0.95
	I am willing to spend more time to participate in XYZ community.	0.82
	I am less likely to switch to other online community.	0.95
Extra-role behaviors $\alpha = 0.83$ AVE = 0.75	Adapted from Harrison-Walker (2001); Pihlström and Brush (2008)	
	In the future I intend to try the cell phones discussed in this forum.	0.90
	I would gladly forward valuable information I have received from this forum to my friends.	0.92
	I am proud to tell others that I am the member of this forum.	0.77

## THE IMPACT OF GLOBAL FINANCIAL CRISIS ON AUDITING PRACTICES IN THE COMMERCIAL BANKS OF JORDANIAN

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### ABSTRACT

*This study makes a review of the "The Impact of Global Financial Crisis On Auditing Practices in The Commercial Banks of Jordanian" It aims at identifying the auditing practices as prevalent in the banking sector of Jordan, assessing their efficacy and efficiency; examining their conformance to the international standards; evaluating their contribution to instill confidence in the stakeholders and foster trustful relationship between bank management, employees and customers. The study also purposes to ascertain whether the auditors have the realization of their responsibility and obligations in carrying out the banking business operations in keeping with the banks policies, banking rules and regulations, and in the best interest of the stakeholders. This study discusses the applications of Information Technology to the banking operations in Jordan. It is revealed that computerization of banking activities is fast permeating in Jordan. Software applications cover deposits and payments and maintenance of accounts data in software ledgers. E-banking offers some specific banking services like Electronic Fund Transfer, Electronic Payments, ATM Services, on line viewing of account balances, trade stock and mutual funds, track real time stock quotes, etc.*

### KEYWORDS

global financial crisis, auditing practices.

### INTRODUCTION

Historically, the Jordanian Commercial Banks is one of the strongest economic sectors in the country, although the region suffering from the effects of political and economical instability at the regional and international levels, but the Jordanian Commercial Banks was able to maintain the strength and stability. One of reasons for this growth and strength is the role played by the Central Bank of Jordan in administrative and supervisory and control practices over banks.

The history of banks in Jordan dates back to the early twentieth century when the Ottoman Bank was founded in 1925 (Yaghmour et al. 2009, P. 3) , followed after the Arab-Israeli war 1948, moving the Arab Bank to the city of Amman. Then the Jordanian Commercial Banks has seen entry of a number of local and foreign banks to provide banking services in the Jordanian market. The Commercial Banks in Jordan consists from (13) commercial bank, and three Islamic Banks, and nine branches of foreign banks all subject to the instructions and the supervision of the central bank of Jordan. The Central Bank of Jordan is a public corporation owned by the government because of its significant role in issuing money and implementation of the monetary policy of the state (Hanoon, 2005, p. 29). Since the banks are the most sensitive to the impact of financial crisis from other organizations, this paper will look at the methods of audit and control imposed by the global financial crisis and the auditors and the business of banks in Jordan, both the Central Bank and Department of Internal Auditing in the bank.

### PROBLEM STATEMENT AND QUESTIONS

This study determined the problem as follows: "The causes and repercussion of the global financial crisis affected the strategies of control exercised by the Central Bank of Jordan on the banks, as well as the internal control procedures in those banks".

This problem will be discussed according to the following questions:

1. What is the impact of the global financial crisis on the banks of Jordan?
2. What are the changes that have taken place on the international standards on Auditing by the global financial crisis?
3. How does the internal audit departments of Jordanian banks in compliance with international standards for auditing, especially those issued after the occurrence of the global financial crisis?

### THE STUDY IMPORTANCE

The importance of this study stems from the importance of the Commercial Banks , because of its role in strengthening the national economy, and regulated the relationship between investors and seekers for funding, as it saving coffers of the citizens. These tasks and others required the need to impose strict control over their practices, to ensure the safety of the economy, and the preserve the money of depositors, and to meet the needs of those in need of funding, especially as the global financial crisis has occurred in U.S. banks in the absence of the Federal Reserve roles.

### THE STUDY OBJECTIVES

The study aims at the following:

1. To identify changes in the regulatory strategies of the Central Bank of Jordan due to the global financial crisis.
2. To identify the suitability of such changes to International standards on Auditing issued to address the global financial crisis.
3. To clarify the response of Jordanian banks to implement internal auditing methods that are consistent with these changes.

### THE STUDY METHODOLOGY

This study takes the qualitative approach, which is dependent on the style of the case study, where the researcher to collect relevant data through semi-structured interviews with managers of internal audit in two Jordanian banks.

### THEORETICAL FRAMEWORK AND REVIEW OF LITERATURE

#### CAUSES OF THE GLOBAL FINANCIAL CRISIS

Causes of the global financial crisis back to the beginnings of this millennium, according to (Crottey, 2008), the crisis began in the form of a bubble in the U.S. housing market. And this bubble began to grow, when the involvement of banks and mortgage brokers to the promotion and sale of mortgages in order to get the fees that are commensurate with the volume of mortgage that they gave. Banks earned large fees securitizing mortgages, selling them to capital markets in the form of mortgage backed securities and collateralized debt obligations, and servicing them after they were sold. The mortgages backed securities became a collateral for a new mortgage, which turned the crisis to become a credit crisis. Because of the darting in granting such loans, this darting to grant these loans, accompanied by an overestimation of the value of the collateral, and not to study and analyze the financial situation of the borrower, resulting in a large number of borrowers in danger of not being able to pay. This led to a sharp decrease in the banks liquidity, and all of that happened during the absence of the role of the

Federal Reserve (Blundell et al, 2008). In order to avoid such situations, banks must be a subject for rigid control by the central banks, and the external auditor, or even the internal auditing department in the banks. IN this regard, Al Sabaah (2009) pointed out that the reasons of the global financial crisis are:

- The weakness in controlling tools to some of financial transactions, especially those of investment banks and funds, mortgage corporations and insurance companies.
- The multiplicity of financial tools, and widen in loan's granting.
- The inefficiency of traditional tools of the monetary policy in affecting the basic monetary indicators such as, liquidity, credit, and the levels of interest rates.

The effects of the global financial crisis make adjustments to the decisions of the Basel I, in particular with regard to the control of banks. Basel II consists of three mutually supporting pillars, the second pillar:

*"Supervisory Pillar allows supervisors to evaluate each bank's assessment of its own risks and to determine whether those assessments seem realistic. Eventually, each bank's management is responsible for assessing and reacting prudently to all of the risks that a bank faces, including those that might not be considered under the first pillar. The second pillar will therefore encourage a dialogue between banks and their supervisions on the nature of the risks that banks face and the measures they take to control them, including holding a side sufficient levels of capital. That dialogue creates great implicit incentives for management to undertake careful evaluations of the bank's capital needs."*(Kania, 2006, p.72)

For Jordan, the Central Bank of Jordan manages the monetary policy through using three tools in affecting the cash supply, first, quantitative control tools which include money supply and gross domestic liquidity in order to affect the credit volume, second, qualitative control tools in which the central bank can govern the interest rates, and, direct control tools represented by the central bank instructions.

### **SUPERVISORY METHODS OF THE CENTRAL BANK OF JORDAN DURING AND AFTER THE GLOBAL FINANCIAL CRISIS**

Perhaps the most important focus of the central bank's strategy for the years 2007-2009 is to continue in the exercise of supervisory methods to protect the Jordanian banking system, while preserving the rights of shareholders and depositors. As stated in the second strategy, entitled "continue to follow the banking controls to keep pace with the best practices and international standards.

The vision of the banks in this area to enhance the strength and integrity of the banking system, in order to access the Commercial Banks is working efficiently and highly competitive. Also the central bank encourages the integration policy to increase the strength of banks and reduce their number, also it seeks to raise capital banks to meet the requirements of Basel Capital adequacy. Central Bank's Strategy to control the banks based on the following regulatory programs:

1. Validate the work and performance of banking institutions and the safety of their financial positions.
2. Conduct field inspections on the work of banks.
3. Control office on the banks.
4. Oblige banks to apply the rules of corporate governance.
5. The establishment of the unit for combating money laundering.
6. Oblige banks to raise the minimum capital funds.
7. Rehabilitation of banks to implement Basel II.
8. Support government efforts to develop the credit information system (Strategic plan of the Central Bank of Jordan , 2008).

### **THE BANK MUST PROVIDE THE CENTRAL BANK WITH THE FOLLOWING**

1. Any change that the bank wishes to carry out at the position of the General Manager or any of the bank's executive management before making the decision.
2. Detailed reports regarding any lawsuits instituted between the bank and other entitles that comprise the legal opinion and the rulings rendered in that regard.
3. The debts that the bank has written off where it shall comprise the customer's name, amount of debt, collateral, the requisite reasons for writing off such debts and any other information that the bank deems necessary to list, provided that it includes the Board of Directors or the Audit Committee's (or its equivalent in respect of foreign branches) resolution in that respect.
4. The information relating to the members of the Board of Directors, executive management and the committees that include members of the Board of Directors as members therein according to the enclosed specimens, on an annual basis or upon the occurrence of any amendments.
5. A semi-annual report of the following shareholders:
  - (a) Jordanians, Arabs and Foreigners ownership and its ratio to capital as a whole.
  - (b) Member of the Board of Directors, their representatives and the executive management's ownership where it shows the name, number of shares, percentage of ownership and nationality.
  - (c) The ten largest .shareholders ownership in the bank, displaying the name, number of shares, percentage of ownership and nationality.
  - (d) Shareholders holding (10) thousand shares or more, where it shows the name, number of share, percentage of ownership and nationality.
  - (e) Bank's participation where it shows the bank's name, number of shares, percentage of ownership and the bank's nationality.
  - (f) Ownership that is less than (10) thousand shares displaying the number of shareholders, amount, and percentage of ownership as a total.
1. Name of liaison officer responsible for providing all the Central Bank's requirements for all areas and the name of an alternate officer on an annual basis or upon the occurrence of any amendments.
2. The annual budget and the assumptions upon which it was based and the goals desired to be achieved, and this should be carried out annually by the end of January at the latest.
3. Detailed report clarifying the circumstances of any embezzlement, forgery, theft, fraud or major shortage in the assets with an illustration of the procedures that the bank is taking to recover its rights and to guarantee the non-recurrence of such issues in the future.

### **IMPACT OF THE GLOBAL FINANCIALS CRISIS ON THE METHODS AND OBJECTIVES OF INTERNAL AUDIT**

Internal audit can be defined as an independent, objective and consulting process, designed to raise the value of the work of any organization, and helps to achieve the organizational goals by applying the systematic approach and controlled to assess the effectiveness of risk assessment, and evaluation of monitoring activities and to improve those activities and procedures (Abdel-Mohsen, 2009).

The Institute of Internal Auditors (IIA) believes that the global financial crisis, affected the topics that require most focus of the internal auditors. The IIA Foundation (IIAF) has conducted a survey in early March 2009.

The analysis of the survey showed the following results:

1. The global financial crisis has impacted not only the organization, but also the internal audit activities in those organizations.
2. The focus of internal audit activities increased on the risk arising from changes in economic conditions.
3. The results indicate that the majority of respondents do not agree that good risk management can prevent the occurrence of the crisis, but they believe that internal audit is the most capable in this area.
4. The concentrations of internal audit affected by the changes in stakeholders needs and expectations (The institute of internal Auditors, 2009).

Therefore, the activities of internal audit has become more focused on assessing the potential risks of banking operations, which consists of the following risks:

- Financial risks.
- Operational risks.

- Compliance risks.
- Credit risks.
- Liquidity risks,
- Effectiveness of risk management
- Expose the bank to deal with parties suffer from financial distress.
- Cost/expense reduction or containment.
- Model/Valuation validation.
- Reputation risks.

For Jordan, the evidence of corporate governance for banks in Jordan consists of two key basing:

### THE INTERNAL CONTROL ENVIRONMENT THAT CONSISTS OF

(1) Internal Control Systems, which consists of the following:

- The structure of internal control system must evaluated by the internal and external auditors once a year at least,
- The annual report must include, a report about the extent efficiency of internal control system, on Financial reporting such as disclosure of weaknesses in internal control systems, the responsibility of executive management for development of control systems, on financial reporting.
- The banks has to develop procedures to allow staff from reporting, secretly and timely, the existence of concerns about the possibility of irregularities, and that is to allow verification of these concerns, and the Audit committee must be responsible to follow-up the implementation of these actions.

(2) Internal auditing:

This section deals the duties of the bank management to activate the internal audits, as well as the duties of internal auditor.

These duties are summarized in the following points:

- The bank should provide to the internal audit department as a sufficient number of qualified human resources, so that it is, trained and rewarded appropriately.
- The internal audit department has the right to obtain any information, and contact any staff member.
- Full powers must be given to the department of internal audit to enable it to perform its duties as required.
- The bank should document the responsibilities, powers and functions of the department of internal audit within the Internal Audit Charter adopted by the Board of Directors, and circulated within the bank,
- Internal audit reports will be sent to the chairman of the Audit Committee.
- Internal audit staff, must not, perform any operational responsibilities.
- The internal audit department implements its duties without any external intervention.
- Primary responsibility for the management of internal audit –which should be based on risk- includes at least the following:
- Operations of financial reporting in the bank, to make sure that key information about financial matters, administrative and operations are available where precision, reliability and timeliness.
- Compliance with the bank's internal policies, standards and international procedures, laws and regulations relevant (Securities Depository Center, 2009).

### DATA COLLECTION

As mentioned earlier, this study is based on the verification of the commitment of the Jordanian banks, to the requirements of internal audit, established by the Basel and adopted by the Central Bank of Jordan. Through a case study of two Jordanian banks.

For the Housing Bank for Trade and Finance, has created a committee called the Audit Committee, chaired by an independent member of the Board of Directors. And the internal audit reports to the chairman of the committee. Internal auditors also became very much concentrating on making sure of risk that result from banking operations. Particularly in the area of finance, as the valuation of the guarantees provided by the borrower became through expert companies in this area, in addition to the requirement of insurance on the life of the borrower.

And through a telephone call with the director of banking operations in the Jordan Commercial Bank, the researcher found that both banks are implementing the same procedures.

### RECOMMENDATIONS

This study presents the following recommendations for the Jordanian Banks:

1. Banks should get out of the traditional framework of the audit process designed to detect errors.
2. Banks should adjust their instructions to comply with the new requirements.
3. The executive management should not interfere in the work of the auditor to maintain independence.
4. New releases by Basel Committee and other relevant bodies must be followed by the bank.

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**FINANCIAL DIAGNOSIS: A CASE STUDY OF LANKA ALUMINIUM INDUSTRIES PLC IN SRI LANKA****ARULVEL, K.K****HEAD****DEPARTMENT OF ACCOUNTING****FACULTY OF MANAGEMENT STUDIES & COMMERCE****UNIVERSITY OF JAFFNA****JAFFNA, SRI LANKA****BALAPUTHIRAN, S****SENIOR LECTURER****DEPARTMENT OF ACCOUNTING****FACULTY OF MANAGEMENT STUDIES & COMMERCE****UNIVERSITY OF JAFFNA****JAFFNA, SRI LANKA****DR. B. NIMALATHASAN****SENIOR LECTURER****DEPARTMENT OF ACCOUNTING****FACULTY OF MANAGEMENT STUDIES & COMMERCE****UNIVERSITY OF JAFFNA****JAFFNA, SRI LANKA****ABSTRACT**

*An attempt was to enquire into the entire gamut of the Lanka Aluminium Industries Plc (LALU) affairs by diagnosing the financial health, particularly, aspects of liquidity, assets management, debt-financing and profitability, applying the techniques of ratio analysis on accounting information for a period five years (i.e., 2006-2010). The result reveals that the LALU shows inefficient financial performance during the period of the study and needs immediate action and care of concerned authorities for its mere existence event.*

**KEYWORDS**

Accounting System; Financial Diagnosis; Income Statement and Balance Sheet.

**1. INTRODUCTION**

Financial Statements are derived from a historical cost-based accrual accounting system employing generally accepted accounting principles. The two primary statements are the income statement and the balance sheet (Pinches, 1984). A firm's income statement reports operations over a period; the balance sheet reports its assets, equity and liabilities at a point in time. For the investors, careful analysis of these statements can provide some clues about the firm's future cash flows. For management, careful analysis can help it plan for and anticipate the future. Thus, the point of financial analysis is to diagnose trends that are indicative of the magnitude, timing or riskiness of the firm's future cash flows (Pinches, 1984). The financial statements, if utilized and interpreted carefully, can provide 'symptoms' of the condition of the firm. That is, just as a physician uses symptoms for diagnosis, a financial analyst of manager help to utilize his/her experience to interpret the 'symptoms' revealed by the financial economic and managerial conditions of the firm (Mathur, 1979).

**2. THEORETICAL BACKGROUND**

The analysis and interpretations of financial statements are generally aimed at determining the financial position of a firm. Ratio analysis is a part of the total analysis of the financial statements. Financial ratio is used as an analytical technique for assessing the performance of the concern (Kaveri, 1980). Any attempt to find out the relationship between two items or groups of items of the financial statement establishes a ratio. (Kaveri, 1980). The analysis of financial ratio involves two types of comparisons (i) time-series analysis and (ii) cross-sectional analysis.

Times series analysis is done when a financial analyst measures a firm's performance overtime. Comparison of current to past performance utilising ratio analysis allows the firm to determine whether it is progressive as planned. Cross-sectional analysis involves the comparison of different firms' financial ratios at the same point in time. Another popular type of cross-sectional comparison is a comparison of the firm's ratios to industry averages (Gittman, 1982).

Ratio analysis becomes complete if the actual ratios of a firm are compared with the average ratios or standard ratios of the industry. It is important not to rely on single ratio for getting a complete idea about the soundness or weakness of the business firm because each ratio tells its own story and each ratio in conjunction with the others then tells a supplementary story (Kaveri, 1980). Ratio analysis may not be a precise technique for ascertaining liquidity, solvency, profitability, etc., of the firm because the financial statements are prepared on the basis of certain for the industry owing to the dissimilarities of the firms in the industry in several respects like business policy, accounting procedures, local conditions, management policy and the knowledge of persons preparing such statements, etc. In that case, an accurate measure. The ratio technique is also used for forecasting the business position on the basis of past ratios, but it does not cover uncertainty of the future and other economic spite of certain limitations the ratios if discriminatingly calculated and wisely interpreted can be a useful tool of financial analysis (Hunt, 1971). Financial ratios can be grouped into four basic categories, as follows:

1. Liquidity Ratio;
2. Asset Management ratios;
3. Debt Management ratios; and
4. Profitability ratios.

**LIQUIDITY RATIOS**

Liquidity ratios focus on current assets and liabilities and are often of lesser importance when considering the long run viability and profitability of the firm. (Pinches, 1984).



**ASSETS MANAGEMENT RATIOS**

Asset management ratios are indicators of managerial capabilities in effectively utilising the firm's assets. It captures the firm's managerial efforts in managing inventories of raw and finished goods, its production processes, its credit and asset management policies, and the effectiveness of its marketing and sales force (Mathur, 1979).

**DEBT MANAGEMENT RATIOS**

The extent, to which a firm uses debt financing or financial leverage, has three important implications. (i) By raising funds through debt, the owner can maintain control of the firm with a limited investment; (ii) Creditors look to the equity, or owner-supplied funds to provide a margin of safety; if the firm earns more on investments financed with borrowed funds than it pays in interest, then the return on the owner's capital is magnified or 'leveraged'

**PROFITABILITY RATIOS**

Profitability is the net result of a large number of policies and decisions (Weston & Brigham, 1990) Managerial perceptions of the economic environment, competition, the firm's product markets and decisions with respect to assets and capital structure, all have an impact on the firm's profit. Therefore, profitability ratios may be considered to be the key ratios that are strong measures of the firm's overall performance (Mathur, 1979).

**3. OBJECTIVES**

The study has the following objectives

1. To evaluate the financial performance of the Lanka Aluminium Industries Plc respect of liquidity, assets utilization, debt management and attaining planned goal of profits;
2. To identify causes of such poor management of liquidity, asset utilization, debt-financing and profitability of the Lanka Aluminium Industries Plc ; and
3. To make some suggestions and recommendations for over coming the crises in order to get better operational result in future.

**4. MATERIAL AND METHODS**

This section is divided into five sub-sections. The first sub-section presents the scope. The sub-second section discusses the period of the study. In the sub-third section, data sources are discussed. The sub-fourth section illustrates the reliability and validity whereas the last sub-section highlights mode of analysis.

**4.1 SCOPE**

The scope of the study is Lanka Aluminium Industries Plc in Sri Lanka. Only one company is selected for the study purpose.

**4.2 PERIOD OF THE STUDY**

The period of the study was five years from 2009 to 2010 financial year.

**4.3 DATA SOURCES**

In order to meet the objectives and hypotheses of the study, data were collected from secondary sources mainly from financial report of the selected companies, which were published by CSE.

**4.4 RELIABILITY AND VALIDITY**

Secondary data for the study were drawn from audited accounts (i.e., income statement and balance sheet) of the concerned companies as fairly accurate and reliable. Therefore, these data may be considered reliable for the study. Necessary checking and cross checking were done while scanning information and data from the secondary sources. All these efforts were made in order to generate validity data for the present study. Hence, researcher satisfied content validity.

**4.5 MODE OF ANALYSIS**

The following ratios are taken to measure the financial diagnosis of the industry which is given table-1.

**TABLE-1: CALCULATIONS OF RATIOS**

<b>Liquidity Ratios</b>	
Current Ratio	= Current Assets / Current Liabilities
Quick Ratio/ Acid Ratio	= Current Assets- Inventory/ Current Liabilities = Current Assets-Inventory/ Current Liabilities – Bank overdraft
Cash Ratio	= Cash + Short Term Market Securities / Current Liabilities
<b>Assets Management Ratios</b>	
Average Collection Period	= Accounts Receivables/ Credit Sales X365
Inventory Turnover	= Cost of Goods Sold/ Average Inventory
Fixed Asset Turnover	= Sales/ Fixed Assets
Total Asset Turnover	= Sales/ Total Assets
<b>Debt Management Ratios</b>	
The Debt Ratio	= Total Debts/ Total Assets
The Debt-Equity Ratio	= Long term debts/ Owners' equity
Time Interest Earned Ratio	= Earnings before interest & taxes (EBIT) or operating income/ Interest expense
<b>Profitability Ratio</b>	
Gross Profit Ratio	= Gross Profit/ Net Sales X100 or Sales – Cost of Goods Sold/ Sales
Net Profit Ratio	= Net Profit Before Tax/ Net Sales X100
Operating Profit Ratio	= Profit from Operating Activities / Net SalesX100
Return on Capital Employed	= Profit after Interest and Taxes/ Capital Employed X100
Return on Investment	= Net Profit after Interest and Tax / Total AssetsX100

## 5. ANALYSIS

This section presents the findings of the study. The following table-2 shows that summary of financial ratio.

**TABLE-2: SUMMARY OF FINANCIAL RATIOS**

Ratios	Years				
	2006	2007	2008	2009	2010
<b>Liquidity Ratios</b>					
Working Capital (in Sri Lankan Rupees.)	78,084,000	115,630,000	142,632,000	1,491,840,000	191,830,000
Current Ratio (proportion)	1.83:1	2.21:1	1.77:1	1.51:1	1.56:1
Quick Ratio/ Acid Ratio(proportion)	1.41:1	2.09:1	1.05:1	1.11:1	1.31:1
Cash Ratio(proportion)	0.49:1	0.46:1	0.74:1	0.77:1	0.68:1
<b>Assets Management Ratios</b>					
Average Collection Period ( In days)	34.32	52.86	51.61	59.80	55.53
Inventory Turnover ( In times)	16.37	8.32	7.72	7.27	9.78
Fixed Asset Turnover (In times)	4.30	4.75	7.41	9.97	8.83
Total Asset Turnover(In times)	2.22	2.11	2.25	2.37	2.66
<b>Debt Management Ratios</b>					
The Debt Ratio( In times)	0.27	0.25	0.39	0.50	0.45
The Debt-Equity Ratio(In times)	0.08	0.07	0.12	0.14	0.10
Time Interest Earned Ratio( In times)	4.16	4.58	3.06	2.23	3.02
<b>Profitability Ratios</b>					
Gross Profit Ratio (%)	13.55	12.88	10.82	8.99	9.72
Net Profit Ratio (%)	3.52	3.46	1.57	1.17	2.40
Operating Profit Ratio (%)	6.23	5.54	5.40	4.34	5.57
Return on Capital Employed (%)	15.64	13.04	15.17	13.00	19.64
Return on Investment (%)	10.50	9.15	8.17	5.69	9.91

**Source:** Calculated from the figures available in the income statements and balance sheets of the companies concerned.

From the above table-2, research findings discuss the following subheads.

### 5.1 LIQUIDITY RATIOS

From the table-2, it was observed that the position of net working capital of the Lanka Aluminium Industries Plc is very much efficient in the sense that in all of the five years starting from 2006-2010. The current, quick and cash ratio are also reasonable position. Current ratio indicates that the industry is fully unable to pay its short-term obligations, because its current liabilities, in some of the cases are two or three times greater than its current assets. The quick ratio and cash ratio also give us similar impression as we have in case of current ratio. This situation needs some short of corrective measures to overcome the serious shortage of working capital. This can be done by introducing fresh working capital by raising equity finance.

### 5.2 ASSETS MANAGEMENT RATIOS

Table-2 illustrates that average collection period in all the years excepting the year 2006, is quite normal. Inventory turnover ratio, gradually decreases besides the years of 2006 to 2009. In 2010 it reaches the pick and in 2009. If we look into the fixed asset turnover ratio and total asset turnover ratio, we get a very good picture in respect of Industry performance in asset utilization. The position of both ratios, in all of the years excepting the year 2007 (i.e., only for total assets turn over), is an upward trend. Finally, we can say that the performance of the industry particularly in respect of asset utilization is satisfactory.

### 5.3 DEBT-MANAGEMENT RATIOS

We found that from the table-2 that all of the ratios related to debt management, show a miserable situation of the industry in managing funds. From the debt ratio, we observed that it shows a decreasing trend up to the year 2007 and thereafter, an increasing trend.

The debt-equity ratio expresses that the burden of debt in almost all the years shows an upward trend and causes to increase the degree of financial risk to the capital structure of Lanka Aluminium Industries Plc. Time interest earned ratio shows increasing trend up to the year 2007 and thereafter, a decreasing trend. In fine, we can say that the debt management system of the industry is very much and is not conducive to attract more funds from outside in case of emergency. Lanka Aluminium's management contends that the shortfall of cash flow is the main reason for such occurrence.

### 5.4 PROFITABILITY RATIOS

Profitability is the net result of a number of policies and decisions. This ratio enables us to judge how successful the entity has been at trading. The higher the gross profit ratio, the better profitability. Hence, the companies with higher gross profit ratio may be said to be better ones. It states that all the years' show decreasing trend of gross profit. Similarly, Net profit ratio, operating profit ratio, return on capital employed and return on investment shows that all the years' show decreasing trend.

In fine, after studying all of the profitability ratios of the industry, we find that the industry shows a dismay picture of its profit performance. Therefore, management of this industry should take necessary measures to improve profitability.

## 6. SUGGESTIONS

From the study so far made by financial ratios, the following remedial measures can be suggested for achieving a better financial performance of the industry.

1. Budgetary control and standard costing systems have to be introduced so that person can be identified with responsibility for the work done improperly and wrongly.
2. Equity capital is to be raised up to the extent of present accumulated operating loss. Dependence on borrowed funds is to be reduced gradually.
3. Working capital of permanent nature and fixed assets, are to be financed from long-term sources and working capital of variable nature is to be financed from short-term sources, as per ideal concept of financing.
4. Working capital crisis has to be removed for better and smooth running of production. For this purpose, line of credit arrangements can be established with commercial banks.
5. Improved accounting system aiming at better functioning of accounting information systems (AIS) and management information systems (MIS) as well.

## 7. CONCLUDING REMARKS

From the above analysis and discussion, we may conclude Lanka Aluminium Industries Plc shows inefficient performance during the period of the study and calls for keen attention of this industry' management solving the problems as highlighted in this paper.

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**DETERMINANTS OF BASIC SCHOOL TEACHERS' LEVEL OF COMPUTER LITERACY IN GHANA**

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**ABSTRACT**

*Computer literacy is very important in every aspect of life and its role in education is increasingly becoming more crucial. The purpose of this study was to investigate the effect of gender, subject specialization, teaching experience, and school status on basic school teachers' level of computer literacy in Ghana. The sample of the study covered 30 basic schools (20 public schools and 10 private schools) in Jomoro District in the western region of Ghana. In all 105 teachers participated in the study. An instrument structured on a 4 point likert scale and which yielded reliability coefficients of 0.944 was used to collect data. The study showed that statistically significant differences exist between males and females in their familiarity with some types of Information Communication Technology. More male teachers than female teachers were familiar with Hard disk, RAM, CD-ROM, Monitor, Sound Card, and Joystick. The study also showed that teacher's major subject area and the teaching experience had no effect on their familiarity with Information Communication Technology. Finally, the study also revealed that Public and Private school teachers did not differ significantly in their familiarity with Information Communication Technology. It is recommended that more attention should be paid to Information Communication Technology in the initial teacher training programme in Ghana. The colleges of education must be well equipped with Information Communication Technology facilities so that they can train teachers with good knowledge in Information Communication Technology for our basic schools.*

**KEYWORDS**

Computer literacy level, gender, subject specialization, teaching experience, school status.

**INTRODUCTION**

It is generally accepted that the use of Information and Communication Technology (ICT) in education can bring about positive changes to the society because computers offer exciting approaches to teaching, which was not even dreamed of two decades ago. However, the extent to which the educational potential of computer technology will be realized depends, to a very large extent, on teachers. The use of computers can turn teaching and learning around and bring about advances that would improve education dramatically. Computer literate individuals will reap greater benefits than their counterparts who lack that knowledge. To promote computer literacy of teachers, governments need to invest considerably in the training of teachers. To evaluate the impact of these investments and thereby help ensure that the intended results are achieved, Information and Communication Technology (ICT) literacy of teachers should be measured periodically. Jay (1981) insisted on the need for personal education in computer technology, and promoting computer literacy for both learners and instructors.

The need for personal education in computer technology and the need to promote computer literacy for both learners and instructors within educational institutions is, therefore, very crucial. However, there has been little information related to teachers' level of literacy in basic computer operations and the extent to which variables such as gender, public and private school teachers' level of literacy in computer technology, teachers' major subject area, and years of teaching experience, either jointly or individually predict the basic school teachers' level of computer literacy. It has become important to provide information along this line in order to be able to make recommendations that will promote computer literacy among teachers in Ghana.

**REVIEW OF LITERATURE**

The diffusion of innovations theory provides the framework for this study. It is a theory that seeks to explain how, why, and at what rate new ideas and technology spread through cultures. The diffusion process can be defined as "the spread of a new idea from its source of invention or creation to its ultimate users or adopters" (Rogers, 1962, p. 13). According to Rogers and Shoemaker (1971) cited in Jenkins (2009), there are five categories into which adopters fall based upon their innovativeness: laggards, late majority, early majority, early adopters, and innovators. The positions of the five areas of innovativeness are arranged on a bell curve. According to Rogers (1962), the adoption of an innovation requires a decision by an individual. Individuals must begin using a new idea and allow it to replace the previous idea they were using.

The diffusion of innovations theory can be linked back to teachers' computer literacy, access to and use of technology. Certain indicators emerge to indicate shifts between the five categories of adoption when we analyze prior research related to technology. Daulton (1997) found that in a matter of ten years (1983 to 1993) FCS teachers' technology adoption rates increased from 5% to 83%. This increase shows that as technology became more common in the school setting, teachers moved from the late majority category to the early adopter category. On the strength of this we can say that teachers have the desire to incorporate technology into the classroom (early adopter) but face challenges in acquiring knowledge to do so.

The precise definition of "computer literacy" can vary from group to group. For instance, an experienced computer professional may consider one's ability to do self tuition new programs or tasks to be central to computer literacy. In common discourse, however, "computer literate" often connotes little more than the ability to use several very specific applications for certain very well-defined simple tasks, largely by rote. Real problems can arise when such a "computer literate" person encounters a new program for the first time, and a high degree of "hand-holding" is required.

Mason and McMorro (2006) suggested two distinct components to computer literacy: awareness and competence. Awareness requires that a person has understanding of how computers impact their day-to-day life as well as that of the larger society. Competence expects a person to be able to exhibit a hands-on expertise with a software application. Both of these components should be evaluated when looking at computer literacy within the classroom setting.

Some of the most basic computer literacy skills include using word processor, email, mailing lists, and the World Wide Web (Manley, et al., 2000). Computer literacy is even thought to be as important as writing, reading, and mathematics in the school setting; as children in today's society have never experienced schools without computers (Croxall & Cummings, 2000). These skills are essential in today's school systems as more tasks are completed using computer technologies.

Acquiring the skills to use instructional technology in the classroom is a necessity in today's society (Robyler et al., 1993). Further, computer literacy is an important component in having the ability to successfully and confidently use technology (Croxall & Cummings, 2000; Eisenberg & Johnson, 1996) within the FCS classroom. Russell's (1995) six-stage process can be used to help teachers develop a better understanding of technological applications, as can attending workshops or taking classes that deal with using technology in the classroom (Redmann & Kotrlik, 2004). Russell's six stages are: awareness, learning the process, understanding and application of the process, familiarity and confidence, adaptation to other contexts, and creative application to new contexts. Studies have indicated that many different factors can influence an individual's level of computer literacy. As with prose and document literacy, ICT literacy is highly correlated with education and income, both of which are key measure of socio-economic status (Nakhaie, 1998). The same relationships also hold for home computer ownership. However, it is important to note that computer ownership does not necessarily imply strong computer literacy skills.

### NEED/IMPORTANCE OF THE STUDY

The outcome of the study would serve as good basis for the development of supportive programmes to basic school teachers which could be replicated in all regions of Ghana. It would also help educational policy makers to plan proper policies on the training of teachers in the proper use of computers and how to use it to enhance teaching and learning in schools. The findings would further help identify teachers who lack necessary competence in integrating ICT in their respective subject areas. Finally, the outcome of the study would serve as a resource material for students who may undertake similar studies in future.

### STATEMENT OF THE PROBLEM

It has been observed that teachers do not have the right attitude towards computers and therefore are not motivated to use it in teaching. Modern developments in technology have provided new possibilities to teachers but most of them are not able to take the chance because of lack of computer literacy skills. Furthermore, it is not known whether gender, major subject area, years of teaching experience, and school status affect teachers' levels of computer literacy. It is therefore important to conduct this study to ascertain the reality.

### OBJECTIVES

The purpose of the study was to investigate basic school teachers' attitude towards ICT and their computer literacy levels. The study further investigated whether gender, major subject area, years of teaching experience, and school status affect teachers' levels of computer literacy.

### HYPOTHESES

The following Hypotheses were formulated and tested:

1. Ho: There is no statistically significant difference between male and female teachers' level of literacy in computer technologies.
2. Ho: There is no statistically significant difference between public and private school teachers' level of literacy in computer technologies.
3. Ho: There is no statistically significant relationship between teachers' major subject area and their level of literacy in computer technologies
4. Ho: There is no statistically significant relationship between teachers' years of teaching and their level of literacy in computer technologies

### RESEARCH METHODOLOGY

The study basically aims at gathering information on attitude, knowledge and awareness issues of basic school teachers in Jomoro district. The study therefore employed the descriptive survey method. The target population for the study was all the basic school teachers (private and public) in Jomoro district. The pupil/teacher ratio in Jomoro district of kindergarten, primary and junior secondary school in the district were found to be 58:1, 46:1 and 25:1 respectively. The decision to use the basic school teachers in Jomoro District is based on the assumption that they are likely to lack computer knowledge in ICT because the district is more of rural or remote than urban. The stratified random sampling technique, disproportional method, was used to select 30 basic schools from the district. The simple random sampling technique was used to select the quota of respondents from the schools for the study.

A questionnaire developed by the researchers after an elaborate literature review was used to collect data. The questionnaire was divided into two main parts. They are: demographic Information and teachers' level of computer literacy. The items were tested (SPSS v. 17) for reliability using an internal consistency method (Cronach's Alpha coefficient, [Cronbach, 1990]) which yielded reliability coefficients of 0.944.

The questionnaire was administered to the teachers personally in their various schools in two phases. Phase 1 was carried out between 8<sup>th</sup> March, 2010 and 26<sup>th</sup> March, 2010 and it covered schools along the southern belt of the district. From Ellonyin through Bonyere, Half Assini to Anlomatuope. The second phase, which started from 30<sup>th</sup> March, 2010 and ended on 16<sup>th</sup> April, 2010 captured schools on the northern part of the district; from Adusuazo, Tikobo No.1 up to Elubo. Out of the 120 questionnaires administered, 105 were retrieved thereby recording a return rate of 87.5%

All the items in the questionnaire were computerized using the Statistical Package for Social Sciences (SPSS v17). It involved definition of variables, keying in of the data using codes and editing the data for missing values and correcting them.

### RESULTS OF THE STUDY

#### HYPOTHESIS 1

It was hypothesised that:

Ho: There is no statistically significant difference between male and female teachers' level of literacy in computer technologies.

An independent-sample t-test was used to analyse and test hypotheses 1 and 2. It helped to determine the level of difference, if any, between male and female respondents' literacy level in computers technologies. The result of the independent-sample t-test is shown in Table 1.

TABLE 1: COMPARISON OF MALE AND FEMALE RESPONDENTS ON THEIR LITERACY LEVEL IN COMPUTERS TECHNOLOGIES

Variable	M	SD	t	df	P
Male	1.51	0.50	-2.62	103	*0.010
Female	1.30	0.46			

(\* p<0.05) Field data, 2010

Inspection of the two group means indicated that the mean scores in familiarity with ICTs for female respondents (1.30) is significantly lower than the mean score (1.51) for males as seen in Table 20. There was therefore a significant difference between males and females in their familiarity with computers;  $t(103) = -2.62$ ,  $p = 0.01$ . The magnitude of the difference in the means was very small (eta squared = 0.006). This result confirms the chi-square findings in research question 5 that, significant differences were found to exist between males and females in their familiarity with some types of ICTs. More male teachers than female teachers were familiar with Hard disk, RAM, CD-ROM, Monitor, Sound Card, and Joystick.

Specifically, the significant difference was recorded in only 5 out of the 19 hardware items. The result of items which showed the differences in their familiarity with ICTs is shown in Table 2.

TABLE 2: COMPARISON OF MALE AND FEMALE RESPONDENTS ON THEIR FAMILIARITY WITH ICT HARDWARE WHICH HAD THE HIGHEST SELECTION

Items	M	SD	t	df	P
<b>Hard disk</b>					
Male	1.23	.426	-3.77	99	*0.01
Female	1.61	.497			
<b>RAM</b>					
Male	1.47	.503	-2.93	98	*0.00
Female	1.79	.418			
<b>Monitor</b>					
Male	1.07	.254	-2.13	99	*0.00
Female	1.21	.418			
<b>Sound card</b>					
Male	1.55	.501	-2.90	99	*0.00
Female	1.82	.390			
<b>Joystick</b>					
Male	73	1.67	-2.29	99	*0.00
Female	28	1.89			

(\* p<0.05) Field data, 2010

As seen from Table 2, more males respondents were more familiar with Hard disk  $t(99) = -3.77, p = 0.01$ , RAM  $t(98) = -2.93, p = 0.00$ , Monitor  $t(99) = -2.62, p = 0.00$ , Sound Card  $t(99) = -2.90, p = 0.00$  and Joystick  $t(99) = -2.29, p = 0.00$  than females respondents. Hence the study failed to accept the null hypotheses that 'There is no statistically significant difference between male and female teachers' level of literacy in computer technologies'

**HYPOTHESIS 2**

Ho: There is no statistically significant difference between public and private school teachers' level of literacy in computer technologies.

To test hypotheses 2, again an independent samples t-test was conducted to compare the means of public and private schools familiarity with ICTs. Table 3 shows the results of the independent sample t-test on the 19 items between public and private schools respondents.

TABLE 3: COMPARISON OF PUBLIC AND PRIVATE SCHOOLS RESPONDENTS ON THEIR FAMILIARITY WITH ICTS

Variable	Public		Private		T	p
	M	SD	M	SD		
Hard disk	1.31	.467	1.38	.490	-.66	.51
RAM	1.57	.500	1.58	.501	-.08	.94
CD-ROM	1.46	.502	1.36	.486	.98	.34
CD (Compact disc)	1.08	.277	1.15	.362	-1.07	.29
DVD	1.11	.321	1.13	.339	-.20	.84
Floppy Disk	1.46	.502	1.33	.478	1.24	.22
Keyboard	1.03	.178	1.08	.267	-.97	.33
Mouse	1.06	.248	1.10	.304	-.65	.52
Monitor	1.08	.277	1.15	.362	-1.07	.29
Printer	1.15	.358	1.08	.267	1.10	.28
Scanner	1.41	.496	1.35	.483	.60	.55
Sound card	1.66	.479	1.60	.496	.56	.57
TV /Radio Card	1.49	.504	1.49	.506	.06	.97
Microphone/Speaker	1.16	.373	1.15	.362	.19	.85
Digital camera	1.28	.452	1.21	.409	.82	.41
Joystick	1.77	.424	1.68	.474	1.06	.29
Optical scanner	1.85	.358	1.78	.423	.99	.33
Overhead projector	1.66	.479	1.85	.362	-2.19	.06
Modem	1.80	.403	1.70	.464	1.14	.26

Results of the analysis in Table 3 shows that differences in all the 19 items tested under familiarity with computers between public and private schools were not statistically significant. From Hard disk through to Modem, none of them showed any statistically significant difference in their test scores. They all showed a *p* value greater than 0.5. By the results of the analysis, the study accepts the null hypothesis that there is no statistically significant difference between public and private school teachers' level of literacy in computer technologies

**HYPOTHESIS 3**

Ho: There is no statistically significant relationship between teachers' major subject area and their level of literacy in computer technologies

The relationship between respondents' subject area of specialisation and their familiarity with computers was investigated using the standard multiple regression (simultaneous) approach. The ICT selected for the regression analysis was based on the most selected hardware (items that received 15% selection and above) for classroom teaching. These ICT included Hard disc, Monitor, Mouse, Keyboard and Printer. The researcher checked to see if the data met the assumptions of multiple linear regressions. The tests for normality, homoscedasticity, and multicollinearity all resulted in normal outcomes.

The means, standard deviations, and intercorrelations of the analysis can be found in Table 4.

TABLE 4: MEANS, STANDARD DEVIATION, AND INTERCORRELATION FOR MAJOR SUBJECT AREA AND PREDICTORS VARIABLES (N = 88)

Variable	M	SD	Intercorrelations				
			Hard disk	Monitor	Mouse	Keyboard	Printer
Hard disk	1.35	.48	--	.46	.40	.30	.26
Monitor	1.10	.31	.46	--	.73	.65	.23
Mouse	1.08	.27	.40	.73	--	.74	.42
Keyboard	1.05	.21	.30	.65	.74	--	.27
Printer	1.11	.32	.26	.23	.42	.27	--

Correlation is significant at the 0.05 level (2-tailed). Field data, 2010

Table 4 shows that only mouse correlated positively (low) with subject area of specialization ( $r = .07$ ), though not statistically significant. The rest of the predictors showed negative correlation with subject area of specialization, yet they are also statistically not significant. Table 23 also shows that the predictive variables are not significantly correlated with each other. Therefore it can be concluded from Table 23 that the predictive variables (Hard disk, Monitor, Mouse, Keyboard, and Printer) are not statistically significantly correlated with subject area of specialisation which is the dependent variable for familiarity with

computers;  $F(5, 82) = 1.08, p > 0.05$ . From the analysis,  $F = 1.08$  and is not statistically significant ( $p = 0.38$ ). This indicates that the combination of all the predictors (Hard disk, Monitor, Mouse, Keyboard, and Printer) on subject area of specialization do not significantly correlate with respondents' familiarity with computer technologies.

The standard multiple regression analysis was conducted to determine the amount of variance in respondents' subject area of specialization in relation with familiarity with ICTs that can be explained by the variables in this study. The beta coefficients are presented in Table 5.

**TABLE 5: SIMULTANEOUS MULTIPLE REGRESSION ANALYSIS SUMMARY FOR HARD DISK, MONITOR, MOUSE, KEYBOARD, AND PRINTER PREDICTING FAMILIARITY WITH ICTs (N = 88)**

Variable	b	SEb	$\beta$	t	sig
Constant	38.82	19.82		1.96	.06
Hard disk	2.16	8.30	.032	.26	.80
Monitor	-30.89	18.09	-.29	-1.71	.09
Mouse	45.04	23.55	.38	1.91	.06
Keyboard	-26.89	25.53	-.17	-1.05	.30
Printer	-10.12	12.29	-.10	-.82	.41

Note:  $R^2 = .01; F(5, 82) = 1.08, p > 0.5$  Field data, 2010

All the predictors had  $p$  values greater than 0.05 which is the error margin allowed in the test (0.005 alpha levels). This is an indication that, none of the predictors contribute significantly to the prediction of respondents subject areas in relation with familiarity with ICTs. The adjusted R squared value was 0.005. This indicates that only 0.5% of the variance in subject area of specialization on familiarity with computers can be predicted from the combination of Hard disk, Monitor, Mouse, Keyboard, and Printer. It also shows that only 0.5% of the variance in subject area of specialization on familiarity with computers technologies was explained by the model. According to Cohen (1998) this is a very small effect. Since the t-statistic (1.08) is not statistically significant ( $p=0.38$ ), the null hypothesis which states that there is no statistically significant relationship between teachers' major subject area and their level of literacy in computer technologies is accepted.

**HYPOTHESIS 4**

Ho: There is no statistically significant relationship between teachers' years of teaching and their level of literacy in computer technologies

To test hypothesis 4, standard multiple regression was again used in the analysis of the responses. Also, the ICTs used for the regression analysis was based on the most selected hardware used in hypothesis 3. These ICTs included Hard disc, Monitor, Mouse, Keyboard and Printer. The researcher checked to see if the data met the assumptions of multiple linear regressions. The tests for normality, homoscedasticity, and multicollinearity all resulted in normal outcomes. The means, standard deviations, and intercorrelations of the analysis can be found in Table 6.

**TABLE 6: MEANS, STANDARD DEVIATION, AND INTERCORRELATION FOR YEARS OF TEACHING AND PREDICTORS VARIABLES (N = 97)**

Variable	M	SD	Intercorrelations				
			Hard disk	Monitor	Mouse	Keyboard	Printer
Hard disk	1.33	.47	--	.41	.40	.30	.30
Monitor	1.10	.31	.411	--	.69	.61	.20
Mouse	1.07	.26	.40	.69	--	.74	.40
Keyboard	1.04	.20	.29	.61	.74	--	.25
Printer	1.11	.32	.30	.20	.40	.25	--

Correlation is significant at the 0.05 level (2-tailed). Field data, 2010

Table 6 shows that hard disk and monitor correlated positively (low) with years of teaching experience ( $r = .18$  and  $.06$  respectively), though not statistically significant. The rest of the predictors; keyboard and printer, showed negative correlation with years of teaching experience, yet they are also statistically not significant.

Table 6 shows that the predictive variables (Hard disk, Monitor, Mouse, Keyboard, and Printer) are not statistically significantly correlated with years of teaching experience which is the dependent variable for familiarity with computers. Table 30 also shows that none of the predictive variables are significantly correlated with each other. When the combination of all the predictors (Hard disk, Monitor, Mouse, Keyboard, and Printer) were entered into the model simultaneously to predict whether the respondents' years of teaching experience correlate with their familiarity with ICTs, it showed no statistically significant correlation,  $F(5, 91) = 2.28, p > 0.05$ . From the analysis,  $F = 2.28$  and is not statistically significant ( $p = .06$ ). This indicates that the combination of all the predictors (Hard disk, Monitor, Mouse, Keyboard, and Printer) on years of teaching do not significantly influence respondents' familiarity with computer technologies. The standard multiple regression analysis was conducted to determine the amount of variance in respondents' years of teaching in relation with familiarity with ICTs that can be explained by the variables in this study. Table 7 shows the beta coefficients of the analysis.

**TABLE 7: MULTIPLE REGRESSION ANALYSIS SUMMARY FOR HARD DISK, MONITOR, MOUSE, KEYBOARD, AND PRINTER PREDICTING FAMILIARITY WITH ICTs (N = 97)**

Variable	b	SEb	$\beta$	t	sig
Constant	1.63	.45		3.66	.00
Hard disk	.40	.18	.25	2.20	.030
Monitor	.57	.36	.23	1.56	.12
Mouse	-.95	.52	-.32	-1.82	.07
Keyboard	-.22	.58	-.06	-.37	.71
Printer	-.16	.27	-.06	-.58	.56

Note:  $R^2 = .062; F(5, 91) = 2.28, p > 0.5$  Field data, 2010

The predictors had  $p$  values greater than 0.05 which is the significant value allowed in the test. This is an indication that, none of the predictors contributes significantly to the prediction of respondent's years of teaching experience on familiarity with ICT. The adjusted R squared value was .062. This indicates that only 6.2% of the variance in years of teaching experience on familiarity with computer technologies was explained by the model. According to Cohen (1998) this is a very small to medium effect.

Since the t-statistic (2.28) is not statistically significant ( $p=0.06$ ), the null hypothesis which states that there is no statistically significant relationship between teachers' years of teaching and their level of literacy in computer technologies is accepted.

**DISCUSSION OF RESULTS**

This study suggests that there is a disparity among male and female teachers concerning their level of computer literacy in the district. There is statistically significant difference between male and female respondents' familiarity with computer technologies. More male teachers than female teachers were familiar with Hard disk, RAM, CD-ROM, Monitor, Sound Card, and Joystick. This seems not to be a surprise as this is consistent with earlier studies. Shashaani & Khalili, (2001) and a recent study by Broos (2005) also found significant gender differences - favouring males in terms of attitudes toward new communications technology, the extent of computer use and self-perceived computer experience. Even when females perceived themselves as being more competent in using computers, they expressed higher computer anxiety levels compared to males.

Although the result may not provide a conclusive evidence of specific gender disparity, Broos (2005), indicated that gender disparity in the use of IT for educational purposes existed to a certain extent. This is definitely a cause for concern as IT is considered a crucial tool for effective teaching and learning in most curricula. Chen (1985) on the other hand found that females and males responded with similar levels of interest toward computers when they possessed similar amounts of computer experience. In effect, lack of technical and theoretical knowledge is a barrier to the use of Computer-assisted Learning technology. It is however refreshing to note that Shashaani, (1997) had identified that the gender gap can be narrowed when both genders are exposed to the same amounts and types of experiences when using computers

The study also revealed that there is no statistically significant relationship between respondents' years of teaching and their familiarity with computer technologies. There is also no statistically significant relationship between respondents' majoring subject area and their familiarity with computer technologies. The results of the analysis for school status revealed that the two groups of schools did not differ significantly in their familiarity with ICT. Teachers who teach in public schools did not differ significantly in their familiarity with ICT than private school teachers. This is not a surprise since majority of the respondents reported that they do not have computers and also they are not computer users. The respondents' as a whole seemed generally familiar with Information and Communication Technologies (ICT). The frequency distribution showed that 62% of total teachers were familiar with Information and Communication Technologies.

## CONCLUSION

Computing poses a lot of challenges to the education system in terms of its integration into the curricula of schools and the vast potential it holds for socioeconomic development. The increasing use of computers in industry places a very high demand on schools to provide opportunities for computer literacy. This in turn places a demand on teacher education to revise its curricula to provide quality teachers equipped for this purpose. As computer use continues to increase in society, educators must also prepare for the use of computers within the classroom. This involves all levels of education, including basic schools.

## RECOMMENDATIONS

Considering the findings and conclusions drawn from the study, the following recommendations are made:

1. More attention should be paid to the initial teacher training programme in Ghana. The training colleges must be well equipped with ICT facilities so that they can train teachers with good knowledge in ICT for our basic schools.
2. There is the need for in-service training in computer technology because it will build their confidence so that they can become capable of dealing with available technology.
3. The Ministry of Education and Ghana Education Service should provide sufficient hardware and software for all basic schools. Computers and computer-related technologies should be part of classroom teaching activities in Ghana

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**DATA MINING IMPACTS ON HIGHER EDUCATION**

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**ABSTRACT**

*Data Warehouse can serve as a storage medium for keeping the business memory, or at least involving certain types of data. It helps gaining new knowledge by delivering well integrated data to analysis tools and thus becomes an important part of Decision Support Systems or Executive Information Systems. Sharing and reuse of relevant knowledge during project could prove significant benefits. In this way a Data Warehouse; storing, managing and sharing data; results in growth of knowledge and may lead to enhance the enterprise's quality and success. Data mining can be considered a way to discover knowledge in large databases. New knowledge may be further managed by the applications of knowledge sharing and reuse. As a new technology, data mining has emerged with the development of database technologies, which allow the user to access or process a large amount of information. The present work relates Data Warehousing and Data Mining to Knowledge Discovery and Knowledge Management (including knowledge sharing and knowledge reuse). Apply this to the higher education sectors and compare their results to diagnose pros and cons.*

**KEYWORDS**

Achievement Measure, Course Objectives, Performance Analysis, Students' Assignments.

**INTRODUCTION**

The process of data collection in the organizational memory generates a great amount of data requiring automatic or semi-automatic procedures for treatment and analysis for acquisition of new knowledge for next step. It is possible to create a model for organizing and measuring knowledge upgrade in systems of education with the support of Data Warehousing and Data Mining tools.

Today's organizations are creating data and information at an unprecedented pace. Much of that data comes from organizational business transactions. Traditionally, that data has resided on corporate servers and has represented operational on-line transaction processing (OLTP) data. The goal of a data warehouse is to integrate applications at the data level. The data is extracted from operational systems, cleansed, transformed, and placed into the data warehouse. Although the notion of creating an integrated data warehouse is appealing conceptually, it may be infeasible operationally. Trends indicate that federated data warehouse architectures are more practical, from the political, operational, and technical points-of-view.

Moreover, as organizations move their operations to the Internet and establish partnerships, via portals and extranets, with both their customers and suppliers, the "data" for the e-enterprise becomes distributed among many parties. This presents both challenges and opportunities in building enhanced data warehouses that reflects the information holdings of the modern organization.

Our notion of the data warehouse must be extended to include not only operational transaction-oriented data, but also data created by knowledge workers within the enterprise. We can then include technical reports, correspondences, presentations, audio, video, maps and other heterogeneous data types, as well as unstructured data.

Increasingly, we view the Internet and the World Wide Web as data sources that complement e-enterprise information holdings. The data collected from the Web must be incorporated into the data warehouse for business decision-making.

Data warehouse holdings can be used for business intelligence, based upon knowledge created by means of data mining and knowledge discovery. However, in order to acquire, catalog, organize, index, store and distribute the enterprise's information holdings, we need to address issues related to the management of knowledge resources, termed knowledge management. In this proposal, we present suggestion for the management of higher educational institution knowledge assets in the context of data warehouses and data mining.

**DATA MINING AND DATA WAREHOUSING IN EDUCATION**

Data Warehouse (DWh) can serve as a storage medium for keeping the business memory, or at least involving certain types of data while Data mining can be considered a way to discover knowledge in large databases. As a new technology, data mining has emerged with the development of database technologies, which allow the user to access or process a large amount of information. The purpose of data mining techniques is to generate automatic tools to investigate and extract information from databases. The extracted knowledge is finally presented in terms of models and rules among variables.

Data mining techniques are very powerful tools and can be used to describe the database in a concise way by capturing important properties, or to predict new data based on a set of models/rules extracted from the database. Due to their multidisciplinary application, a multitude of data mining techniques may be studied, applied and proposed in a variety of different fields. Visual data mining can be considered a data mining process enriched by visualization methods.

By the advancement of information technology, the global economy has been greatly affected by knowledge growth rate. Knowledge (and the reuse concept of knowledge) is the most important asset for organizations. Effective Knowledge Management (KM) and knowledge discovery have been not only becoming the possible solution for enterprise while it has also been becoming a difficult to manage knowledge more effectively in a competitive environment. Now days we can realize that managing and discovering knowledge is a much more complicated process than previously thought due to rapid changes are being taking place in an electronic age.

The goal of data warehousing has been to create a centralized and unified view of enterprise data holdings. Many factors contributed to this, such a problem of semantic heterogeneity, terminology conflicts, etc. However, one of the overriding factors has been the need for organizations to assert ownership over the data. Organizations wish to own their data, wish to assume responsibility for the stewardship of their data, and wish to share and reuse their data according to well defined agreements. Some works, that apply Data Mining techniques in education, concentrate on the data gathered during student interaction with communication tools: chat, forum and e-mail.

We are interested in applying data mining on students 'performance-data' obtained through different assessments with the help of an online database system. (See the figure.) The basic idea is to prepare the data collected from a student's several assessments, in each item of the ontology (subjects) and relate them (cross over) by using their hierarchical organization, in order to discover new knowledge about the student learning by using data mining and data warehousing tools. (See the figure) A method of survey may be employed where statistical tool like SPSS can boost analytical power of the performance measurement.

We will try to point out in which way the DWh could contribute to an organization wide knowledge management, knowledge sharing and reuse. In fact, a DWh could serve as one main component in a knowledge management system. The data contained in a DWh represents a large part of a company's knowledge, e.g. the company's clients and their demographic attributes. The DWh represents an organisation wide data collection, which is central and defines a common basis for several organisational units accessing it. From the stored data, new knowledge can be derived as well shared and reused using technologies such as Knowledge Discovery in Databases (KDD) and related tools.

Knowledge sharing and knowledge reusability could be the issues when we exploit the maximum performance of a given Data warehouse. It could not only increase the quality and reliability while it substantially helps in increasing the output. Knowledge Management, sharing and reusability issues taken together with other aspects of the database can help us in optimising and hence maximising the available knowledge in the organization. It will also help in the enhancement of the quality of data and knowledge because of its reusability and sharing. Reusability makes the data and knowledge qualitatively better because of its repetitive use.

The proposed model for continuous accompaniment of the learning, through the monitoring of the student's Knowledge Acquisition Level (KAL) in each item of the knowledge domain, making the identification of the learning gaps possible. (See the figure.) The model also supports the monitoring and the development of metacognitive processes in order to allow the student controls his own learning through the process of self-regulation, which comprises self-monitoring, self-evaluation, and self-reinforcement.

However, this process of data collection generates a great amount of data requiring automatic or semi-automatic procedures for treatment and analysis for acquisition of new knowledge for next step. This model is for organizing and measuring knowledge upgrade in systems of education and learning with the support of Data Mining. Some works, that apply Data Mining techniques in education, concentrate on the data gathered during student interaction with communication tools: chat, forum and e-mail.

In our work, we are interested in applying data mining on students 'performance-data' obtained from several assessments (for example, Test1, Test2, Assignment1 and Final Examination). The basic idea is to prepare the data collected from a student's several assessments, in each item of the ontology (subjects) and relate them (cross over) by using their hierarchical organization, in order to discover new knowledge about the student learning by using for data mining tools.

Assessment module table 1 presents a sketch of the table (from database) that contains assessment data (performance) stored in relational database model that must be prepared to generate a multidimensional model, as shown in the Table 2 of the Student module.

Each objective (O1.1 for example) can be measured in several assessments. The Knowledge Acquisition Level (KAL) indicates the student knowledge level in a specific item of the knowledge domain and can be calculated, for example, as the arithmetic average of the student performance data in that item in the several assessments. For instance, for objective O1.1 the KAL value after two assessments would be:

$$(75+95) / 2 = 85$$

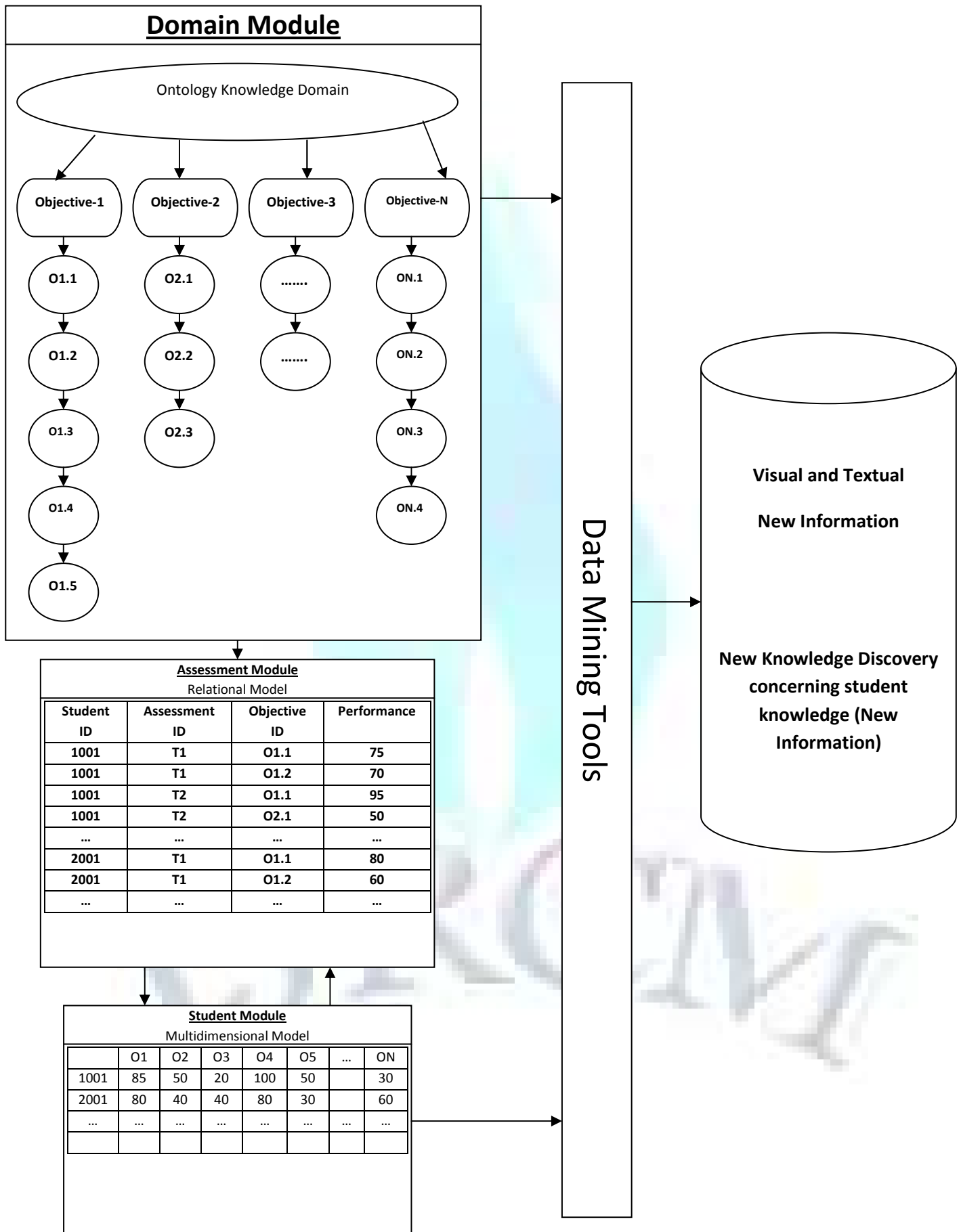
In the multidimensional table of the Student Module, the objective (O1, O2,...,ONN) correspond to the objective evaluated (each line of the table in relational model) and the measures correspond to respective KAL. (The objectives are all specified clearly and distributed to the students at the beginning of the course along with the syllabus for that course.)

After the treatment of original data, some data mining techniques could be applied for knowledge discovery, such as: clusterization, segmentation, classification, association, etc. Moreover, visual data mining tools can be used too. The use of Data Mining is justified since in an ongoing accompaniment learning model the historical data must be kept and processed for new knowledge discovery. Moreover, the decisions based on historical data help the educators to see who their pupils are and which qualities and difficulties they share. The implementation of a program of data and analysis can take to improvements in education as no other innovation has done so far.

Based on the principle that it is necessary to identify continuously what the student knows (cognitive and metacognitive measures) and to keep this information so that it can be used for instruction, this work propose a model for knowledge organization and measure based on ontology, and with the data mining techniques support, to make the discovery of new information automatic from the data gathered with the several assessments.

The proposed model is based on knowledge organization using ontology (module of the domain) representing the learning hierarchies. Each problem or question assessment must be associated with the ontology items indicating clearly the objectives of the evaluation, or rather, what is being evaluated (assessment module).

In this way, it is possible to establish a knowledge measure (KAL) for each ontology item in the model. The establishment of the measure in each ontology item will allow the selection of more adjusted evaluations to the current student KAL. Moreover, it will favour an adjusted instruction in accordance with the student learning gaps due to his learning necessities. Based on knowledge organization using ontology (Domain module) and the current student knowledge (Student module), the proposal is to apply data mining techniques for new knowledge discovery concerning the student knowledge (new information). The use of visual tools will assist in the new knowledge reading and interpretation.



**CONCLUSION**

Knowledge-based support for decision-making is becoming a key element of a Higher Educational setting. Traditional data warehouses with the combinations of knowledge management environments and its related tools may influence Higher Educational decision-makers. This work proposes a knowledge oriented model together with a collection of services that can be used to manage and encourage knowledge activities within the Higher education through the data mining and data warehousing techniques.

The learning assessment process that aims to diagnose the learning gaps in order to improve the instruction can generate a great amount of data. Thus the collected data need to be treated and interpreted so as to provide new and necessary information concerning the student knowledge level. The model for organizing and measuring knowledge upgrade in systems of education and learning with the support of Data Mining tools in order to generate new information from the assessment data in an automatic or semi automatic way. The model is based on knowledge organization using ontology that allows to represent the learning hierarchies. Thus it makes possible to establish the knowledge acquisition level in each item of the domain. Intention is to sort out and test some data mining techniques and tools and implement the prototype to test and validate the proposed model.

Successful knowledge management (including knowledge sharing and reuse) needs to integrate data bases, information systems, and knowledge based systems. As it has been shown in the figure above, a Data Ware-house can connect these kinds of systems. It provides a wide basis of integrated data. This data can be presented and utilized via proper knowledge management; knowledge sharing and knowledge reuse activities with the help of data discovery or related tools.

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## CHALLENGES OF INTERNAL AUDIT FUNCTION IN PUBLIC SECTOR GOVERNANCE: EMPIRICAL EVIDENCE FROM ETHIOPIA

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### ABSTRACT

*A healthy constructed internal audit function can play a vital role in the governance and accountability process of public sector institutions through their assessments on the effectiveness of key organizational controls, governance and risk management processes. The purpose of this study is to examine the role of internal audit function in public sector governance and challenges that have an effect on this function empirical evidence from Amhara National Regional State public sector, Ethiopia. Structured questionnaire survey of all internal audit directors and staff from 35 public sector bureau of Amhara National Regional State, a total of 61 internal auditors was used. To analyzed the data, OLS multiple regression statistical method was employed. OLS regression analysis results show that risk management role of internal audit function is positively related to compliance with professional audit standards, unrestricted access, formal mandate, top management support, and competent leadership, and negatively related to organizational independence, competent staff and sufficient funding. The finding reveals that competent staff, compliance with professional audit standards, and sufficient funding is positively related with the control function of internal audit. The regression results also suggest that governance process role of internal audit function is positively related to competent staff and compliance with professional audit standards, and negatively related to top management support, formal mandate, and unrestricted access. The study concludes that policy makers and regulators and all other parties related to internal audit function in the public sector that needs the services of internal audit to be effective and efficient should give emphasis on the value adding role of its function in the public sector through risk management, control and governance processes.*

### KEYWORDS

Ethiopia, Internal auditing, Role of internal audit function

### INTRODUCTION

The widespread characteristics of public sector governance cry for an effective internal auditing function to meet the demanding responsibilities required by stakeholders. A healthy constructed internal audit function can play a vital role in the governance and accountability process of public sector institutions through their assessments on the effectiveness of key organizational controls, governance and risk management processes (Asare, 2009). This healthy internal audit function of risk management, control and governance process requires organizational independence, formal mandate, unrestricted access, sufficient funding, competent leadership, competent staff, management support, and professional audit standards (IIA, 2006). To what extent the existence of these elements are associated with the risk management, control and governance roles of internal audit function in public sector governance is rarely empirically investigated.

The paper is structured as follows. The next section reviews the literature and develops research question. The third section outlines data collection procedures and the research methods employed. The fourth section provides empirical analysis and discussion of the study; and finally, section five present conclusions.

### LITERATURE REVIEW

#### A. ROLE OF INTERNAL AUDIT FUNCTION

The existing literature (for example, Asare, 2009, and MOFED, 2004) state that the role of internal audit function can be identified as involving three main elements, namely the evaluation and improvement of risk management, control and governance processes in the public sector. Risk management, control and governance encompass the policies and procedures established to ensure the achievement of objectives and include the appropriate assessment of risk, the reliability of internal and external reporting and accountability processes, compliance with applicable laws and regulations, and compliance with the behavioral and ethical standards set for public organizations and employees. Others argue oversight, insight, and foresight as an essential element of a strong public sector governance structure (IIA's, 2006). This study however, covers risk management, control and governance process role of internal audit function in the public sector. There fore, the following section presents these roles of internal audit function.

#### A1. ROLE OF INTERNAL AUDITING FUNCTION-RISK MANAGEMENT

As Asare (2009) state that the demand for proper risk management strategies in the public sector emanates from the complexity and dynamism of the operating environment, ever-increasing needs of society coupled with general unpredictability pattern and dwindling of resources for national development. The author further note the internal auditor's role in risk management involves assessing and monitoring the risks that the organization faces, recommending the controls required to mitigate those risks, and evaluating the trade-offs necessary for the organization to accomplish its strategic and operational objectives.

The institute (IIA, 2010) state that internal audit activity must evaluate risk exposures relating to the organization's governance, operations, and information systems regarding the: reliability and integrity of financial and operational information, effectiveness and efficiency of operations and programs, safeguarding of assets; and compliance with laws, regulations, policies, procedures, and contracts. In the context of governance, the key activity of internal auditing with respect to risk is to monitor all the subsidiary steps of identifying risk, assessing the potential effect of the risk on the organization, determining a strategy to address the risk, and then monitoring the environment for new risks as well as monitoring the existing risk strategy and attendant controls (Hermanson, etl. 2003).

Hass, Abdolmohammadi, and Burnaby (2006) on their American literature review of internal auditing note that internal auditors must not only be able to assess risks in their large organizations, but they must also be able to complete complex risk analyses in their own internal audit function (IAF). The authors in addition included, accomplishing this, internal auditors need to possess increasing levels of critical thinking, analysis, decision making, and logic.

#### A2. ROLE OF INTERNAL AUDIT FUNCTION\_ CONTROL

Asare (2009) note that the internal auditing as a control measure does not only minimize the opportunities for corruption through the verification of procurement processes but also ensures effective physical monitoring of capital items procured and actual utilization to avoid fraud and abuse. In addition to these, internal audit has played an active role in implementing effective governance and controls while being asked to assess the effectiveness of management's control practices. In the context of governance, the key activities of internal auditing with respect to control is that to ensure controls in place to address key organizational risks (Hermanson, et al. 2003).

Standard 2130 of IIA (2010), state that the internal audit activity must assist the organization in maintaining effective controls by evaluating their effectiveness and efficiency and by promoting continuous improvement. Similar to this, an internal audit function typically evaluates the system of internal control of the whole management process of planning, organizing and directing to determine whether reasonable assurance exists so that objectives and goals of the company will be achieved (Haron, Ibrahim, Jeyaraman and Chye, 2009). To achieve these roles internal auditors must incorporate knowledge of controls gained from consulting engagements into evaluation of the organization's control processes (IIA c1, 2010).

**A3. ROLE OF INTERNAL AUDIT FUNCTION\_ GOVERNANCE PROCESS**

The institute of internal auditor's professional guidelines (IIA, 2006) state that the public sector governance encompasses the policies and procedures used to direct an organization's activities to provide reasonable assurance that objectives are met and those operations are carried out in an ethical and accountable manner. The institute in addition state public sector governance relates to the means by which goals are established and accomplished.

Internal audit can help to improve governance processes by focusing on how values are established to ensure effective and efficient control and management of public sector entities. Such a value system requires an open government that is transparent in its dealings with a high sense of ethical behavior and fairness (Asare, 2009). Similarly, standard 2130 (IIA, 2010) state that internal audit activity should assess and make appropriate recommendations for improving the governance process to accomplish the following objectives: promoting appropriate ethics and values within the organization, ensuring effective organizational performance management and accountability, and effectively coordinating the activities of and communicating information among the Board, external and internal auditors and management. The above-stated functions of internal audit considered as dependent variables of the study. The following section presents challenges (independent variables of the study) that have an effect in these functions.

**B. CHALLENGES ASSOCIATED WITH THE ROLE OF INTERNAL AUDIT FUNCTION**

To achieve the risk management, control and governance functions as stated under (IIA, 2006) all government audit functions require the existence of organizational independence, formal mandate, unrestricted access to information, sufficient funding, competent leadership, competent staff, management support, and professional audit standards. This study considered these elements as challenges which determine the existence of effective internal audit function in public sector governance. As a result, the following section reviews previous literatures related to these elements which considered as independent variables of the study.

**ORGANIZATIONAL INDEPENDENCE:** MOFED (2004), Ethiopian Government Auditing Standards (hereafter EGAS, 2006), and IIA (2006) state that organizational independence allows the audit function to conduct work without interference by the entity under audit. EGAS (2006), especially emphasis that in all matters related to their audit work, audit offices and individual auditors must have independence from the legislature, executive and the management of the audited entities. However, in Ethiopian case, to what extent these implications really applicable in the sector require empirical investigation.

Just as independence is a major issue for external auditors, independence is also an important issue for internal auditors. However, because the company they are auditing directly employs them, it is impossible for internal auditors to be independent in the same manner as external auditors (Hock and Burch, 2011). The authors additionally affirm that a crucial issue of organization independence is for the chief audit executives (CAE) to have a reporting line in the organization that will allow the internal audit activities (IAA) to fulfill its tasks.

Van Gansberghe (2005) affirm that, the agreement and active involvement of the head of internal audit, senior managers, audit staff, accounting officers and senior operational management must be secured in a climate that fosters independent, but valued, evaluation of the effectiveness of risk management, control, and governance processes. To foster independence, Wobschall (2011) on his internal Audit Quality Assessment Framework paper similarly state that internal auditors sufficiently maintain independence and objectivity by not auditing operational areas for which they have previously had executive or management responsibility within the last year and not undertaking subsequent audits of a system, which they have previously been involved in consultancy on systems design.

**MANAGEMENT SUPPORT:** Mihret and Yismaw's (2007) Ethiopian higher education case study result shows that management support to IA is considered as one of the determinants of IA's attributes. They also indicate that audit findings and recommendations would not serve much purpose unless management is committed to implement. The institute in relation to support state that the legitimacy of the audit function and its mission should be understood and supported by a broad range of elected and appointed government officials, as well as the media and involved citizens (IIA, 2006).

MOFED (2004) state that heads of internal audit should co-ordinate internal audit plans and activities with the management, other internal auditors, external auditors, and other review agencies to ensure the most effective audit coverage is achieved and duplication of the effort is minimized. In line with this thought, Van Gansberghe (2005) noted that the IA function should work closely together with operational managers to improve the organization's evaluation of risks and determining its risk appetite, to improve its systems, regulations, procedures and the ethical environment.

**FORMAL MANDATE/EXISTENCE OF AUDIT CHARTER:** The interpretation of attribute standard 1000 states that the internal audit charter is a formal document that defines the internal audit activity's purpose, authority and responsibility. In line with this notion, Commonwealth of Australia (2007) in its better practice guide states that the charter should define the scope of internal audit, that is, the programmes, activities, processes, systems and organizations that are subject to internal audit review. In addition it states that the charter should also specify the requirement for an internal audit strategic business plan and annual work plan. In a similar manner, Hock and Burch (2011) stated that the internal audit charter provides the Internal Audit Activity (IAA) with a formal mandate to do its work.

**UNRESTRICTED ACCESS TO INFORMATION:** Audits should be conducted with complete and unrestricted access to employees, property, and records (IIA, 2006). In relation to this, encyclopedia of business indicates that internal auditors have unrestricted access to whatever they might need to make an objective assessment. It includes unrestricted access to plans, forecasts, people, data, products, facilities, and records necessary to perform their independent evaluations. (<http://www.referenceforbusiness.com/index.html>.)

**SUFFICIENT FUNDING:** The audit function must have sufficient funding relative to the size of its audit responsibilities. This important element should not be left under the control of the organization under audit, because the budget affects the audit function's capacity to carry out its duties (IIA, 2006).

**COMPETENT LEADERSHIP:** The head of the audit function must be able to effectively recruit, retain, and manage highly skilled staff. Moreover, the chief audit executive should be an articulate public spokesperson for the audit function (IIA, 2006). The Ministry of Finance and Economic Development of Ethiopia defines the minimum level of skill, knowledge and experience required of the internal auditor and the Head of the Internal Audit. It also states the Head of Internal Audit should be qualified and have a wide experience of management.

**COMPETENT STAFF:** EGAS (2006) states that the audit staff who have line responsibility for ensuring the quality of audits should supervise and review audit activities and the audit report by using the auditing standards. In line with this notion, the audit function needs a professional staff that collectively has the necessary qualifications and competence to conduct the full range of audits required by its mandate. Auditors must comply with minimum continuing education requirements established by their relevant professional organizations and standards (IIA, 2006).

**PROFESSIONAL AUDIT STANDARDS:** The IIA states that professional audit standards support the implementation of the previous (above) elements and provide a framework to promote quality audit work that is systematic, objective, and based on evidence (IIA, 2006). Internal auditing is conducted in diverse legal and cultural environments; within organizations that vary in purpose, size, complexity, and structure; and by persons within or outside the organization. While differences may affect the practice of internal auditing in each environment, conformance with The IIA's International Standards for the professional Practice of Internal Auditing (Standards) is essential in meeting the responsibilities of internal auditors and the internal audit activity (IIA, 2010).

**NEED /IMPORTANCE OF THE STUDY**

The previous studies focus on the effectiveness of internal audit or internal audit function in different settings. For example, Arena and Azzone (2009), Dessalegn and Getachew (2008), Dessalegn and Aderajew (2007), Goodwin-Stewart et al. (2006), etc. in Italian companies, Ethiopian public enterprises, Ethiopian higher education case study and Australian companies respectively focus on the effectiveness of internal audit or internal audit function in different settings. Their studies did not widely investigate empirically to what extent risk management, control & governance process role of internal audit function associated with organizational independence, formal mandate, unrestricted access, sufficient funding, competent leadership, competent staff, management support, and professional audit standards. The need of this study is therefore; to fill this gap through empirical examination of the degree of association between the role of internal audit function and its' challenges.

## STATEMENT OF THE PROBLEM

The widespread characteristics of public sector governance cry for an effective internal auditing function to meet the demanding responsibilities required by stakeholders. Internal audit can help to improve governance processes by focusing on how values are established to ensure effective and efficient control and management of public sector entities. Such a value system requires an open government that is transparent in its dealings with a high sense of ethical behavior and fairness. The complexity of the public sector operating environment requires that the internal audit structural design, approach, practice and scope be reformed to ensure open, accountable and prudent decision-making within all public sector organizations (Asare, 2009).

As stated under The Institute of Internal Auditor (IIA,2006), to protect the public interest, every government requires independent audit activities providing a range of assurance and advisory services from financial attestation to performance and operational efficiency, whether using internal and external audit services, or through use of a form that combines the two. The institute furthermore stated that the absence of good governance structures and lack of adherence to basic governance principles increases the risk of public corruption, which is defined as the misuse of entrusted power for private gain.

The nature of the internal audit functions according to the International Standards for the Professional Practice of Internal Auditing (Standards) (ISPPA, 2010), expressed as internal audit activity must evaluate and contribute to the improvement of governance, risk management, and control processes using a systematic and disciplined approach. In line with this, the nature of work of the internal audit functions (according to Standard 2100): *"...is to evaluate and improve the effectiveness of the following three processes:*

*Risk management processes — identification and evaluation of potential risks that might affect the achievement of objectives of an organization and determination of adequate corrective actions.*

*Control processes — policies, procedures, and activities which ensure that risks are kept within the limits defined by management in the risk management process.*

*Governance processes — procedures which allow stakeholders to evaluate risk and control processes defined by management."*

The internal audit function as a result contribute both by evaluating the systems' functioning and reliability (assurance services) and supporting the design of these systems by providing specific recommendations (consulting services).

The risk management, control and governance processes are sometimes recognizing as the three central part of internal auditing function in the public sector. To achieve these functions as stated under (IIA, 2006) all government audit functions require organizational independence, formal mandate, unrestricted access, sufficient funding, competent leadership, competent staff, management support, and Professional audit standards. To what extent the existence of these elements associated with the risk management, control and governance roles of internal audit function in public sector governance is rarely empirically investigated.

In the face of the role of internal audit function in the public sector governance, there is inadequate prior empirical studies which examined the degree of association between organizational independence, a formal mandate, unrestricted access, sufficient funding, competent leadership, competent staff, management support, and Professional audit standards with the risk management, control and governance roles of internal audit function in public sector governance. Prior studies focus on the effectiveness of internal audit or internal audit function in different settings. For example Arena and Azzone (2009), based on questionnaire survey of 153 Italian companies found that internal audit team characteristics, internal audit process and activities and the organizational links influence internal audit effectiveness. Dessalegn and Aderajew (2007), on their case study of Ethiopian higher education public-sector organizations conclude that management support to internal audit (IA) and IA quality as the major determinants of internal audit effectiveness. On the other study, Dessalegn and Getachew (2008), on their Ethiopian state-owned enterprise case study, identify factors that determine the value adding attributes of internal audit. They conclude that organizational goals and strategies and the level of risk exposure of organizations could be the potential factors that shape the dominant focus of internal audit as either assurance or consulting.

On their literature review, Dessalegn et al (2009), conclude that internal audit effectiveness is influenced by the dynamics prevailing in IA settings. They also argued that as IA is aimed to assist organizations to achieve objectives, a positive association between internal audit's level of compliance with the standards for professional practice of internal auditors and with organizational performance could serve as an additional approach to assess IA effectiveness. Goodwin-Stewart et al. (2006), on their study of the use of internal audit by Australian companies, suggest that firms with an integrated risk management framework are more likely to use internal audit. In addition, this study results indicate that, while size appears to be the determinant driver, there is a strong association between internal audit and the level of commitment to risk management. However, their study finds only a weak support for an association between the use of internal audit and strong corporate governance.

Office of thrift(March,2003), on interagency policy statement on the internal audit function and its outsourcing paper state that ideally, the internal audit function's only role should be to independently and objectively evaluate and report on the effectiveness of an institution's risk management, control, and governance processes. This paper also added, the internal audit function should be competently supervised and staffed by people with sufficient expertise and resources to identify the risks inherent in the institution's operations and assess whether internal controls are effective. The manager of internal audit should oversee the staff assigned to perform the internal audit work and should establish policies and procedures to guide the audit staff. The recent studies of Soh et al. (2011), on their semi-structured interview study of the internal audit function's perceptions of internal audit roles, effectiveness and evaluation shows that the internal audit function (IAF) is not responsible for risk identification of risk profiling, with unanimous agreement that this is the management's responsibility. Rather, the IAF's role is to provide an independent review of risk processes and ensure that risk mitigating controls are in place. Their study also highlight the emphasis placed on having the right people with the appropriate skills (particularly accounting and IT) in the IAF and especially in the role of the chief audit executives (CAE).Further more, their study confirmed that perceptions of IAF effectiveness are related to the level of expertise within the function and the support, status and position of IAF.

Although most scholars agree that the role of internal audit function in the public sector governance is compulsory, still there is an inadequate empirical prior study on this issue in developing nations in Ethiopian case in general and in Amhara National Regional State case in particular. Hence, the intent of this study is to examine empirically the role of internal audit function in public sector governance and challenges that have an effect on this function in the case of Amhara National Regional State.

## OBJECTIVE OF THE STUDY

The general objective of this study is to examine the role of internal audit function in public sector governance and challenges that have an effect on this function the case of Amhara National Regional State public sector. Specifically it was intended to determine the magnitude of relationship between challenges and the role of internal audit function in the public sector governance and to identify the prevailing challenges of internal auditing function.

## RESEARCH QUESTION

Overall it can be seen from the literature that there is a dearth of empirical prior studies which examine to what extent risk management, control & governance process roles of the internal audit function related to organizational independence, formal mandate, unrestricted access to information, sufficient funding, competent leadership, competent staff, management support, and professional audit standards in developing nations in Ethiopia case in general and in Amhara National Regional State in particular. Hence, to fill this gap, the current study attempts to answer the following research question.

RQ: To what extent better risk management, control and governance process role of internal audit function relates to better existence of organizational independence, formal mandate, unrestricted access, sufficient funding, competent leadership, competent staff, management support, and Compliance with Professional audit standards in the organization?

## FUNCTIONAL RELATIONSHIP AND SPECIFICATION OF THE MODEL

Extent literatures suggest a number of challenges which might be important in determining the role of internal audit function in the public sector. Thus, let us outline the functional relationship.

$$\text{Model1: } RM = \beta_0 + \beta_1 (Id) + \beta_2 (ST) + \beta_3 (MD) + \beta_4 (AS) + \beta_5 (F) + \beta_6 (L) + \beta_7 (SF) + \beta_8 (C) + \epsilon$$

$$\text{Model2: } CT = \beta_0 + \beta_1 (Id) + \beta_2 (ST) + \beta_3 (MD) + \beta_4 (AS) + \beta_5 (F) + \beta_6 (L) + \beta_7 (SF) + \beta_8 (C) + \epsilon$$

$$\text{Model3: } GC = \beta_0 + \beta_1 (Id) + \beta_2 (ST) + \beta_3 (MD) + \beta_4 (AS) + \beta_5 (F) + \beta_6 (L) + \beta_7 (SF) + \beta_8 (C) + \epsilon$$

Where;

RM = Risk management role of internal audit function measured by total items scored

$\beta_0$  =intercept of the regression line

$\beta_1$  to  $\beta_8$  =slope coefficient of the regression line

Id = existence of organizational independence measured by total items scored

ST= existence of top management support measured by total items scored

MD = existence of formal mandate/audit charter measured by total items scored

AS = existence of unrestricted access measured by total items scored

F= existence of sufficient funding measured by total items scored

L= existence of competent leadership measured by total items scored

SF = existence of competent staff measured by total items score

C= existence of compliance with professional audit standards measured by total items score

$\epsilon$ = is the error term associated with the  $i^{\text{th}}$  observation.

CT = control function role of internal audit measured by total items scored

GC =Governance process role of internal audit function measured by total items scored

## RESEARCH METHODOLOGY

### A. RESEARCH PHILOSOPHY, APPROACH, DESIGN

This study was based on positivistic knowledge claims, quantitative methods, deductive approach and analytical survey strategy of inquiry in the perspective of getting a general picture of the role of internal audit function and its' challenges.

The selection of these methodologies is appropriate because of their inter linkage among them as Creswell (2003) stated as:

*A quantitative approach is one in which the investigatory primarily uses positivistic claims for developing knowledge (i.e. cause and effect thinking, reduction to specific variables and hypotheses and questions, uses of measurement and observation, and the theories), employs strategies of inquiry such as experiments and surveys, and collect data on predetermined instruments that yield statistics data.*

### B. THE DATA AND MEASUREMENT

This study empirically analyzes how the challenges (independent variables) predict the role of internal audit function (dependent variables) in public sector governance by distributing structured closed-ended questionnaires to the internal audit directors and staffs of the selected Amhara National Regional State public sectors and support the questionnaire results by open-ended interview. Both dependent and independent variables measured at five - point likert-type scales with response options ranging from strongly disagree(SDA,1) to strongly agree(SA,5)( see Appendix1) . The questionnaire has cover pages which contains the general information about respondents and instructions. The collected data are analyzed by using OLS multiple regressions statistical analysis method by means of SPSS (version16) and stata (version 11) application software.

To ensure internal validity of the data, the questionnaire was pretested at two stages. The first stage, it was subjected to review by advisors and other colleagues, and in the second stage, to insure clarity and understandability of items to actual respondents, the questionnaire was pilot tested with internal auditors of regional Bureau of Finance and Economic Development (BOFED). The questionnaire was revised based on the comments and suggestions received at each stage before the actual data collection obtained.

To assist the external validity of data, there are commonalities in policies, procedures and organizational contexts of most public sector entities in Ethiopia and the same internal audit manual is used by all public bodies in Ethiopia (MOFED, 2004). Global Audit Information Network (IIA, 2009), Premier Benchmarking program framework of questionnaire type was adopted and revised as appropriate to the study. This broad domain of attributes ensures high –construct validity of measurement items identified in the questionnaire.

### C.THE SAMPLE

According to regional Bureau of Finance and Economic Development (BOFED) 2003E.C, Amhara National Regional State (ANRS) has 42 government budgetary public sectors at regional level. Due to the new organizational arrangement i.e. BPR (business re-engineering process) , two or more similar function offices categorized under one office and thereby using single pool internal audit system . In addition, other offices at the time of data collection not yet employ internal auditors and others employ recently but not fully know the organization. For that reason, from 42 offices 35 offices are available at the time of data collection and become appropriate participants of the study. Hence, to get large number of participant, this study covers all internal audit directors and staffs of 35 offices at regional level.

A total of 69 questionnaires distributed, of which 61 usable (88.41 % response rate) were received. Majority of internal auditors were first degree graduates 45(73.8%) followed by college diploma, second degree and certified internal auditors (CIA), 14(23.0%), 1(1.60%) and 1(1.60%) respectively. Most of them are Accounting graduates followed by management. Work experience of internal auditor's ranges from 1 to 35 years and the mean work experiences are 12.81years.

## EMPIRICAL RESULTS AND DISCUSSION

### A.TEST OF ASSUMPTIONS

#### A1.NORMALITY OF DISTRIBUTION TEST

This study used Kolmogorov-Smirnov and Shapiro-Wilk (K-S) normality test analysis. As Greasley (2008) states the insignificance values of K-S normality test shows normally distribution of error terms. Results of K-S normality test were presented in table 1 below. Table 1 shows risk management D(61)=.073, P>.05 ,control function D(61)=.067,p>.05 and governance process D(61)=.080,P>.05 ,all are show evidence of normally distributed.

TABLE 1: K-S TESTS OF NORMALITY

Variables	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Risk management	.073	61	.200*	.977	61	.318
Control function	.067	61	.200*	.978	61	.333
Governance process	.080	61	.200*	.968	61	.110

a. Lilliefors Significance Correction

\*. This is a lower bound of the true significance.

Source: Author's own computation



**A2. LINEARITY TEST**

As Baum (2006) pointed out, the best method to test linearity of hypotheses is using Walde test by linear combination method of stata syntax command. Wald test hypothesis the coefficients for independence, support, mandate, access, fund, leader, staff, and compliance are simultaneously equal to zero. All three null hypotheses are rejects because the current study combined sums of estimated coefficient are -.2117037, .481589, and -.190609 for model1, model 2 and model 3 presented in tables 2A, 2B and 2C respectively rather than zero. There fore, according to Baum (2006), linearity assumption is maintained that is the coefficient of each or combination of predictor variables differ from zero.

H0: independence + support + mandate + access + fund + leader + staff + compliance= 0.

Model1:  $RM = \beta_0 + \beta_1 (Id) + \beta_2 (ST) + \beta_3 (MD) + \beta_4 (AS) + \beta_5 (F) + \beta_6 (L) + \beta_7 (SF) + \beta_8 (C) = 0$

**TABLE 2 A**

Risk management	Coef.	Std. Err.	T	P> t	[95% Conf. Interval]
(1)	-.2117037	.0296012	-7.15	0.000	-.2711029 -.1523045

H0: independence + support + mandate + access + fund + leader + staff + compliance = 0.

Model2:  $CT = \beta_0 + \beta_1 (Id) + \beta_2 (ST) + \beta_3 (MD) + \beta_4 (AS) + \beta_5 (F) + \beta_6 (L) + \beta_7 (SF) + \beta_8 (C) = 0$

**TABLE 2 B**

Control	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
(1)	.481589	.0726901	6.63	0.000	.3357256 .6274523

H0: independence + support + mandate + access + fund + leader + staff + compliance = 0

Model3:  $GC = \beta_0 + \beta_1 (Id) + \beta_2 (ST) + \beta_3 (MD) + \beta_4 (AS) + \beta_5 (F) + \beta_6 (L) + \beta_7 (SF) + \beta_8 (C) = 0$

**TABLE 2 C**

Governance	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
(1)	-.190609	.0755199	-2.52	0.015	-.3421507 -.0390672

Source: Author's own computation

**A3. TEST OF MULTICOLINEARITY**

Correlation analysis was applied to determine the interrelationships among independent variables and to examine the possibility of collinearity or multicollinearity. Since all independent variables were measured using approximately interval scales, with the response rang strongly disagree (SDA, 1) to strongly agree (SA, 5), Pearson product moment pair-wise correlation was used. Multicollinearity is a serious problem when the pair-wise correlation coefficients between two regressors are high, say excess of .80 (Gujarati, 2004, pp. 359). The current study, the highest correlation result is .5612 that is the correlation between competent leadership and competent staff. This indicates that problem of multicollinearity is not the threat. The following table presented this result.

**TABLE 3: PEARSON PRODUCT MOMENT PAIR-WISE CORRELATION**

	Independence	Support	Mandate	Access	Fund	Leader	Staff	Compliance	Risk	Control	Governance
Independence	1.0000										
Support	0.4717**	1.0000									
Mandate	0.3586**	0.2740*	1.0000								
Access	0.4519**	0.4157**	0.1996	1.0000							
Fund	0.0807	0.3126*	0.1850	-0.0448	1.0000						
Leader	0.3705**	0.3238*	0.5212**	0.2149	0.3133*	1.0000					
Staff	0.4659**	0.2804*	0.4856**	0.2741*	0.1167	0.5612**	1.0000				
Compliance	0.5402**	0.2799*	0.3854**	0.3266*	0.1669	0.2278	0.2565*	1.0000			
Risk	0.4043**	-0.1306	-0.0597	0.1177	-0.4520**	-0.2643*	-0.5614**	0.1869	1.0000		
Control	0.4312**	0.4892**	0.3237*	0.3306**	0.3936**	0.3400*	0.4686**	0.4708**	-0.4214*	1.0000	
Governance	0.0325	-0.4971*	-0.2724*	-0.2735*	-0.0176	-0.1080	-0.0188	0.3844*	0.1106	-0.3663*	1.0000

Source: Author's own computation

Note: \*\*Correlation is significant at the 0.01 level (2-tailed); \* Correlation is significant at the 0.05 level (2-tailed).

**A4. TEST OF AUTOCORRELATION**

The most celebrated test for detecting serial correlation and more formal procedure for examining the correlations between the error terms is Durbin-Watson d test (Gujarati, 2004, pp.467 and Malhotra, 2006, pp.588). The current study , computed Durbin-Watson d test is 1.843. The lower bound (dL) and upper bound (dU) from Durbin-Watson d statistic: Significance point of dL and dU at 0.05 level of significance, n =61 table shows 1.298 and 1.894 respectively. This indicates that  $dL < d < dU$ , that is  $1.298 < 1.843 < 1.894$ . In this situation Gujarati (2004) suggests no positive autocorrelation. Therefore, autocorrelation problem is not the hazard of this study.

**A5. TEST OF HOMOSCEDASTISTY/HETEROSCEDASTICITY**

The best method of homoscedastisty/ heteroscedasticity test as Cameron and Trivedi (2009) and Gujarati (2004) recommended was Breusch-Pagan-Godfrey (BPG) Test. The results of (BPG) test indicate the assumption of equal (constant) variance of residuals is maintained implies that no problem of heteroscedasticity.

**TABLE 4 A: TEST FOR HETEROSCEDASTICITY (MODEL 1)**

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity
Ho: Constant variance
Variables: fitted values of risk management
chi2 (1) = 0.26
Prob > chi2 = 0.6115

**TABLE 4 B: TEST FOR HETEROSCEDASTICITY (MODEL 2)**

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity Ho: Constant variance	
Variables: fitted values of control	
chi2 (1)	= 0.03
Prob > chi2	= 0.8574

**TABLE 4 C: TEST FOR HETEROSCEDASTICITY (MODEL 3)**

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity Ho: Constant variance	
Variables: fitted values of governance	
chi2 (1)	= 0.01
Prob > chi2	= 0.9238

Source: Author's own computation

**B. Research question/model test**

RQ1: To what extent better risk management, control and governance process role of internal audit function relates to better existence of organizational independence, formal mandate, unrestricted access, sufficient funding, competent leadership, competent staff, management support, and Compliance with Professional audit standards in the organization?

Model1:  $RM = \beta_0 + \beta_1 (Id) + \beta_2 (ST) + \beta_3 (MD) + \beta_4 (AS) + \beta_5 (F) + \beta_6 (L) + \beta_7 (SF) + \beta_8 (C) + \epsilon$

The extent of association of risk management role of internal audit function with organizational independence, formal mandate, unrestricted access, sufficient funding, competent leadership, competent staff, management support, and Compliance with Professional audit standards in the organization was measured by using OLS multiple regressions. The following table presented OLS regression results.

**TABLE 5: OLS RESULT OF RISK MANAGEMENT (MODEL 1)**

Risk	Coefficient	t	P**
Independence	-.4132392	-15.19	0.000
Support	.1048558	4.33	0.000
Mandate	.1176807	4.36	0.000
Access	.1224209	6.22	0.000
Fund	-.2566005	-14.89	0.000
Leader	.0930857	4.18	0.000
Staff	-.3294688	-14.34	0.000
Compliance	.3495616	14.07	0.000
Constant	4.102363	39.88	0.000

Note: - \*\* significant at the 0.05 level (2-tailed).  
 Number of obs = 61, F (8, 52) = 109.13, sig. F = 0.0000;  
 R-squared = 0.9438 ; Adj. R-squared = 0.935; Durbin-Watson=1.843  
 Root MSE = .08862

Source: Author's own computation

Table 5 show the model is significant ( $F=109.127$ ;  $Sig.F=.000$ ) and explained 94.38 percent of the variation in risk management. The table also demonstrates risk management role of internal audit function is significantly related with organizational independence ( $\beta=-.413$ ,  $p=.000$ ), compliance with professional audit standards ( $\beta=.350$ ,  $p=.000$ ), competent staff ( $\beta=-.329$ ,  $p=.000$ ), sufficient funding ( $\beta=-.257$ ,  $p=.000$ ), unrestricted access ( $\beta=.122$ ,  $p=.000$ ), formal mandate ( $\beta=.118$ ,  $p=.000$ ), top management support ( $\beta=.105$ ;  $p=.000$ ) and competent leadership ( $\beta=.093$ ,  $p=.000$ ) in their order of relationship.

Model2:  $CT = \beta_0 + \beta_1 (Id) + \beta_2 (ST) + \beta_3 (MD) + \beta_4 (AS) + \beta_5 (F) + \beta_6 (L) + \beta_7 (SF) + \beta_8 (C) + \epsilon$

OLS regression analysis was utilized to test this model. The following table presented the OLS regression results.

**TABLE 6: OLS RESULT OF CONTROL FUNCTION (MODEL 2)**

Control	Coefficient	T	P
Independence	-.0050268	-0.08	0.940
Support	.1120112	1.89	0.065
Mandate	-.0220967	-0.33	0.740
Access	.036271	0.75	0.456
Fund	.1015646	2.40	0.020**
Leader	-.027403	-0.50	0.619
Staff	.1467025	2.60	0.012**
Compliance	.1395662	2.29	0.026**
Constant	1.093269	4.33	0.000**

Note: - \*\* significant at the 0.05 level (2-tailed).  
 Number of obs = 61; F (8, 52) = 6.47; Sig. F = 0.0000;  
 R-squared = 0.4990; Adj. R-squared = 0.4219; Root MSE = .21761

Source: Author's own computation

Table 6 shows, the model is significant ( $F=6.47$ ,  $Sig.F=.000$ ) and explained 49.9 percent of the variation in controlling function of internal audit in the public sector. The result proposes, not surprisingly, the control function of internal audit is significantly related with competent staff ( $\beta=.147$ ,  $p=.012$ ), compliance with professional audit standards ( $\beta=.140$ ,  $p=.026$ ), and sufficient funding ( $\beta=.102$ ,  $p=.020$ ) in their order of relationship.

Model3:  $GC = \beta_0 + \beta_1 (Id) + \beta_2 (ST) + \beta_3 (MD) + \beta_4 (AS) + \beta_5 (F) + \beta_6 (L) + \beta_7 (SF) + \beta_8 (C) + \epsilon$

Table 7 summarizes the results of OLS regression analysis of this model

**TABLE 7: OLS RESULT OF GOVERNANCE PROCESS (MODEL 3)**

Governance	Coefficient	t	P
Independence	.0922073	1.33	0.190
Support	-.4394102	-7.12	0.000**
Mandate	-.4108293	-5.96	0.000**
Access	-.1675093	-3.34	0.002**
Fund	.0470163	1.07	0.290
Leader	.0492953	0.87	0.390
Staff	.1194188	2.04	0.047**
Compliance	.5192021	8.19	0.000**
Constant	3.045318	11.60	0.000**

Note: - \*<sup>\*</sup> significant at the 0.05 level (2-tailed).  
 Number of obs = 61; F( 8, 52) = 21.35; Sig.F = .0000;  
 R-squared = 0.7666; Adj. R-squared = 0.7307;  
 Root MSE = .22609

Source: Author's own computation

The OLS regressions in Table 7 results show the model is significant ( $F=21.35$ ;  $Sig.F=.0000$ ) and explained 76.66 percent variation of governance process role of internal audit function. The results also show that governance process role of internal audit function is significantly related with compliance with professional audit standards (beta=.519,  $p=.000$ ), top management support (beta=\_.439,  $p=.000$ ), formal mandate (beta=\_.411,  $p=.000$ ), unrestricted access (beta=\_.167,  $p=.002$ ), and competent staff (beta=\_.119,  $p=.047$ ) in their order of relationship.

### C. DISCUSSION

This study has attempted to examine the role of internal audit function in public sector governance and challenges that have an effect on this function the case of Amhara National Regional State public sector. Data were collected by distributing structured questionnaires measured at five-point likert-type scale and analyzed using multiple OLS regression statistical method.

Given inadequate empirical research on this issue, this study designed empirical model for measuring the role of internal audit function of risk management, control and governance process in the public sector. One of the major findings here is that the theoretical aspects of internal audit function in public sector and its' challenges suggested in IIA (2006) and Asare (2009) were empirically tested by developing OLS multiple regression models.

The model here explains 94.38% of variation of risk management role, 49.90% of variation of control function and 76.66% of variation of governance processes. This shows that the combined effect of organizational independence, formal mandate, unrestricted access, sufficient funding, competent leadership, competent staff, management support, and Compliance with professional audit standards explains 94.38% of the role internal audit function on risk management in the public sector, and the remaining portion of 5.62% explained by other factors which were not mentioned in this study represented as error term (e). The joint effect of competent staff, compliance with professional audit standards; and sufficient funding explain 49.90% of control function of internal audit in the public sector, and the remaining 50.10% explained by other factors which were not mentioned in this study represented as error term (e). The combined effect of competent staff, compliance with professional audit standards, top management support, formal mandate and unrestricted access explains 76.66% governance process role of internal audit function in the public sector and remaining 23.34% explained by other factors which were not mentioned in this study represented as error term (e).

#### C1. ROLE OF INTERNAL AUDIT FUNCTION- RISK MANAGEMENT

One of the objectives of this study is to examine and analyze challenges that affect the risk management role of internal audit function. The regression result confirms that risk management role of internal audit function is positively related with the existence of compliance with professional audit standards, unrestricted access, formal mandate, top management support, and competent leadership. This provides evidence for the relationships predicted in the first model.

The implication here is that the better internal auditors' compliance with professional audit standards in their day to day activities, the better improvements risk management performance in the sector. As stated under IIA (2010) as internal auditors compliance with professional audit standards in their activities, they can evaluate risk exposures relating to the organization's governance, operations, and information systems regarding the: reliability and integrity of financial and operational information, effectiveness and efficiency of operations and programs, safeguarding of assets; and compliance with laws, regulations, policies, procedures, and contracts.

Unrestricted access is positively related with risk management role of internal audit function. This result reveals that the existence of unrestricted accesses to information (internal auditors get free access to information) of plans, forecasts, people, data, products, facilities, and records; as Hass, et al (2006) noted internal auditors not only be able to assess risks in their large organizations, but they also be able to complete complex risk analyses in their risk management function. Formal mandate is positively related with risk management role of internal audit function. This implies the existence of formal mandate in the organization improves risk management role of internal audit function. Dessalegn (2010), on his "Factors Associated with the Attributes of Internal Audit Departments" study supports this result. His study suggests internal audit charter (or similar organizational policy) is important to strength internal audit.

The other result of the study advocates top management support is positively related with risk management role of internal audit function. Previous study findings support this result. For example, top management support is crucial to the operation and success of internal audit function (Cohen, et al., 2010 and Soh et. al, 2011), management support to IA is considered as one of the determinants of IA's attributes (Dessalegn, et al., 2007), and the degree of collaboration of internal auditors with managers in addressing problems and threats is a key point (Arena et al., 2006). Furthermore, the study shows, competent leadership positively related with risk management role of internal audit function. This result is consistent with Arena et.al (2006), study of internal audit in Italian organization. Their study concludes that the leadership of internal auditors emerged as a very important element for the effectiveness and acceptance of the internal audit activities. In addition, they suggest that leadership of internal auditors is necessary to demonstrate that internal audit is actually useful for the whole company and the auditors can improve process and activities.

The regression results indicate that the lower existence of organizational independence, competent staff, and sufficient funding results internal auditor's activities faces a big challenge for the risk management role of internal audit function in the sector. This result supported by Ahmad, Othman and Jusoff (2009) on their study of "The effectiveness of internal audit in Malaysian public sector". They concluded that internal audit function in the public sector in Malaysian is curtailed (*shortened*) by understaffing and negative perception accorded to internal audit led to inaction by management on recommended remedies which only serve to nullify the positive contribution internal audit potentially hold to elevate (*make higher*) the service delivery quality of the public sector.

#### C2. THE ROLE OF INTERNAL AUDIT FUNCTION - CONTROL

Another objective of this study is to examine and analyze the control function of internal audit and challenges that have an effect on this function. The regression result indicates that control function of internal audit is positively significantly related with the existence of competent staff, compliance with professional audit standards; and availability of funding. The results confirm the researcher's expectations in the second model. This reveals that the better existence of competent staff, compliance with professional audit standards; and availability of funding, the better control function of internal audit in the public sector. Even if these variables are statistically significant, it predicts only 49.90 % of control function of internal audit in the public sector as compared to other variables.

**C3. THE ROLE OF INTERNAL AUDIT FUNCTION- GOVERNANCE PROCESS**

One more objective of this study is to examine and analyze challenges that have an effect on the governance process role of internal audit function in the public sector. The result of the study proposes that governance process of internal audit function is positively related with the existence of competent staff and compliance with professional audit standards. This result confirms expectations in the third model. This indicates that with the better existence of competent staff and compliance with professional audit standards in the public sector, the better improvements in the governance process role of internal audit function. Theoretically the IIA (2006) supports this result. Through the better existence of competent staff and compliance with professional audit standard; internal auditors can provide independent, objective assessments on the appropriateness of the organization's governance structure and the operating effectiveness of specific governance activities. In addition, they act as catalysts for change, advising or advocating improvements to enhance the organization's governance structure and practices (IIA, 2006).

The findings suggest that the governance role of internal audit function faces a big challenge when there is lower existence of formal mandate, top management support, and unrestricted access. As stated under IIA (2006) with the lower existence of top management support, formal mandate and unrestricted access, internal auditors cannot ensure a government's credibility, establish equitable provision of services, and assure appropriate behavior of government officials whilst reducing the risk of public corruption.

**CONCLUSION**

A healthy constructed internal audit function can play a vital role in the governance and accountability process of public sector institutions through their assessments on the effectiveness of key organizational risk management, controls, and governance processes. This study has examined the extent of relationship between the role of internal audit function and its' challenges. Structured questionnaire survey of all internal audit directors and staff from 35 public sector bureau of Amhara National Regional State was used. To analyze the data, OLS multiple regression statistical analysis method was employed.

With the fulfillment of assumptions expected, OLS multiple regression analysis results show that the risk management role of internal audit function is better improved, when there is better existence of compliance with professional audit standards, unrestricted access, formal mandate, top management support, and competent leadership. The regression results indicate that the lower existence of organizational independence, competent staff, and sufficient funding results internal auditor's activities faces the big challenge for the risk management role of internal audit function in the sector. The findings suggest that the control function of internal audit becomes better with the better existence of competent staff, compliance with professional audit standards, and sufficient funding in the public sector. The results also reveal that the higher the extent of compliance with professional audit standards, and existence of competent staff highly improve the governance process role of internal audit function. The findings suggest that the activities of internal auditors for governance role of internal audit function faces a big challenge when there is lack of formal mandate, lack of top management support, and lack of unrestricted access.

The study concludes that policy makers and regulators and all other parties related to internal audit function in the public sector that needs the services of internal audit to be effective and efficient should give emphasis on the value adding role of its function in the public sector through risk management, control and governance processes.

The results of the study are expected to contribute insights for empirical model to examine the role of internal audit function and its' challenges in public sector governance. Potential limitations intrinsic in the sampling technique employed should be granted. That is, selections of only internal audit director and staff as a respondents rather than including management groups. Nonetheless, this will have little influence on the validity of the results. Since most of executive manager's professions were not accounting and related professions rather take the position by nomination, and in that case have lack of understanding the auditing terms itself. So their exclusion has little impact on the validity of the results. For the reason that internal auditing function in the public sector has a multifaceted role in the public sector like insight, oversight and foresight role, further research could be done to examine which challenges mentioned in this study highly affects these role is potential avenue.

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## APPENDIX

### APPENDIX 1 - ITEMS IN THE QUESTIONNAIRE

#### PART ONE

The following questionnaire measures the existence of organizational independence, formal mandate, unrestricted access, sufficient funding, competent leadership, competent staff, management support, and Professional audit standards in your organization to perform effective internal audit function. The researcher kindly requests you to fill your agreement or disagreement by putting (numbers) at the end of each statement based on the following scale value (1= strongly disagree, 2=Disagree, 3=Neutral/undecided/, 4=Agree and 5=strongly agree).

#### A. ORGANIZATIONAL INDEPENDENCE

1. Internal audit is free from intervention in performing its duties.
2. Internal auditors freely include any audit findings in their audit report.
3. Internal auditors can audit operational areas for which they have previously had executive or management responsibility within the last year.
4. The internal audit function has strategic position to contribute to organizational strategy performance.
5. Internal auditor undertakes subsequent audits of a system, which they have previously been involved in consultancy on systems design.
6. The current structure of internal audit promotes objectivity, consistency and business understanding.
7. The current reporting line of internal audit functions in your organization promotes internal audit to discharge its role in good governance.

#### B. TOP MANAGEMENT SUPPORT

8. Management is sufficiently aware of the needs of internal audit.
9. Management does provide enough support and encouragement for training and developing the IA staff.
10. Management perceive internal audit as value adding function.
11. Management always implements internal audit's recommendations.
12. Management staffs are highly understood and appreciate the role of internal audit function.

#### C. FORMAL MANDATE/EXISTENCE OF AUDIT CHARTER/

13. Internal audit department has a formal Internal Audit Charter /policy/.
  14. The Internal audit charter /policy/ is clearly and easily understood by staff members.
  15. The Internal audit charter/policy/ requires some clarity.
  16. Internal audit activities, power and duties, and reporting lines of internal audit are clearly defined in the internal audit charter/policy/.
  17. Currently the formal internal audit charter/policy/ is in the process of formulating.
- D. UNRESTRICTED ACCESS**
18. Internal auditors allowed unrestricted access of plans and forecasts of the organization to perform their independent evaluations to judge the audit work.
  19. Internal auditors allowed unrestricted access of people, data, products, facilities, and records of the organization to perform their independent evaluations to judge the audit work.
- E. SUFFICIENT FUNDING**
20. Internal audit department in your organization has sufficient budget relative to the size of its audit responsibilities.
- F. COMPETENT LEADERSHIP**
21. Internal audit department in your organization has policies for hiring of internal audit staff
  22. Internal audit departments in your organization has policies for training of internal audit staff
  23. The head of the internal audit in your organization effectively develops annual audit plans based on risk.
  24. The head of the internal audit in your organization effectively develop and implement appropriate framework to measure internal audit performance.
- G. COMPETENT STAFF**
25. The internal audit department has sufficient number of staff who is responsible to undertake auditing activities.
  26. The internal audit department has qualified and competent internal audit staff.
  27. Internal auditors undertake continuous professional development activities.
- H. COMPLIANCE WITH PROFESSIONAL AUDIT STANDARDS**
28. The purpose of internal audit is in line with "standards for the professional practice" formulated by the Institute of Internal Auditors.
  29. The purpose of internal audit is in line with internal audit manual formulated by Ministry of Finance and Economic Development Bureau.
  30. The authority of internal audit is in line with "standards for the professional practice" formulated by the Institute of Internal Auditors.
  31. The authority of internal audit is in line with internal audit manual formulated by Ministry of Finance and Economic Development Bureau.
- PART TWO**
- The following questionnaire measures the role of internal audit function in your organization regarding to risk management, control activities and governance processes. The researcher kindly requests you to fill your agreement or disagreement by putting (numbers) at the end of each statement based on the following scale value (1= strongly disagree, 2=Disagree, 3=Neutral/undecided/, 4=Agree and 5=strongly agree).
- A. RISK MANAGEMENT ROLE**
1. Internal auditing should be fully responsible for and lead the risk management program.
  2. Along with management, internal auditing should share in the responsibility and oversight of the risk management program.
  3. Internal auditing should only support risk management efforts as requested or needed.
  4. Internal auditing should be completely separate from and not involved with the organization's risk management program.
- B. CONTROL FUNCTION OF INTERNAL AUDIT**
5. Internal audit has the authority to review any aspect of the entity's operations.
  6. Internal audit systematically assessing control environment.
  7. Internal audit evaluates the effectiveness of management's monitoring processes.
  8. The frequency and scope of supervision and monitoring activities of internal audit are appropriate to the size and nature of the entity.
  9. Internal audit assist management in preparing a report on the effectiveness of internal control.
  10. Internal audit assist management in designing a comprehensive assessment, including testing of controls across the organization.
  11. Internal audit identifies significant control deficiencies and communicate to the higher officials.
- C. CONTRIBUTION FOR GOVERNANCE PROCESS**
12. The current reporting line of internal audit functions in your organization promotes internal audit to discharge its role in good governance.
  13. The IA department contributes to the organization above and beyond its costs.
  14. The information provided by IA is vital to organizational operations.
  15. The existence of internal audit function in the organization is highly strength and supports the organization to bring about good governance.
  16. Internal auditors are highly involved in promoting the effectiveness of the governance structure of the organization.

## AN EXAMINATION OF LEADERSHIP STYLES OF SENIOR AND MIDDLE LEVEL MANAGERS IN SELECTED ORGANISATIONS IN MUSCAT, SULTANATE OF OMAN

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### ABSTRACT

*The objective of the study was to examine the leadership styles of senior and middle level managers employed in construction and engineering companies in Muscat, Sultanate of Oman. Data was collected using the Leadership Styles Questionnaire. The findings of the study suggest that senior level managers Delegate, Facilitate, Direct and Coach whereas middle level managers Delegate, Direct, Facilitate and Coach.*

### KEYWORDS

Authoritarian Leadership Style, Coaching Leadership style, Delegative Leadership Style, Facilitating Leadership Style.

### INTRODUCTION

The global marketplace is faced with different challenges that affect an organizations overall management and operations. Various pressures on the internal and external conditions such as the unstable world and local economies, the workforce, the customers, and even the management itself risk the success or failure of the organization. In implementing effective management of a business, regardless of what kind of management strategy is used, the person who is foremost in all the transactions of the business must be able to deal with all the potential hazards. Thus, Leadership is an important aspect of any organization.

For decades, the issue on leadership has been undertaken in various studies. In fact the study on leadership dates back to 1921 (Hughes, Ginnett&Curphy, 1999, p. 8). Leadership comprises the aptitude and ability to inspire and influence the thinking, attitudes, and behavior of other people (Adler, 1991; Bass and Stogdill, 1989; Bennis and Nanus, 1985; Kotter, 1988). Leadership is a process of social influence in which one person is able to enlist the aid and support of other individuals in the achievement of a common task (Chemers, 1997)

Yukl (2002) defined leadership as the process of inspiring other people to comprehend and agree on what needs to be done and how to accomplish them effectively. In addition, leadership is also defined as the process of facilitating collective and individual efforts to fulfill shared objectives According to Bass (1990), leadership is an interaction between two or more members of a group that often involves a structuring or restructuring of the situation and the perceptions a and expectations of the members.

Somewhere between the broad personality trait and the specific behavior sits the leadership style. Styles reflect relatively stable patterns of response to social situations. Leadership style refers to the degree of direction that the leader provides to subordinates in attempting to influence their behavior toward the accomplishment of organizational objectives (Gibson & Marcoulides, 1995). Leadership style is the total pattern of explicit and implicit leader's action as seen by employees. The styles of leadership are the authoritarian (autocratic, directive) style (Lewin, Lippitt, & White, 1939), permissive (delegative) style, democratic (Facilitating) style (Schriesheim, 1982; Newstrom, 1993) and Coaching (Newstrom, 2009). Through the current study, we would like to explore the leadership styles adopted by senior and middle level managers.

Senior and Middle level managers face fundamentally different task frameworks. Senior managers can independently take policy decisions; they have more of multifaceted tasks and extended periods. Within certain boundaries defined, for instance, by the organization's environment or by its board of directors, upper managers can relatively autonomously draft strategic policy decisions (Hambrick and Mason, 1984). They usually face more complex and ambiguous tasks with more extended time frames, as compared to managers on lower hierarchical levels (Sashkin, 1988).

Middle level managers on the other hand have to follow guidelines and orders from the senior level managers. Though they may have some freedom in implementing management's decisions into operational plans, this autonomy is however restricted. These differences may affect the leadership styles of senior and middle level managers.

Bruch and Walter (2007) investigated whether the occurrence of Transformational leadership behaviors varied between upper and middle managers and whether such behaviors differentially influence the job satisfaction of upper and middle managers' direct subordinates. Using the Multifactor questionnaire 5X they found that Idealized influence and inspirational motivation occurred more frequently among upper rather than middle managers, while there were no differences for intellectual stimulation and individualized consideration.

### COACHING LEADERSHIP STYLE

A rapidly emerging metaphor for the leader is that of a coach. Coaching means the leader prepares guides and directs a "player" but does not play the game. The coaching leader selects the right player, teaches and develops subordinates, is available for problem-oriented consultation, to review resource needs and to listen to inputs from employees.

This leadership style is more likely to be exhibited by senior rather than middle level managers. As Antonakis and Atwater (2002) argued, "the role of top-level leaders is to use their vision and values to ensure that organizational resources are used to achieve the organization's intended objectives ... At lower hierarchical levels, values and vision also play a role, but different instrumental leader behaviors ... will contribute to organizational performance" (p. 697). In contrast to upper management, middle managers' job profile usually does not include the formulation of visionary goals (Bryman, 1992). Also, upper managers' responsibilities are usually more abstract and long-term oriented than those of middle managers (Pavett and Lau, 1983; Van der Velde et al., 1999). Thus, senior level managers are in a better position to represent the management's position in a convincing manner, can motivate them with monetary and non-monetary rewards, and instill confidence in their ability to perform, appreciate their achievements and good work and provide them with a lot of feedback on how they are doing.

Middle managers may nevertheless be able to achieve certain levels of inspirational motivation by explaining the visionary aspirations defined by senior managers towards their followers, by clarifying how work unit goals relate to the such visions, and by translating strategic objectives into daily routines (Raine)

and Watson, 1996). However, while middle managers' inspirational motivation is likely to remain limited to such a smaller scale, upper managers more frequently have opportunities for the development and communication of a global, strategic vision for the entire organization or significant subunits thereof (Shamir and Howell, 1999).

### **FACILITATING LEADERSHIP STYLE**

Intellectually stimulating leaders encourage followers to develop innovative ideas and to challenge old ways of doing things by proactively involving followers in their decision-making (Bass, 1985). Upper managers may perform such behaviors to a greater extent than middle managers, because due to their higher autonomy, they may have greater freedom to probe innovative solutions and to involve subordinates in the search for novel approaches (Shamir and Howell, 1999). In addition, with upper managers' work problems often being ill defined and complex, they may more frequently depend on direct subordinates' creativity in developing effective solutions (Waldman et al., 2004). Thus, senior level managers may have the power, the chance, and the need to exhibit facilitating leadership styles.

Middle managers may find it more difficult to approach work problems in innovative ways, as their tasks are pre-defined. Therefore, middle managers also may less often require their subordinates' creativity to arrive at effective solutions, diminishing the necessity for intellectually stimulating behaviors. Finally, middle managers may lack the authority to promote innovative processes. They "often serve as rule enforcers and protectors of the organization rather than innovators" (Rainey and Watson, 1996, p. 780). Due to their general familiarity with followers' work, middle managers may be able to stimulate followers' creativity by framing given tasks in challenging ways (Rainey and Watson, 1996). Nevertheless, such behavior is likely to be less frequent than in the case of senior managers. Accordingly, managers at higher organizational levels have been found to more frequently include subordinates in their decision-making than lower level managers (Jablin, 1987) and to give subordinates greater opportunities to critically question managerial instructions (Miles et al., 1996).

### **AUTHORITARIAN LEADERSHIP STYLE**

Authoritarian style (Huffman and Piggrem, 2003) of leadership states that the leader has the authority over his subordinates. Autocratic leaders centralize power and decision making in themselves. They structure the complete work situation for the employees. They give detailed instructions, specify goals and objectives and keep a check on staff to see if they are achieving the desired outcome. In order to achieve the set standards and goals, both senior and middle level managers may have to display Directive leadership style. Middle level managers being the "rule enforcers" and given their familiarity with the followers and their work, are more likely to exhibit authoritarian leadership style.

### **DELEGATIVE LEADERSHIP STYLE**

The permissive (Delegative) refers to the kind of leadership wherein the followers are permitted to be involved in the decision making process. The leader implements minimal control or manipulation on their followers. The leader delegates broad responsibilities to the staff and expects them to handle the details, to find and correct their own errors. However, the leader is still accountable for the final decision to be made.

## **METHOD**

### **DATA COLLECTION & SAMPLE DESCRIPTION**

Data for the current study was collected from six large construction and engineering private sector companies. Managing Directors of each of these organization were requested to rate their reactions in typical situations. Thirty-six middle level managers representing all the major departments in the organization volunteered to participate in the survey. All the senior level managers were males, in the age group of 45 to 60 years and had been employed in the company for more than ten years.

Middle level managers were also predominantly male (94%), having mean age = 33 years and had been employed in the present organization for more than two years.

### **MEASURES**

The leadership styles questionnaire was employed to gather information regarding leadership style. This survey instrument is a twenty four item Likert scale questionnaire ranging from 1 (to almost no extent) to 5 (to a very great extent). A higher value represented greater use of the leadership style. It has four sub dimensions to measure directing (I check staff's work on a regular basis to assess their progress and learning.), coaching (hold periodic meetings to show support for company policy and mission.), delegating (provide staff with clear responsibilities and allow them to decide how to accomplish them) and facilitating (I appoint staff into task groups to action policies affecting them.) leadership style. Each sub dimension had six items. Internal reliabilities for each of the sub scales range from 0.89 to 0.81.

### **RESULTS**

The first research question addresses to the leadership styles of the senior and middle level managers. It is observed from Table I that the respondent senior and middle level managers are using all the four leadership styles. However, they are using delegative leadership style (mean = 24.000) to greater extent as compared to the other styles.

(Facilitating = 23.3529, Coaching = 22.5883 and Directing = 22.4706). Managers at all levels ensure that information systems are timely and accurate and that information is fed directly to staff (mean = 4.4118), they recognize staffs achievement with encouragement and support (mean = 4.3529), they provide staff with clear responsibilities and allow them to decide how to accomplish them (mean = 4.2353), hold regular meetings to discuss work status (mean = 4.2353) check staffs work on a regular basis to assess their progress and learning (mean = 4.1765), Provide staff with time and resources to pursue their own development objectives (mean = 4.1176) and expect staff to create their own goals and objectives and submit them in finished form (mean = 4.0588).

For the senior level managers, providing staff with clear responsibilities and allowing them to decide how to accomplish them co related significantly ( $r = 0.699^{**}$ ,  $p = 0.002$ ) with recognizing staffs achievement with encouragement and support. Checking staffs work on a regular basis to assess their progress and learning co related significantly with

Discussing any organizational policy changes with staff prior to taking action ( $r = 0.614^{**}$ ,  $p = 0.009$ ), emphasizing the importance of quality but allowing staff to establish the control standards ( $r = 0.607^{**}$ ,  $p = 0.010$ ). Providing staff with time and resources to pursue their own development objectives co related significantly with discussing any organizational policy changes with staff prior to taking action ( $r = 0.814^{**}$ ,  $p = 0.000$ ).

For the middle level managers, Ensuring that information systems are timely and accurate and that information is fed directly to staff co related significantly ( $r = 0.634^{**}$ ,  $p = 0.006$ ) with making sure that staff are aware of and understand all company policies and procedures, recognizing staffs achievement with encouragement and support ( $r = 0.637^{**}$ ,  $p = 0.006$ ). Recognizing staff's achievement with encouragement and support co related significantly with appointing staff into task groups to action policies affecting them ( $r = 0.611^{**}$ ,  $p = 0.009$ ) and providing staff with clear responsibility and allowing them to decide how to accomplish them ( $r = 0.699^{**}$ ,  $p = 0.002$ ).

Checking staffs work on a regular basis to assess their progress and learning co related significantly ( $r = 0.665^{**}$ ,  $p = 0.004$ ) setting own performance standards for each aspect of the staffs job, explain the benefits of achieving the work goals ( $r = 0.644^{**}$ ,  $p = 0.005$ ).

### **CONCLUSION**

We thus conclude that both senior and middle level managers are using Delegative leadership style. Senior level managers, given the influence and autonomy, which they enjoy, delegate clear responsibilities down the line and at the same time give their subordinates the freedom to decide how to achieve the set



targets. Through their positional power, they emphasize on the importance of quality standards, however the control standards are established by the staff. They discuss organizations policy changes with the staff prior to implementing them. They provide staff with time and resources to pursue their own developmental objectives and recognize staffs achievement with encouragement and support.

Middle level managers, ensure that information systems are timely and accurate and that information is fed directly to staff, they set performance standards for each aspect of the job and explain the benefits of achieving goals. Like senior level managers, they too check staffs work on a regular basis and recognize staffs achievement with encouragement and support.

Senior level managers Delegate, Facilitate, Direct and Coach whereas middle level managers Delegate, Direct, Facilitate and Coach.

**DELEGATING LEADERSHIP STYLE**

	Mean
Provides staff with clear responsibilities and allows them to decide how to accomplish them	4.2353
Explains the benefits of achieving the work goals to the staff	3.9412
Meets with staff regularly to discuss their needs	3.7059
Emphasizes the importance of quality but allows staff to establish control standards	3.6471
Expects staff to create their own goals and objectives and submit them in finished form	4.0588
Ensures that information systems are timely and accurate and that information is fed directly to staff.	4.4118
Total	24.000

**FACILITATING LEADERSHIP STYLE**

	Mean
Appoints staff into task groups to action policies affecting them.	3.9412
Discuss any organizational or policy changes with staff prior to taking action.	4.3592
Avoids making judgments or premature evaluation of ideas or suggestions.	3.7059
Rotates the role of team briefer among the staff.	3.4118
Provides staff with the time and resources to pursue their own developmental objectives.	4.1176
Avoids evaluating problems and concerns as they are discussed.	3.8253
Total	23.3529

**COACHING LEADERSHIP STYLE**

	Mean
Holds periodic meetings to show support for company policy and mission.	3.5294
Recognizes staff's achievements with encouragement and support.	3.7647
Meets with staff regularly to discuss their needs.	3.8824
Explains the benefits of achieving their work goals to staff.	3.7647
Holds regular meetings to discuss work status.	4.2353
Focuses on opportunities and not problems.	3.4118
Total	22.5883

**DIRECTING LEADERSHIP STYLE**

	Mean
Checks staff's work on a regular basis to assess their progress and learning.	4.1765
Makes sure staff is aware of, and understand, all company policies and procedures.	3.9412
Demonstrates each task involved in doing the job.	3.5882
Sets down performance standards for each aspect of my staff's job.	3.4706
Has staff report back to me after completing each step of their work.	3.7059
Tries to assign work in small, easily controlled units.	3.5882
Total	22.4706

**ZERO ORDER CORRELATIONS BETWEEN LEADERSHIP STYLES**

	1	2	3	4
1. Facilitating	(0.87)			
2. Coaching	0.666**	(0.89)		
3. Delegating	0.718**	0.819**	(0.81)	
4. Directing	0.550**	0.433*	0.345	(0.88)

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

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

**LEADERSHIP STYLES: MEAN**

	Facilitating	Coaching	Delegating	Directing
Senior Manager	24.9333	23.8667	25.4667	24.2000
Middle Manager	21.9465	21.7336	23.3571	22.4706

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**KNOWLEDGE AUDIT AS A SUCCESS FACTOR FOR KM IMPLEMENTATION**

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**ABSTRACT**

*In today's knowledge-driven economy, organizations are increasingly dealing with intangible assets and intellectual properties like human capital, customer capital, patents and brands. Accounting these issues has become a daunting task for organizations and must be properly included in the corporate financial accounts. Accordingly, these intangible, knowledge assets are dominating the corporate balance sheets and revealing their value of knowledge by demonstrating how it is, or how it can be converted into purchasable goods and services. Against this backdrop, knowledge is recognized as the most important strategic asset in any organization across the globe. These developments offer a strong base for Knowledge Audit or K-Audit. With the help of knowledge audit, organizational knowledge can be quantified, measured and assessed. Therefore, knowledge audit is so vital, because it gives an organization a comprehensive picture of its strengths and weakness, allowing it to focus its efforts in the right direction. Certainly, a proper business needs assessment and cultural assessment also needs to be performed as part of the knowledge audit. The choice of approach depends on business needs and objectives. There is no doubt that K-Audit is unquestionably the first step in any kind of KM initiative and has been considerably recognized as a must for any kind of organizational efforts towards effective knowledge management. To achieve successful KM, a knowledge audit is vital to investigate an organization's knowledge 'health'. The knowledge audit provides an evidence based assessment of where the organization needs to focus its KM effort.*

**KEYWORDS**

Knowledge, Knowledge Management, Knowledge Asset, K-Audit, Knowledge Inventory, Knowledge Health.

**INTRODUCTION**

In today's knowledge-driven economy, organizations are increasingly dealing with intangible assets and intellectual properties like human capital, customer capital, patents and brands. Accounting these issues has become a daunting task for organizations and must be properly included in the corporate financial accounts. Unlike in the past, these intangibles are now contributing maximum to a firm's bottom line. Innovation and knowledge have become the key imperatives from automobiles to aircraft, from mobile phones to office equipment and computers to sports equipment. Accordingly, these intangible, knowledge assets are dominating the corporate balance sheets and revealing their value of knowledge by demonstrating how it is, or how it can be converted into purchasable goods and services. Against this backdrop, knowledge is recognized as the most important strategic asset in any organization across the globe. However, in many organizations knowledge is invisibly created, captured, distributed and shared throughout the organization. And most importantly, intangible assets are not easy to quantify, measure and value. Organizations are universally acknowledging the difficulties they encountered in attempting to quantify and measure these intangibles. These developments offer a strong base for Knowledge Audit or K-Audit. It is the first major stage in effective knowledge management and corporate knowledge valuation. Moreover, with the help of knowledge audit, organizational knowledge can be quantified, measured and assessed. Therefore, knowledge audit is so vital, because it gives an organization a comprehensive picture of its strengths and weakness, allowing it to focus its efforts in the right direction.

**KNOWLEDGE MANAGEMENT**

Knowledge Management (KM) is the collection of processes that govern the creation, dissemination, and utilization of knowledge. In one form or another, knowledge management has been around for a very long time. Practitioners have included philosophers, priests, teachers, politicians, scribes, Librarians, etc. Knowledge Management comprises a range of practices used by organisations to identify, create, represent, and distribute knowledge. Knowledge management has become an important area of focus for many organizations in order to be successful in today's business environment. There are many documented cases of successful KM efforts that have greatly aided firms in virtually every area of business. However, even with these documented achievements, many companies are still reluctant to undertake KM initiatives.

A knowledge audit can offer an evidence-based assessment of an organisation's knowledge status. It can help to frame knowledge strategy, assess progress, and facilitate strategic and operational buy-in. It can throw a spotlight on knowledge and information, infrastructure, processes and culture. Many organisations accept that knowledge is the basis of innovation and that organisations need to innovate in order to get ahead of competitors. Whether or not your organisation has begun a knowledge-management programme, it is important to be aware of its knowledge-related requirements. It is also important that organisations find a way of assessing the impact of their knowledge initiatives. Conducting knowledge audits is a key process not only for KM purposes but also for the strategic planning phase, both on the enterprise and business-unit levels, for forging competitive strategies and tactics. Therefore, Knowledge audit is one of the successful factors to achieve the Knowledge Management implementation.

**KNOWLEDGE AUDIT – AN OVERVIEW**

A critical part of a knowledge management methodology is performing a knowledge audit (Liebowitz, 1999). A knowledge audit may identify the following (Wiig, 1993):

- Information glut or lack of information
- Lack of awareness of information elsewhere in the organization
- Inability to keep abreast of relevant information
- Significant "reinventing the wheel"

- Common use of out-of-date information, and
- Not knowing where to go for expertise in a specific area.

A knowledge audit assesses potential stores of knowledge. It is the **first part of any knowledge management strategy**. By discovering what knowledge is possessed, it is then possible to find the most effective method of storage and dissemination. It can then be used as the basis for evaluating the extent to which change needs to be introduced to the organization. Part of the knowledge audit is capturing "tacit" knowledge. To do this, some organizations use communication technologies and virtual teams, including groupware, discussion databases, video conferencing, data conferencing, and team-ware. In a knowledge audit, one should try to identify the knowledge of: people who know the contents of libraries, including feedback from lead customers with product innovations and adaptations; rules of thumb; shortcuts; and cheat sheets. For the audit, look at: flows, sinks, sources, and constrictions in addition to the stores. Look for opportunities and assess the form and nature, relevance, usefulness, costs, timeliness, and the accuracy of the data collected. Pay close attention to the context, the transformations, and the assumptions along the way.

According to **Debenham and Clark (1994)**, a knowledge audit is a planning document which provides a structural overview of a designated section of an organization's knowledge as well as details of the qualitative and quantitative characteristics of the individual chunks of knowledge within that designated section. The document also identifies the knowledge repositories in which those chunks reside. They feel that the knowledge audit is a scientific measurement of the state of affairs of specified sections of corporate knowledge.

**Debenham and Clark (1994)** further explain the detailed objectives of a knowledge audit as:

- to give a high-level view of the extent, nature, and structure of the knowledge in a specified section;
- to provide meaningful hard data input to the strategic plan for knowledge processing;
- to identify the relevant knowledge repositories within the organization;
- to provide a statement of the qualitative characteristics of the chunks of knowledge within
- a particular knowledge repository; and
- to provide scientific estimates for the quantitative characteristics of the chunks of knowledge within a particular knowledge repository.

In their view (**Debenham and Clark, 1994**), the knowledge audit report includes:

- two page executive summary highlighting the major findings of the knowledge audit
- a clear statement of the reason for conducting the knowledge audit.
- a description of the audit process
- an analysis of the accuracy and sensitivity of the findings
- the conclusions, which should summarize the detailed findings of the knowledge

K-audit in an easily digestible form, and should relate these findings to the reasons why the audit was conducted.

- a "block map" a diagram displaying the various knowledge blocks audited, their relationships to one another and the knowledge repositories in which they reside.
- a section containing "block proformas"--the means used to record information about the qualitative characteristics of a block, as well as to record the values for the quantitative characteristics of a block--in a knowledge audit report, there is usually one proforma per page and one proforma per block.
- An index providing the page numbers of the various blocks and corresponding repositories.

According to **Shah et al. (1998)**, some questions for a knowledge audit include:

#### 1. BUSINESS CONCEPT

1. How do you conceptualize the business?
2. What is the mission or objectives of your team or unit?

#### 2. ENTERPRISE KNOW-HOW

1. How dependent are you on knowledge and expertise?
2. How do you generate knowledge?
3. Please describe various methods in which you codify knowledge (e.g., knowledge maps of who knows what, printed sources (rule books), experience databases (repository of customer problems and actions)
4. Do you codify knowledge related to both successful and failure experiences?
5. What mechanisms exist to transfer knowledge from expert people/teams to other people/teams (e.g., training, informal talks, etc.)?

#### 3. KNOWLEDGE WORKERS

1. Are they focused on what they are best at?
2. What kind of partnership exists between management and knowledge workers?
3. How do you use training and team processes to enhance knowledge/skills?
4. How is compensation linked with knowledge/skill levels?

#### 4. KNOWLEDGE MEDIATED THROUGH IT

1. Is IT used just to process data or also to manage knowledge?
2. How do you implement your IS projects related to knowledge management?

#### 5. ORGANIZATIONAL DESIGN

1. Does the flow of information in your unit foster or hinder innovation?
2. How close are you to being a modern networked, flat, and adaptable organization?

**Wiig (1993)** points out several knowledge analysis methods that could be used in the knowledge audit:

- Questionnaire-based knowledge surveys: used to obtain broad overviews of an operation's knowledge status
- Middle management target group sessions: used to identify knowledge-related conditions that warrant management attention
- Task environment analysis: used to understand, often in great detail, which knowledge is present and its role
- Verbal protocol analysis: used to identify knowledge elements, fragments, and atom
- Basic knowledge analysis: used to identify aggregated or more detailed knowledge
- Knowledge mapping: used to develop concept maps as hierarchies or nets
- Critical knowledge function analysis: used to locate knowledge-sensitive areas
- Knowledge use and requirements analysis: used to identify how knowledge is used for business purposes and determine how situations can be improved
- Knowledge scripting and profiling: used to identify details of knowledge intensive work and which role knowledge plays to deliver quality products
- Knowledge flow analysis: used to gain overview of knowledge exchanges, losses, or inputs of the task business processes or the whole enterprise

Certainly, a "knowledge map" showing the taxonomy and flow of knowledge is a critical part of the knowledge audit. Some people (e.g., **Snowden, 1999**) believe that the best representations for knowledge maps are stories--they convey the context, the values, and the message. The most productive audit activities may be: identification of knowledge opportunities for connecting to customers, capturing the corporate memory (helping learning and preventing repeated errors), and compiling a directory of true experts and their interests.

According to **Dataware (1998)**, one of the leaders in the knowledge management field, a productive knowledge audit need only concentrate on answering the following question: "In order to solve the targeted problem, what knowledge does one have, what knowledge is missing, who needs this knowledge and how will they use the knowledge?" The audit begins by breaking that information into two categories: what knowledge currently exists and what knowledge is missing.

Once the location or source of the missing information is identified, they can begin to structure the relevant information so that it can be easily found. At the conclusion of the knowledge audit, the knowledge management team has the information necessary to design its knowledge management system on paper.

- A knowledge audit is a qualitative appraisal and examination of the enterprise's knowledge 'health'. It is about determining the knowledge (and actionable information) required to enable competitive success of the business within its targeted markets.
- A Knowledge Inventory (sometimes called an information audit) is a practical way of getting to grips with "knowing what you know". Applying the principles of information resources management (IRM) it identifies owners, users, uses and key attributes of core knowledge assets. It is often carried out in conjunction with a Knowledge Management Assessment as a baseline on which to develop a knowledge management strategy.
- Indicators that a knowledge inventory would be worthwhile include: managers and professionals feel the symptoms of 'information overload'. It is difficult to find quickly key information and knowledge needed to make key decisions useful sources of information and knowledge are frequently stumbled across by accident duplication of information gathering activities is taking place across different departments.
- Questions are raised about the value of information systems or information management (library) investments in organizations and industries with a strong R&D function.

### KNOWLEDGE AUDIT: DIFFERENCES

In the corporate world, auditing is an accepted management technique. Currently, there are different types of audits exist such as financial audits, communication audits, technical audits, employment audits, and also more recently, information audits along with K-Audit.

### AUDIT: FINANCIAL VS KNOWLEDGE

"The most general definition of an audit is an evaluation of a person, organization, system, process, project or product. Audits are performed to ascertain the validity and reliability of information, and also provide an assessment of a system's internal control. The goal of an audit is to express an opinion on the person/organization/system etc. under evaluation based on work done on a test basis. Due to practical constraints, an audit seeks to provide only reasonable assurance that the statements are free from material error. Hence, statistical sampling is often adopted in audits. In the case of financial audits, a set of financial statements are said to be true and fair when they are free of material misstatements – a concept influenced by both quantitative and qualitative factors."

However a knowledge audit works a little differently, its more of a qualitative evaluation. Its essentially an investigation of an organizations knowledge "health". It's used to provide a sound investigation into the company or organization's knowledge 'health'. (Arjun Thomas, 2003)

### AUDIT: CONTENT VS KNOWLEDGE

For those of you who are confused between a content audit and a knowledge audit: a content audit is focused primarily on the content in the organization. It just identifies what content exists and what doesn't. Details like what the content is used for isn't really looked into. A knowledge audit on the other hand looks at problems and puts the information in the context of the problem.

### AUDIT: INFORMATION VS KNOWLEDGE

Information audit focuses on the identification of users' information needs as well as how well these needs are met by the information services. While both information audit and K-Audit focuses on documented knowledge. More importantly, K-Audit focuses on non-documented (tacit) knowledge which people carry along with them.

Unlike the information audit, the required information for K-Audit cannot be found in the corporate system and is totally depend on people. Information knowledge can be found within the corporate systems whereas a knowledge audit has a wider scope to include both corporate documents and people-based knowledge. For the effective utilization of expertise in the organizations, K-Audit identifies where it can find the expertise and how this expertise is accessed.

### KEY BENEFITS OF A KNOWLEDGE AUDIT

- It helps the organization clearly identify what knowledge is needed to support overall organizational goals and individual and team activities.
- It provides evidence of the extent to which knowledge is being effectively managed and indicates where improvements are required.
- It provides an evidence-based account of the knowledge that exists in an organisation, how that knowledge moves around in, and is used by, that organisation.
- It provides a map of what knowledge exists in the organisation and where it exists, as well as revealing gaps.
- It reveals pockets of untapped knowledge.
- It provides a map of knowledge and communication flows and networks.
- It provides an inventory of knowledge assets, giving a clearer understanding of the contribution of knowledge to organizational performance.
- It provides vital information for the development of effective knowledge management programmes and initiatives that are directly relevant to the organization's specific knowledge needs and current situation.

### IMPORTANCE OF KNOWLEDGE AUDIT

Reason for KM Program Failure – Lack of understanding of KM needs – K Audit can reveal KM needs, SWOTS Results with risks for implementation of KM. Although knowledge audit has been identified as an important activity in the knowledge management, there is lack of a systematic approach in its conduction and the audit practice varies with different industries and companies. (Cheung Chi Fai et.al. 2005) Ko Kam Chin2, Chu Ka Fu1, Lee Wing Bun1, The Hong Kong Polytechnic University1, Johnson Electric Group2] "Systematic Knowledge Auditing With Applications" in Journal of Knowledge Management Practice, August 2005

The definition of knowledge audit is defined by **National Electronic Library for Health (2005)** as a qualitative evaluation into an organization's knowledge 'health'. It provides an evidence based assessment of where the organization needs to focus its KM effort. Hence, the organization's KM needs, strengths, weaknesses, opportunities, threats and risks are revealed for the implementation of KM. **Liebowitz et al. (2002)** stated that the objectives of knowledge audit is to know what knowledge does the company has, what knowledge is missing, who needs this knowledge and how will they use the knowledge so as to solve the targeted business problem. Although a wide variety of approaches have been proposed in conducting knowledge audit with varying levels of coverage and details (**Debenham and Clark, 1994; Wiig, 1995; Frappaolo and Koupoulos, 2000; Hylton, 2002a and 2002b; Liebowitz et al, 2002; Tiwana, 2002**), there is lack of systematic approach for knowledge audit and the practice varies with different industries and companies.

### NEED FOR KNOWLEDGE AUDIT

Often referred to as a knowledge inventory, a knowledge audit assesses and lists an organization's knowledge resources, assets and flows. Knowledge Audit is a critical component of any KM strategy, and often the first step in designing one. If we do not know what knowledge we already have, what our knowledge gaps are and how that knowledge flows within our organization, how can we devise an effective KM strategy? Knowledge audits "reveal the organization's knowledge management needs, strengths, weaknesses, opportunities, threats and risks." These indicate what steps are needed to improve current practices. What do we have, what do we need, and what are the gaps?

Knowledge audits can help to identify a number of things, including:

- Information glut or scarcity;

- Lack of awareness of information elsewhere in the organization;
- Inability to keep abreast of relevant information;
- Continual "reinvention" of the wheel;
- Quality and quantity of in-house knowledge and information;
- Common use of out-of-date information;
- Not knowing where to go for expertise in a specific area.

### CHARACTERISTICS OF KNOWLEDGE AUDIT

Knowledge audits enable the assessment and prevention of organizational memory loss and brain drain, problems that result in undercapitalization and waste of knowledge resources,

- Knowledge audit should be the first step in any Knowledge Management initiative. Properly done, it would provide accurate identification, quantification, measurement and assessment of the sum total of tacit and explicit knowledge in the organization (**Ann Hylton, 2002**).
- K-Audit focuses on the core information and knowledge needs in an organization by identifying the gaps, duplications, flows and their contribution to business goals. With sound investigation, it provides an organization knowledge health. In short, it provides an evidence-based assessment of where the organization is required to focus on in its Knowledge Management (KM) efforts.
- K-Audit may refer to identifying specific knowledge assets such as patents and the degree to which these assets are based, enforced and safeguarded. **Dr. Ann Hylton**, a leading knowledge auditor defines, "The K-Audit is a systematic and scientific examination and evaluation of the explicit and tacit knowledge resources in the company. It investigates the current knowledge-environment and culminates, in a diagnostic and prognostic report on the current corporate 'knowledge health'."
- The report provides evidence as to whether corporate knowledge value potential is being maximized. In this respect, the K-Audit measures the risk and opportunities faced by the organization with respect to corporate knowledge."

### OBJECTIVES OF KNOWLEDGE AUDIT

- K-audit helps an organization to clearly identify what knowledge is needed to support overall organizational goals and individual and team activities.
- It gives tangible evidence of the extent to which knowledge is being effectively managed and indicates where improvements are needed.
- It explains how knowledge moves around in, and is used by, that organization.
- It provides a map of what knowledge exists in the organization and where it exists, revealing both gaps and duplication.
- It provides an inventory of knowledge assets, allowing them to become more visible and therefore more measurable and accountable.
- It provides vital information for the development of effective knowledge management programmes and initiatives that are directly relevant to the organization's specific knowledge needs and current situation.
- It helps in leveraging customer knowledge.

### COMPONENTS OF A KNOWLEDGE AUDIT

A Knowledge audit can have the following components (not necessarily need to be in order): as stated in Fig. 1. are

1. Knowledge need analysis
2. Knowledge inventory analysis
3. Knowledge Flow analysis
4. Knowledge mapping

FIG. 1: COMPONENTS OF KNOWLEDGE AUDIT



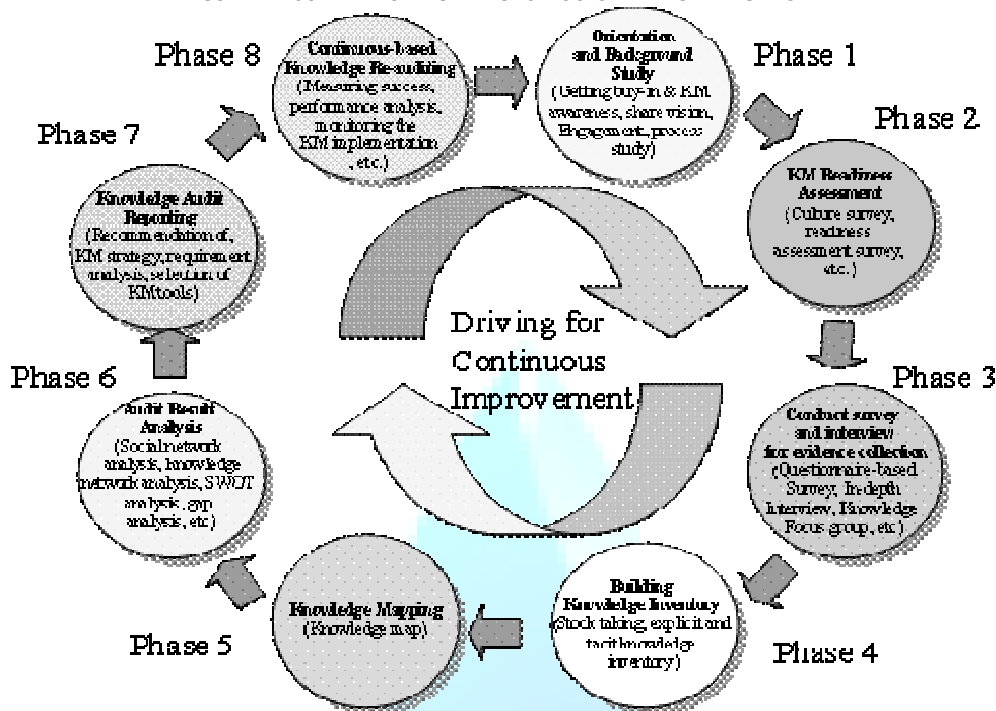
A **successful knowledge audit** focuses the following questions:

- How is knowledge defined in the organization?
- What knowledge is needed to support the business?
- Is a glut or lack of knowledge / information impacting effective and efficient decision-making?
- Where are the knowledge assets?
- What is the format and media of the knowledge assets?
- How does that knowledge flow within and outside the enterprise?
- How is knowledge captured, stored, enriched and exchanged?
- How is knowledge secured against potential loss?
- How is knowledge created in the organization?
- How do workers keep their knowledge from becoming obsolete?

### SYSTEMATIC APPROACH IN KNOWLEDGE AUDIT

Figure 2 shows the framework of systematic knowledge audit. Basically, it is composed of eight phases which include orientation and background study, KM readiness assessment, conduct survey and interview for evidence collection, building knowledge inventory, knowledge mapping, audit result analysis, knowledge audit reporting and continuous-based knowledge re-auditing, respectively.

FIGURE 2: A SCHEMATIC DIAGRAM OF STRUCTURED KNOWLEDGE AUDIT



### ESSENTIAL PHASES OF KNOWLEDGE AUDIT

- Orientation And Background Study
- KM Readiness Assessment
- Conduct Survey and Interview for Evidence Collection
  - Pilot Interview
  - Detailed Face-to-face Interview
  - Follow Up Interview (only carry out if necessary)
- Building Knowledge Inventory
- Knowledge Mapping
- Audit Result Analysis
- Knowledge Audit Reporting
- Continuous Knowledge Re-auditing

### DELIVERABLES OF A KNOWLEDGE AUDIT

In particular, Knowledge Audit process is designed to discover:

- Available knowledge resources (know what we know):
- Stores and sinks of explicit knowledge resources
- Expertise and tacit knowledge resources
- Hidden and undercapitalized resources (we don't know that we know):
- Key leverage points in the learning process
- Practices perfected by certain departments (best practices).
- Knowledge resources required to meet strategic objectives (we don't know that we don't know):
- Blocks in knowledge flows and networks
- Gaps and unmet needs for knowledge and information

Common approaches and tools that can be applied to conduct a knowledge audit are: Site observation, questionnaire-based surveys, face to face Interviews, focus group discussion, forums. A knowledge audit could be divided into four parts: background study, data collection, data analysis and data evaluation. So the deliverables of a knowledge audit could be:

- A list of knowledge items (K-needs & current K-assets) in the form of spreadsheets
- A knowledge network map which shows the flow of knowledge items
- A social network map that reveals the interaction among staff on knowledge sharing

These deliverables will help an organization in identifying the gap between “what is” at present and “what should be” in the future from a KM perspective.

### CONCLUSION

The knowledge audit process plays a key role in identifying a knowledge management strategy for the organization. Certainly, a proper business needs assessment and cultural assessment also needs to be performed as part of the knowledge audit. The choice of approach depends on business needs and objectives. There is no doubt that K-Audit is unquestionably the first step in any kind of KM initiative and has been considerably recognized as a must for any kind of organizational efforts towards effective knowledge management. To achieve successful KM, a knowledge audit is vital to investigate an organization's knowledge 'health'. The knowledge audit provides an evidence based assessment of where the organization needs to focus its KM effort.

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## MEASURING THE LEVEL OF CUSTOMER SATISFACTION AND CUSTOMER LOYALTY IN BANKING AND INSURANCE SECTOR IN INDIA: A COMPARATIVE STUDY

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### ABSTRACT

*Customer Relationship Management (CRM) is emerging as a core marketing activity for business operating in fiercely competitive environment. India is being considered as the country having one of the largest customer data base. It is one of the fastest developing countries, given this fact organizations are focusing on developing an effective strategy to retain and enhance their customer base i.e. by developing a sound Customer Satisfaction strategy and generating more Customer Loyalty. Banking and Insurance sector are now understanding the importance of Customer Satisfaction and Loyalty, they are functioning with a more customer centric approach. The aim of this study is to analyze and compare the level of Customer Satisfaction and Customer Loyalty in selected banks and insurance companies of India, identify the benefits, the problems, as well as the success and failure factors and develop a better understanding of CRM. For conducting the study a self designed standard questionnaire was used from over 500 customers from both the sectors. Further mean, was calculated to measure the level of significance of Customer Satisfaction and Customer Loyalty in both sectors. Also, T test was applied on the data collected to measure the difference in the level of Customer satisfaction and Customer Loyalty in Banking and Insurance Sectors, which resulted that, there is a significant difference in the level of Customer Satisfaction and Customer Loyalty between Banking and Insurance Sectors. There is a paradigm shift in customer's behaviour pattern; hence organizations should focus on developing long lasting relationships by catering customers' needs.*

### KEYWORDS

Customer Loyalty, Customer Relationship Management, Customer Satisfaction.

### 1. INTRODUCTION

The concept of relationship marketing was formally introduced in early 90s when financial services, airlines and other service institutions stated to 'reward to retain' the existing customers by introducing loyalty programs, CRM is only a product of the late nineties. With the era of new technology, growing customer demands, companies are in a process of enhancing their relationship management approach. They are now understanding the importance of CRM and have started designing their products with a more customer centric approach.

In India also, the wave of deregulation of early 1990s has created heightened competition and greater risk for banks and other financial intermediaries. The cross-border flows and entry of new players and products have forced banks to adjust the product-mix and undertake rapid changes in their processes and operations to remain competitive. Over the years, Indian banks have expanded to cover a large geographical and functional area to meet the development needs. The banks now need to ensure by their service that the customers come back to them i.e. loyalty is generated and maintained. This is because the major chunk of income for most of the banks comes from existing customers. By implementing better customer services, the level of other factors like trust, commitment and assurance also increases.

According to a RBI road-map, India will have a competitive banking market after 2009. As one of the most attractive emerging market destinations, India will see foreign banks come in, what with more freedom to come in, grow and acquire. Therefore, it is imperative that Indian banks wake up to this reality and re-focus on their core assets- the customers. A greater Focus on service management is the only way the banking industry can protect its market share and boost growth.

While the insurance sector is seeking to maintain a balance between acquiring customers and developing existing ones, customer acquisition is vital, as no retention strategy will entirely stem customer defection. Insurance companies are experiencing unacceptable levels of customer churn, thanks to which they are focusing on keeping the customers they already have in a bid to ensure a net growth in their customer base. Today, the focus is on selling more products to existing customers to improve profitability. Customer-focused strategies require CRM (customer relationship management) to help acquire customers through various touch points and translate operational data into actionable insights for proactively serving customers.

In life insurance industry, a decade ago, selling for insurance company is seemed straight forward. But things have changed and competition has taken a new pace. Today bank sell annuities, stock brokers sell life insurance. The line between financial services providers has blurred. Combined with the competition, challenging economic condition has forced the insurance company to rethink how to do their business. To survive in this competitive world, insurance companies can no longer operate under a policy based model. Instead, they must adopt a new client centric approach to better meet the needs of its customers.

### 1.2 CUSTOMER SATISFACTION AND CUSTOMER LOYALTY

#### 1.2.1 CUSTOMER SATISFACTION

Customer satisfaction, a business term, is a measure of how products and services supplied by a company meet or surpass customer expectation. Customer Satisfaction is seen as a key differentiator and increasingly has become a key element of business strategy. Customer Satisfaction is an abstract concept and the actual manifestation of the state of satisfaction that will vary from person to person and from product to service. The state of satisfaction depends on a number of both psychological and physical variables which correlate with satisfaction behaviors such as return and recommend rate.

#### 1.2.2 CUSTOMER LOYALTY

It is defined as continuing patronage over time. The degree of loyalty can be gauged by tracking customer accounts over defined time periods and noting the degree of continuity in patronage. It can also be defined as the degree to which a customer exhibits repeat purchasing behavior from a service provider, possesses a positive attitudinal disposition toward the provider, and considers using only this provider when a need for this service exists. Loyalty is also interpreted as true loyalty rather than repeat purchasing behavior, which is the actual re-buying of a brand, regardless of commitment.

### 1.3 BANKS APPROACH TO CUSTOMER SATISFACTION AND CUSTOMER LOYALTY

The ongoing developments in Indian industry and government and the integration of India with the global markets also offer myriad opportunities to the banking sector. Companies and governments are increasingly seeking high-quality banking services to improve their own operating efficiency. Companies seek to

offer better customer service and maximize shareholder returns and governments seek to improve the quality of public services. K V Kamath (MD and CEO, ICICI Bank)

The Indian banking sector is faced with multiple and concurrent challenges such as increased competition, rising customer expectations, and diminishing customer loyalty. The banking industry is also changing at a phenomenal speed. While at the one end, we have millions of savers and investors who still do not use a bank, another segment continues to bank with a physical branch and at the other end of the spectrum, the customers are becoming familiar with ATMs, e-banking, and cashless economy. This shows the immense potential for market expansion. The exponential growth for the industry comes from being able to handle as wide a range of this spectrum as possible. In this complex and fast changing environment, the only sustainable competitive advantage is to give the customer an optimum blend of technology and traditional service. P T Kuppuswamy (Chairman and CEO, The Karur Vysya Bank)

#### 1.4 INSURANCE COMPANIES APPROACH TO CUSTOMER SATISFACTION AND CUSTOMER LOYALTY

Insurance business in India is transacted mainly out of trust and confidence. We do agree that while pricing is an important factor for customer choice, it is not the only factor. Indian customers are becoming more discerning and advisors need to educate them not only about price but also about products and value added services offered by insurers, says CEO and MD of Bharti AXA General Insurance, Dr. Amarnath Ananthnarayan in an exclusive conversation with Apnapaisa.

Customers have become more demanding and require product and services to meet their evolving needs and expectations. Insurers need to focus on developing customised propositions, stronger direct relationships and increase transparency in their communication," Ernst & Young, India Partner and Insurance leader Rohan Sachdev

## 2. LITERATURE REVIEW

Patrick Amofah Amer Ijaz (2005), "Objectives Strategies and Expected Benefits of Customer Relationship Management". Master's Thesis,. Conducted a study to determine the objectives, strategies and expected benefits of CRM initiatives by service organizations. Case study methodology was adopted in order to conduct the study. It was found that customer identification, customer differentiation, customer interaction and personalization are main strategies of CRM initiatives by the service companies. The major benefits to these organization by CRM was found to be higher profitability, cost reduction, customer retention and loyalty and positive impact on all over performance of the organizations in the long run.

Iftikhar Hussain et al (2009), "Customer Relationship Management: Strategies and Practices in Selected Banks of Pakistan". International Review of Business Research Papers. Conducted the study to explore and analyze the strategic implementation of CRM in selected banks of Pakistan, identify the benefits, the problems, as well as the success and failure factors of the implementation and develop a better understanding of CRM impact on banking competitiveness as well as provide a greater understanding of what constitutes good CRM practices. In this study, CMAT (Customer Management Assessment Tool) model is used which encompasses all the essential elements of practical customer relationship management. Data is collected through questionnaires from the three major banks (HBL, MCB, and Citibank) of Pakistan. The evidence supports that CRM is gradually being practiced in studied banks; however the true spirit of CRM is still needed to be on the active agenda of the banking sector in Pakistan.

Dr. Mercy S. Samuel et al (2011), "CRM Strategies: An Underlying Market Based Strategy for Insurers: A Qualitative Study". Synergy. Stated that the current challenges that the insurance companies are facing is a very high level of attrition which happens due to excessive targets and a resistant consumer? Rather than exhibiting an appreciation for the value of broad, long lasting customer relationships, the thinking of insurance companies remained inherently product focused bound by product limitations and scarcity of customer information endemic to insurer and vice versa. But now the insurance companies are awakening to capture the customer attention. Insurers must learn much about the financial and personal situation of the customer and then go in for segmentation and targeting.

Ponreka Maria D et al (2009), "Customer Satisfaction with Service Quality with Special Reference to Life Insurance Corporation in Madurai District" . *Advances in Management*. In view of the increasing competition, the paper attempts to understand the dimensions of service quality, which helps ensuring maximum customer satisfaction and hence helps LIC to acquire a larger share in the market. The study was done on a stratified random sampling design. Through factor analysis, the factors identified with new names which influence the quality of service rendered by the LIC in Madurai district are Individualized attention. Performance, Tangibles, Trustworthiness and Courtesy. While this research provides some important initial insight into role of service quality factors in life insurance market, there is still an opportunity to extend these findings to gain on more comprehensive understanding of service quality.

Vikas Nath et al (2009), "An Insight into Customer Relationship Management Practices in Selected Indian Service Industries". *Journal of Marketing & Communication*. The present study seeks to determine the status of Customer Relationship Management in Banking, Insurance and Telecommunications sectors and the extent to which it is being practiced and accepted by the organizations in the stated industries. It further tries to determine the extent to which relationship-marketing practices lead to a favourable customer relationship, connectivity and profitability of a customer. It was seen that there is an ongoing struggle for capturing a larger share of the customer pie at the lowest possible cost in a bid to serve customers as effectively and efficiently as possible. Increased competition is prompting customers to move from one firm to another in search of better service and, more explicitly, complete solution to their issues. It can be said that organizations in selected industries must provide a compelling vision to keep them focused on CRM strategically, tactically and in real time, continuously and mutually with key stakeholders.

Kallol Das et al (2009), "Customer Relationship Management (CRM) Best Practices and Customer Loyalty A Study of Indian Retail Banking Sector". The current study explores the association between deployment of customer relationship management (CRM) best practices and loyalty of profitable customers in Indian retail banking sector. The study comprises two parts. The first part called the CRM best practices survey involves the use of descriptive research design. The second part viz. case study research involves the use of embedded customer loyalty survey. The study develops a list of 29 CRM best practices, which may be helpful to the organizations toward achieving comprehensive CRM deployment. The results also imply that going for CRM deployment may not be a profitable strategy for retail banks, particularly in the Indian context.

Bilal Afsar (2010), "Determinants of customer loyalty in the banking sector: The case of Pakistan". *African Journal of Business Management*. This research attempts to find the factors of customer loyalty and their relationships with the banking industry in one of the developing countries, which is Pakistan. It was found that Perceived quality, satisfaction, trust, switching cost and commitment are the factors which influence the loyalty of the customers.

Dr. Naveen Kumar et al (2011), "CUSTOMER SATISFACTION IN NEW GENERATION BANKS (A CASE STUDY OF HDFC BANK)". *Journal Of Arts, Science & Commerce*. Stated That the Majority of India's Banks Are not very diversified in terms of the products and services they offer. One strategic focus that banks can implement to remain competitive would be to retain as many customers as possible. And customer retention is possible through customer satisfaction only. Thus, customers' satisfaction is the key of success in today's competitive era.

Dr Doongar Singh Khichee (2011), "Customer Satisfaction: A Study of Insurance Facilities Available in Jodhpur". *Lachoo Management Journal*, Volume 2, Number 2, July - December 2011. The customers are educated and are using the services with ease and efficiency. The insurance market is well developed with the products accepted by the insurance system and made available to the customers through the aid of technology. The impact of technology is high with the services reaching through the internet to make the transactions happening in a faster way. The insurance serves are the lifeblood of nay economy with the emphasis to make the life of the customers comfortable and happy so to enhance the insurance literacy. The well defined insurance services in any sector speak of the excellence of the business systems. The quality of services gives the well developed business models to so as to work on sustainable basis.

## 3. NEED/IMPORTANCE OF THE STUDY

This study would help the bank and insurance management to gain useful insights regarding relative contribution of each service quality dimensions of relationship management. Considering the present status of both the sectors it has become very essential for them to retain existing customers and boost sales by satisfying them. Satisfied customers are not only loyal towards the organization but also help in creating a trust for the organization in the market which increases the goodwill. Thus, it becomes essential to study both the sectors with a focus of customer centric approach which would help in analysing customers

need and their approach towards a stronger long term relationship. Since India aspires to become globally competent financial centre, it would be appropriate and relevant to conduct the study in order to analyse the current market scenario so that the organizations can implement a strategy in accordance with it.

#### 4. STATEMENT OF THE PROBLEM

With increased level of competition, changing customer's preferences and foreign markets existence, it has become very essential for the Indian organizations to develop themselves at such a pace that meets the global standards of service management. This study is aimed at comparing and addressing the issues of customer satisfaction and loyalty levels of banking and insurance sectors.

#### 5. OBJECTIVES

The overall objective of this study is to analyze the levels of Customer Satisfaction and Customer Loyalty which are prominent in Banking and Insurance industry. For the purpose of the study the following objectives are taken.

1. To measure the level of Customer Satisfaction in Banking Sector.
2. To measure the level of Customer Satisfaction in Insurance Sector.
3. To compare the level of Customer Satisfaction in Banking and Insurance Sector.
4. To measure the level of Customer Loyalty in Banking Sector.
5. To measure the level of Customer Loyalty in Insurance Sector.
6. To compare the level of Customer Loyalty in Banking and Insurance Sector.

#### 6. HYPOTHESES

In order to analyze the level of Customer Satisfaction and Customer Loyalty in Banking and Insurance sector, the following Null Hypotheses are framed

Ho1: There is no significant difference in the level of Customer Satisfaction in Banking and Insurance Sector.

Ho2: There is no significant difference in the level of Customer Loyalty in Banking and Insurance Sector.

#### 7. RESEARCH METHODOLOGY

The following methodology is applied for the purpose of Measuring the Level of Customer Satisfaction and Customer Loyalty in Banking and Insurance Sector India.

##### 7.1 SAMPLE DESIGN

A total of 500 questionnaires were distributed among the respondents out of which 469 from banking sector and 459 from Insurance sector were received as completely filled questionnaires. Convenience sampling method was adopted to fill in the questionnaire. In this research, survey and literature method was employed to have an analysis on the impact of Customer Satisfaction and Customer Loyalty in Banking and Insurance sector

##### 7.2 METHODS OF DATA COLLECTION

In order to analyze the impact of Customer Satisfaction and Customer Loyalty in Banking and Insurance sector primary data was collected by using self designed and standard structured questionnaire for Banking and Insurance Sector. All of this data was numerical and as a result the methodological research approach in his paper is quantitative. The questions in the questionnaires tried to find the levels of Customer Satisfaction and Customer loyalty prevalent in Banking and Insurance Sector. The above opinions were measured by requesting respondents to indicate, on a five-point Likert-type scales, anchored on "1 = Strongly Disagree" through "5 = Strongly Agree".

##### 7.3 DATA VALIDATION

To validate the collected data, statistical tools are applied and inferences are drawn. To compare the level of Customer Satisfaction and Customer Loyalty in both the sectors i.e. Banking and Insurance a Paired Samples Test, T test is performed on the data collected. The data was analyzed with the help of SPSS software.

#### 8. RESULTS & DISCUSSIONS

To achieve the objectives of the study, the collected data is analysed and the following are the results:

##### OBJECTIVE 1: TO MEASURE THE LEVEL OF CUSTOMER SATISFACTION IN BANKING SECTOR

The results of data collected for banking sector indicates that the customers are satisfied with the services provided by the banks, as the mean value is found out to be 3.33, which is more than the standard value 3.00. The questions asked in the questionnaire covered areas of Customer satisfactions such as level of customer satisfactions of customers with the banks product, services, and timely delivery of services. However, some of the customers strongly disagreed on the parameter that banks conduct recreation facilities for the customers, because of which the mean value got affected. Thus, banks need to focus upon these issues more adequately.

##### OBJECTIVE 2: TO MEASURE THE LEVEL OF CUSTOMER SATISFACTION IN INSURANCE SECTOR

The results of data collected for insurance sector indicates that the customers are satisfied with the services provided by the insurers, as the mean value is found out to be 3.84, which is more than the standard value 3.00. The parameters to evaluate the level of satisfaction in Insurance and Banking sectors were same. The areas which need current attention are improving the product features, service offered before and after sales service. Hence, the hypothesis is true in the sense that there is no significant impact of Customer Satisfaction in Insurance Sector.

##### OBJECTIVE 3: TO COMPARE THE LEVEL OF CUSTOMER SATISFACTION IN BANKING AND INSURANCE SECTOR

Ho1: There is no significant difference in the level of Customer Satisfaction in Banking and Insurance Sector.

The comparative mean tests or T tests (Table No. 1) results indicate that the factors of Customer Satisfaction do not have a significant impact in Banking and Insurance sector as the value is less than .05. Hence, there exists a significant level of difference in the satisfaction of customers in both the sectors. Earlier, the mean value results indicate that customers are more satisfied in insurance sectors as compared to banking sector. Thus, banking sector needs to enhance its operations in terms of delivering services and relationship management in order to generate more customer satisfaction levels. Hence, the hypothesis, Ho1: There is no significant difference in the level of Customer Satisfaction in Banking and Insurance Sector stands rejected.

##### OBJECTIVE 4: TO MEASURE THE LEVEL OF CUSTOMER LOYALTY IN BANKING SECTOR

The results of data collected for banking sector indicates that the customers are satisfied with the services provided by the banks, as the mean value is found out to be 3.90, which is more than the standard value 3.00. However, the customers feel that they can switch to other banks on recommendation of their friends and foe, as on this parameter mean value is low, hence, for banks it is very important that they not only satisfy their customers but also, maintain a long term relationship with them. This can be implemented by improving in the area of service management by the employees. Customers should be given with the best of services and ease of comfort while doing banking; this will encourage them to further maintain their relationship with bank.

##### OBJECTIVE 5: TO MEASURE THE LEVEL OF CUSTOMER LOYALTY IN INSURANCE SECTOR

The results of data collected for insurance sector indicates that the customers are satisfied with the services provided by the insurers, as the mean value is found out to be 3.96, which is more than the standard value 3.00. The customers who purchase a company's product tend to buy same company's product for themselves and their family. Hence, the sector needs to focus improving their services in order to attain more Customer Satisfaction level which would help in maintaining loyalty amongst the customers

##### OBJECTIVE 6: TO COMPARE THE LEVEL OF CUSTOMER LOYALTY IN BANKING AND INSURANCE SECTOR

Ho2: There is no significant difference in the level of Customer Loyalty in Banking and Insurance Sector.

The results of T test for Customer Loyalty indicate that some of the factors are highly significant, while others are not significant for both the sectors. Factors such as having an inclination to change one’s current organization, level of loyalty and considering loyalty as an important factor are not significant. Earlier from mean values, it was observed that insurance customers are more loyal as the mean value was higher, thus the banks need to focus on creating more loyalty programs. Hence, the hypothesis Ho2: There is no significant difference in the level of Customer Loyalty in Banking and Insurance Sector stands rejected.

**9. FINDINGS**

1. The results of Customer Satisfaction for Banking sector indicates that customers are satisfied with their banking services, but also some of the variables need prior attention such as creating recreation facilities and performance of their bank with their competitors.
2. The result of Customer Satisfaction for Insurance sector indicates that customers are satisfied with their Insurance Company as the mean value is more than standard i.e. 3.84. Still some areas where the customers are not satisfied include improving the product features, service offered before and after sales.
3. The result of T test for comparing the level of Customer Satisfaction in Banking and Insurance sector indicates that there is a significant difference; customers of insurance are more satisfied as compared to customers of banking sector (Table No. 1).
4. The result of Customer Loyalty for Banking Sector indicates that customers are loyal towards their banking as the mean value is 3.90 as against the standard of 3.0.
5. The results of Customer Loyalty for Insurance Sector indicate that customers are loyal towards their Insurance Company. They not only purchase same company’s product again, but also for their families and also suggest it in their social arena.
6. The result of T test for comparing the level of Customer Loyalty in Banking and Insurance sector indicates that there is a significant difference; customers of banks are less loyal as compared to customers of insurance sector (Table No. 2).

**10. RECOMMENDATIONS**

From the above findings, following recommendations are suggested:

1. In the area of Customer Satisfaction banks need to focus on of meeting the expectations of product and services of the customers, providing timely delivery of service to its customers and also by creating recreation facilities, as on all these parameters the score of satisfaction is low for the sector.
2. In the area of Customer Loyalty again the banks need to improve on their loyalty programmes as the customers of insurance not only purchase same company’s product again, but also for their families and also suggest it in their social arena.
3. In today’s scenario with increasing competition banks need to channelize their resources up to optimum by delivering quality and timely services to its customers in order to maintain a long term relationship with them.

**11. CONCLUSION**

It can be concluded from the study that the Banks and Insurance both sectors need to focus on generating more effective relationship management with its customers. As seen from the values of mean and result of T test for Customer Satisfaction, Insurance is excelling, hence, banks need to strategise and concentrate on the strong areas of the insurers and accordingly work on their relationship management. Similarly, for Customer loyalty, banks need to adopt strong areas of insurers as the result of T test suggests that insurers are having more loyal customers.

It has to be understood that both customer satisfaction and customer loyalty go hand in hand. If your customers are satisfied, they should be loyal towards you and vice-versa. But, today in such a competitive environment, just satisfying the customers does not suffices. One should always focus on building a long term relationship, for which continuous tracking and adopting new strategies is suggested. Further if your customers are loyalty, it is not necessary they will not shift to your competitor, hence a constant focus on satisfying their needs is essential.

**12. SCOPE FOR FURTHER RESEARCH**

Future direction could be to analyse the implementation of the whole concept CRM in the banking and Insurance sector. Also service quality dimensions can be studied in both the sectors.

**13. TABLES & FIGURES**

TABLE NO. 1

Paired Samples Test, T test for comparing the level of Customer Satisfaction between Banking and Insurance Sector							t	df	Sig. (2-tailed)
		Paired Differences			95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	CSB1 CSI1	.349	1.167	.054	.241	.456	6.397	458	.000
Pair 2	CSB2 CSI2	.107	.950	.044	.020	.194	2.406	458	.017
Pair 3	CSB3 CSI3	.109	.907	.042	.026	.192	2.574	458	.010
Pair 4	CSB4 CSI4	.309	1.011	.047	.217	.402	6.556	458	.000
Pair 5	CSB5 CSI5	.166	1.323	.062	.044	.287	2.682	458	.008
Pair 6	CSB6 CSI6	.148	1.243	.058	.034	.262	2.553	458	.011
Pair 7	CSB7 CSI7	.092	1.668	.078	-.061	.244	1.175	458	.240
Pair 8	CSB8 CSI8	2.800	.893	.042	2.718	2.882	67.135	458	.000

(Here, CSB= Customer Satisfaction in Banking Sector and CSB1, CSB2, CS3, CS4, CS5, CS6, CS7, CS8 = Variables of Customer Satisfaction. Also, CSI= Customer Satisfaction in Insurance Sector and CSI1, CSI2, CSI3, CSI4, CSI5, CSI6, CSI7, CSI8 = Variables of Customer Satisfaction)

TABLE NO. 2

Paired Samples Test, T test for comparing the level of Customer Loyalty between Banking and Insurance Sector									
		Paired Differences					t	df	Sig. (2-tailed)
		95% Confidence Interval of the Difference							
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	CLB1 CLI1	-.156	.994	.079	-.311	-.001	-1.988	159	.048
PAIR 2	CLB2 CLI2	-.213	1.084	.086	-.382	-.043	-2.480	159	.014
PAIR 3	CLB3 CLI3	.019	1.385	.109	-.197	.235	.171	159	.864
PAIR 4	CLB4 CLI4	-.176	1.172	.055	-.284	-.069	-3.227	458	.001
PAIR 5	CLB5 CLI5	-.054	1.063	.050	-.152	.043	-1.098	458	.273
PAIR 6	CLB6 CLI6	.105	1.371	.064	-.021	.230	1.634	458	.103
PAIR 7	CLB7 CLI7	-.087	.716	.033	-.153	-.022	-2.609	458	.009

(Here, CLI= Customer Loyalty in Insurance Sector and CLI1, CLI2, CLI3, CLI4, CLI5, CLI6, CLI7, CLI8 = Variables of Customer Loyalty in Insurance Sector & CLB= Customer Loyalty in Banking Sector and CLB1, CLB2, CLB3, CLB4, CLB5, CLB6, CLB7 = Variables of Customer Loyalty in Banking Sector)

TABLE NO. 3

Construct to measure Customer Satisfaction and Loyalty		
Customer Satisfaction in Banking and Insurance Sector	CSB1 CSI1	I am satisfied with the product and services of the organization.
	CSB2 CSI2	I am satisfied with the interactions experienced with the organization.
	CSB3 CSI3	I am satisfied with the performance of the product.
	CSB4 CSI4	The product/service has met my expectations.
	CSB5 CSI5	The organization provides timely delivery of its services
	CSB6 CSI6	In comparison to other organizations, I consider the services of my organization successful.
	CSB7 CSI7	The organization conducts recreation facilities for the customers.
	CSB8 CSI8	Customer Satisfaction is important factor to build up relationship
Customer Loyalty in Banking and Insurance Sector	CLB1 CLI1	I would like to continue purchasing the product of my organization.
	CLB2 CLI2	I don't have any inclination to change my current organization
	CLB3 CLI3	I would recommend my current organization to others.
	CLB4 CLI4	I would consider myself to be a loyal customer of my organization.
	CLB5 CLI5	My intention to use the services of my current organization will not change.
	CLB6 CLI6	Even if a close friend recommends other organization, the preference for my organization would not change
	CLB7 CLI7	Customer loyalty is an important factor to build up customer relationship

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## A STUDY ON RETAIL SERVICE QUALITY SCALE (RSQS MODEL) APPLICATION WITH REFERENCE TO RELIANCE FRESH IN CITY OF BHAVNAGAR

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### ABSTRACT

Organized retailing as we all know is increase day by day in India. There are number of stores with different formats introduce in Indian retail industry. For each and every store or formats has to think over the service aspect during their operation to face completion prevailing in the retail industry. If they are fail to deliver quality service than they are fail to stand in the completion So in the competitive environment is necessary to provide extraordinary service quality. The study examines the Retail Service Quality Scale (RSQS) developed in the US for applicability in case of convenience store and special focus with reliance fresh. . So here in this research paper we present study on applicability of RSQS model basically for reliance fresh. here we try to find out that whether various dimensions of retail service quality like physical aspect, reliability, problem solving, personal interaction and policy with their sub dimensions apply for reliance fresh for basically Bhavnagar city with a sample of 200 customers as respondents with the help of survey tried to find out that they are there in case of reliance fresh or not. In case of RSQS model during research tried to get opinion regarding various sub dimensions of RSQS Model by taking opinion of customers and in this way find whether all these dimensions like physical aspects ,reliability ,personal interaction, problem solving and policy are present there or not.here in this study only problem solving dimensions is fully applicable while other dimensions are not fully applicable like physical aspect, policy, reliability, personal interaction because there are many respondents who are neutral in their view

### KEYWORDS

Service quality, Retailing,

### INTRODUCTION

Retail is the final stage of any economic activity. By virtue of this fact, retail occupies an important place in the world economy. As there are many definitions on the term retailing but few of them are as under; According to the Phillip Kotler; "Retailing includes all activities involved in selling goods or services to final consumers for personal, non-business use" The issue of highest priority today involves understanding the impact of service quality on profit and other financial outcomes of the organization" (Zeithaml et al., 1996, p. 31). This statement represents a dramatic departure from organizational views of quality as recent as a decade ago. In initial explorations within the services arena, quality was viewed primarily as a problem to be solved, manifested at the tactical level. Service quality has since emerged as an irrepressible, globally pervasive strategic force (Powell, 1995) as well as a key strategic issue on management's agenda (Dean and Bowen, 1994). Service quality is being increasingly perceived as a tool to increase value for the consumer; an as a means of positioning in a competitive environment to ensure consumer satisfaction, retention, and patronage. to measure service quality. This study examines the Retail Service Quality Scale (RSQS) developed in the US for applicability in case of convenience store and special focus with reliance fresh. . This scale has been found appropriate in a variety of settings – across different countries such as South Africa and Singapore and across a variety of store types such as supermarkets, department stores and hyper stores. so here a literature review which are present for RSQS model give us a motivation to do a research on applicability of RSQS model in organized retail store in under developed area like Bhavnagar distinct and try to find out service quality on the basis of different dimensions of RSQS model.

### OBJECTIVE OF THE STUDY

- To Evaluate The Service Quality For Reliance Fresh With The Use Of Retail Service Quality Scale Developed By Dabholkar In 1996.
- To Understand The Reliability Of The RSQS For Evaluating The Services Of Reliance Fresh.

### RESEARCH METHODOLOGY

Research methodology states how the research study is under taken. It includes specification of research design source of data, method of primary data collection, sampling design and analysis procedure adopted. Research methodology states what procedures were employed to carry out the research study.

#### RESEARCH DESIGN

Here in the market research of consumer of department store especially reliance fresh have done, exploratory research design is used. It is help to understand consumer's impression as well as image of service quality of reliance fresh.

#### TARGET AUDIENCE

As per as target audience is concern we take a visitors of reliance fresh in Bhavnagar.

**SAMPLING PROCEDURE**

There was a little scope for change cons duration in this study so Non-probability sampling was preferred accordingly in which we were use convenient sampling method

**SAMPLE SIZE**

The numbers of visitors were decided on the basis of different types of Age group and occupation as well as gender. This study consists of 200 samples.

**FORM OF QUESTIONNAIRE**

The questions asked were in open-ended and close-ended form, open-ended question was to get customer’s own views and in close-ended questions, multiple-choice questions and dichotomies questions were be included.

Pre-testing of the questionnaire was done on a sample of 10 respondents and based on the difficulties encountered by them in answering the question. The initial format was modified suitably.

**SCOPE OF THE STUDY**

The scope of the study is limited to Bhavnagar

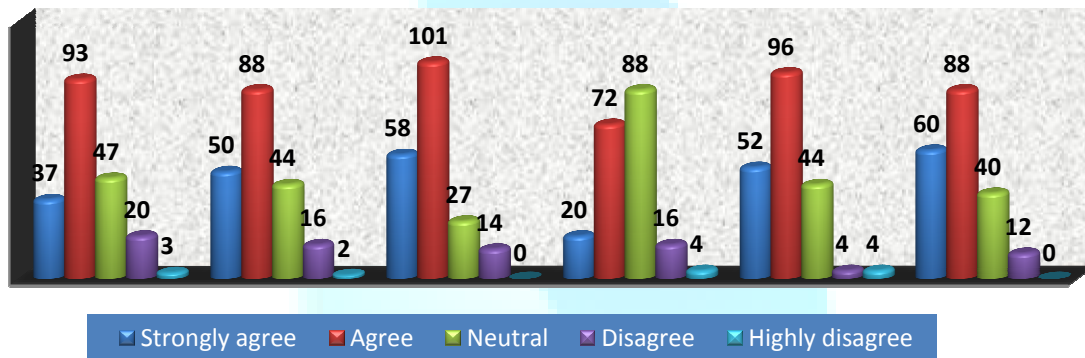
The study was completed within 1 month time period

**DATA SOURCES** In primary data collection we use survey as well as personal interview of store manager in our study In case of secondary data source we use internet, related books, journals, magazines.

**ANALYSIS AND INTERPRETATION**

**TABLE-1: ANALYSIS OF PHYSICAL ASPECT FOR SERVICE QUALITY**

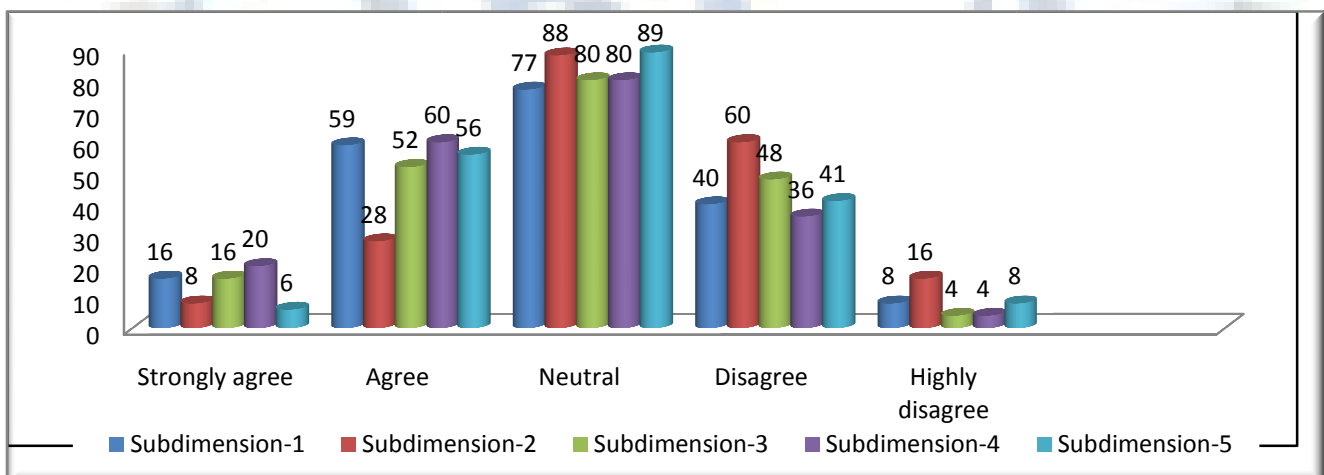
Particular	Strongly agree	Agree	Neutral	Disagree	Highly disagree	Total
Equipment & fixtures	37	93	47	20	03	200
Physical facilities	50	88	44	16	02	200
Materials use	58	101	27	14	00	200
Public areas	20	72	88	16	04	200
Store layout	52	96	44	04	04	200
Space for movement	60	88	40	12	00	200



here we try to get opinion regarding service quality in case of physical aspect from strongly agree to strongly disagree with help of following parameters Like equipment and fixture, quality of materials like packing bags, brochures, bill print, store layout, rest room and trial room etc. But here in case of reliance fresh in case of each and every sub dimensions of physical aspects they are agree upon their opinion regarding quality of physical aspects of reliance fresh with above 100 respondents in each and every sub dimension but here there are many respondents who are neutral in their view so the mean of each and every dimension is different from other and no two dimensions are same in this case so we can say that physical aspect dimension for reliance fresh is not fully applicable as per as reliance fresh of Bhavnagar city is concern.

**TABLE-2 ANALYSIS OF RELIABILITY FOR SERVICE QUALITY**

Particular	Strongly agree	Agree	Neutral	Disagree	Highly disagree	Total
Fulfill promise	16	59	77	40	08	200
Promise on time	08	28	88	60	16	200
Right service	16	52	80	48	04	200
Merchandise availability	20	60	80	36	04	200
Error free transaction	06	56	89	41	08	200



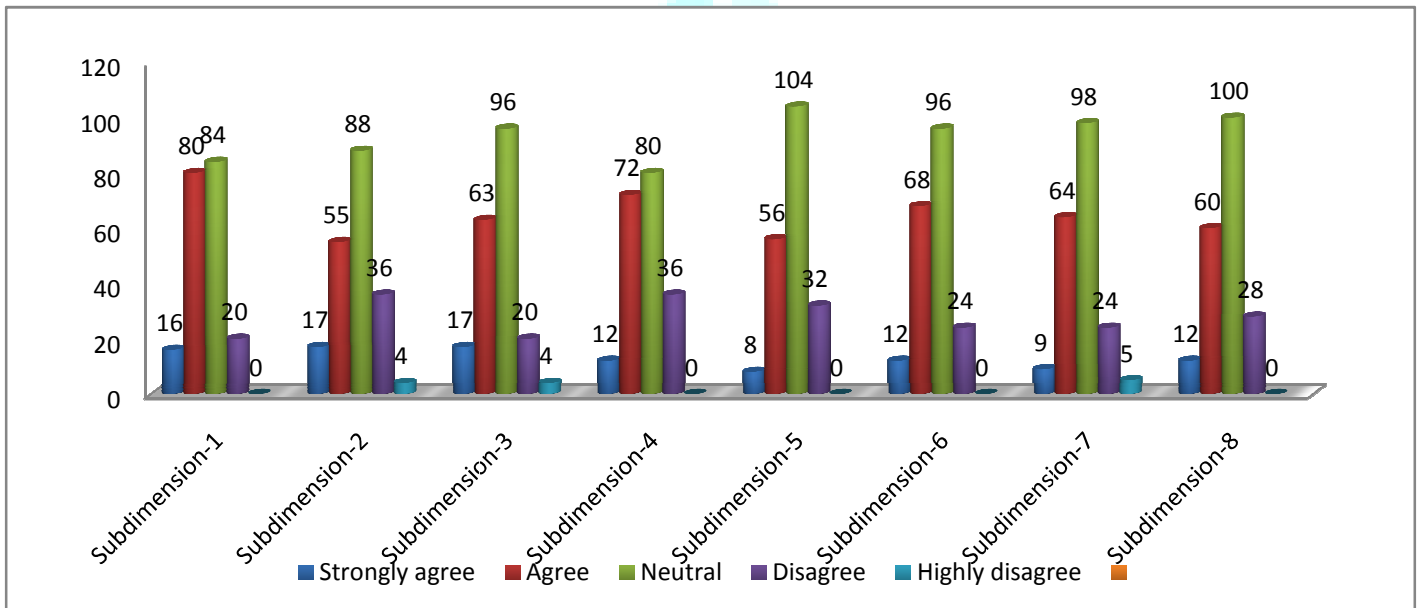


Here from the above table we can see that in each and every sub dimensions are concern most of the respondents are neutral in their view regarding reliability dimension. Around 80 to 90 respondents are their in this category. . And on and average 45 respondents are on disagree for reliability dimension. There are also respondents who are strongly agree or agree on their view of this service quality dimension but which is less in number than neutral and disagree on this dimension. So on and average we can say that this scale is not applicable in case of this study.

**ANALYSIS OF PERSONAL INTERACTION**

**TABLE 3**

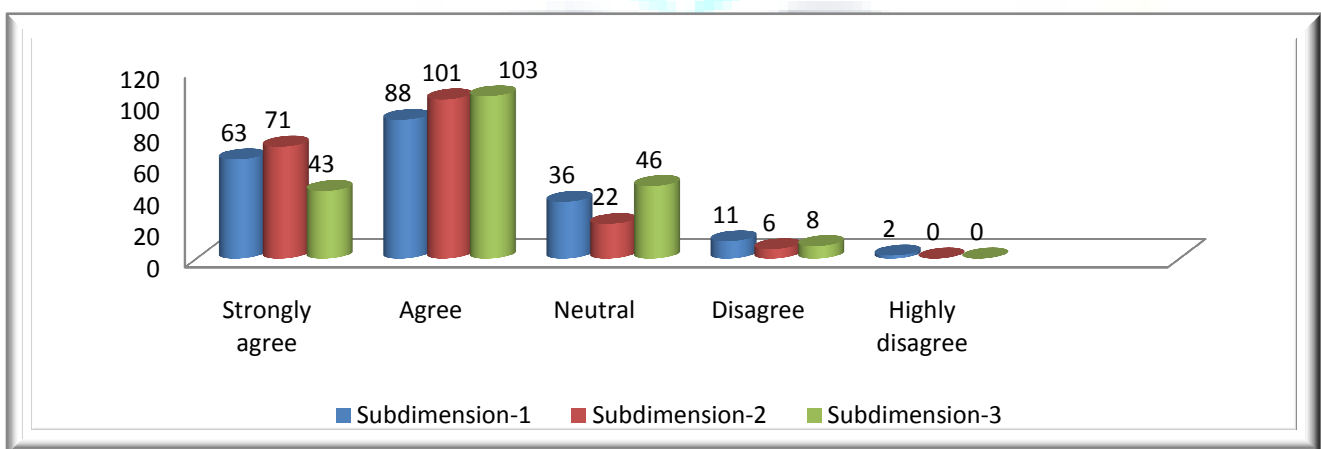
Particular	Strongly agree	Agree	Neutral	Disagree	Highly disagree	Total
Knowledge of employee	16	80	84	20	00	200
Felling of safety for doing transaction	17	55	88	36	04	200
Prompt service by employee	17	63	96	20	04	200
Right guidance by employees	12	72	80	36	00	200
Fair response by employee	08	56	104	32	00	200
Individual attention to customer	12	68	96	24	00	200
Continuous courteous by employee	09	64	98	24	05	200
Telephone response by employee	12	60	100	28	00	200



Here in case of reliance fresh in personal interaction dimension of service quality again fall in neutral category in their response on an average 90 respondents from the total. And the second highest here is in case of agree as a response for personal interaction dimension with on an average 60 to 65 respondents. Very few respondents in this dimension give their view as disagree. So as most of the respondents fall in the neutral category they are not consider in agree or strongly agree that's why this model is not purely applicable in study because of different opinion in different sudimensions and variation into sub dimension

**TABLE-4: ANALYSIS OF PROBLEM SOLVING**

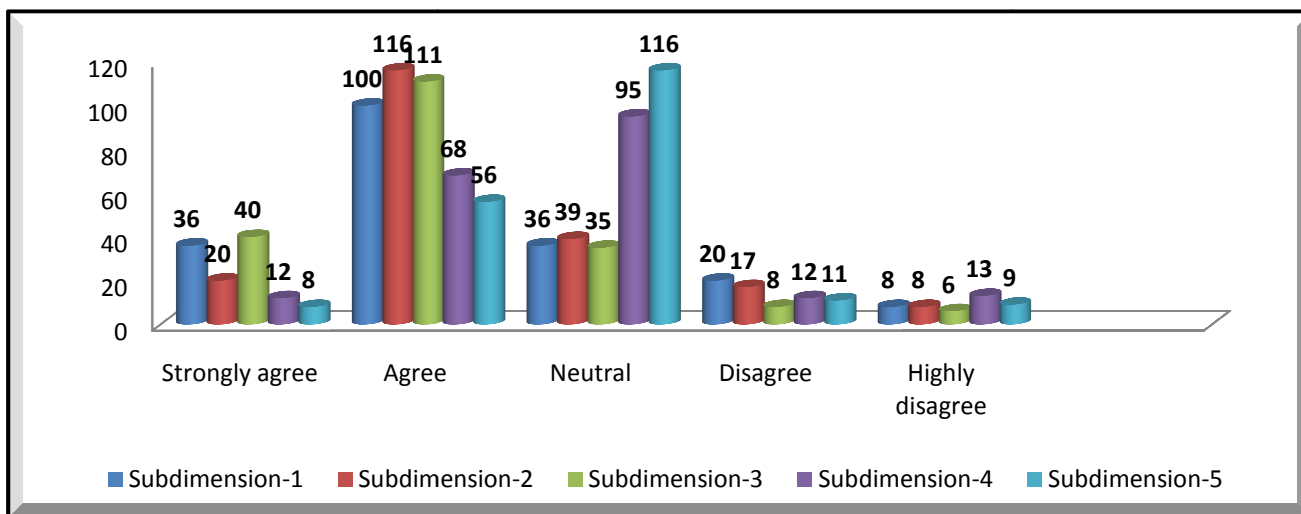
Particular	Strongly agree	Agree	Neutral	Disagree	Highly disagree	Total
Handling returns and exchange	63	88	36	11	02	200
Employees interest to solve problem	71	101	22	06	00	200
Complain handling	43	103	46	08	00	200



In case of problem solving dimension of RSQS model there are sub dimensions like handling of return and exchange, complain solution and desire interest in solving problem is there. Here in case of reliance fresh from the above table we can say that in all sub dimensions of problem solving are agree or strongly. Around 150 respondents from the total respondents find problem solving dimension of service quality in reliance fresh is good. So in this way problem solving dimensions overall apply in case of this study of reliance fresh.

TABLE-5: ANALYSIS OF POLICY DIMENSION

Particular	Strongly agree	Agree	Neutral	Disagree	Highly disagree	Total
High quality merchandise	36	100	36	20	08	200
Convenient parking	20	116	39	17	08	200
Convenience opening hours	40	111	35	08	06	200
Credit card facility	12	68	95	12	13	200
Membership card	08	56	116	11	9	200



Here in this case most of the respondents in first three sub dimensions are on agree upon their views regarding these quality dimension with on an average 105 respondents but in case of credit card or in case of membership card there are neutral on their views On an average 110 respondents. So here because of these two dimensions the mean of different sub dimensions are not on strongly agree or agree on their views. So overall mean is not comparing with a standard mean of agree view so we can say that this dimension is also not fully applicable in case of reliance fresh.

**HYPOTHESIS TESTING**

**Z test**

Here in case of hypothesis testing we try to find out that dimensions of RSQS model are statistically applicable with help of Z test

PARTICULAR	$\bar{x}$	$\sigma$	Z OBSERVED VALUE	Z CRITICAL VALUE	RESULT
Physical aspects	2.176736429	0.88125944	3	1.645	Not applicable(hypothesis rejected)
Reliability	2.904470516	0.932573957	13.70	1.645	Not applicable(hypothesis rejected)
Personal interaction	2.691235209	0.805806689	12.10	1.645	Not applicable(hypothesis rejected)
Problem solving	1.970548394	0.805797128	0.52	1.645	Applicable(hypothesis accepted)
Policy	2.904470516	0.932573957	7.2	1.645	Not applicable(hypothesis rejected)

**FINDINGS**

- The first and foremost finding in case of RSQS Model is regarding first dimension physical aspect. Here the sub- dimensions of service quality like modern equipment and furniture, bags, trial room, rest room but in case of layout to movement in the store is difficult so there is difference in response to various sub dimensions and overall the physical aspect of service quality is not totally applicable in case of reliance fresh. The statistical data in case of physical aspect give the same finding as this dimension is not fully applicable.
- In case of second dimension here is reliability in which sub dimensions like time period, promises, error free transactions in all these respondents are neutral in their view because sometimes they find reliability and sometime there is no reliability kind of thing in service delivery. Reliability is also there but we cannot say that there is a fully reliability is there because of different sub dimension. The statistical data in this regard also present that this dimension is not fully applicable.
- Here in case of third dimension personal interaction in which various sub dimensions like employee knowledge, prompt service, individual attention also most of the customers are neutral in their view because in case of employees behavior they have different experience at different time at the rush like weekend or festival season employees have not that much curtsey to delivering service. So this dimension of personal interaction is also not applicable because of different sub dimension. So this dimension is also not applicable for RSQS model. The statistical data in this regard also present that this dimension is not fully applicable.
- The fourth dimension of RSQS model is problem solving in which there are various sub dimensions like handling of return and exchange, problem solving, handling of customer complain. Here from the research finding of this dimension is against or opposite of other dimensions in case of this all sub-dimensions respondents are agree upon problem solving dimension of RSQS Model. This happen because now a days to stand in competition as specially in organized retailing customers retention is become necessary that's why problem solving aspect given more important in case of retail services. The statistical data also show the same result and conform that problem solving dimension of reliance fresh is applicable in case of this study.
- The last dimension of RSQS model is Policy under which various sub dimensions like quality merchandise, convenience parking, convenience opening hours etc. in case of policy dimensions the finding is that in case of first three sub dimensions of policy are applicable like parking. Opening hours, quality merchandise and in case of other two sub dimensions like credit card and membership card because most of the respondents not use credit card as well as membership card that's why they are give neutral as well as disagree in this matter so because all sub dimensions are not apply for policy the overall dimension of policy for service quality is not applicable. The statistical data also provide with the same result in this case that policy dimension of service quality as a whole is not applicable.

**SUGGESTIONS AND RECOMMENDATIONS**

- The first and foremost suggestion for reliance fresh for the city of Bhavnagar itself is that they have to open a new store to manage rush of weekend in the city.

- The second most important suggestion for reliance fresh is regarding employee behavior. Many respondents in this study said that employee behavior is not same for every day at the time of rush they become aggressive so to give proper training to them and continuous check behavior of employees in the stores.
- Reliance fresh has to adopt certain techniques to maintain traffic in the store
- Reliance fresh has to increase more reliability because they are not that much reliable in case of timely services, by maintaining enough stock to provide necessary products to the customer at a time they want.
- There are certain respondents in the study said that they cannot get proper individual attention and prompt services they have to wait for a long time so reliance fresh has to maintain an individual attention to customer to retain customer
- There are many respondents who are not know about reliance membership card, and those who know not take it seriously, so in this regard reliance fresh has to create more awareness and create awareness regarding benefits of membership card.

## CONCLUSION

In case of RSQS model at the end we can say that the validity and reliability of RSQS in the Indian retail setting indicate that RSQS can be used to assess the overall service levels provided by the store and for tracking changes in the overall service levels over a period of time. But here from this study we can say that only problem solving dimension of this model is applicable here. And the scale only helpful to identify slightly a policy and personal interaction dimension. This severely restricts the usefulness of the scale as a diagnostic tool for providing strategic direction. Retailers wanting greater clarity in identifying service areas for improvement will be disappointed with the RSQS's hazy dimensions. here there are many sub dimensions of these scale which are fully adoptable and others are not match with Indian retailing. RSQS in the Indian context are advised to pay special attention to scale adaptation to ensure that the scale has reliable diagnostic ability. So here in this case if Indian retailers want to apply RSQS model they require a careful re-thinking before applying this existing model and try to first of all to make suitable by eliminating or adding dimensions or sub dimensions to make it suitable with Indian context.

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**ONLINE BUYING BEHAVIOUR OF CUSTOMERS: A CASE STUDY OF NORTHERN INDIA**

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**ABSTRACT**

*It has increasingly come to be known that the Internet facilitates different stakeholders across the globe to get connected inexpensively and also reliably. As a technical infrastructure, it is a global interconnection of networks which are connected into for sharing information using a common set of protocols. Thus being a vast network, the Internet becomes an enabler for facilitating e-commerce as it allows businesses to showcase and sell their products and services online and by giving potential customers, prospects and business partners' access to information about these businesses as well as their products and services. Business organizations are under competitive pressures to create and deliver higher value to their customers. Technology needs to play a critical role in this context, wherein new business models are emerging for taking products and services right into customer's homes and empower them in a way so that products and services can be demanded as per the customer's own needs and comfort. The present paper seeks to investigate the parameters that determine the Purchase Intent of the customers for online buying in Northern India. The analysis suggests that the most important factor which influenced the purchase intention of the respondents' is "Reliability". The reliability is the most relevant factor for buyers in Northern India followed by transaction security and perceived price. However, the minimum values have been scored by convenience and perceived ease of use. Whereas transaction security is the most relevant factor for non-buyers in Northern India followed by reliability and perceived price. However, the minimum values have been scored by convenience and perceived ease of use. The main findings of the study are there is no significant difference in the Purchase Intent among online buyers in Northern India and there is significant difference in the perceptions of the online buyers and non-buyers in Northern India. Study also found that demographic characteristics of the customer influence his/her web and internet usage.*

**KEYWORDS**

Buying Behavior, E-Commerce, Technology, Internet, Purchase Intent, On-Line Buying.

**1. INTRODUCTION**

**E**lectronic Commerce has opened up a new universe for consumers and organizations. Companies are trying to exploit the potential of Internet not only for acquiring the customers but also for retaining them with long lasting relationships. New business models have emerged that are trying to take products and services right into customer's homes and empower them in a way so that products and services can be demanded as per the customer's own needs with the click of their mouse. Many companies have started using the Internet with the aim of cutting marketing costs, thereby reducing the price of their products and services in order to stay ahead in highly competitive markets. Companies also use the Internet to convey, communicate and disseminate information, to sell the product, to take feedback and also to conduct satisfaction surveys with customers. Customers use the Internet not only to buy the product online, but also to compare prices, product features and after sale service facilities they may receive if they purchase the product from a particular store. In addition to the tremendous potential of the E-commerce market, the Internet provides a unique opportunity for companies to reach existing and potential customers more effectively. If exploited intelligently, electronic commerce has the potential to increase the corporate profits through better customer acquisition and retention. However companies need to rethink their strategies, products and business processes in order to develop a cohesive management approach. Further in order to respond to the new opportunities and competitive threats management must anticipate technological and consumer behavioural changes. New pane E- Commerce is becoming critical in three inter-related dimensions: customer to business interactions, intra-business interactions, and business to business interactions. In the customer to business dimension, which happens to be the focus of the research, electronic commerce is enabling the customer to have an increasing say in what products/services are made, and how services are delivered. With this shift towards the empowerment of consumers and their involvement in how products are made and services are delivered, the retailers are re-evaluating every aspect of its operation from customer service to advertising, merchandising to store design and logistics to order fulfillment. Furthermore, reacting to pressures of retailers, suppliers too are assessing technology based solutions to drive down costs (labor, delivery, production) and become more efficient producers of goods and services. The traditional models are being challenged (Kalakota, 1997) wherein the customer went to the store and located the product. In the online model, the retailer seeks out the customer (catalogue retailing).

While a number of surveys conducted by NASSCOM indicate that online purchasing has been growing in India, little systematic research has been conducted to understand the determinants of the adoption and diffusion of this innovative technology in Indian homes. The current work, therefore, seeks to provide with an understanding of the households that participate in the online buying. It is therefore important to study the factors leading to adoption and/or participation in the online buying activities, as understanding the adoption patterns and attitudes, and, perceptions of the e-consumers may provide a useful mechanism to suggest strategic options for fueling the growth of B2C E-Commerce in India.

The present research study would tend to evaluate the perceptions of customers towards on-line buying and identify the differences that exist if any. It would also study the demographic profiles of the customers for understanding the differences in adoption that exists in northern India, the impact of demographics on web and internet usage among customers and the on-line usage behaviour of customers in different regional settings. The research study would also tend to

identify the differences in perceptions of online buyers and non-buyers. It will also ascertain as to how the findings can be useful for the retail companies in reshaping their strategies for better acquisition and retention of customers with different backgrounds and perceptions.

## 2. REVIEW OF LITERATURE

The current literature on online buying behaviour of customers has mainly concentrated on identifying the factors which affect the willingness of consumers to engage in Internet shopping. In the domain of consumer behaviour research, there are general models of buying behaviour that depict the process which consumers use in making a purchase decision. These models are very important to marketers as they have the ability to explain and predict consumers' purchase behaviour. The classic consumer purchasing decision-making theory can be characterized as a continuum extending from routine problem-solving behaviours, through to limited problem-solving behaviours and then towards extensive problem-solving behaviours (Schiffman et al., 2001). The traditional framework for analysis of the buyer decision process is a five-step model. Given the model, the consumer progresses firstly from a state of felt deprivation (problem recognition), to the search for information on problem solutions. The information gathered provides the basis for the evaluation of alternatives. The development and comparison of purchasing evaluation criteria result in the actual decision to buy. Finally, post-purchase behaviour is critical in the marketing perspective, as it eventually affects consumers' perception of satisfaction/dissatisfaction with the product/service. This classic five stage model comprises the essence of consumer behaviour under most contexts. Nevertheless, the management of marketing issues at each stage in the virtual environment has to be resolved by individual E-marketers. Peterson et al. (1997) commented that it is an early stage in Internet development in terms of building an appropriate dedicated model of consumer buying behaviour. Decision sequences will be influenced by the starting point of the consumer, the relevant market structures and the characteristics of the product in question. Consumers' attitude towards online shopping is a prominent factor affecting actual buying behaviour. Jarvenpaa and Todd (1997) proposed a model of attitudes and shopping intention towards Internet shopping in general. The model included several indicators, belonging to four major categories; the value of the product, the shopping experience, the quality of service offered by the website and the risk perceptions of Internet retail shopping. In the research conducted by Vellido et al. (2000), nine factors associated with users' perception of online shopping were extracted. Among those factors the risk perception of users was demonstrated to be the main discriminator between people buying online and people not buying online. Other discriminating factors were; control over, and convenience of, the shopping process, affordability of merchandise, customer service and ease of use of the shopping site. In another study, Jarvenpaa et al. (2000) tested a model of consumer attitude towards specific webbase stores, in which perceptions of the store's reputation and size were assumed to affect consumer trust of the retailer. The level of trust was positively related to the attitude toward the store, and inversely related to the perception of the risks involved in buying from that store. Jarvenpaa et al. (2000) concluded that the attitude and the risk perception affected the consumer's intention to buy from the store. There are several studies in the literature that show the importance of trust trait as a part of culture on e-commerce activities. Gefen and Heart (2006) empirically investigate whether the effects of predictability and familiarity on trust beliefs differ across national cultures and conclude that trust beliefs differ across national culture. Grabner-Kraeuter (2002), presents that trust is the long-term barrier for realizing the potential of e-commerce to customers. Knezevic et al. (2006) mentioned in their paper that the limitations for e-commerce development are basically the perceptions about e-commerce in the culture. Wu and Chang (2006) stated the importance of transaction trust on e-commerce. Teo & Liu (2005) indicated the importance of trust for online purchases. Gefen (2000) stated trust as a critical factor influencing the successful proliferation of e-commerce. Strategy implementation in various cultures has distinctive differences. The study by Lynch and Beck (2001) present the implications and traits for successful strategies and that geographical and cultural difference should be taken into account. Trust is interwoven with risk (McAllister, 1995). One of the consequences of trust is that it reduces the consumer's perception of risk associated with opportunistic behaviour by the seller (Ganesan, 1994). Kim and Benbasat (2003) identified four categories of trust related issues: "personal information, product quality and price, customer service, and store presence" (p.49). As a new form of commercial activity, Internet shopping involves more uncertainty and risk than traditional shopping. In the virtual environment, a consumer cannot physically check the quality of a product before making a purchase, or monitor the safety and security of sending sensitive personal and financial information; e.g., credit card details; through the Internet to a party whose behaviours and motives may be hard to predict. Kini and Choobineh (1998) suggested that trust in the Internet business is necessary, but not sufficient, for an Internet buying behaviour to take place. The consumer must also trust the transaction medium for online shopping. In addition to the impact of trust and perceived risks associated with online shopping, enjoyment of the online shopping experience is also an important determinant of retaining online shoppers (Rice, 1997). Many online purchasers said that they would not shop on a particular website next time if they had an unpleasant experience with it. On the web, shopping enjoyment is positively and significantly related both to attitudes and intentions toward shopping on the web (Eigheten, 1997). Su et al. (2008) mentioned that apart from the absence of the ambience of a physical shop such as temperature, lighting, and business equipment, the online retail environment also lacks person-to-person contact. Like traditional customers, e-consumers also feel the necessity of receiving high quality on their physical products and a personalized customer service online. Brown (2005) purchases are further influenced by such things as personal, psychological, and social issues. A good market researcher will study the thought process undergone by consumers, compare it with their demographic data, and use the resulting information to market their products (Armstrong et al, 2005). The impact of perceived ease of using the website and of transactional control, vary with the type of task the consumer is undertaking. Li et al. (1999) examined the effects of three perceived channel utilities; communication, distribution and accessibility; and four types of consumer shopping orientations; recreational, experiential, convenience and economic. Their results showed that online buying behaviour was affected by a mix of consumer shopping orientation and perceived channel utilities. Information technology provides online consumers with tremendous access to information about products and services from anywhere in the world and from different sources other than solely from the product seller. The combination of less time available for shopping, limited information-processing capability and the explosive amount of information on the web has, however, led customers to demand more control, less effort and greater efficiency during shopping (Jarvenpaa and Todd, 1997). In order to respond to the customers' desire for control and convenience, web stores have to design an efficient system to enable consumers to easily find what they need, learn more about it and quickly make a purchase decision (Baty and Lee, 1995). Design characteristics of a web page were found to affect consumers' online buying decision. Ho and Wu (1999) found that homepage presentation is a major antecedent of customer satisfaction. The other antecedents; such as logical support, technological characteristics, information characteristics and product characteristics; are also predictive factors to satisfaction. By using a sample of 214 online shoppers, Ranganathan and Ganapathy (2002) found four key dimensions of B2C web sites; information content, design, security and privacy. They concluded that, though all these dimensions have an impact on the purchase intention, security and privacy were found to have greater impact on the purchase intent of online buyers. Dholakia and Rego (1998) investigated the factors which make commercial web pages popular. They found that a high daily hit-rate is strongly influenced by the number of updates made to the website in the preceding three month period. The number of links to other websites was also found to attract visitor traffic. The explosive growth in usage of the Internet provides a great number of potential consumers to E-marketers. Whether or not marketers can convert their potential customers into real ones and retain them depends, to a very large extent, on the service they offer and on the perceived customer satisfaction of consumers (Churchill and Surprenant, 1982; Oliver, 1980; Luarn and Lin, 2003). Many researchers have found the quality of web retailing sites is a dominant antecedent of customer satisfaction within the online shopping environment. Assuming web design as an important issue in web shopping, Wolfenbarger and Gilly (2002) developed a four-dimensional scale; .comQ; that included website design, reliability/fulfillment, customer service and privacy/security to measure the quality of an online retailing site. They found that website design quality was an important issue in customer satisfaction. This scale was tested and validated, and they recommended its use in any further study dealing with the measurement of online quality. This review of empirical studies has embodied different factors which influence online buyers' behavior. The antecedents of online purchase include many attitudinal components; for example, attitude towards a website and perceived risk of an online purchase. Consumers' online shopping experiences, website design and fulfillment of quality expectations are deemed as the major components to successful online transactions. The review also presented the fact that good customer service led to customer satisfaction, which in turn resulted in consumer loyalty to such websites. Many researchers have also conducted studies to measure how online consumers perceived web shop quality.

### 3. SCOPE OF THE STUDY

The scope of the study shall comprise of the following cities in northern India viz. Jammu, Chandigarh and Delhi. Within each city, data shall be collected from different cross section of the society. The respondents of this research study shall comprise of those people who have some familiarity with the use of computer systems such as students in computer training institutes, cyber café users, teachers/students in colleges and universities and computer users in private/public sector undertakings.

### 4. HYPOTHESES

The study thus focuses on perceptions of the customers. The study is based on the following hypotheses:

H1: There is a significant Purchase Intent among online buyers in Northern India.

H2: There is significant difference in the perceptions of online buyers and non-buyers

### 5. OBJECTIVES

The main objectives of the study are as follows:

- To analyze the impact of demographics on web and internet usage among customers in select cities in Northern India
- To evaluate the perceptions of respondents towards different factors of online buying taken up in the study
- To study the variations in perceptions of online buyers and non-buyers
- To suggest strategies for future growth of business to consumer e-commerce in India

### 6. RESEARCH METHODOLOGY

The research study was conducted by collecting both primary and secondary data. Primary data have been collected by administering a self designed questionnaire to the customers. Secondary data was obtained from various books, journals, published papers, newspapers, websites etc.

The research has been conducted by randomly selecting a total of 150 customers from three cities viz. Delhi, Chandigarh and Jammu. The data so collected was tested for its reliability and validation of the construct. The **Cronbach alpha** was calculated for the data and value for the same has been **0.8800**. Since the value is higher than 0.5, therefore it shows that data for the study is reliable. It further shows that the data is fit for factor analysis. Then factors affecting customers' perceptions regarding adoption of online buying were carved out by applying factor analysis technique using SPSS 17 software. Thereafter, a detailed analysis was carried out by applying appropriate statistical tools such as Mean and ANOVA technique.

### 7. ANALYSIS

#### 7.1. DEMOGRAPHIC PROFILE

TABLE 1 (a)

Gender	Total (%)
Male	58.18
Female	41.82

Table 1(a) depicts the demographic profile of the respondents taken from the Northern India. Table depicts that out of the total number of the respondents, 58.18% of the respondents are male and 41.82% are the female.

TABLE 1 (b)

Occupation	Total (%)
Student	34.55
Self Employed	9.09
Private Sector	47.27
Govt. Service	7.27
Any Other	1.82

Table 1(b) depicts that 47.27% of the respondents are working in private sector, 34.55% of the respondents are students, 9.09% of the respondents are self employed, 7.27% of the respondents are working in Government services and 1.82% of the respondents are falling under the category of 'Any Other' as given in the Table 1(b). It indicates that the respondents who are working in private sector are more associated with web and internet followed by the students.

TABLE 1 (c)

Age	Total (%)
Less than 21 years	0
21-30 years	89.09
30-40 years	5.45
40-50 years	5.45
Above 50 years	0

Table 1(c) depicts that 89.09% of the respondents fall in the age group of 21-30 years, 5.45% of the respondents fall in the age group of 30-40 years and 40-50 years each. It clearly indicates that mostly the youngsters are involved into online activities.

TABLE 1 (d)

Education	Total (%)
10+2	0
10+2 Vocational Training	5.45
Bachelor's Degree	54.55
Master's Degree	32.73
Doctoral Degree	0
Other	7.27

Table 1(d) depicts that 54.55% of the respondents are Graduate, 32.73% respondents are Post Graduate, 7.27% of the respondents fall under the category 'Other' and 5.45% of the respondents fall under the category '10+2 Vocational Training' as given in the Table 1(d). Thus it indicates that highly educated people are more interested in computer and online environment.

TABLE 1 (e)

Marital Status	Total (%)
Single	85.45
Married	14.55

Table 1 (e) depicts that out of the total respondents, 85.45% of the respondents are unmarried and 14.55% of the respondents are married. Thus, it indicates that unmarried people are highly involved in online activities.

TABLE 1 (f)

Current Family Income	Total (%)
Below 10000	16.36
10000-25000	45.45
Above 25000	38.18

Table 1(f) depicts that 45.45% of the respondents have their family income between Rs. 10,000-25,000, 38.18% of the respondents have their family income above Rs. 25000 and 16.36% of the respondents have their family income below Rs. 10,000. It indicates that most of the online shoppers fall in the income bracket of Rs 10,000-25,000 followed by those having family income above Rs. 25,000. It indicates that the customers with higher family income are more inclined towards online processes.

TABLE 1 (g)

Family Type	Total (%)
Single	63.64
Joint	36.36

Table 1(g) depicts that 63.64% of the respondents have nuclear family and 36.36% of the respondents have joint family. Thus it indicates that the respondents who are dwelling in nuclear families are more indulged into online activities.

7.2. WEB AND INTERNET USAGE

TABLE 2 (a)

Access to Internet		Total (%)	
Yes		100	
No		0	
Where (If Yes)	Total (%)	Who Pays for it	Total (%)
Home	29.09	Self/ Spouse	36.36
College/ University	21.82	Parents	29.09
Work Place	40	Work	29.09
Cyber Café	29.09	School	7.27
Other	0	Other	0

Study found that all the respondents have access to internet as given in Table 2(a). Table 2(a) depicts that 40% of the respondents have access to internet at work place, 29.09% of the respondents have access to internet at home, same percentage of the respondents have the access to internet at cyber café and 21.82% of the respondents have the access to internet at college/university. It indicates that most of the respondents have access to internet at workplace followed by home and cyber café. Table 2(a), also depicts that 36.36% of the respondents told that their bills are paid by themselves or by their spouse, 29.09% of the respondents told that their internet charges are paid by their parents and the same percentage of the respondents apprised that their internet bills are paid by their organizations where they work and 7.27% of the respondents told that their internet bills are paid by their School as shown in the Table 2(a). It indicates that mostly the internet bills of the respondents are paid by the respondents themselves followed by their parents and their organizations where they work.

TABLE 2 (b)

Web primarily used for	Total (%)
Self	43.64
Business	38.18
Education	54.55
Shopping	23.64
Entertainment	50.91
Communication with others	54.55
Gathering information for personal needs	36.36
To while away the time	10.91
Other	0

Table 2(b) depicts that 54.55% of the respondents used web primarily for education purpose, same percentage of the respondents used web primarily for communication with others, 50.91% of the respondents used web primarily for entertainment, 43.64% of the respondents used web primarily for self, 38.18% of the respondents used web primarily for business purpose, 36.36% of the respondents used web primarily for gathering information for personal needs, 23.64% of the respondents used web primarily for shopping purpose and just 10.91% of the respondents used web primarily to while away the time as mentioned in the Table 2(b). Thus, it indicates that most of the respondents used web primarily for education and communication purpose.

TABLE 2 (c)

Would you like internet shopping instead of personal market visit?		Total (%)		
Yes		49.09		
No		49.09		
S.No.	Reasons for "Yes"	Total (%)	Reasons for "No"	Total (%)
1	Saves time	33.3	Safety issue	15.9
2	Wide variety	6.4	Quality issue	14.3
3	Detailed information available	3.2	Lack of wide variety	3.2
4	One stop shop for all purposes	1.6	No trust	3.2
5	Good Quality	1.6	Lack of personal touch	3.2
6	Saves money	1.6	Privacy issue	1.6
7	Comparability available	1.6	Lack of personal satisfaction	1.6
8	Convenient	1.6	Delivery issue	1.6
9	Less rates in certain items	1.6	Everything is available around	1.6
10			Internet expenses	1.6
Total		52.5		47.6

Table 2(c) depicts that 49.09% of the respondents would like to consider using internet for shopping consumer goods instead of visiting the market personally as most of them think that it saves time (33.3%), provides wide variety in products/services(6.4%), detailed information available (3.2%) etc. and the equal percentage of the respondents, i.e. 49.09%, would not like to consider using internet for shopping consumer goods instead of visiting the market personally as most of them think that there are safety issue (15.9%), quality issue (14.3%) etc. associated with the online buying. Table 2(c) depicts that the percentage of

reasons favouring internet shopping is 52.5% and the percentage of reasons which are not favouring internet shopping is 47.8%. It indicates that favourable factors for internet shopping are more than unfavourable factors.

**7.3. FACTOR ANALYSIS**

The factors which were obtained after factor analysis are: convenience, reliability, perceived ease of use, information access, transaction security and perceived price as shown below:

**TABLE 3: FACTOR ANALYSIS**

Factors	Mean	Factor Loading	Eigen Value	% of Variance Explained
<b>Convenience (F1)</b>			<b>6.69</b>	<b>17.5</b>
Internet buying avoids the hassle of local shopping	3.47	.671		
I dislike the problems of Internet buying	3.21	-.681		
I usually don't have enough time to shop in stores	2.75	.716		
I prefer online shopping as it is available, 24x7 days a week	3.32	.735		
Internet Shopping is a substitute to traditional way of shopping	3.2	.593		
The Internet is the first place, I visit when I want to buy something	2.8	.536		
The Internet offer wider product selection than local stores	3.37	.585		
I don't trust Internet retailers	3.06	-.621		
I say positive things about Internet shopping to other people	3.24	.535		
Shopping over the internet is safe	2.78	.648		
<b>Reliability (F2)</b>			<b>3.17</b>	<b>11.9</b>
I trust the opinion of consumers who have experienced the products I am planning to purchase	3.7	.629		
Availability of product information reduces uncertainty in the purchase decision process	3.68	.640		
A confirmatory email after the order enhances my loyalty	3.58	.563		
When I buy online, I prefer buyer with high ratings	3.53	.642		
After sale support is essential	4.15	.737		
Reviews and people's comments about products affect my decision to purchase or not.	3.88	.733		
<b>Perceived Ease of Use (F3)</b>			<b>1.52</b>	<b>7.57</b>
Its easy to sell products online	3.18	.836		
Selling products online is an easy process	3.21	.812		
<b>Information Access (F4)</b>			<b>1.38</b>	<b>7.28</b>
Product Information available online is very accurate	2.98	.656		
I find it easy to find the best price for the product I am looking for online	3.3	.610		
I prefer dealing with companies which offer the latest innovative sites	3.43	.698		
<b>Transactional Security (F5)</b>			<b>1.1</b>	<b>6.86</b>
It's a real hassle to return products bought online	3.81	.799		
Shipping charges are a drawback to online shopping	3.8	.771		
<b>Perceived Price (F6)</b>			<b>1.07</b>	<b>6.33</b>
It requires a lot of time and effort on my part to set up an account with another Internet retailer	3.24	.557		
When I buy products online I always make my decisions in terms of price	3.35	.645		
I prefer shopping online if prices are lower than the prices in stores	3.51	.697		

The analysis suggests that the most important factor which influenced the purchase intention of the respondents' is "Reliability". The reliability is the most relevant factor for buyers in Northern India followed by transaction security and perceived price. However, the minimum values have been scored by convenience and perceived ease of use. Whereas transaction security is the most relevant factor for non-buyers in Northern India followed by reliability and perceived price. However, the minimum values have been scored by convenience and perceived ease of use.

**7.4. BUYERS & NON-BUYERS**

Figures below in Table 4 represent the perceptions of the respondents in Northern India. The table depicts the mean values for buyers and non buyers in the context of online buying in Northern India. The analysis suggests that the reliability is the most relevant factor for buyers in Northern India followed by transaction security and perceived price. However, the minimum values have been scored by convenience and perceived ease of use. Whereas transaction security is the most relevant factor for non-buyers in India followed by reliability and perceived price. However, the minimum values have been scored by convenience and perceived ease of use. Convenience orientation and perceived ease of use are the distinguishing factors between buyers and non buyers in India whereas transaction security is not the factor that distinguishes buyers from non buyers. It indicates that convenience orientation and perceived ease of use are the important factors for online buyers but irrelevant for non- buyers. Reliability factor weighs high amongst buyers however non-buyers perceive transaction security more important. This means that transaction security is an important factor before non-buyers in India. That is the reason, they do not buy on line is due to the lack of transaction security attached with online buying.

Finally, the average mean value for buyers is 3.6 and for non –buyers is 3.17 as given in Table 4. It indicates that buying orientation of online shoppers is more than that of non- buyers in India.

**TABLE 4: COMPARISON OF PERCEPTIONS**

Factors	Mean (Buyers)	Mean (Non- buyers)
Convenience (F1)	3.43	2.83
Reliability (F2)	3.94	3.59
Perceived Ease of Use (F3)	3.43	2.97
Information Access (F4)	3.48	3.01
Transaction Security (F5)	3.81	3.82
Perceived Price (F6)	3.53	3.22
<b>Average Mean</b>	<b>3.6</b>	<b>3.17</b>



**7.5. ANOVA (BUYERS AND NON-BUYERS)**

ANOVA test was applied upon the responses of online buyers and non-buyers of different select cities of the Northern India to investigate the differences in their perceptions and the results are given in the Table no. 5.

**TABLE 5: ANOVA**

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	84.441	1	84.441	76.449	.000
Within Groups	500.359	453	1.105		
Total	584.800	454			

Table 5 shows that the calculated value for "F is 76.449" and since the value of F is greater than 2 and the value of "Significance (0.000)" is less than 0.05 therefore the result suggests that there is significant difference in the perceptions of the online buyers and non-buyers in Northern India.

**7.6. ANOVA (SELECT CITIES)**

ANOVA test was also applied to investigate the significant difference in Purchase Intent among online buyers in Northern India. The results of the test are given in the Table no.6.

**TABLE 6: ANOVA**

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	13.013	6	2.169	1.712	.116
Within Groups	574.996	454	1.267		
Total	588.009	460			

Table 6 shows that the calculated value for "F is 1.712" as the value is less than 2 and the value of "Significance" (0.116) is greater than 0.05 therefore the result suggests that there is no significant difference in the perceptions of the respondents of the select cities of Northern India.

**8. CONCLUSION**

The research study endeavoured to investigate the parameters that determine the Purchase Intent of the customers for online buying in Northern India. The study concludes that the most important factor which influenced the purchase intention of the respondents' is "Reliability". The reliability is the most relevant factor for buyers in Northern India followed by transaction security and perceived price. However, the minimum values have been scored by convenience and perceived ease of use. Whereas transaction security is the most relevant factor for non-buyers in Northern India followed by reliability and perceived price. However, the minimum values have been scored by convenience and perceived ease of use. The main findings of the study are there is no significant difference in the Purchase Intent among online buyers in Northern India and there is significant difference in the perceptions of the online buyers and non-buyers in Northern India. Study also found that demographic characteristics of the customer influence his/her web and internet usage. Therefore, the consumers with a distinct profile viz. young people with good income, living in urban areas and well educated have a favourable orientation towards web and internet usage. This segment holds maximum opportunity for the adoption of E-commerce as compared to other segments.

**9. SUGGESTIONS AND RECOMMENDATIONS**

The results obtained are important because they would allow the various companies to self evaluate and improve their marketing strategies to fuel the B2C e-commerce in India. Therefore the companies intending to use internet as a channel of distribution should consider the factors which determine the purchase intent of the online buying among customers. The six factors identified after factor analysis, reveal that online buying as a modern and innovative way of shopping, commonly known as B2C E-Commerce, has enormous potential and capability to contribute towards the growth of business in modern context. The marketers need to identify relevant strategies that will help in the adoption of E-commerce as an alternate business medium. Online buying is a technology oriented option and the data analysis points towards the fact that the marketers need to segment the consumers on the demographic basis and position this option of transacting business among the segment which has a distinct profile viz. young people with good income, living in urban areas and well educated. This segment holds maximum opportunity for the adoption of E-commerce as compared to other segments.

While analyzing the perceptions of customers, it has been seen that among the respondents, who are in favour of internet shopping saving of time and convenience are two very important factors. Therefore the companies intending to use internet as a channel of distribution should keep these two factors in consideration while designing their website. The website should be easy to handle and customer friendly. The quality of website will be of critical importance while being evaluated by the customers. The quality of website will also be determined by the customers on the basis of the management of safety issues. The review of literature has also indicated about trust being an important factor affecting the adoption of E-commerce. Therefore the E-commerce companies need to strategize the trust dimension, as it will help them build relationships with their customers and also take care of their security concerns. A number of products are purchased by the customers only after a personal touch and verification. This factor can also be taken care by the quality of website. Thus companies should focus on developing interactive websites to enhance their virtual presence and attract the customers and address their concerns.

Comparison of buyers and non-buyers suggests that reliability is one factor which is relevant for both buyers as well as non-buyers. The companies should focus on conveying reliability to the customers. An effective communication between the company and customers can serve the purpose of an important confidence building measure. Thus the companies should focus on developing effective communication strategies which transcend beyond the brand building exercises. Perceived price is another strategic factor that needs to be managed efficiently by internet based companies. Price is one of the relevant factors that have a potential to convert a non-buyer into a buyer. The companies should provide facts about price and if possible a comparative price structure that communicates the perceived differential advantage in absolute terms and helps in adopting the internet as a business medium.

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**DEALERS AND CONSUMER DURABLES**  
**(A STUDY BASED ON DEALERS PERCEPTIONS AS REGARDS SAMSUNG COLOUR TELEVISION)**

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**ABSTRACT**

*Consumer durables are household assets that satisfy consumer wants, and which do not generate any further income on it. Consumer durables consist of items like radio, television, washing machines, refrigerator, sewing machines, electric fans and furniture. Many multi-national companies like Samsung, LG, Philips, Sony and Onida have entered into the consumer durable market with many product features and different models. The Government of India had opened doors for entry of Multinational Companies into India and consequently world leaders like Sony, Samsung and LG had launched their consumer products like Television and Audio Systems in the Indian consumer market. A marketing strategy creates awareness and desire. This psychological desire gets converted into demand and the act of buying takes place. The dealers play an important role at this stage. Primary data required for the study was collected by distributing questionnaires to 50 dealers. A dealer normally deals with all types of consumer durables. In ranking of consumer durables sold by the dealers, television was ranked 1<sup>st</sup>. Dealers deal with various brands of colour television like Samsung, LG, Onida and Sony and finally Samsung brand bagged the 1<sup>st</sup> rank. Factor analysis had been applied to investigate the underlying structure of the variables that influence the dealer's perception as regards marketing strategy of Samsung India Electronics Private Limited for Samsung color television. The variables have been reduced to three factors, "Brand image factor", "Service factor" and "Promotional" factor. Samsung India Electronics Private Limited should provide timely and adequate stocks, liberal credit terms, give awards etc., to encourage and motivate the dealers. It is necessary to build long term loyal relationships as the new economy is becoming more competitive.*

**KEYWORDS**

Consumer durables, multi-national companies, dealer's perception, Samsung color television.

**INTRODUCTION**

The consumer market consists of all the households and individuals who buy goods and services for their personal use. The consumer market is growing at a tremendous pace. The changing socio-cultural, political and economic environment has transformed ordinary people into sophisticated consumers. Consumer durables are household assets that satisfy consumer wants, and which do not generate any further income on it. Consumer durables consist of items like radio, television, washing machines, refrigerator, sewing machines, electric fans and furniture. These goods are expected to provide good service for a fairly long period of time, although net addition to holdings of such durables, are not considered as capital formation.

Today consumer durables have replaced the concept of luxury items. Durable goods like television, computer, refrigerator etc., are found in almost all households, although their models may differ from class to class. Consumers are now going for real "Life Quality" improvement in products and services. Consumers in India want better quality of life for themselves and hence they buy consumer durables that make life better. Price and reputation of the manufacturer are the major factors influencing purchase decisions of consumers in the lower income group. Company's reputation, price and quality of the product are some of the factors influencing the choice of consumer durables. Many multi-national companies like SAMSUNG, LG, PHILIPS, SONY and ONIDA have entered into the consumer durable market with many product features and different models.

The growing competition in all the segments of consumer products has made strategic marketing, an inevitable marketing approach. In order to develop successful marketing strategy, marketers must understand consumer behaviour, and target market, keeping in view the environmental influences, individual differences and psychological process by which the consumers make few decisions.

The Indian consumer market especially in the field of consumer durables like television, competition is increasing day by day due to the liberalization policy of the Government of India. Advanced technology also plays a major role in attracting consumers. Previously television was purchased by high class people, but due to the decrease in prices and also due to other factors like liberal consumer loans, new hire purchase and installment purchase schemes, television is now purchased by middle class and upper middle class people also. Hence demand for the television sets are increasing day by day.

The Government of India had opened doors for entry of Multinational Companies into India and consequently world leaders like Sony, Samsung and LG had launched their consumer products like Television and Audio Systems in the Indian consumer market. A marketing strategy creates awareness and desire. This psychological desire gets converted into demand and the act of buying takes place. The dealers play an important role at this stage. In this competitive environment there is increasing competition from national as well as multi-national companies, for almost all products falling under the category of consumer durables.

**REVIEW OF LITERATURE**

C. Madhavi and John William Felix have stated that consumer durables have attributes like price, timeliness, quality etc., and consumer perception varies with the experience of product values.

Dr. K. Shivakumar and S. Komathi have used averages and percentages and observed that manufacturers and marketing executives of durable products realize that they have to bring out products to meet the specific needs and wants of their customers.

Dr. Mallikarjuna Reddy has stated that in order to develop successful marketing strategies, marketers must understand consumer behaviour of the target market, keeping in view environmental influences, individual differences and psychological process based on which consumers make decisions.

Dr. S.G. Losarwar has found that suitable marketing strategy must be used for marketing consumer durables. He also observed the factors influencing consumers in the selection and use of a particular product.

Dr. Urvashi Makkar has observed that white goods markets are changing markets which needs a new base of market segmentation.

Dr. Gurmeet Singh and Harish Gautam have stated that television is the only media where all the elements of advertisement i.e., AIDA (Attract – Interest – Desire – Action) have good effect. They observed that television media plays an important role in providing effective communication between the marketer and the consumer.

Selvaraj and A. Mahendran have used chi-square, rank correlation and found that factors like age, family size and occupation have not influenced the brand preference. They found that the price, brand name, dealers network and after sales service together influence the buyers purchase decision.

Namshin Cho has observed that Samsung Corporation, a Korean Firm concentrates in organizational innovations. He analysed the consequences of the organizations' innovations, problems in implementing them and he also states the remedies to overcome those problems.

Chong Ju Choi has observed that the Samsung corporation attempts at re-engineering. He has also found that Samsung, Korea's largest and most successful corporation has been able to re-engineer various aspects of its culture such as working hours and attitudes towards product quality.

**OBJECTIVES OF THE STUDY**

1. To study about dealer’s perception as regards marketing strategy of Samsung India Electronics Private Ltd (For colour Television).
2. To offer suggestions for improving the sales of Samsung Colour Television.

**METHODOLOGY**

This study adopts survey method of research, covering dealers in Chennai city. Primary data required for the study was collected by distributing questionnaires to 50 dealers. After careful investigation, incomplete questions were discarded and finally 30 questionnaires collected from dealers and were taken for the present study.

**QUESTIONNAIRE DESIGN**

Dealer’s Questionnaire consists of 2 parts. Part A deals with general questions regarding the general information and part B deals with dealer’s perception as regards the Marketing Strategy of Samsung India Electronics Private Ltd. To analyse the dealer’s perception as regards the marketing strategies of Samsung India Electronics Private Ltd, dealers were asked to rate each item on a 5 point scale namely Strongly agree, Agree, Neither agree, nor disagree, Disagree, Strongly disagree and 5, 4, 3, 2, 1 points were assigned to these responses.

**RANKING OF CONSUMER DURABLES SOLD BY DEALERS**

A dealer normally deals with all types of consumer durables. Table 1 deal with the ranking of consumer durables sold by the dealers.

**TABLE 1: RANKING OF CONSUMER DURABLES SOLD BY DEALERS**

Type of product	Mean	Rank
Colour television	8.4	1
Refridgerator	4.8	3
Washing machine	5.0	2
Air conditioner	3.5	4

From table 1 it can be seen that television sales has the highest mean of 8.4 and hence 1<sup>st</sup> rank can be assigned to it. Many consumers are buying Colour Television as it enhances their status and standard of living. Mean value of Washing Machine is 5 and hence 2<sup>nd</sup> rank is assigned to it. They are followed by Refridgerator (mean 4.8) and Air conditioners (mean 3.5) and hence 3<sup>rd</sup> and 4<sup>th</sup> rank can be assigned to them.

**RANKING OF VARIOUS BRANDS OF COLOUR TELEVISION SOLD**

Dealers deal with various brands of colour television like Samsung, LG, Onida and Sony. Table 2 shows the ranking of the various brands of colour television sold by the dealers.

**TABLE 2: RANKING OF BRANDS OF COLOUR TELEVISION**

Particulars	Mean	Rank
Samsung	3.10	1
LG	2.17	2
Onida	2.00	4
Sony	1.24	3

Table 2 reveals that Samsung brand has the highest mean and hence 1<sup>st</sup> rank is assigned to it. This shows that consumers prefer Samsung colour television due to advanced technology and good after sales service even if it is priced slightly more than other brands. Rank 2 is assigned to LG brand.. Onida and Sony brand of colour television are assigned the third and fourth rank respectively.

**FACTOR ANALYSIS**

Factor analysis has been applied to investigate the underlying structure of the variables that influence the dealer’s perception as regards marketing strategy of Samsung India Electronics Private Limited for Samsung color television. KMO measure of sampling adequacy is 0.689 and Barlett’s test shows a significance of 0.000. Therefore factor analysis can be applied to ten variables measuring dealer’s perception as regards marketing strategy of Samsung India Electronics Private Limited for Samsung color television. It is observed that measures of sampling adequacy (MSA) are more than 0.5. Hence all 10 variables can be subjected to factor analysis.

**GROUPING OF VARIABLES**

The Principal Component Analysis by factor extraction method and Varimax rotation method has been used to group the variables of perception of dealers as regards marketing strategy of Samsung India Electronics Private Limited for Samsung color television. Table 3 shows the factor extraction for perception of dealers as regards marketing strategy of Samsung India Electronics Private Limited for Samsung color television.

**TABLE 3: FACTOR EXTRACTION PERCEPTION OF DEALERS**

Variables	Communalities	Factor	Extraction sums of squared loadings			Rotation sums of squared loadings		
			Total	% of Variance	% Cumulative	Total	% of Variance	% Cumulative
Samsung products are “value for money” for the customers	0.571	2	1.756	17.560	59.286	1.857	18.568	57.532
Samsung provides very good after sale service	0.834	3	1.418	14.177	73.462	1.593	15.931	73.462
Samsung products carry very good brand recall	0.759							
Samsung provides adequate and timely stocks to the customers	0.883							
Samsung provides clean and proper product demonstration for the customer on the shop floor	0.757							
Samsung handles customer complaints immediately	0.552							
Complaints do not reoccur	0.767							
Samsung advertisements and promotions do not contain false promises	0.847							
Samsung gives adequate margins for the channel partners	0.688							

Extraction method –principal component analysis

TABLE 4: ROTATED COMPONENT MATRIX

VARIABLES	COMPONENT		
	I	II	III
Samsung supplies wide range of products	0.825		
Samsung products are "value for money" for the customers	0.750		
Samsung provides very good after sale service		0.866	
Samsung products carry very good brand recall	0.862		
Samsung provides adequate and timely stocks to the customers	0.906		
Samsung provides clean and proper product demonstration for the customer on the shop floor			0.856
Samsung handles customer complaints immediately		0.526	
Complaints do not reoccur		0.875	
Samsung advertisements and promotions do not contain false promises			0.915
Samsung gives adequate margins for the channel partners			0.824

Extraction method: principal component analysis.

Rotation method: Varimax with Kaiser Normalization.

The above ten variables have been reduced to three factors. Three statements are loaded in first factor. These statements deal with brand, image, range of products, brand recall, adequate and timely stock. So the first factor is named as "Brand image factor". The statements loaded in second factor consist of value of money, after sales service and complaints do not reoccur and hence it is named as "Service factor". The last factor is named as "Promotional" which includes clean and proper demonstration, handles customer complaints, gives adequate margins etc.,

TABLE 5: DEALER'S PERCEPTION VARIABLES IN RESPECTIVE FACTORS

Factors	Variables	Factor loadings
Factor 1 Brand Image Factor	Samsung supplies wide range of products.	0.825
	Samsung product carries very good brand re-call	0.862
	Samsung provides adequate and timely stocks to the customers.	0.906
Factor 2 Service Factor	Samsung products value for money for the customers.	0.750
	Samsung provides very good after sales service	0.866
	Complaints Do Not Re-Occur	0.875
	Samsung provides clean proper product demonstration given to the customers.	0.856
Factor3 Promotional Factor	Handles customers complaints immediately.	0.526
	Gives adequate margins for the channel partners.	.824
	Advertisements and promotions do not contains false promises.	.915

Extraction method: Principal Component Analysis

Rotation method: Varimax with Kaiser Normalization.

The above table shows that Principal Component Method of Factor analysis and the Varimax Rotation Method have been used to group the 10 variables in to 3 factors. The most dominant factor is "Brand image" and it includes 3 variables viz, Samsung supplies wide range of products. Samsung product carries very good brand re-call. Samsung provides adequate and timely stocks to the customers and it explains 38.964% of the variance. The next factor is "Service" factor and it includes 3 variables namely Samsung products value for money for the customers. Samsung provides very good after sales service. Complaints do not re-occur. Samsung provides clean proper product demonstration given to the customers. Value for money, sales service, and it explains 18.568% of the variance. The last factor is "Promotional" factor and it consists of 4 variables Handles customers complaints immediately, Gives adequate margins for the channel partners. Advertisements and promotions do not contain false promises, it explains 15.931% of variance.

**SUGGESTIONS**

1. Liberal credit terms can be given by Samsung India Electronics Private Limited to its dealers.
2. Samsung India Electronics Private Limited should provide timely and adequate stocks to the dealers.
3. The company can give awards, free family trips etc., to encourage and motivate the dealers.
4. The company should concentrate more on advertisements and sales promotion techniques.
5. Attractive, colourful and informative brochures can be circulated to dealers.

**SCOPE FOR FUTURE RESEARCH**

1. There are many consumer durables like washing machines, air conditioners, refrigerators, etc. used by consumers. But this study deals only with the perception of dealers as regards Samsung colour Television. Hence future research can be focused on other consumer durables.
2. There are many products manufactured by Samsung India Electronics' Private Limited future research can be focused on other products also.
3. This study deals with the perception of dealers in Chennai only. Future research can be focused on All India basis.

**CONCLUSION**

Commitment, trust, value, satisfaction and loyalty are the key words to success. Samsung India Electronics Private Limited should provide timely and adequate stocks, liberal credit terms, give awards, free family trips etc., to encourage and motivate the dealers. It is necessary to build long term loyal relationships as the new economy is becoming more competitive.

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## A STUDY ON THE INDIAN SMALL CAR MARKET AND FACTORS INFLUENCING CUSTOMERS' DECISIONS TOWARDS PURCHASE OF SMALL CARS'

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### ABSTRACT

*The small car market in India is growing at a very fast pace. India has become the third largest manufacturer and the second largest market for small cars overtaking Brazil. As per the Society of Indian Automobile Manufacturers (SIAM) small cars contribute for 80% of the domestic market and the exports are rising at a greater speed. This study has been carried out to understand the changing preferences and requirements of customer's of small cars. The changing lifestyle, increase in disposable income, and standard of living in the middle class families make them to aspire a car at an early age. The findings of the study would help car manufacturers to get an insight into product development, design and distribution and to develop specific promotional tools to reach various segments of the society to influence the decision making towards purchase of small cars. The study would also provide meaningful insight to students and research scholars to pursue similar studies in future.*

### KEYWORDS

Customers, Preference, Purchase Decisions, Small cars.

### INTRODUCTION

The automobile industry is considered to be one of the key sectors of any economy, due to its capability of linkages with the other sectors of the economy. The small car market in India is growing at a very fast pace. India has become the third largest manufacturer and the second largest market for small cars overtaking Brazil. As per the Society of Indian Automobile Manufacturers (SIAM) small cars contribute for 80% of the domestic market and the exports are rising at a greater speed.

### DEFINITION OF A SMALL CAR

A small car (Europe) is also known as compact cars (North America) is a classification of cars which are larger than a super mini but smaller than or equal to a mid-size car. The term often leads into confusion, this car class is also known as the C-segment across Europe. Current compact car size, for US and international models respectively, is approximately 4,100 mm (161 in) and 4,450 mm (175 in) long for hatchbacks, or 4,400 mm (173 in) and 4,750 mm (187 in) long for convertibles, sedans (saloon) or station wagons (estate car). Multi-purpose vehicles and sport utility vehicles based on small family cars (often called compact MPVs and compact SUVs) have similar sizes, ranging from 4,200 mm (165 in) to 4,500 mm (177 in) in the U.S., and from 4,400 mm (173 in) to 4,700 mm (185 in) in international-based models.

In Japan, any vehicle that is over 3.4 m (11.2 ft) long, 1.48 m (4.9 ft) wide, 2 m (6.6 ft) high and with an engine over 660 cc (40 cu in) but is under 4.7 m (15.4 ft) long, 1.7 m (5.6 ft) wide, 2 m (6.6 ft) high and with engines at or under 2,000 cc (120 cu in) is considered a compact vehicle. The dimension standards are absolute, meaning special consideration is not made for SUVs, CUVs, minivans, station wagons or hatchbacks.

Common engines are 1.5 to 2.4-litre straight-4s, using either petrol (gasoline) or diesel fuel, with a range between 100 bhp (75 kW) and 170 bhp (127 kW). Some models also have economical 1.3 or 1.4-litre units. High-performance versions, may have 2.5-litre engines, or even V6 3.2-litre units, ranging maximum outputs from 170 bhp (127 kW) to 300 bhp (224 kW). India also follows the same norms, but recently Toyota and Honda have asked the Indian govt to redefine the 'Small Car' definition. Instead of the length of the car and engine size, they want the fuel efficiency, emission norms and passenger safety as the criteria for the definition

### THE TOP SMALL CARS IN INDIA

**Reva**, the India's first electric car is a 2-door fully automatic hatchback that is fun to drive and easy to manoeuvre.

**Alto** is Maruti Udyog's subcompact offering to India and has become the most popular design and sold like 'hot cake' in the small car segment. The Maruti **WagonR** met with a lukewarm response from the market and the initial sales were sluggish at best largely because the **Hyundai Santro** was launched much before and was still in the spot light. However, WagonR has picked up its popularity and become a fast moving car in the small car segment. GM launched **Chevrolet Spark** in India as a come-back vehicle to the long forgotten Matiz. The Korean auto major launched the **Hyundai i10** at the end of 2007 to bridge the gap between the Getz Prime and the Santro Xing.

Produced exclusively in India, the world-class **A-star** makes a successful journey around the globe. The Czech car manufacturer, Skoda Auto of the Volkswagen Group has introduced its second generation **Skoda Fabia** in India as a 2008 model

### REVIEW OF LITERATURE

**Florian A. A. Becker Ritterpach and Jutta C.E Ritterpach (2008)** explored the reasons for emergence, consolidation and challenges to Indian small car, under range of context conditions including political, social, economic and infrastructural conditions. A survey was done on potential buyers drawn from 9 cities accounted for 60% - 70% of country's car owning population, who travelled 800 km per month on an average.

**Rajneesh Tiwari, Mahipat Renawat and Andreas Lange (2009)** The study was conducted with the objectives to identify govt policies that influenced the development of automobile industry, and to explore the role played by govt. The findings of the study stressed the need to improve infrastructure and increased the skilled labour, to ensure social and political harmony to avoid slowing of reforming policies and to create a conducive eco- system by supporting world class innovations.

**S M Satish and Sivakumaran Bharadwaj, (2010)** The study was the first to attempt the segmentation of car buyers in India. It was a search on identifying the patterns of search behaviour of consumers considering personality related variables based on Freudian psychoanalytic theory of personality.

**Ramendra (2009)** studied on how the demand potential of small car market in India was going to be satisfied by various players like Tata Motors – launching of its most anticipated model Tata Nano in India in the ultra-cheap small cars market segment and the other auto manufacturers of premium small cars like the leading auto manufacturer Honda Motor Co's Honda Jazz. After analyzing various factors like engine capacity, fuel efficiency... The study was conducted to analyse the impact of increase in cars on environment and suggested the need for developing eco friendly/ green cars and cheap cars like Tata Nano.

**J. Clement Sudhakar and Dr R. Venkatapathy (2008)** conducted the study in Coimbatore city, Tamil Nadu, India analysed the factors influencing the purchase of cars, influence of peer group and the most influencing peer group. It was found that brand image, value, publicity, dealer's network, after sales service and vehicle performance were significant. As far as peer group influence was concerned influence of friends was higher for purchase of small cars and both friends and co workers for midsize cars.

## NEED OF THE STUDY

Small car segment has been predicted to be growing at a greater speed with the change in life style and disposable income especially of the middle class segment. This study had been carried out to understand the changing preferences and requirements from customer's perspective. This would help the car manufacturers in designing small cars as per customer's expectations and to develop promotional tools to reach various segments of the society and influence the decision making towards purchase of small cars. The study would also provide meaningful insight to students and research scholars to pursue similar studies in future.

## STATEMENT OF THE PROBLEM

The small car market in India is increasing at a greater pace. The Society of Indian Automobile Manufacturers (SIAM) has predicted 350million middle class will contribute for the growth of Indian Small car market. The small car manufacturers are trying to increase their market share through a healthy competition. A study on consumer preferences towards small cars in India is aimed to analyse the changes in consumer preferences and expectations towards small cars in the Indian car market, with reference to Bangalore.

## OBJECTIVES

1. To provide a brief overview of the Indian small car market
2. To study the consumer preference towards small cars
3. To recognize the major factors influencing the decision to buy a small car
4. To ascertain the important attributes of a car that influences the decision to purchase a small car
5. To identify the preferred sources of information used by consumers to buy small cars
6. To ascertain the influence of peer group, family members, media, SMS, and internet in purchase decisions of small cars

## HYPOTHESIS

H<sub>1</sub> : There is no significant relationship between age and preference towards small cars.

H<sub>2</sub> : There is no significant difference between the gender and preference towards small cars

## RESEARCH METHODOLOGY

Research data was collected through a questionnaire that was developed with various factors, attributes and information sources the customer would prefer for decision-making. The same was administered to 400 people of which the researcher was able to collect 340 questionnaires and 329 questionnaires were fit to be used for data analysis and 11 were rejected. The convenience sampling technique under non-probability sampling method was used to administer the questionnaire. The questionnaires were distributed to the respondents of various age groups, working in different sectors and residing across Bangalore city. The questionnaire consisted of 11 questions overall, with sub sections so as to collect the information on various factors, attributes and information sources considered by the respondents to buy a small car. The researcher personally interviewed people across various age groups, who owned cars and who were planning to buy cars and who were instrumental/ influential in making a decision to buy a car, to know the factors and attributes considered generally to purchase a car. To test the reliability and validity a Cronbach alpha test was conducted on a pilot study with a sample size of 30 with a result of 0.814. The questionnaire was modified after taking into consideration all the valuable inputs. The analysis was done using the multi variate tool of Factor Analysis especially the Principal Component analysis to reduce a large set of correlated variables into smaller number of uncorrelated principal components and chi square analysis for testing the hypothesis.

1.1: TABLE SHOWING RELIABILITY TEST

CASE PROCESSING SUMMARY

		N	%
Case	Valid	30	100.0
	Excluded	0	.0
	Total	30	100.0

RELIABILITY STATISTICS

Cronbach Alpha	No of Items
.814	48

## OPERATIONAL DEFINITION

According to the Ministry of Finance, India small cars means a car at 4 metre length and a maximum 1.2 litre engine specification for petrol and 1.5 litre for diesel. A small car is car less than a sedan.



RESULTS & DISCUSSION

TABLE 1.2: FACTORS CONSIDERED IN MAKING A DECISION TO BUY A SMALL CAR

Rotated Component Matrix using Varimax rotation Eigen Value > 1.013				
	Component			
	1	2	3	4
<b>FACTOR 1 : MY FAMILY MY CAR</b>				
Safety and comfort of driving	0.771394	0.183899	0.099081	-0.15001
Parking space	0.590828	0.061139	0.353818	-0.23885
No of people in the family	0.561941	0.050667	-0.09295	0.193015
Frequency of travel	0.537888	0.05253	0.310559	0.212872
Income level of the family	0.523422	0.07735	-0.12178	0.311217
<b>FACTOR 2 : INFRASTRUCTURE &amp; CREDIT</b>				
Increase in auto and bus fares	-0.04807	0.739507	0.359851	0.050139
Credit facilities and allowances	0.207045	0.673234	-0.1664	0.164665
Lack of adequate public transport	0.156694	0.619431	0.074386	-0.09174
<b>FACTOR 3 : SPECIAL REQUIREMENTS &amp; TAX BENEFITS</b>				
Special requirement of the family	0.15219	-0.01748	0.783361	-0.00931
Tax benefits	-0.07589	0.41317	0.601472	0.138305
<b>FACTOR 4 : STATUS &amp; DISTANCE</b>				
Status increases with the purchase	-0.03479	0.131136	-0.03919	0.705732
Distance travelled influences car purchase	0.23589	-0.08865	0.165686	0.687597

**INTERPRETATION:** The consumers consider the safety and comfort while driving for themselves and their family members as an important criteria followed by Infrastructure and credit and tax benefits and the customers have given least preference to the status increase with purchase of small car and distance travelled.

TABLE 1.3: ANALYSING THE VARIOUS ATTRIBUTES WHICH MOTIVATES THE CONSUMER TO PURCHASE A SMALL CAR

Rotated Component Matrix (Varimax rotation) Eigen value > 1.047					
	Component				
	1	2	3	4	5
<b>FACTOR: 1 VEHICLE DESIGN &amp; COST OF OWNERSHIP</b>					
Safety issues while driving	.720	.086	.127	-.020	.208
Driving comfort	.715	-.149	.202	.068	.208
Ease in transmission(smoothness of gears)	.658	.101	.004	.183	4.568
Fuel efficiency	.576	-.005	.236	.106	.083
Engine capacity	.572	.400	-.005	.100	.087
After sales service	.572	.025	.286	.224	-.205
Boot space	.513	.136	.143	.340	-.225
<b>FACTOR: 2 DELIGHT FEATURES</b>					
Built in music system	.078	.785	-.035	.134	.069
Latest technology like blue tooth, sensor control	.111	.774	.054	.171	-.022
Good air conditioning	.191	.709	.073	.155	.096
<b>FACTOR: 3 MAINTENANCE SUPPORT</b>					
Cost of spare parts	.087	-.053	.750	.201	.100
Cost of maintenance	.268	-.095	.745	.071	-.005
Extended warranty period	.210	.232	.583	-.062	.032
<b>FACTOR: 4 ADDED FEATURES</b>					
Choice of colour	.093	.174	-.162	.619	.103
Good resale value	.290	.084	.203	.598	-.038
Exchange offer	-.094	.201	.366	.560	.061
Auto transmission facility	.179	.148	.067	.522	.035
<b>FACTOR: 5 PRICE AND LOOKS</b>					
Brand- very important	.003	.133	.110	-.028	.722
Price- main criteria	.254	-.221	.099	.418	.516
Looks of the car	.423	.294	-.159	.236	.479
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. a. Rotation converged in 6 iterations.					

**INTERPRETATION:** The customers prefer attributes like driving comfort, engine capacity, fuel efficiency, boot space, cost of spare parts and extended warranty period. It's surprising to know that this segment does not consider the price, brand and the looks as an important attribute for purchase decision.

TABLE 1.4: CUSTOMERS' RESPONSE TO THE SOURCES OF INFORMATION PREFERRED BEFORE PURCHASING A SMALL CAR

Rotated Component Matrix			
	Component		
	1	2	3
<b>FACTOR 1- NEWS YOU CAN USE</b>			
Car magazines can be a trusted source	.677	.230	.037
I prefer motor shows & Auto Exhibitions to get the information on the latter trends	.665	.007	-.033
News paper articles are very genuine	.608	.316	-.010
Internet, World Wide Web will be a good source of information	.576	-.203	.347
Manufacturer brochures give a better idea compared to any other source	.466	.400	.071
I take inputs from the experience of other car owners	.357	.208	.313
<b>FACTOR-2 : PUBLICITY &amp; IMAGE</b>			
Television programs and coverage are very genuine	.026	.784	.194
TV and magazine advertising can be a trusted source	.242	.759	-.097
<b>FACTOR 3 OPINION MATTERS</b>			
I take inputs from the experience of other car owners	.113	-.101	.821
I always consider the opinion of friends, relatives and colleagues as very important	-.055	.211	.815

**Interpretation** The respondents considered car magazines, motor shows and auto exhibitions as the most preferred source of information followed by TV and magazine advertising and the opinion of friends and relatives are the least preferred source

TABLE 1.5: FACTORS WHICH THE CONSUMERS GIVE MORE IMPORTANCE WHILE BUYING A SMALL CAR

Rotated Component Matrix Varimax rotation			
	Component		
	1	2	3
<b>FACTOR 1 CLOSE CIRCLE</b>			
family	.708	-.033	.049
friends	.688	.279	.201
<b>FACTOR 2 MOBILE FRIENDLY</b>			
SMS	-.607	.344	.076
<b>FACTOR 3 MEDIA CIRCLE</b>			
others	-.078	-.976	.145
media	-.403	.523	.508
<b>(N/A)</b>			
Internet	-.210	.137	-.944

**Interpretation:** opinion of family and friends influence the most for decision making to purchase a small car. SMS influences over other factors like media. Younger and tech savvy generation would like to spend more time and give preference to messages received through SMS.

**CHI SQUARE TESTING**

**Hypothesis 1**

H0: There is no significant relationship between age and preference towards small car

H1: consumer preferences do change significantly with changes in age

TABLE 1.6

Age	Preferred			Not preferred			Total
	Observed frequency (o)	Expected frequency (e)	$\frac{(o-e)^2}{e}$	Observed frequency (o)	Expected frequency (e)	$\frac{(o-e)^2}{e}$	
20 - 30	73	97.31	6.07	111	85.57	6.96	184
31 - 40	80	47.60	22.05	10	41.85	24.24	90
41 - 50	17	23.80	23.8	28	20.93	7.07	45
Above 50	5	5.29	0.016	5	4.65	0.03	10
Total	174		<b>51.94</b>	151		<b>38.30</b>	329

The calculated Chi square value is greater than P value, hence H0 is rejected. It is concluded that the preference of consumers on small cars change significantly with changes in age. Therefore null hypothesis is rejected.

**Hypothesis 2**

HO a : There is significant difference between the gender and their preference towards small car

H1a : There is no significant difference between the gender and preference towards small car

**TABLE 1.7**

Gender	Preferred			Not preferred			Total
	Observed frequency (o)	Expected frequency (e)	$\frac{(o-e)^2}{e}$	Observed frequency (o)	Expected frequency (e)	$\frac{(o-e)^2}{e}$	
Male	172	177.02	0.14	36	30.98	0.81	208
Female	108	102.98	0.25	13	18.02	1.40	121
Total	280		0.39	49		2.21	329

Chi square = 0.39 + 2.21 = 2.60 Degrees of Freedom = 1. Calculated Chi square value is 2.60 Degrees of Freedom 1 value = 3.84. The calculated Chi square value is smaller than P value, HO is accepted. It is concluded that there is significant difference between the gender and their preference towards small car.

**RECOMMENDATIONS**

Customers give at most importance to safety and comfort while driving. The manufacturers should look for more innovative ways of strengthening the safety features of the car. The boot space should be increased as it is looked at an important feature by customers across age. Family and friends are the most influential factors considered while making a purchase decision of small cars. The promotional campaigns can be made keeping in mind to attract them. The price, brand and looks of the car are not considered as a major factor affecting the purchase of a small car. The customers are looking for the application of latest technological features, like sensor control, blue tooth technology... Among the respondents, majority of women (89%) preferred to buy a small car. The manufacturers can customize the small cars to suit the requirements of women. Mostly people in the 31 – 40 age group preferred to buy a small car than the younger segment. The car manufacturers should design the cars to attract this growing segment. The 50 and above age group is divided in their opinion whether to buy or not to buy. Promotional offers can be made to attract the older generation to drive a car. There should be uniform specification given on small cars by the govt of India to match the international specification, so that every small car manufacturer will be able to get the concession of excise duty and the benefit is passed on to the ultimate consumers. To reduce the cost of spare parts and maintenance, indigenous component industries should be encouraged which would also create more employment opportunities.

**CONCLUSION**

There is a huge potential waiting to be tapped by the Indian govt and the manufacturers of small cars. There is equal opportunity for the component and other allied industrial growth along with the growing small car market. At the international level, due to saturation of American and European markets the giant car manufacturers are shifting towards Asian, especially Indian car market. The associated organisations like SIAM, ACMA, have projected a total shift towards development of small car market by 2015. Customers are expecting all facilities of luxury segment in the small car segment for which they are willing to pay. The combined effort of govt, manufacturers and various associations involved together should promote a common forum to ensure that the ultimate benefit should go up to the consumer.

**SCOPE FOR FURTHER RESEARCH**

The present study has been conducted on demographic characteristics, the factors and attributes, the consumers would be looking for while purchasing a small car. The psychographic characteristics in decision making would be a potential area of research. The growing educational level of women, increase in working women, make them more confident and independent. A further research is possible on this aspect, specially concentrating the potential of growth in small car market contributed by the preferences of womenfolk. The study can be extended further to semi – urban and rural markets to give an insight to the car manufacturers.

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**LEAN MANUFACTURING SYSTEM: AN EFFECTIVE TOOL FOR ORGANIZATIONAL MANAGEMENT****S. K. RAJENDRA****ASSOCIATE PROFESSOR****DEPARTMENT OF INDUSTRIAL ENGINEERING & MANAGEMENT****DR. AMBEDKAR INSTITUTE OF TECHNOLOGY****MALLATHAHALLI****R. SUPRABHA****ASST.PROFESSOR****DEPARTMENT OF INDUSTRIAL ENGINEERING & MANAGEMENT****DR. AMBEDKAR INSTITUTE OF TECHNOLOGY****MALLATHAHALLI****V. M. AKSHATHA****ASST.PROFESSOR****DEPARTMENT OF INDUSTRIAL ENGINEERING & MANAGEMENT****DR. AMBEDKAR INSTITUTE OF TECHNOLOGY****MALLATHAHALLI****ABSTRACT**

Every organization is striving hard on getting more work done in less time and with greater ease. The fundamental aim of any organization has been to continuously minimize waste and maximize flow which would ultimately lead to customer satisfaction by providing right product at the right time in the right quantity and the right quality at a reasonable price. This can be achieved greatly by adopting lean manufacturing system which is more than a cost reduction program. It aims at eliminating wastes which could be in the form of excess production and inventory, redundant movement of material, waiting and delays, over processing, excess worker motion, rework and corrections. The purpose of this paper is to standardize the process of empty bin collection at the logistics department of the firm. The bins are collected by the transporter from various operational points. The study reveals that turnaround time of external milk run vehicles was more, which in turns minimizes the delivery frequency. The primary objective was to reduce the transporters' waiting time by increasing the availability of bins. According to the value chain analysis, different improvement ideas were proposed to eliminate non-value added activities. After implementing these ideas for process improvements, the distance traveled reduced by 54% and process time reduced by 61%.

**KEYWORDS**

Lean manufacturing system, Lean manufacturing design, Process activity mapping, current state value stream mapping, Future state value stream mapping.

**INTRODUCTION**

Lean manufacturing has become an integrated system composed of highly inter related elements and a wide variety of management practices, including Just-in-Time (JIT), quality systems, work teams, cellular manufacturing etc. The purpose of implementing it is to increase productivity, reduce lead time and cost, and improve quality. Principles of lean thinking have been broadly accepted by many manufacturing operations and have been applied successfully across many disciplines. Lean manufacturing is most frequently associated with the elimination of seven important wastes to ameliorate the effects of variability in supply, processing time or demand. It is a philosophy of manufacturing that focuses on delivering the highest quality product on time and at the lowest cost. It is the systematic removal of waste by all members of the organization from all areas of the value stream. It is called lean as it uses less, or the minimum, of everything required to produce a product or perform a service. In a nutshell, lean manufacturing can be best defined as an approach to deliver the utmost value to the customer by eliminating waste through process and human design elements. [8]. The aim is to pull products through the value stream quickly and accurately, rather than make a forecast well ahead of demand and sell the resulting stock. It is based on improving operational capability and joint process analysis, rather than relying on supplier auctions and big centralized systems. [1]. Value Stream Mapping can serve as a good starting point for any enterprise that wants to be lean and describe value stream as a collection of all value added and non-value added activities which are required to bring a product or a group of products using the same resources through the main flows, from raw material to the hands of customers. It helps to visualize the station cycle times, inventory at each stage, manpower and information flow across the supply chain. A value stream map provides a blueprint for implementing lean manufacturing concepts by illustration how the flow of information and materials should operate. [6]

**IMPORTANCE OF THE STUDY**

Value stream mapping (VSM) is a popular visualization method to map the flow of the transformation of raw materials to a final product for a lean manufacturing system (LMS) or a lean system design (LSD). The premise of the VSM is to understand product flow from the customer's perspective, improve throughput, reduce cycle time and help to design a production system [7]. It is performed through the following steps: Select a product family; create a current-state map; create a future-state map using lean techniques; create an implementation plan for the future state; Implement the future state through structured continuous improvement activity

**STATEMENT OF THE PROBLEM**

The present work was carried out at the Logistics [LOG1 (goods inward)] department of BOSCH Ltd. Presently, each transporter made one delivery per day, collecting supplies of certain lot size from different suppliers. A system of external milk run is followed. As per the production requirements, orders are placed to different suppliers. These orders are picked up by the transporters and delivered to the Logistics Department (LOG1). A route is specified for each of the transporters. The transporter collects the parts from all the suppliers located in that route. After collecting the parts, the transporter reaches the logistics department where the parts are unloaded. A window time is fixed for the arrival of each of the transporters. During every delivery, the transporter will have to carry out a number of activities which are as below

- The transporter arrives at LOG1 and unloads the parts at the dock.
- The transporters need to update the time in the monitoring sheet.

- The transporter needs to put the stickers in the monitoring, it has two types of stickers, they are of green and red colour. Red colour indicates on time delivery and green colour indicates delivery is late.
- Informs the concerned officer and gets the quantity and invoice checked.
- Arranges the parts in specified places.
- Loads the empties required for next delivery.(Bins and wooden pallets)
- Gives the invoice for LOG1 officer for booking.
- Leaves the dock.

Delay in any one of the above processes leads to increase in the turnover time of the transporter since they have to wait. Each transporter needed different types of empty bins for supply of different parts. It was found that the major delay was occurring when the transporter had to load these empty bins as there was no sufficient number of bins available at LOG1. This was mainly due to non-standardized process for the collection of bins. The transporter had to wait until all types of bins in required numbers are collected from different plants and brought to LOG1.

**OBJECTIVES**

The following are the main objectives of the study;

1. Standardisation of job, to ensure elimination of delays caused due to the above mentioned problems through the implementation of value stream mapping and milk runs.
2. Preparation of standard work sheets. This would be very helpful for a new worker to understand the process and follow it accordingly.

**RESEARCH METHODOLOGY**

The basic metrics for production and logistics were recorded and an overview of the material that has to be supplied and removed for all points of use was made. The stations in production which have to be supplied with the materials and the route to be followed were identified.

**STAGE 1: COLLECTION OF DATA**

The worker collecting the empties was observed and the following data were recorded:

- The different types of Bins and places from where the bins were collected was identified.
- The Present route that is followed was observed and sketched.
- Time taken for all activities was noted down.
- Distance traveled was measured.
- The number of bins collected from different location was noted down.

The present route is as shown in Fig. 1.. It was observed that there was no fixed route that was followed. The person just moved around the plant, and wherever an empty bin was found it was picked up. The different places from where bins are picked up are also shown. A hand pallet truck is used to collect the bins and pallets. The distance travelled and time taken in the present route is as in Table 1. The above activities are done twice in each shift, which results in a total distance travelled of 4120m and the total time taken is 140min. The different types of bins collected and its weights are shown in Table 2.

**TABLE 1-PRESENT ROUTE DETAILS**

Sl. No	Activity	Distance Travelled	Time Taken
1	Collection of wooden pallets	740m	30min
2	Round1:Collection of Bins	660m	20min
3	Round 2:Collection of Bins	660m	20min
<b>Total</b>		2060m	70min

**TABLE 2-TYPES OF BINS COLLECTED**

Sl. No	Type of Bins	Weight (kg)	Sl. No	Type of Bins	Weight (kg)
1	Big Steel Bins	3.5	11	D.V. Pin Bins	1.5
2	Small Steel Bins	2.5	12	Barrel Bins	1
3	Big Plastic Bins	2.5	13	Feed Pump Bins	1
4	Small Plastic Bins	2	14	Bearing Bins	1.5
5	Bearing Flange Bins	1.5	15	D.V Holder Bins	1
6	Pin Bins	4.5	16	Pump Housing Bins	2.5
7	Roller Ring Bins	2	17	D.V. Pin Bins(steel)	1
8	F. P -Screw plug Bins	1	18	Mono Block	1.5
9	L.D.A Bins	1.5	19	P.F. Bins	1.5
10	Tension Lever Bins	0.5	20	P.D.M Housing Bins	4

**STAGE 2: DRAW THE CURRENT STATE MAP**

With the data collected current state value stream mapping was done as in Fig. 2. Value stream mapping shows all the activities involved in the process of collection of bins, both value added and non-value added activities. It helps to visualize the entire process at once. It forms a basic implementation plan, that is, becomes a blue print for implementation.

**FIG. 1: EXISTING ROUTE**

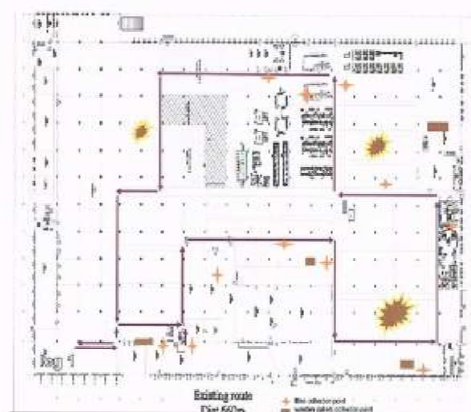
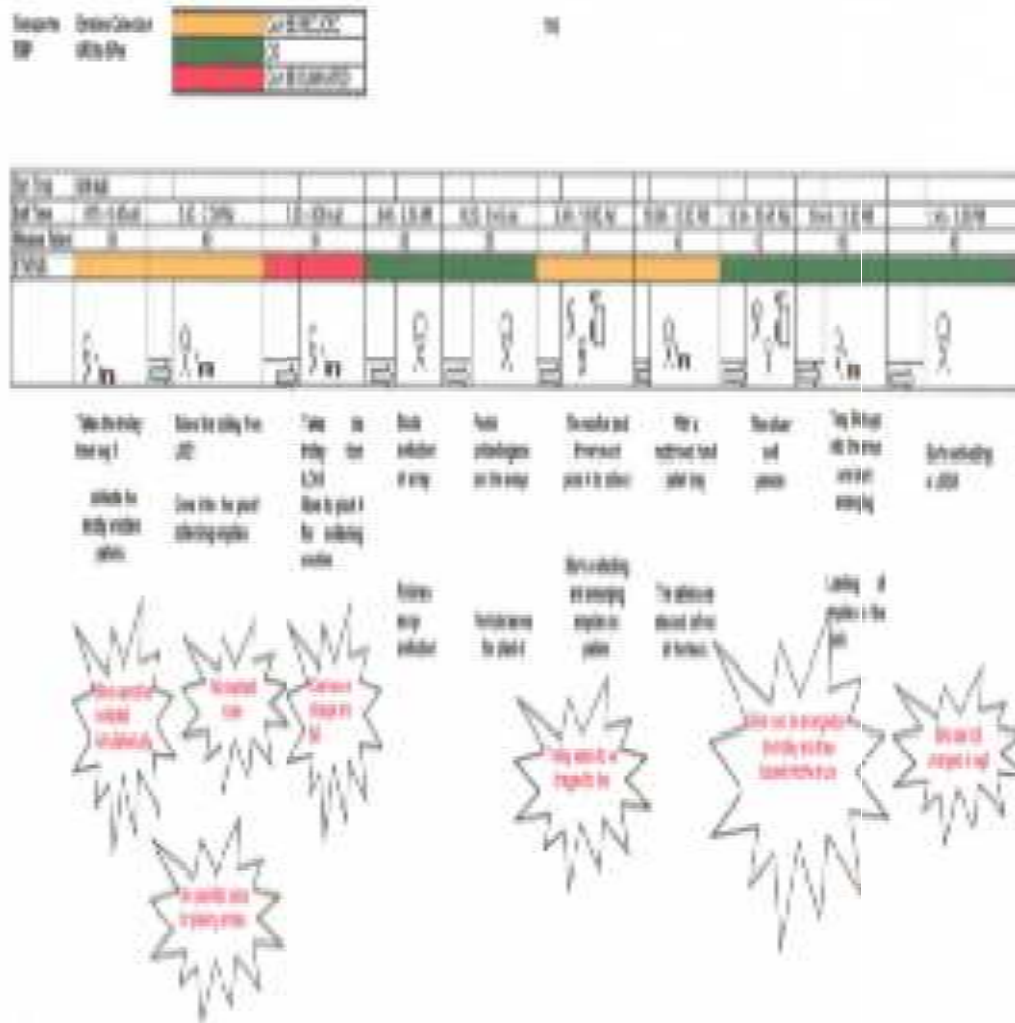


FIG. 2: CURRENT STATE VALUE STREAM MAP



**STAGE 3: OBSERVATION AND ANALYSIS**

When the present system was observed, it was found that there were no specific halt points defined; it was observed that trays were collected from the entrance and dragged till the end of the plant. There was no specific time allotted because of which there were clashes with milk run vehicle, coolant vehicle and material delivery trolleys etc. In case of other plants, a truck is used to get the bins. The truck works twice daily once in each shift. The same worker goes to the other plants along with the truck to collect the bins. Some of the bins which were brought had oily waste which was not cleaned. There were no safety precautions taken. At few workstations though empty bins were placed at a particular place, they were placed on ground and not arranged on a wooden pallet, this also caused delay. There was no standardized route being followed which lead to waste of time. When distributor enquired for the empties, only then the collection was being done hence the distributor has to wait until the bin was brought. To collect the bins from other plants, the trolley was taken from LOG1 to other plant which leads to the wastages (energy and time).

**STAGE 4: DRAW THE FUTURE STATE MAP**

After mapping current state, the next is to improve the present situation to achieve a future state, which would prove most optimal. The purpose of value stream mapping is to highlight the sources of waste and eliminate them, there by implementing an optimum future state that can become a reality within a short period.

**PROPOSED STATE**

When the current state map was analysed in detail it was found that the main drawback was not having a standardized route that could be followed. In order to overcome this, a standardised path was proposed considering the present path followed; workstations from where bins are to be picked up; average number of bins to be collected in each workstation; different types of bins that are to be picked up; different bins weights; distance covered. With a proposal for a new route as in Fig. 3, a suggestion was made on the specific places that could be allotted in the plant near every halt point such that it easy for the operators in the workstation to place the empty bin as well as for the collecting person to pick them. It was also suggested that the bins should be arranged in the specified places after collections so that it will be easy for the transporter to locate it. The distance travelled and time taken in the present route is as in Table 3.

FIG. 3: PROPOSED ROUTE

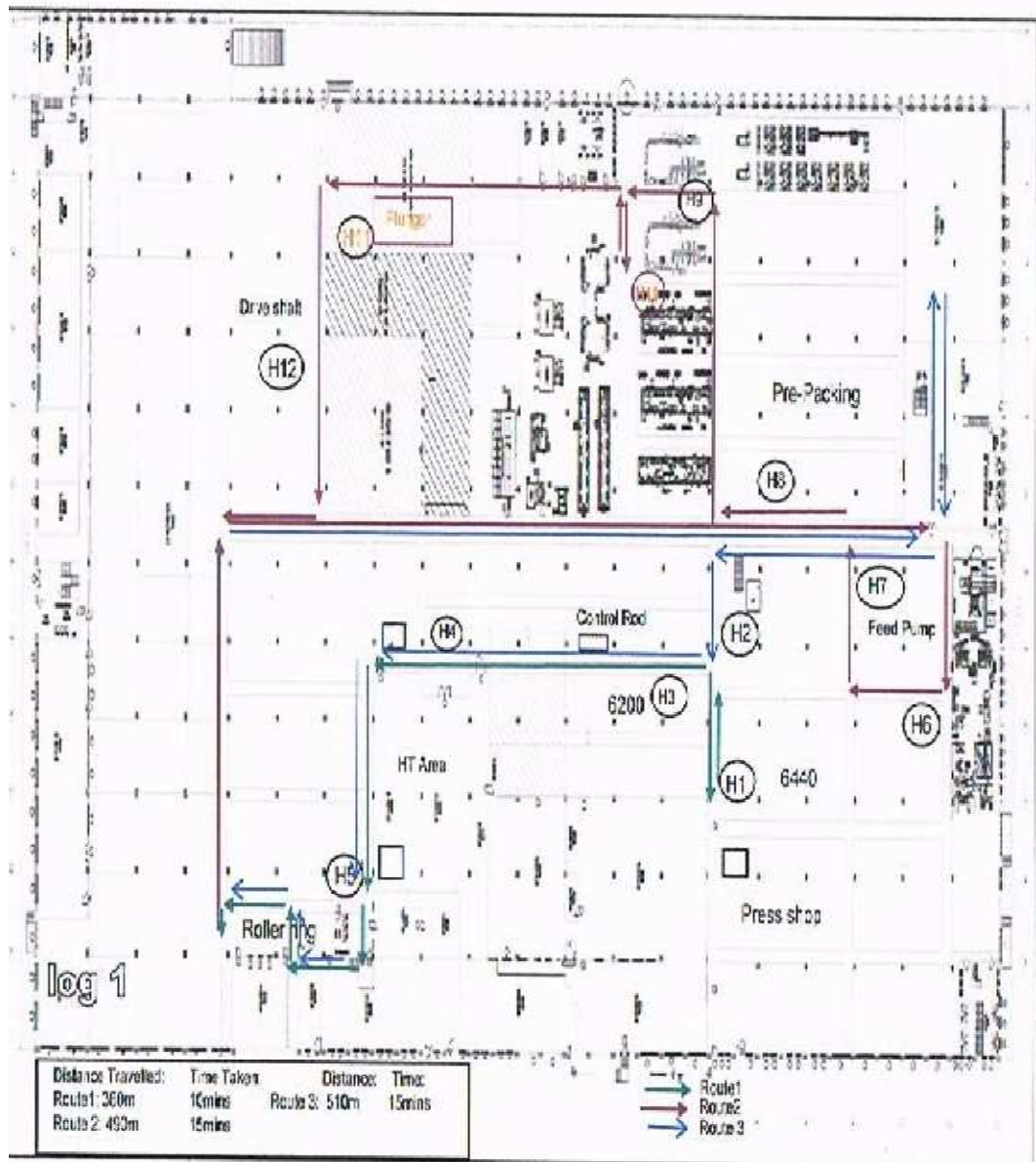


TABLE I-PRESENT ROUTE DETAILS

Sl.No	Activity	Distance Travelled	Time Taken
1	Collection of Bins from Plant 1(Route 1)	360 m	10min
2	Collection of bins from Plant 1(Route 2)	490m	15min
3	Collection of wooden Pallets from Plant 1(Route 3)	560m	15min
4	Collection of bins from Plant 1(second time in a shift)	480 m	15 min
<b>Total</b>		<b>1890m</b>	<b>55min</b>

**RESULTS & DISCUSSIONS**

Standard Works Sheet: Standardized work basically ensures that each the job is organized and is carried out in most effective manner. No matter who is doing the job the same level of quality should be achieved. The standard activities that are to be done in each route and at every halt points were listed and a standard work sheet was prepared. This is very helpful for a new worker to understand process and follow it accordingly. This even helps to monitor the process and any changes or improvement in the process in the future can be adopted easily.

**ALLOCATION OF TIME**

If the bins are brought to, the logistics department within the time the of arrival of the external milk run vehicle, then, it will be easy for the transporters to load it and it also reduces the waiting time. Based on this, the time was allotted for the activities in different shifts. Time was also allotted to arrange the bins in the racks, to make it easy for the transporters to locate them.

**A CHART FOR MONITORING**

Any process implemented must be monitored to know its progress. Monitoring also helps to know any deviations happening from the actual planned. It also helps to improve the process in the future. Hence, a deviation-monitoring chart was designed, which shows the activities to be carried out in each shift and the corresponding window times. The distance Travelled in the existing system was 4120m which was reduced to 1890 m in the proposed system which results in a savings of 54%. The time taken in the existing system was 140min which was reduced to 55 min in the Proposed system which results in a savings of 61%..

**CONCLUSION**

It can be concluded that by improving the process by standardizing the work, recommending new route, allocating time, specific halt points for the collection of the bins, the distance to be travelled can be reduced and thereby time taken is also reduced. Reduction in time and distance travelled leads to faster collection of bins because of which more bins will be available at the department. Arranging the bins in specified places makes it easy for the transporter to locate them and load it. Availability of sufficient number of bins reduces the waiting time of the transporter, thereby, reducing the transporter turnaround time. Further, reduction in transporter turnaround time helps to increase the delivery frequency; there by smaller lot sizes deliver can be achieved.

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## CUSTOMER SERVICE MANAGEMENT IN SELECT PUBLIC SECTOR BANKS IN RURAL VILLAGES IN SALEM DISTRICT, TAMIL NADU

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### ABSTRACT

*A research study on Customer Service Management in Select Public Sector Banks in Rural villages in Salem District, Tamil Nadu, was undertaken. Analysis of satisfaction level of customers by mean scores has proved that none of the customers is extremely satisfied with any variable. There is only a moderate satisfaction in internal ambience, speed of deposits and withdrawal, service charges, bank's innovativeness etc. The factor analysis has revealed the fact that these factors have explained the variations only to the extent of 60.54 per cent. The rest 74.62 per cent remains unexplained. This confirms the poor service delivered by banks under study. A number of worthwhile suggestions like customer complaint management, knowledge updating of bank staff, professional management of grievance redressed system etc. have been given for enriching customer service spectrum of the branches.*

### KEYWORDS

CRM, public sector bank, Salem.

### INTRODUCTION

In Rural villages in Salem Public sector banks were ruling the roost during the pre-liberalization era. Then mass banking was the order of the day. But ever since our country embraced market economy, there has been a paradigm shift in the functioning of banks. Profit banking concept has pushed the mass banking concept to the backyard. The institutions are acting locally with a global thinking. Thus marketing concept permeates the banking arena. In a competition driven economy, customer is the sovereign. Only such of those entities that satisfy customers are surviving and the rest of others die a natural death. Commerce in fathers et., That service quality is the function of expectation of customers and service provider's performance. Further service provider's superior performance facilitates achieving market excellence. Hectic competition, high degree of customer awareness and consequent higher expectation, explosive growth of communication technology and astounding growth of information technology are some of the factors contributing to a sea change in banking scenario. The information and communication technology has empowered customers with market knowledge and wider choices. Therefore banks in general are under pressure not only to attract new customers but also to retain existing customers. Public sectors banks are losing their customers to new generation private sector banks and foreign banks who are wooing the customers by virtue of their sophisticated technology absorption. It is ultimately the customers who would decide which bank to continue and which one to exit. Thus our Indian banking industry is fast inching towards customer orientation.

### RATIONALE OF THE STUDY

Mass banking approach pursued during pre liberalization era had drained the profitability of banks in no small measure. Most of the public sector banks became unprofitable, under-capitalized and burdened with NPAs. However banking sector reforms of 1991 heralded a major breakthrough in the banking operation. Public sector banks began to feel the heat of competition from private and foreign banks in the wake of our economy being opened to competitive regime. Aggressive marketing campaign, sophisticated technology absorption, infusion of energetic and dynamic man power, innovative products, enticing customers' service and so on. Triggered mass exodus of premium customers to private fold.

Banks are slowly emerging as financial super markets. They have started cross selling the products. They have diversified the services into insurance mutual funds factoring, credit card, leasing, hire purchasing, me chant banking, pay roll management consultancy, home financing, etc. Therefore contemporary commercial banks do not simply limit themselves to narrow confines of conventional banking. Thus concept of narrow banking has given place to universal banking. Now the most of public sector and old generation private sector banks are undergoing rapid transformation. Their sheer size itself is slowing down the technology absorption. Once this process is completed, they would undoubtedly become technical super powers on par with new generation private sector banks. Thereafter they have to focus their time and energy on ramping up their customer service to outperform the new generation private and foreign counter parts.

As for public sector banks, though they are fast adopting technology, they have not leveraged it to improve their marketing prospects. They are using information technology for their performance management system; for tracking down NPA; and for ensuring match between assets and liabilities. They can effectively harness information technology infrastructure to aggregate industry data, plot demand curves, identify best practices among the client, and keep track of crop price and the like. The research cells need to use these vital inputs for designing newer products providing valuable insight to their customers, spotting potential customers, and improving the quality of service delivery etc. In other words, research and development infrastructure has to gear up itself to respond effectively to the business strategies of new generation private banks and foreign banks. To sum up, the public sector banks have to move powers in the chess board of banking service to secure the customer who is sovereign in the entire game. Any slackness or neglect would end the fate of the bank concerned. In this backdrop, effort is made to appraise the level of services currently rendered by PSBs in Rural villages in Salem District in order to spotlight the strong and weak points in their service delivery.

### OBJECTIVE OF THE STUDY

The following are objectives of the study.

- To explore the customer's perception on the quality of services rendered by the banks.
- To investigate the factors influencing the level of customer's satisfaction in PSBs.
- To suggest strategies to win and retain customers so as to sustain and enhance the market share of bank.

## RESEARCH METHODOLOGY

Since banks under review were reluctant to give the addresses of customers, researcher himself had to contact those visiting branches for collecting necessary information. The purpose of study was explained and response solicited on the specially designed questionnaire. Finally ten public sector banks were purposely chosen wherein 10 customers from each branch were chosen randomly.

## LIMITATIONS OF THE STUDY

The study is purely based on perception of customers, which is likely to vary. Depending upon the improvement made in service segment from time to time the very same opinion may not be prevailing now. In view of the non-co-operation from the banks, time and resource constraints, the size of samples could not be expanded.

## TOOLS AND TECHNIQUES

The principal component, Average Scores and Factor Analysis with Varimax Rotation have been used for interpreting the results.

## RESULTS AND DISCUSSION

The correlation matrix brings to the fore the fact that there are 7 pairs of variables which are not only positively correlated but also statistically significant. They are condensed to seven factors which the banks under review have to focus to tone up customer service. The set of variables with a statistically significant correlation are given below.

1. Service charges have been correlated with atmosphere in the banks
2. Decor of bank, with seating accommodation
3. Innovativeness in new product development with competence of staff.
4. Parking space correlates with ambience in the bank
5. Banks' publicity as to their services with the image of the bank
6. Knowledge of the bank employees and their attitude towards customers
7. Location of the banks with staff presence at the bank

All the seven factors derived out of 25 variables explain 60.54 per cent of the total variation. It means that the remainder of 74.62 per cent remains unexplained. This confirms that the banks services are far from satisfactory. A cursory glance at the weighted average mean score reveals that customers are satisfied to a moderate extent in factors like banks' innovativeness, speed of depositing, automation etc. A slight satisfaction is noticeable in 12 factors specified in the table. A lowest level of satisfaction is observable in areas like over draft and cash credit facilities, customer contact programmes, advertisement, branch management service quality and service adequacy.

Average service is calculated by using weighted arithmetic mean

$$\bar{X} = \frac{\sum f_1 \times x_1}{W}$$

The analysis made earlier unfolds the overall opinion of the respondents in respect of different services offered in Public Sector Banks in the area.

## FINDINGS AND SUGGESTIONS

Analysis of satisfaction level of customers by mean scores proves beyond any shadow of doubt that none of the customers are extremely satisfied with any variable. There is moderate satisfaction in internal ambience, speed of deposits and withdrawals, service charges and banks' innovativeness. The factor analysis has revealed the fact that these factors have explained the variations only to the extent of 60.54 per cent. The rest 74.62 per cent remains unexplained. This confirms the poor service delivered by banks under study. The following suggestions are offered to upscale the services.

## SUGGESTIONS

### 1. CUSTOMER COMPLAINTS MANAGEMENT

While anticipating customers' needs and meeting them in full measure is one aspect of customer care, settlement of customers' complaints to the utmost satisfaction shorn of bitterness initially experienced is another aspect.

Any complaint voiced is a reflection of either defective delivery of service or delivery of deficient service. Complaints are to be welcomed as mirror reflecting the image of service delivery. They are blessing in disguise. Professional handling of customers' grievances would impart perfection to the style of functioning of a bank.

Even a trivial or minor complaint is to be taken seriously so as to imbibe a feeling in the complainer that he is not ignored. Even if fault is with the customer, it should be handled very delicately. A convinced customer not only stays with the bank but also brings new ones by sharing his pleasant experience in the grievance settlement with the prospective customers.

### 2. KNOWLEDGE UPDATE OF BANK STAFF

The bank staff dealing with customers and customer complaints should be familiarized with latest rules, regulations and also the best practices pursued by flagship banks. Thus knowledge update is a powerful weapon in the armory of complaint management. In other words, poor working knowledge or a misguidance by bank staff cause incalculable damage to the image building efforts. Misinterpretation by the bank employees of the problem reported by the customers and wrong information given to customers would octant heighten the dissatisfaction of the clients apart from landing the bank into legal battle.

Deficient service resulting from inadequate knowledge of banking practice is to be rooted out by banks through periodical review of complaint management system in place.

Case studies regarding complaint management and legal consequences of mismanagement of complaints should be highlighted among staff at branch level meetings. This would help the staff in nipping the complaints at budding stage.

### 3. PROFESSIONAL MANAGEMENT OF GRIEVANCE SYSTEM

In the case of written complaints, the first step is to acknowledge receipt of the complaint letter.

If the probe is likely to take time, another letter assuring the complainant of an early solution to the problem reported and expressing regret for what had happened is to be sent forthwith.

If the complaint lodged has some basis, bank should not hesitate to admit it honestly. Apologizing for the lapse, assuring prompt action against the erring official with an assurance of non recurrence of such lapse in future would not only assuage the bruised feelings of complainant but also zoom the image of the bank concerned.

The delinquent staff should be reprimanded or suitably punished depending upon the nature of the lapse and the harm done to the bank's reputation. Where the internal enquiry has established that lapse is not due to delinquency of staff but due to the misunderstanding of the customer concerned, a diplomatic letter pointing to the lapse on the part of customer need to be written in such a way as not to hurt his ego.

### 4. HELP DESK

This is to be made available in every branch especially bigger ones. It should attend to the queries raised by customers, help the customers fill the forms and clarify doubts on various financial products offered by the bank. A thorough checklist of documents required for processing the loan application should be prepared and supplied to loan applicant at the initial stage itself so as to facilitate its speedy disposal.

**5. COMPLAINT AUDIT**

Directors' Report should contain the details regarding the number of complaints received and redressed and complaints still pending. A deep review of the complaint audit would yield valuable inputs in fine tuning the operational performance of the banks by removing various obstacles in the delivery of quality customer service.

**6. AWARD FOR EFFECTIVE GRIEVANCE MANAGEMENT**

Modalities should be evolved to recognize and reward branches which excel in redressed of customer grievances and in the sphere of customer care. Feedback responses can be gathered from diverse customer groups.

**7. CUSTOMERS' MEET**

Bank should organize customers' meet at regular intervals at every branch, ascertain their feedback on customer service and invite suggestions for improving their relationship. Banks should use this opportunity to educate customers on various deposits and loan products. Similarly banks should organize prospective customers contact programmer at various institutions like schools, colleges, and so on.

**8. BRAIN STORMING SESSION**

In a competition driven banking landscape, customer is sovereign. Therefore Brain Storming sessions with high level officers can be organized by the Head office for exploring various avenues of toning up customer care service. Innovative and workable suggestions emerging from such sessions should be appreciated and appropriately rewarded. They should be put into action in quick time.

In sum, the banks under present study have the potential to tone up their service standards by pursuing some of the suggestions offered in this write up in letter and spirit. Further they have to shore up their image by active engagement in community service, in sponsoring events like seminars and symposia and in maintaining cordial relationship with various institutions etc.

**9. REWARDING FINANCIAL DISCIPLINE**

As for those customer who maintain financial integrity by paying all dues to the bank in time, banks may consider giving some concessions like reducing interest rate, raising credit limits increasing installments, reducing charges, etc in order to promote financial discipline among customers. Banks may have to spot such disciplined current account holders through data mining process and seek to sell more financial products to them.

**10. IMPROVING BUSINESS AMBIENCE**

All most all banks in rural villages in Salem District are rearranging their layout following the single window pattern ever since core banking has come into vogue. The internal ambience keeps improving with increasing seating facility, air conditioning, providing chill water fusilier computerization of operations and so on. The alternative delivery channels like ATM, phone banking, online banking have been helping the elite customer in town areas. Despite these positive developments, still the proportion of customers hesitating to make use of these modern banking facilities is still higher. Banks have to initiate steps to spread awareness about the various financial and investment products. Motion pictures, handouts, wall posters, newspaper insertions. Information kiosks etc. can be used for transmission of information about service products.

**CONCLUSION**

Before concluding it would be more fitting if the experience of Toyota's success in entering the higher end car market after launching Lexus model is recalled. Focus on customer satisfaction and employee empowerment is said to be a dominant factor in ensuring successful marketing. It is said that 100 best customers and leaders were selected and formed as a team to frame guidelines for their new customer service satisfaction cell. Some of the important guidelines are:

1. Do not just meet customer needs, exceed them
2. Do just answer questions, anticipate them
3. Do not just be thorough, check even minute details
4. Do not just do good work, provide an unpatrolled service
5. Do not just do your best, do your best as part of them
6. Do not just be courteous; make every customer feel as if he (or she) is the only one.

These guidelines hold good for any industry or service provider and if followed in true spirit, would give no room for complaints at all. They are intended not for curing complaints but for preventing them. They in fact treat the customer as the most important person, whose care and satisfaction is the ultimate mission of the organization.

To quote again Gandhiji's perception of "customer as being not an outsider but a part of the business and not an interruption in our work but as the purpose of it" is most appropriate as it sums up the rationale for customer care and customer satisfaction.

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**REVISITED 'THE IRREGULARITY OF INDIAN STOCK MARKET: AN OCTOBER EFFECT ANALYSIS'**

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**ABSTRACT**

*In the today's emerging market it will be interested to deal and investigate the behavior of risk and return characteristics of stock prices in every month, especially in the month of October, as October has traditionally been a scary month for Stock Markets. The objective of the study is to assess the October effect in the Indian Stock Market i.e. BSE and NSE and to observe how the market behaved during the month of October for the last Six years i.e., 2003 to 2011. The present study hypothesized that there is no significant effect of the October month over the Indian stock market. When we keen observe the deviation with the help of statistical relevance by applying some of the statistical tools (Cardiovascular Signals Runs Test). At last we concluded that our statistics go against the theory.*

**KEYWORDS**

BSE, NSE, October, Run Test.

**INTRODUCTION**

India becomes an interesting case study because since the early 1990's some very fundamental changes took place in the Indian Capital Market. These include the birth of the Securities and Exchange Board of India (SEBI) as a regulator of the Indian Capital Market, the birth of National Stock Exchange (NSE) as a competitor of the Bombay Stock Exchange (BSE), introductions of computerized screen based trading at both the exchanges and dematerialization of shares<sup>1</sup>. These changes have led to substantial improvement in Market Capitalization, liquidity and efficiency of the Capital Market, especially during the second half of the 1990's.

In the today's emerging market it will be interested to deal and investigate the behavior of risk and return characteristics of stock prices in every month, especially in the month of October, as October has traditionally been a scary month for Stock Markets. The decline in stock market has been observed during the last many years in the month of October. In the past 18 Octobers between 1991 and 2008 the market has gone up just six times, it has been flat once and fallen on 11 occasions. Both sensx and nifty declined during the month of October 2005 from 8821, 2669 (5<sup>th</sup> October) to 7656, 2307 (28<sup>th</sup> October) i.e., 13.2 per cent, 15.7 per cent respectively.<sup>2</sup> Based on above exploration it seems that the month of October may have deserved bad reputation in the stock market.

A collection of theories shows us that certain days, months or times of year are subject to above-average price changes in market indexes and can, therefore, represent good or bad times to invest.<sup>3</sup> Some theories that fall under the calendar effect include the Monday effect, the October effect, the Halloween effect, Vallan (settlement period) effect and the January effect etc.

Some people believe that stock prices generally increase during the month of January, because people are buying back stocks after end of the year sell-off by investors harvesting tax losses, this is known as January effect. This effect is often seen in the US, but in India this effect is observed in the month of April and in October, so it is known as October effect.<sup>4</sup>

**SURVEY OF LITERATURE**

Seasonality in security market returns has been extensively documented. Among the different seasonal effect observed in stock markets, an interesting one is the seasonality in month of the year effect. Major seasonality effect in the literature of this field are day of the week effects, month of the year effects, turn of the month effects, turn of the year effects, holiday effects and January effect. A major finding in most of the empirical research on monthly seasonality in the stock markets is the so-called January effect concerning abnormal returns during this month compared to the rest of the year. Relevant surveys were made on stock market to see the day of the week effect on BSE during 1988-1990. Wachtel (1942) described January effect on Stock prices Wachtel who first described January Effect in financial markets, found that the Dow-Jones industrial Average from 1927-1942 showed frequent bullish tendencies from December to January. Rozeff and Kinney (1976) found that average return on equal-weighted index of New York Stock Exchange prices 1905 through 1974 was 3.5% during January and only 0.5% during other months.

Banz (1981) showed that small firms had higher expected returns and Keim (1983) found that nearly half of the excess returns of small firms occurred during January. Moreover, half of the January returns came during the first five days of the month, specially the first day of trading. Gultekin and Gultekin (1983) documented evidence of seasonality, mainly January effect, in stock returns in 13 of 17 countries study. Their studies are particularly strong given that they used value weighted indices that give less weight to small firms, which drive the January Effect in the US data. Ariel Robert, A. (1987) found that although there is no tax on Capital gains for investors in Japan nor a tax benefits for losses, there is a strong January Effect in the country. According to Aggarwal, A. and K. Tondon, (1994), October: this is one of the peculiarly dangerous months to speculate in stocks in. the others are July, January, September, April, November, May, March, June December, August and February. Balban E. (1995) found evidence of low returns in October for the Athens and Turkish stock exchange respectively. Poshakwale (1996) studied the returns on BSE between 1987-1994 and found that mean returns expect for Monday and Wednesday are positive and that week end effect on returns support the presence of first order auto correlation and provide indication of non random nature of stock price on BSE. Likewise monthly effect has played a significant role in the Indian Stock Market.

A recent study by Nath and Dalvi (2005) found that before the introduction of rolling settlement, this effect was significant. But after the introduction, this type of effect shows market inefficiencies.

<sup>1</sup> Misra (1997) provides a brief survey of the historical transition of the Indian Capital Market from 1947, the year of India's independence, to the first half of the 1990's.

<sup>2</sup> Gupta, L, C (1992), stock Exchange Trading in India: Agenda for Reform, Delhi: Society for Capital Market Research and Development.

<sup>3</sup> Bodie, Zvi, Alex Kane and Alan J Marcus (1989), Investments, Homewood, 11: Irwin, pp 363-365.

<sup>4</sup> Dutta A, (2008), "The October effect on the BSE index" Portfolio Organizer, pp. 41-48

The above studies show that there is a January effect in the western countries which shows that there is a tendency of the stock market to rise between December 31 and the end of the first week in January. The January effect occurs because many investors choose to sell some of their stock right before the end of the year in order to claim a capital loss for tax purposes.<sup>5</sup>

But in India the October effect as this time is considered as the time of festivals for the Indians. October effect is a theory that postulated that the stocks will tend to decline in the month of October.<sup>6</sup> Although historically there has been a slight underperformance in serious market crashes in October have kept the perception alive. Some investors may be nervous during October since the dates of some large historical market crashes occurred during this month. Black Monday, Tuesday and Thursday all occurred in October 1929, after which came the Great Depression.<sup>7</sup> In addition, the great crash of 1987 occurred on October 19, and saw the Dow plummet 22.6% in a single day.

Dutta A. and Mahapatra A. (2008) examined the October Effect in their research paper “The October Effect on BSE Index”.

According to them October month is well-known for fluctuation in Indian Capital markets. The author studied the October anomaly on BSE index. They said that October’s bad reputation may be well deserved in the Indian market. In the past 17 Octobers between 1991 and 2007 the market has gone up just six times, it has been flat once and fallen on 10 occasions, they added. They observed that deviations, calculated October seems to be having a major influence on the stock Index and month of October is emotionally, religiously and fiscally the strongest month for Indian because people at large are on a buying spree but statistically found that their Null Hypothesis which was stated to be having ‘No October Effect’ seems to be significance.<sup>8</sup> They took a period of five years from 2003 to 2007 for BSE only.

**METHODOLOGY FOR THE STUDY**

**OBJECTIVES**

The objective of the study is to assess the October effect in the Indian Stock Market i.e. BSE and NSE and to observe how the market behaved during the month of October for the last Nine years i.e., 2003 to 2011.

**HYPOTHESIS**

The present study hypothesized that there is no significant effect of the October month over the Indian stock market.

**SCOPE OF THE STUDY**

The study has been conducted on BSE and NSE, taking the opening index of each month. The study has been conducted for the period of Nine years i.e., 2003 to 2011.

**RESEARCH METHODOLOGY**

The BSE and NSE index at the opening of each month has arranged from January to December, for the Nine years. The data has divided into four quarters and Quartile Deviation calculated. Index has divided into two equal halves i.e., from January to June and July to December for the purpose of calculated Mean Deviation for each half. Standard Deviation of each year is calculated. t-distribution for each quarter is calculated and Last of all Run test is applied.

**SOURCES OF DATA**

The nature of study dictates the requirement of the secondary sources of information. Accordingly, all the required data has been obtained from various authentic sources

The secondary data has been taken from Internet and computed data is derived from the historical data. Data has all been taken for research purpose adhering to ethical norms and regulations.

**LIMITATION OF THE STUDY**

The study which has been for a period of Nine years i.e., 2003 to 2011 is a limitation for the study. If the period would have been more, the results could have Higher Degree of reliability.

**ANALYSIS AND INTERPRETATION**

By grouping the BSE & NSE Indexes into four quarters, it is easier to study the October effect. By comparing the quartile deviation, mean deviation and standard deviation and thereafter by applying t-test helps study the October effect more effectively.

Graph 1 represented the Index movement of BSE sensx for the last 9 years i.e. 2003-2011. Graph 2 represented the Index movement of NSE index for the above said time. By applying the techniques of measure of dispersion the figures in the Table 1 could be derived. The graphic representation of Table 1 and Table 2 can be seen on the Graph 3 and Graph 4 which represents the dispersion statistics. Here in Table 1 quartile deviation is calculated to know the Average amount by which the each quarter will differ from the median.

**TABLE 1: DISPERSION STATISTICS FOR THE PERIOD 2003-11 (BSE)**

Column1	Column2	Column3	Column4	Column5	Column6	Column7	Column8	Column9	Column10
	2003	2004	2005	2006	2007	2008	2009	2010	2011
QD (Q <sub>1</sub> )	117.47	52.535	110.52	680.035	576.415	1002.135	408.45	584.91	810.91
QD (Q <sub>2</sub> )	323.67	447.735	519.705	726.66	389.07	1912.855	1611	378.14	316.34
QD (Q <sub>3</sub> )	330.315	206.645	499.53	855.27	986.25	852.05	730.1	1100.42	871.72
QD (Q <sub>3</sub> )	466.045	465.21	752.805	412.505	461.9	347.67	784.27	493.92	1125.05
MD <sub>1</sub>	158.65	388.75	248.21	551.75	570.87	1190.91	2090.06	509.21	462.1
MD <sub>2</sub>	550.01	450.63	581.34	924.62	1902.72	2208.77	714.11	939.22	788.39
SD	928.3005	531.4195	1038.343	1328.131	2640.503	3137.13	3195.1	1455.59	1273.56

Note: QD Quartile Deviation, MD<sub>1</sub> Mean Deviation of Jan to June, MD<sub>2</sub> Mean Deviation of July to Dec., SD Standard Deviation.

**TABLE 2: DISPERSION STATISTICS FOR THE PERIOD 2003-11 (NSE)**

Column1	Column2	Column3	Column4	Column5	Column6	Column7	Column8	Column9	Column10
	2003	2004	2005	2006	2007	2008	2009	2010	2011
QD (Q <sub>1</sub> )	42.6	18.925	33.8	200.725	168.7	244.5	179.425	166.25	370.2
QD (Q <sub>2</sub> )	100.05	156.25	159.05	189.95	115.2	562.675	734.775	160.15	117.03
QD (Q <sub>3</sub> )	115.625	56.875	144.55	222.6	278.675	219.4	185.25	110.225	293.6
QD (Q <sub>3</sub> )	161.925	140.2	232.8	111.15	187.925	102.025	279.05	91.25	204.23
MD <sub>1</sub>	53.39167	133.2943	69.275	159.111	183.4443	316.3167	536.97222	143.09167	192.72
MD <sub>2</sub>	181.9	140.9943	170.3833	253.25	631.3	669.05	231.10833	344.49167	262.71
SD	287.0823	163.9557	272.6189	321.0518	794.3683	870.6108	878.31292	414.32824	364.73

Note: QD Quartile Deviation, MD<sub>1</sub> Mean Deviation of Jan to June, MD<sub>2</sub> Mean Deviation of July to Dec., SD Standard Deviation.

<sup>5</sup> Connolly, robert a, (1989), “An Examination of the Robustness of the Weekend Effect”. Journal of Financial and Quantitative Analysis, vol.24, no.2, pp.133-169.

<sup>6</sup> An interesting study is the so called **Mark Twain Effect** which concerns that average returns during the month October are significantly lower than those in the rest of the year.

<sup>7</sup> Gibbons, Michael R and Patrick Hess (1981), “Day of the Week Effect and Asset Returns”. Journal of Business, vol.54, no.4 (October), pp.579-596.

<sup>8</sup> Dutta A, (2008), “The October effect on the BSE index” Portfolio Organizer, pp. 41-48

As index is divided into two halves i.e. 1 January to 30 June and 1 July to 31 December From Table 1 and Table 2 it can be observed that the mean deviation of 2<sup>nd</sup> half of each year is greater than the mean deviation of 1<sup>st</sup> half (both in BSE & NSE), which indicates that average difference between the index and the mean increases. The standard deviation is calculated to measure the absolute dispersion.

In 2003 the Quartile Deviation of fourth quarter in BSE and NSE is 466.04 and 161.925 respectively which is more than rest of three quarters. In 2004 and in 2005 the same trend can be seen. It is worth while to note here that the fourth quarter contains the month of October. Hence to naked eye it looks as if the month of October has a significant trading volume.

To ensure that whether our eye verification be true or not it is necessary to check the statistical relevance on eye verification, a t-test was conducted in order to check the significance of the quartile deviation (as calculated in Table3 and in Table 4 in BSE & NSE respectively), so that the effect of fourth quartile (which contain the month of October) can be felt on BSE & NSE Indexes.

TABLE 3: YEAR-WISE T-SIGNIFICANCE TEST FOR MEAN FOR ALL QUARTILES (BSE)

t-value	2003	2004	2005	2006	2007	2008	2009	2010	2011
Q1	0.833119	0.187534	0.877193	0.846553	0.959819	0.933505	1.439715	<b>0.986404</b>	0.634242
Q2	0.773904	<b>0.906147</b>	0.780636	0.522865	0.585367	0.539579	0.135844	0.553828	<b>0.866852</b>
Q3	0.211018	0.444591	0.507292	0.011479	0.057611	0.032469	<b>0.692659</b>	0.294462	0.483013
Q4	<b>1.396005</b>	<b>1.163204</b>	<b>1.150538</b>	<b>1.380896</b>	<b>1.487576</b>	<b>1.440616</b>	<b>0.8829</b>	<b>1.24577</b>	<b>1.018081</b>

TABLE 4: YEAR-WISE T-SIGNIFICANCE TEST FOR MEAN FOR ALL QUARTILES (NSE)

t-value	2003	2004	2005	2006	2007	2008	2009	2010	2011
Q1	0.822949	0.26003	0.849553	0.829838	1.003895	0.95678	1.353646	0.887682	0.672565
Q2	<b>0.832761</b>	<b>0.953001</b>	0.832251	0.473457	0.562265	0.566671	0.302559	0.618531	<b>0.692899</b>
Q3	0.194239	0.497085	0.497688	0.137166	0.011639	0.006758	<b>0.620954</b>	0.07834	0.161935
Q4	<b>1.461471</b>	<b>1.190057</b>	<b>1.184116</b>	<b>1.440461</b>	<b>1.5778</b>	<b>1.530209</b>	<b>1.035252</b>	<b>1.584553</b>	<b>1.203529</b>

The Index data of BSE & NSE is not normally distributed so it arise the requirement of a non-parametric test. Accordingly to check the hypothesis of the study Run test is applied here, the values of which are given in Table 5 for BSE & NSE.

TABLE 5: RUN TEST VALUES (BSE &amp; NSE)

Market	N	r	N <sub>1</sub>	N <sub>2</sub>	$\mu r$	$\sigma r$
BSE	36	17	13	22	17.34	7.38
NSE	36	28	13	22	17.34	7.38

Test at 1% Significant Level ( $\alpha = 0.01$ ,  $z = 2.58$ )

Upper Limit = 36.37

Lower Limit = 1.68

Since Lower Limit < r < Upper Limit, the Null Hypothesis is accepted.

Test at 5% Significant Level ( $\alpha = 0.05$ ,  $z = 1.96$ )

Upper Limit = 31.8

Lower Limit = 2.89

Since Lower Limit < r < Upper Limit, the Null Hypothesis is accepted.

## FINDINGS AND CONCLUSION

The above observation which has focused on finding the October effect on BSE & NSE which is inspired by earlier studies which shows that there is a January effect in the western countries and day of week effect in Indian stock market reached on two broad Results:

Firstly, we observed on the basis of various deviations, it seems to be true that October is having a major influence on the BSE & NSE Indexes. Due to a festive month October is emotionally, religiously and fiscally the strongest month for Indians because people at large number on a buying trend. This is a period in which most of the festivals in India are celebrated. This means that the money in pocket is deviated to buying consumables rather than stock. The effect of the October could also be seen from the third quarter where a lot of deviation can be seen in both the Indexes i.e. in the month of September which is the last month of third quarter.

Secondly when we keen observe the deviation with the help of statistical relevance by applying some of the statistical tools we found that our Null Hypothesis which was stated that there is not any October effect seems to be statistically significant. From the above discussion, we came to a major result that whether a visible effect can be seen on the movement of quartile but it has not significantly given any change in statistical view point. That is why, we can say that there is not any statistical relevance on eye verification and hence there is not any significant October effect on the Indian Stock Market.

From the above discussion we concluded that there is nothing special about October though it being a month of festivals in India. It is just an expectation that the Indian Stock Market tends to be poor performance in October due to some major down fall previously, but it is proved worthless. It was just a matter of chance rather than an actual phenomenon. It is just a psychological expectation. At last we concluded that our statistics go against the theory.

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**ICT ENABLED DELIVERY SYSTEM AND CHALLENGES IN PUBLIC HEALTH SERVICES MANAGEMENT**

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**ABSTRACT**

*Information and Communication Technology (ICT) has become a major tool in delivery of health services and has had a revolutionary impact on how we live and perceive the world. ICT has given birth to the contemporary "Es" such as e-learning, e-commerce, e-governance, e-banking, e-shopping and e-health. In response to the challenges of globalization and local development, educational reforms are inevitably becoming one of the major trends in the Asia-Pacific Region or other parts of the world. In the health sector, ICT is a cornerstone of efficient and effective services. In many countries, use of ICT within the sector continues to grow and the Internet in particular is driving significant change. In this paper we've examined the current scenario of ICT based delivery system and the challenges, constraints and opportunities in health services in India.*

**KEYWORDS**

ICT, Public health, Service delivery, Stakeholders.

**1. INTRODUCTION**

The past decade has seen a remarkable growth in the diffusion of information and communication technology (ICT) across the world. This growth has been fuelled by technological advances, economic investment, and social and cultural changes that have facilitated the integration of ICT into everyday life. As information technology in the health care industry evolves, the scope of information sharing is expanding beyond the walls of individual institutions. Achieving this level of integration will require that software models overcome a host of technical obstacles, and that they are accessible, affordable, and widely supported. In response to the challenges of globalization and local development, educational reforms are inevitably becoming one of the major trends in the Asia-Pacific Region or other parts of the world. Based on the most recent research and international observations, a new paradigm has been identified including various new concepts, frameworks and theories for reengineering education.

e-Health, commonly referred to as the application of information and communication technology (ICT) in the health sector has rapidly developed around the world in the last few years. The Indian healthcare sector is undergoing a transformation with improved services becoming available to larger populations. The health sector has always relied on technologies. According to WHO (2004), they form the backbone of the services to prevent, diagnose and treat illness and disease. ICTs are only one category of the vast array of technologies that may be of use. Given the right policies, organization, resources and institutions, ICTs can be powerful tools in the hands of those working to improve health (Daly, 2003). Advances in information and computer technology in the last quarter of the 20<sup>th</sup> century have led to the ability to more accurately profile individual health risk (Watson, 2003), to understand better basic physiologic and pathologic processes (Laufman, 2002) and to revolutionize diagnosis through new imaging and scanning technologies. Such technological development, however, demands an increased responsibility of practitioners, managers, and policy-makers for assessing the appropriateness of new technologies (Hofmann, 2002). The methods people use to communicate with each other have also changed significantly. Mobile telephony, electronic mail and videoconferencing offer new options for sharing perspectives. Digital technologies are making visual images and the voices of people more accessible through radio, TV, video, portable disk players and the Internet, that change the opportunities for people to share opinions, experience and knowledge. This has been coupled with steps to deregulate the telecommunications and broadcast systems in many countries, which open up spaces and platforms, such as community radio, for increased communication.

Reliable information and effective communication are crucial elements in public health practices. The use of appropriate technologies can increase the quality and the reach of both information and communication. On one hand, the knowledge base is about information, which enables people to produce their own health. On the other hand, social organizations help people to achieve health through health care systems and public health processes. The ability of impoverished communities to access services and engages with and demand a health sector that responds to their priorities and needs, is importantly influenced by wider information and communication processes, mediated by ICTs. In this paper, we've highlighted the ICT in public health delivery system and its challenges.

**2. ICT IN PUBLIC HEALTH DELIVERY SYSTEM**

In the health sector, ICT is a cornerstone of efficient and effective services. In many countries, use of ICT within the sector continues to grow, and the Internet in particular is driving significant change. For example, in middle- and high-income countries, the Internet is dramatically changing the way in which consumers interact with health services, including access to health information and the ability to purchase pharmaceuticals and other health products. The Internet also plays a key role in expanding the reach of health services to remote areas. The spread of broadband networks and the development of new e-health applications, defined as the use of ICT for health, have a mutually stimulating effect on further developments. However, it is clear that, despite the numerous creative and sometimes quite costly efforts to improve the situation, access to these developments is not universal, and many countries do not benefit as they might from advances in ICT in health.

Hospitals no longer need to have every type of special ward or unit. If the hospital is linked to a network, far- away specialists can be consulted electronically. Based on the findings, it's evident that Online consultancy and online appointment plays a vital role in implementation of IT. The impact of information technology has been widely accepted by healthcare industry. The security and reliable data be very important and next important things are unique user ID, data backup, error free diagnostic testing and setting up a datacenter. One of the key characteristics of healthcare is the very strong emphasis on secure and reliable data- transfer between the stakeholders, in order to protect the sensitive personal data that is often involved. Health research and the health sector in general are experiencing a rapidly increasing need for high transmission bandwidth for high-resolution images and video streaming used for remote diagnostics, monitoring and the teaching of surgical techniques.

Healthcare has developed and deployed IT systems and ICT services in the last 40 years of the 20<sup>th</sup> century. Examples of how the technology has been used can be found in administrative applications, digitized diagnostic equipment and electronic health records. In an attempt to improve information flow and knowledge,

many healthcare providers have invested in technologies such as online order entry, electronic medical records, and picture archiving and communications systems (PACS). Fueled by the unrelenting pressures of cost, quality, and access, it's believed that the first two decades of the 21st century are the era in which healthcare systems around the globe will be driven into crisis. Consumers worldwide are demanding more and better healthcare services. Yet, in virtually every country, the growth in healthcare demand is increasing more rapidly than the willingness and, more ominously, the ability to pay for it. If left unaddressed, financial pressure, service demands driven by aging populations and other demographic shifts, consumerism, expensive new technologies and treatments, and the increased burden of chronic and infectious diseases will cause most of the world's countries to reach a breakpoint in their current paths. In other words, the healthcare systems will likely "hit the wall" be unable to continue on the current path and then, require immediate and major forced restructuring.

TABLE 1: EXAMPLES OF THE USE OF ICT IN HEALTH SYSTEMS AND SERVICES

Broad area	Examples
Access to information and knowledge	1. Improved access to health information, research, literature and training materials, such as access to biomedical and social sciences research. This supports the health research enterprise and enables comprehensive, evidence-based management of acute and chronic conditions
	2. Improved access to resources on prevention, awareness and education, for the general public as well as for health professionals, researchers and policy makers
Networking and collaboration	1. Collaboration for the management and coordination of care across different health providers, community health services and health institutions
	2. Better exchange of knowledge among policy makers, practitioners and advocacy groups
	3. Rapid and coordinated response to disasters and disease events
Information for policy and action: measuring progress, tracking quality and trend analysis	1. ICT for collecting, organizing and disseminating public health evidence and information for advocacy, practice and policy
	2. Improved ability to describe, model, analyze and monitor trends on health status, income, employment and service coverage, and disaggregate by gender
	3. Support for research on policy effectiveness
Health education and training	1. Direct support to education and training for health professionals and workers, including both pre-service education and in-service training and resources
	2. Improved efficiency and effectiveness of education delivery through strategic application of ICT and ICT-enabled skill development
	3. Improved availability of quality educational resources through ICT
	4. Outreach to special populations (girls and women) using appropriate technologies
	5. Enhanced delivery of basic and in-service education
Public accountability through greater flow of information	1. Greater transparency, accountability and accessibility in delivery of public services
	2. Improved enforcement of regulations and performance monitoring of decentralized services
Delivery of health services	1. Prevention of disease, health education and promotion, and support for diagnosis and treatment
	2. Establishment of health registries and health information systems
	3. Extension of care to rural and remote areas through telemedicine applications; increased access of rural health workers to specialist support and consultation

A number of these uses of ICT promise particular benefits for developing countries. For example, decreasing the isolation of the health community is seen as a major benefit and is thus a driver for adoption. ICT is increasingly well integrated in educational settings in middle- and high-income countries, where communication, collaboration and access to information are at the core of research and teaching. Universities in the developing world need to connect on an equal footing with their counterparts. This access will play an important role in advancing locally relevant research, and will improve capacity by enabling participation in the peer-review process required for publishing and participation in research conferences.

Improved access to care is an important benefit of ICT particularly for countries tackling the challenge of providing health care to people over a broad geographical area. One of the main drivers behind public investment in e-health systems is the expectation that ICT will improve access to services and reduce the inequities experienced by people in remote locations. This is a serious matter in countries that have chronic shortages of physicians, nurses and health technicians. The problem of shortages is often coupled with public concern over access and demographic shifts with concomitant major health resource implications, such as ageing populations and rapid population growth in native or aboriginal communities. In contexts such as these, the goal of access to health care has driven the adoption of ICT for remote diagnosis, monitoring and consultation.

Quality of care is another important driver for ICT adoption. Health service providers are not only attempting to deliver more effective care, they are also attempting to deliver care that is safe. Both goals require the use of ICT to measure, monitor and report on quality improvement initiatives, as well as the use of information systems such as pharmaceutical ordering systems that are proven to reduce errors. Developments such as e-prescription and computer-assisted imaging are part of this. With respect to technology-assisted care, it is critical to ensure that the care and information provided through e-health meet appropriate standards, relating to the quality of information transmitted as well as to the overall reliability of the system and the satisfaction of users, both professionals and patients.

**2.1 FACTORS AFFECTING ICT USE IN THE HEALTH SECTOR**

There are several factors that affect the use of ICT in the health sector. These include costs, access speed, education and collaboration between stakeholders.

**Costs for ICT** - These influence uptakes in all sectors. They are normally reflected at the service level, and incorporate the costs passed on to the user from the infrastructure level. In general, two basic disparities exist in the affordability of ICT: in the basic cost of the technology and in the cost relative to per capita income. Access costs such as high Internet service provider and telephone call fees can be two to four times as high in developing countries as in developed market economies. When the monthly cost for Internet access exceeds the monthly income of a significant proportion of the population, its level of use will remain low.

**Access speed** - This directly affects cost. In nearly all countries, telephone calls are charged on a per-minute basis for telephone mainlines, with an additional access charge. Where Internet access is through a dial-up connection, download times are long, and costs therefore increase. The trend to using large web pages and files is not an obstacle in countries where bandwidth is increasing, but in low-income countries the long download time further increases the cost. Although telemedicine can be successfully practiced via low-bandwidth connections, lack of affordable broadband infrastructure significantly hampers the ability to conduct telemedicine applications where transfer of high-resolution images is required.

**Education** - This clearly affects ICT use, and international disparities are evident at the user level. The degree of technical capacity at this level is a result of long-standing government investment or under-investment in education and training, not only through initiatives such as staff development programmes and technical training in schools, but also including investment in secondary and tertiary education.

**Collaboration between stakeholders** - At the infrastructure and service levels, regulations such as those for importation of telecommunications equipment in emergency situations show the need for cross-border collaboration in ICT and health. Clearly, ICT is central to an effective health sector response in disaster situations, whether natural disasters or man-made (e.g. armed conflict). In the absence of formally established procedures covering disasters and emergencies, customs clearance and type-approval procedures for telecommunications equipment, allocation of radiofrequencies and authorization for radio communications



can delay installation of urgently needed communications systems. For example, regulations on telecommunications equipment importation and type approval delayed help when a non-governmental organization arrived to install radio communications in Bam, Iran after a major earthquake in 2004. Lengthy national and local customs and telecommunications regulatory clearance resulted in an unnecessary and costly delay before the equipment could be installed where needed.

## 2.2 BENEFITS OF ICT IN HEALTH SECTOR

ICT has benefited the health sector both in developed nations and developing nations, the benefits affect the hospital's stakeholders: management of the hospital, health personnel and patients. The use of ICT in health sector reduces the cost of running hospitals (Remlex, 2007). ICT introduces potential of sharing of patients files easy without any threat to patient privacy. It is used for hospital management such as admission and appointment management. ICT improves the efficiency of medical personnel by reducing waiting times and minimize paperwork. ICT makes information available for the use of hospital personnel in an easily readable form. The result of patients' test can be added to the patients' case file as soon as they are ready. To the patients, ICT assists the patients to locate the health facility and personnel, gives 24-hour access to health information and through encryption and password protection can help to keep patients' data confidential.

There has been considerable international discussion about the potential of ICTs to make major impacts in improving the health and well being of poor and marginalized populations, combating poverty, and encouraging sustainable development and governance. Used effectively ICTs have enormous potential as tools to increase information flows and the dissemination of evidence-based knowledge, and to empower citizens. However, despite all its potential, a major challenge is that ICTs have not been widely used as tools that advance equitable healthcare access.

A critical mass of professional and community users of ICTs in health has not yet been reached in developing countries. Many of the approaches being used are still at a relatively new stage of implementation, with insufficient studies to establish their relevance, applicability or cost effectiveness (Martinez, et al, 2001). This makes it difficult for governments of developing countries to determine their investment priorities (Chandrasekhar and Ghosh, 2001). However, there are a number of pilot projects that have demonstrated improvements such as a 50% reduction in mortality or 25-50% increases in productivity within the healthcare system (Greenberg, 2005).

The ICTs have clearly made an impact on health care in the following points:

- Improved dissemination of public health information and facilitated public discourse and dialogue around major public health threats
- Enabled remote consultation, diagnosis and treatment through telemedicine
- Facilitated collaboration and cooperation among health workers, including sharing of learning and training approaches
- Supported more effective health research and the dissemination and access to research findings
- Strengthened the ability to monitor the incidence of public health threats and respond in a more timely and effective manner
- Improved the efficiency of administrative systems in health care facilities.

Experience demonstrates that there is no single solution that will work in all settings. The complexity of choices of technologies and the complexity of needs and demands of health systems suggests that the gradual introduction, testing and refining of new technologies, in those areas of health care where there is a reasonable expectation that ICTs can be effectively and efficiently used, is more likely to be the successful way forward.

## 3. CONSTRAINTS AND CHALLENGES

A number of factors can inhibit the introduction and successful application of ICTs in the health sector in developing countries. Satellife (2005) identified three main categories as **connectivity**, **content** and **capacity**. Madanmohan Rao (2005) adds five more categories for analysis: **community**, **commerce**, **culture**, **cooperation** and **capital**.

**Connectivity** - With connectivity there are issues such as the lack of an enabling telecom policy and regulatory environment; access to electricity, solar power options, UPS back-ups, insufficient infrastructure, connectivity access and high costs. Embedded in this are issues around broadcasting rights and regulations controlling the media.

**Content** - Content factors include the lack of local content creation, the language used and the relevance of content to the local situation. Appropriate language is frequently neglected in ICT programmes and little content is available in local languages for health programmes. Another major content issue is the quality and reliability of health information. The Internet can provide a wide range of users with timely, accurate, diverse and detailed health information. However, its decentralized structure, global reach, leveling of access to the tools of publication, immediacy of response, and ability to facilitate free-ranging interchange also make the Internet a channel for potential misinformation, concealed bias, covert self-dealing, and evasion of legitimate regulation. Given the sensitive nature of health care information, and the high degree of dependence of health professionals on trustworthy records, the issues of reliability (data residing in the electronic health record are accurate and remains accurate), security (owner and users of the electronic health record can control data transmission and storage), and privacy (subject of data can control their use and dissemination) are of particular significance and must be clearly and effectively addressed by health and health-related organisations and professionals (Ramsaroop, et al. 2003). Reliability, security, and privacy are accomplished by the implementation of a number of preventive and protective policies, tools, and actions that address the areas of physical protection, data integrity, access to information resources, and protection against unauthorized disclosure of information.

**Capacity** - While capacity to adapt information to ensure that it is culturally appropriate and relevant is a major challenge, so too is the capacity to use ICTs effectively, to service and maintain them. A skilled ICT work force is an essential ingredient for the effective use of ICTs in health. Systems professionals and technology products and services providers and project team leaders with high skill levels and experience in working in the sector introducing the ICTs are important components of success.

**Community** - The question to be addressed here is who is using ICTs? What are the communities of users and what services exist to facilitate use and to encourage those who have not been involved in health dialogues previously? An important approach to the design and implementation of any ICT and health programme is to identify the various stakeholders who need to be involved and find mechanisms for including their perspectives and concerns and to find ways to mobilize their skills, expertise and resources.

**Commerce** - New technologies have made it possible to open up trade in medicines and services via the Internet. This has both positive and negative consequences. One of the key factors to consider here is the degree to which it is possible to develop effective national or domestic Internet economies that promote online transactional capabilities that will be beneficial for consumers, for businesses and for public health interests.

**Culture** - Cultural issues need to be addressed in terms of appropriate and relevant content. Another aspect of culture is the need to examine and challenge the cultural inhibitions and barriers within society and institutions that prevent effective use of ICTs. This includes a commitment to transform the rules and regulations surrounding telecommunication and broadcast systems. It also means increasing political will to ensure that government procedures are more transparent and that information sharing cultures are encouraged.

**Cooperation** - The use of ICTs for health and development involves local, regional and international participants as stakeholders. No one sector or one set of stakeholders can deal with the complexity involved in the effective use of ICTs in health. Technical knowledge, experience, and financial investments needed to establish large and complex ICT initiatives require tapping into resources and expertise that no single organisation retains. Several key groups should be considered when discussing efforts for ICTs and health.

Dzenowagis (2005) identifies six major groups:

- Citizens (including patients)
- Professionals
- Hospitals and academia
- Health-related businesses
- Governments
- International agencies.

Each of these could be broken down further. For example, the OECD (2005) has catalogued the activities of the major international agencies with an interest in ICT programmes for development. Within each grouping, there may also be those with a health focus, those with a technology focus, or those who are most concerned with development issues. They often have different perspectives on the aims and objectives of introducing ICT into healthcare and hold different views on potential barriers to implementation.

**Capital** - Generally, there is little investment in ICTs for health even in most developing countries. The picture is one of fragmentation, with many different varieties of ICTs being acquired from different donors. Very few government-run health services have properly functioning ICTs within them, and there is no reliable infrastructure to enable inter-organizational transfers of information. Invariably, there is no national health information and IT infrastructure to underpin the delivery of health care. WHO (2004) makes the point that technologies must be 'integrated into health services that meet basic needs' if they are to be considered to be essential investments.

ICT projects, particularly those dealing with information systems, are notorious for running over time and over budget, yet often still failing to deliver all the specified functions satisfactorily. This can be largely avoided by effective project management, including planning, quality assurance, and resource management components. Obtaining an effective system is not simply a process of competitive tendering, local development, or acceptance of an externally funded donated system. The procurement process should be planned and structured, in order to match the solution to the need and circumstances. This in turn needs a systematic approach to defining the requirements and the available resources, including running costs and staff availability.

The convergence of new and old technologies is well documented in a report from FAO (Girard, 2003) that presents examples of converging radio and new ICTs for development. The report argues that radio will have even greater significance and value in years to come. Particularly relevant is the chapter on 'Take Five: A handful of essentials for ICTs in development' by Alfonso Gumucio Dagron where he describes a set of 'non-negotiable conditions for ICTs in development':

- Community ownership
- Local content
- Appropriate technology
- Language and cultural pertinence
- Convergence and networking.

The advent of wireless Internet access potentially allows the use handheld communication devices, web-enabled telephones, interactive television, web and email terminals (WideRay and Satelife, 2003). The novelty and improved efficiency of new technologies may have the biggest effect on the acceptance of second-generation technologies in youth programs. There is a need to identify or develop methodologies for passing content from one medium to another. For example, from the Internet to community radio. Several organizations are modifying computer technology to make it more appropriate for rural areas. For example, the Simputer is being developed in India for rural low-literate populations (Harvey 2002).

### 3.1 CHALLENGES AND OPPORTUNITIES

The problem with healthcare technology is that one hour of care in the emergency room means one hour of paperwork. It's not a good way to keep content those people who went into the care professions. The U.S. government, as well as several other governments around the world is aggressively moving on the problems related to healthcare paperwork, lack of IT, and the standardization and digitization of medical records. Through all of human history, health caregivers have been respected individuals in society. Now with the Internet, consumerism, the Baby Boomers aging, risk adjustment, outcomes measurement, and quality metrics, blind trust in clinicians has begun to erode. Many in academia, clinical practice, and government have suggested that use of information technology in healthcare is the answer to error reduction. However, information technology by itself can have only a limited impact, unless the information is used for deliberate improvement in healthcare practices. Despite the evidence that IT improves care, basic electronic information about patients remains out of reach for most clinicians.

ICT has the potential to solve many of the problems in this field. For example, an early diagnosis of symptoms can save a person's life. Rural health kiosks can transmit symptoms of a sick person to a centrally located hospital and provide a cure via the same medium to the person. To scale up its business and to achieve self-sustainability, it is imperative for the organization to revisit its management and human resources strategies, and find ways to improve the financial performance of its social enterprises.

## 4. CONCLUSIONS

The strategic directions at regional level will support the development of policies, capacities and programmes for managing health knowledge in countries. The strategy calls for countries to take steps towards institutionalization of knowledge management activities, develop capacity and make full use of the available health knowledge.

- Promote collaborative efforts of governments, planners, health professionals, and other agencies along with the participation of international organizations for creating a reliable, timely, high quality and affordable health care and health information systems and for promoting continuous medical training, education, and research through the use of ICTs, while respecting and protecting citizens' right to privacy.
- Facilitate access to the world's medical knowledge and locally-relevant content resources for strengthening public health research and prevention programmes and promoting women's and men's health.
- Alert, monitor and control the spread of communicable diseases, through the improvement of common information systems.
- Promote the development of international standards for the exchange of health data, taking due account of privacy concerns.
- Develop distance learning, training and other forms of education and training as part of capacity building programmes.
- Promote international and regional cooperation in the field of capacity building, including country programmes developed by the United Nations and its Specialized Agencies.
- Launch pilot projects to design new forms of ICT-based networking, linking education, training and research institutions between and among developed and developing countries and countries with economies in transition.
- Volunteering, if conducted in harmony with national policies and local cultures, can be a valuable asset for raising human capacity to make productive use of ICT tools and build a more inclusive Information Society.
- Encourage the adoption of ICTs to improve and extend health care and health information systems to remote and underserved areas and vulnerable populations, recognizing women's roles as health providers in their families and communities.
- Strengthen and expand ICT-based initiatives for providing medical and humanitarian assistance in disasters and emergencies.

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**SOCIAL MEDIA MARKETING AND BOLLYWOOD: RECENT TRENDS AND OPPORTUNITIES****DEEPMALA JAIN****SR. ASST. PROFESSOR****CHANDERPRABHU JAIN COLLEGE OF HIGHER STUDIES & SCHOOL OF LAW  
DELHI****SONIA GOSWAMI****ASST. PROFESSOR****CHANDERPRABHU JAIN COLLEGE OF HIGHER STUDIES & SCHOOL OF LAW  
DELHI****ABSTRACT**

*Indian Entertainment Industry is a billion dollar industry. A huge amount of money is spent every year on the promotion of movies and music by Bollywood. With the emergence of various social media outlets like Twitter, Orkut, Facebook, Youtube and Blogs, it has become easier for the celebrities to stay connected with their fans online and it helps them in promotion of films and music. Some celebrities have more than 2 million followers on the social networking sites like Twitter and Facebook. This research paper focuses on exploring the use of social networking sites by entertainment industry and how the use of social media marketing can provide opportunities to Bollywood for increased market penetration, reduced marketing cost and whether the viewers can be influenced by the use of social media marketing. We examine the use of social media by celebrities for promotion of their movies. The research paper provides a reference point to the media agencies and film makers for using social media as an effective marketing tool.*

**KEYWORDS**

Entertainment Industry, Followers, Online communities, Promotion, Publicity, Marketing campaign.

**INTRODUCTION**

The Indian Film Industry is finally waking up to the power of social media. Filmmakers have started creating websites and doing promotion online. Today Bollywood is using social Media Marketing for promotion of Films and Music. Social networking sites like Twitter, Orkut, Facebook and Blogs are being used by the Bollywood celebrities to stay connected with their fans, build reputation and have conversation and interaction with the audience in the online world. Social networking sites offer advantage over traditional marketing techniques for movies and music as it gives a chance to celebrities through personalized messages and 'Tweets' and fans can give direct feedback on any issue related to the film/music/celebrity. Social media has provided social outlets where people create contents, share it, bookmark it, and comment/'tweet' on it. Features like ease of use, speed and reach attributes to the emergence of Social media marketing. Social media can be used to diffuse information, conducting opinion polls and survey. Gathering information on how people converse regarding movies and music can help Bollywood to design marketing and advertising campaigns for the films. The paper reports on such a study which predicts how social networking sites can influence the user's attitude and opinion about particular movies and songs. In this paper, the researchers have focused on the entertainment industry for the two main reasons-

- 1) The topic of films and music is of considerable interest among the social media users of India as large number of users discuss about movie reviews and music and their opinion varies on the concerned issues.
- 2) The research focuses on analyzing whether viewers get influenced by promotion and positive reviews of the movies on the social networking sites.

Before a movie is released a lot of buzz and attention is created by involving the cast and crew for the promotion through various media channels. Film makers spend a lot of time and efforts on publicizing their movies. The focus of research study is on the pre-released hype through social networking sites like Twitter, Facebook, Orkut and Blogs. The main objective is that movies that are well-talked about in public will be well watched. Apart from it, we have studied how sentiments are created about a movie, how positive and negative opinion propagate through word-of-mouth through social media channels and how they influence viewer's attitude and behavior for a movie. If a movie is bad, the initial reviews by various media channels like T.V., Newspaper and Social media can discourage others from watching it as it happened in the recent case of much talked about movie Ra.One. While on the other hand it is possible to generate positive sentiments about a low budget movie by propagating positive reviews and ratings or various Social media channels. The rate at which 'tweets' and 'comments' are generated can be used to build positive sentiments about a movie.

**LITERATURE REVIEW**

Social networking involves use of an online platform or website that enables people to Communicate, usually for a social purpose, through a variety of services, most of which are web-based and offer opportunities for people to interact over the internet, e.g. via e-mail and 'instant messaging'. While internet usage has grown, the way people are using the internet has also changed. More interactive online technology such as blogs, social networking sites such as Twitter and Facebook and other innovations which are part of greater interactivity and user-generated content that characterize so-called 'Web 2.0' – i.e. sites allowing users to interact and collaborate with each other in a social media dialogue – have become more prominent. 49 per cent of internet users engage in social networking online, up from 17 per cent in 2007 (Dutton Helsper & Gerber 2009). Prior research on social uses of the Internet has shown that people often develop friendships and personal relationships online with people that share their beliefs, interests and values (McKenna, K., Green, A.S. and Gleason). Social media channels provide celebrities an opportunity to manage reputation online, build social connection, and share personal information, photos, videos related to the movies and music. Much before the film is released, online reviews and comments on the movies get available on Social networking sites by celebrities and cast and crew members of the movie. This kind of frank communication and exchange promote a sense of equality between celebrities and their fans unlike any other medium. As fans become the followers and friends with the celebrities on social networking sites so fans become more likely to comment on their idol's new movie and songs, leave testimonials and even send private messages. Social networking sites successfully removes constraints on potential communication between celebrities and their fans, making it all "just a click away". Celebrities and fans successfully developed a symbiotic relationship where celebrities are able to "collect" fans, thus increasing the reach of their self-promotional activities, and fans use their connection to celebrities as part of their identity performance. When fans "friend" celebrities, they want to publicly display their fandom, receive a celebrity' updates, and ideally, encourage the celebrity to validate their expression of appreciation and support through a comment. By explicitly featuring connection to their favorite celebrities, fans use music and celebrity status to express what they are (Liu, H., Maes, P. and Davenport, G). Increased access to technologies of content creation and distribution has popularized techniques of 'micro-celebrity', using social media to develop and maintain an audience (Senft, 2008). Micro-celebrity can be understood as a mindset and set of practices in which audience is viewed as a fan base; popularity is maintained through ongoing fan management; and self-presentation is carefully constructed to be consumed by others. Just as we now see 'regular' people adopting micro-celebrity tactics to gain status online, we also see famous people using similar techniques on social media sites to maintain popularity and image. Some Famous people lack the time or interest to maintain an account but view it as a good marketing tool; some have managers who discourage direct access to fans; and still others are under contract to a team, studio or

production which expressly forbids candid tweeting (Wallenstein and Belloni, 2009). Social networking sites act as word of mouth marketing for the promotion of the movie. Twitter, Facebook, YouTube, Orkut and Blogs allow celebrities and individual followers to "Retweet" or "repost" comments made by the individual user and all of the user's connections are able to see the message, therefore reaching more people. The role of Twitter however is significant as most of the celebrities connect with fans on this social networking outlet. Like much social media, Twitter creates a 'context collapse' (boyd, 2008) in which multiple audiences, usually thought of as separate, co-exist in a single social context. The practice of celebrity involves negotiating these multiple audiences to successfully maintain face and manage impressions. Celebrity practitioners use public acknowledgment, in the form of @replies, to connect with others. Fans reply to celebrities not only in the hope of receiving a reply, but to display a relationship, whether positive or negative. If fans receive replies back, they function as a mark of status and are publicized within the fan community. Celebrity practitioners' public acknowledgement of friends, peers, and colleagues is rarely critical, primarily adhering to front stage norms of public appearance. Famous people mention fans to perform connection and availability, give back to loyal followers, and manage their popularity. While gossiping about celebrities is a common practice that creates social bonds and provides a frame for discussion of larger issues (Feasey, 2008), participants on Twitter run the risk of being publicly shamed by the individual they are discussing. Social Networking sites allow celebrity practitioners to create a sense of closeness and familiarity between themselves and their followers. Highly followed accounts vary in performed intimacy; while some mostly broadcast information about an upcoming tour or book, others write about personal subjects, post exclusive content, or chat about their daily lives. This type of strategic revealing found on confessional talk show appearances, tell-all autobiographies, and magazine interviews has been criticized as 'second order intimacy' (Rojek, 2001: 52) or the 'illusion of intimacy' (Schickel, 1985: 4; Turner, 2004). This point of view maintains that performed intimacy is synonymous with para-social interaction and a poor substitute for actual interaction. Social Medias provide the possibility of actual interaction with the famous celebrities, and the life-streaming functions social networking sites encourages 'digital intimacy' (C Thompson, 2008). The many seemingly insignificant messages serve as phatic communication (Miller, 2008); rather than sharing meaningful information, many tweets and comments serve a social function, reinforcing connections and maintaining social bonds (Crawford, 2009). Some scholars argue that the popularity of celebrity gossip has increased the public's capacity to 'exercise control' over the processes of celebrityization (Feasey, 2008; Turner, 2004: 20); this process is compounded in online venues where people can contribute content, post comments, or simply view a larger set of opinions than those presented in the mainstream media. Arguably, this 'new media democracy' (Brady, 1986; Turner, 2004: 79) allows celebrity personas to be constructed and interpreted in an ongoing process that exists between reader, fan, and celebrity, both on and offline. Concurrently, the increasingly uncertain economics of the entertainment industry have led some performers and personalities to seek alternative means of publicity. Up-and-coming bands book tour dates, arrange press opportunities, create fan clubs, release music over blogs or social networking sites, and manage fans using YouTube, MySpace, Twitter, and other social media tools (Knoppner, 2009). For most workers in the entertainment industry, social media is a necessary part of creating and maintaining a fan base. Spread of word of mouth through social networking sites is frequent and important. Viewers talk about the music they love; post reviews of the movies they like and dislike; and forward video and audio clip of the songs they like to their friends on Social networking sites. Social transmission has significant impact on how people behave (Godes et al.2005; Godes and Mayzlin 2004; 2009; Iyengar, Van den Bulte and valente 2011; Leskovec, Adamic and Huberman 2007). Consequently, marketers have come to realize that generating word-of-mouth is an important part of marketing strategy for film promotion. Word-of-mouth and online reviews have been shown to boost new customer acquisitions (Schmitt, Skiera and Vanden Bulte 2011; Trusov, Buckin and 2009) and increase sales in various product categories (Godes and Mayzlin 2009; Chevalier and Mayzlin 2006). Practitioners often argue that products need to be interesting (i.e., novel or surprising in some way) to be talked about (Dye 2000; Hughes 2005; Knox 2010; Rosen 2008), Sernovitz (2006) argues that the most important thing to generate word-of-mouth is to "be interesting" and that "nobody talks about boring companies, boring products, or boring ads.". Interpersonal communication affects everything from decision making and well-being (Asch, 1956; Mehl, Vazire, Holleran, & Clark, 2010) to the spread of ideas, the persistence of stereotypes, and the diffusion of culture (Heath, 1996; Heath, Bell, & Sternberg, 2001; Kashima, 2008; Schaller, Conway, & Tanchuk, 2002; Schaller & Crandall, 2004. 59% of people report that they frequently share online content with others (Allsop, Bassett, and Hoskins 2007), and someone tweets a link to a New York Times story once every four seconds (Harris 2010). Such social transmission also has an important impact on both consumers and brands. Decades of research suggest that interpersonal communication affects attitudes and decision making (Asch 1956; Katz and Lazarsfeld 1955), and recent work has demonstrated the causal impact of word of mouth on product adoption and sales (Chevalier and Mayzlin 2006; Godes and Mayzlin 2009). Consumers may share such practically useful content for altruistic reasons (e.g., to help others) or for self enhancement purposes (e.g., to appear knowledgeable, see Wojnicki and Godes 2008). Practically useful content also has social exchange value (Homans 1958), and people may share it to generate reciprocity (Fehr, Kirchsteiger, and Riedl 1998). Emotional aspects of content may also affect whether it is shared (Heath, Bell, and Sternberg 2001). People report discussing many of their emotional experiences with others, and customers report greater word of mouth at the extremes of satisfaction (i.e., highly satisfied or highly dissatisfied; Anderson 1998). People may share emotionally charged content to make sense of their experiences, reduce dissonance, or deepen social connections (Festinger, Riecken, and Schachter 1956; Peters and Kashima 2007; Rime et al. 1991). "By understanding the social network of users, firms can better understand and influence consumers' behavior," (Raghuram Iyengar). Social networking sites act as mechanism for word of mouth advertising (Jansen and others). There has been some previous research on analyzing the correlation between block and review mansions and performance. Researchers (Gruhl and others) have shown how to generate automatic queries for mining blogs in order to predict spikes in book sales. Social networking affects earning for movies (Joshi and others). There is very small correlation between sentiments in blog posts and movie box-office scores (Mishnan and Glance). Zhang and Skiena have used a news aggregation model along with IMDB data to predict movies box office numbers. In the Indian film industry, there is also recent focus upon the role of industry structures that are neither market nor hierarchy (integration): Social networks (Powell, 1990; Wasserman and Faust, 1994; Philips et al, 2000; Brass et al., 2004; Watts et al., 2002; Powell et al, 2005). The presence of informal social networks that may solve problems of transaction costs (Williamson, 1975; 2000) and allow for other economic benefits in the film industry has been documented for e.g. Hollywood (Sorenson and Waguespack, 2006) and Italy (Delmestri et al, 2005). In an emerging economy context, there is increasing focus upon how industries are structured by business groups (e.g. Boisot and Child, 1996; Khanna and Palepu, 2000; Luo and Chung, 2005). Business groups represent social networks rather than contractual vertical or horizontal integration, entry to such groups is restricted and often based on kinship, and group members collaborate with low transaction costs, due to reputation and social trust effects. There is ample evidence for such groups in manufacturing, trade and agriculture in emerging countries, including India (Lal, 1998; Bardhan, 1989; Khanna and Palepu, 2000; Ahlstron and Bruton, 2006), and for how such groups facilitate cross-border knowledge transfer (Bhagat et al., 2002). There is more scope for film promotion through social networking sites in India. Almost 70% of Indians make their profile public/visible for anyone to see. Indians seemed less careful about online privacy (Marshall et al.2008). It is Twitter however, that is preferred as a medium of promotion by celebrities in India. A CNN article estimated that 80 'tweets' were being sent to twitter.com via SMS every 5 seconds (Busari, 2008). In India, Sixty percent of adults maintain a profile on a social networking site, and 70% read blogs and 'tweets' (Galagan). Social media has expanded from a small communication portal between students to an advertising gateway for business. Scott Cooley argues in an article titled "Social Networks and Facebook", that people can go on Facebook and read wall posts to get a sense of the reputation of a person. Cooley says that if a company has a large Facebook following it will increase its chances of doing business with them. Many businesses will actually search a person's name on Facebook before considering them for hire. Handheld technologies are aiding the increase in social networking. According to an article by Pat Galagan, "91 percent of people with mobile devices use them to socialize". "Why wouldn't they?" he asks, with the amount of people logging on to Social networking sites it only seems natural to be able to access your profile on the go. Most mobile technology supports a large number of social networking sites in order to please the customer.

## HOW BOLLYWOOD IS USING SOCIAL MEDIA AS A MARKETING TOOL

According to a recent report released in 2011, visits to Social networking sites in India increased by 51% during 2010. India has the 4th largest user base of Internet and Indian youth also use Mobile phones to access Social networking sites to connect with the friends. Facebook has more than 500 million users worldwide, out of which, more than 25 million users belong to India. More than 30 billion pieces of contents (web-links, news-stories, Blogposts, videos, photo albums etc) are shared each month. Orkut, Twitter, Myspace are also gaining popularity at a large pace. YouTube offers tremendous opportunities in video marketing as more than 100 million videos are seen every month on YouTube. Today, celebrities chat with the fans, 'comment' and 'tweet' and share pictures

and videos online. Celebrities are using social networking sites to take the pulse of the viewers and making them more involved in the film projects. Filmmakers are using social media to take suggestions for the movie titles, cast and crew for movie, winner of the awards, posters and marketing plan from the viewers. This process of directly connecting with the fans is revolutionary. Small screen is also using virtual world to reach out to the audience and involve the audience through digital initiatives like online polls and games. Recently, Producer 'Karan Johar' posted the first look of 'Katrina Kaif's' item song, 'Chikni Chameli', from *Agneepath*, on Facebook. South-sensation Dhanush's Kolaveri di for his Tamil film, 3, won YouTube's 'Recently Most Popular Gold Medal'. From Amitabh Bachchan, Aamir Khan, Priyanka Chopra to Anupam Kher, almost every Bollywood celebrity is using social media to connect with the fans across the globe. This way celebrities gain personal attention and enhance their personal brand image. A classical example is actor Priyanka Chopra, who is on Twitter from last two years. She has more than 1.7 million followers on Twitter. The credit goes to her stardom but her media expert team is also responsible for creating new platforms of interaction and engagement for Priyanka's fans from across the world. The team manages Priyanka chopra's Twitter account, Facebook page and her website and provides timely update on the actor. The professional team to handle her media image has successfully created a strong personal brand that is talked about not just in newspapers or TV but in the online world too. Even less commercially successful celebrities like Gul Panag, Kamal Khan are using social media to create a successful personal brand online with their prolific Blogging and Tweeting. In 2009, Gul Panag became the first Bollywood star to be the "Tweeter face" for the Wills lifestyle India fashion week (WLIFW). She has been successful in creating awareness for her social work projects. Perfectionist Aamir Khan chose the medium of Blogging to interact with his fans globally in the year 2007. Through his blogs, he interacted with his fans on a personal level. During the promotion of the film "3 Idiots" the actor ventured on the medium of social networking and went on to do a 'live chat' with his fan globally. The marketing team for '3 Idiots' used Facebook, Twitter, Youtube and Blogging to create a successful viral marketing campaign. This way the film was promoted as well as Aamir's brand image got a positive influence. After all, celebrities are worshipped in India and everything they endorsed or do has an impact on the mind of the Indian consumer. A big branding truism is that a positive personal brand image would influence marketers and advertisers to rope in that celebrity to endorse products. In the recent times actors like Shah Rukh have relied upon the powerful scope of Social Media for not only promoting their film projects but also for enhancing their Personal Brands. On the other hand, Salman Khan, uses a platform like Twitter to share his thoughts and views rather than for just posting pictures or links of his movies as a part of a promotional stint. He tweets like an ordinary person, promotes his counterparts more than himself and believes in 'word of mouth publicity'. In branding world, all this helps in structuring a positive image amongst his followers and fans. How one uses Social Media is highly individual and immune from judgments about its usage. However, studying how these celebrities use the Social media certainly can provide insights to budding social media enthusiasts as well as social media experts about Social media's increasing influence and power. From film stars to producers and PRs, everyone has been using interactive mediums like Facebook, Twitter and Youtube to engage and interact with their fan base. Due to inherent features such as no geographical constraints and easy connectivity, Social Media has created unique opportunities for Bollywood to sell itself, moving away from traditional tools of promotions. The success of Tamil-English number "Kolaveri di" even before its official launch has proved the power of social networking platforms. Live bands and the concept of posting music online have caught the fancy of many newcomers to reach a global audience

### PROMOTION OF RA.ONE THROUGH SOCIAL MEDIA - A CASE STUDY

ShahRukh Khan has been in a lot of news with regards to his pet project Ra.One and the way he has put his heart and soul in the wide scale promotional campaign for the film. A promotional campaign that spanned over 10 months, Ra.One was not just treated as a film, but as an international brand or a product that everyone was talking about, be it online and offline. The first and foremost strategy for any Bollywood movie today is to build up an online presence, and social networking sites are the quickest way to do that. Ra.One's official Facebook page has more than 3 lakh likes and the beauty of this movie page is that it is unconventionally fresh. From posting latest updates (in the form of trivia and pictures) to running polls and contests, the Ra.One official page has been stylized as per the standards set by actor himself. With Facebook tabs like Ra.One Genesis, Deconstruct G.One and Director's Diary, the page manages to attract enough attention of the audience. His next social media promotional strategy was the launch of a custom built movie channel on Youtube. This one stop destination platform allowed viewers to see all the promotional videos related to Ra.One. Along with uncut videos and behind the scenes shots, there were also videos of Shah Rukh sharing his thoughts and views on Ra.One, all this and more on the exclusive Youtube channel. Apart from this, the actor was regularly promoting the film through his official Twitter account himself. SRK and Google both partnered for the promotion of the movie Ra.One.

### ROLE OF SOCIAL MEDIA IN WORD-OF-MOUTH PROPAGATION

As far as the marketing value of a movie is concerned, what matters is that people spend money to watch it at the theatres, which in turn affects the box office collections. Leaving apart the actor/director who puts his/her hard-work and money into the film, for others behind a movie, the fact as to how people liked the movie does not matter. But there's a vicious circle: If people don't like the movie, they will not tell the others to watch it. Word of mouth plays a major role in India: a vast majority of the audience will go by what a friend or relative has told them rather than trust printed and published facts. If first show watchers dislike a movie they will certainly warn their acquaintances against spending money on the same, inhibiting prospective viewer-ship for the movie. A fact that cannot be denied is that the acceptability of a movie by the public is very uncertain. Therefore it becomes important for the marketers of a movie to generate the essential first-time audience to at least meet the cost of the movie, if not earn a profit. And the only method to meet this requirement is good publicity. A raging medium of publicity today is the internet, especially social networking sites like Facebook and Twitter. Such sites become an interesting platform for publicity because the costly department of marketing is eased by the internet, wherefrom publicity can be accomplished almost free of cost, with a direct and personalized access to the prospective movie-goers. Most of Facebook publicity is done through fan pages that go by the names of the movies they are dedicated to. Sometimes even profiles of film actors are created and managed by the marketers etc. to get more following by making use of the established brand name of the actor. A page created in the movie's name much in advance of the movie's release seeks to increase its fan base for the movie even before people have watched it. Classic management of such fan pages would include an engaging and sustained interaction with the created, virtual community of fans via posts and letting out interesting bits of information related to the movie or the people associated with it. The percentage of movie-goers who go to watch a movie alone is very small. This one influenced facebook-user-cum-prospective-movie-viewer will take a couple of friends along with him/her to the theatre, increasing the viewership. Thus, using internet as a cost-free medium for publicity, a viewership base for the movie can be, and is created: a large number that is led purely by curiosity. A reason that this kind of publicity works is that the marketers of a movie can, with a single post speak to a large number of people, while each of them believes that he/she is being personally spoken to. One way that cinema-going has become easier for the general public is the information availability online. From the rates, timings and locations of theatres and movies down to booking tickets without going through the hassle of standing in queues is possible online. If one does not have a friend or relative who has watched the movie and can tell if it is a worthy watch, one can easily find the needed information online. Apart from synopses and the luring blurbs provided by the publicity team of a movie, there are forums present where one can find reviews by cinema goers. Such views, though mixed and coming from people whom one does not know, can be trusted because they are usually honest opinions, mostly unbiased.

### SOCIAL MEDIA OUTLETS AND BOLLYWOOD

Social Media is the growing face of peer- to – peer communications with Social Networks such as Facebook, Twitter, MySpace, Orkut becoming the new opinion discovery and sharing engines communication. Social Media is being used as an effective awareness and activation channel by a number of global brands with marketers reaching the audience directly. The film industry has made a move in bits and pieces too but it is still not a well thought-out initiative. Here are some of the popular social media outlets Bollywood is using.

- **FACEBOOK:** After a long ongoing battle with Orkut, Facebook overtook its competitor to become the top social networking site in India. As of March 2011, com.Score research reports 31.6 million unique visitors a month from India to Facebook. India has experienced the fastest growth in Facebook use over the past year, increasing in market share of 88% in August 2011 compared to August 2010. Still, the population penetration of Facebook in India is only 3%. According to the results of an analysis by Experian Hitwise, the average session time on Faceook in August 2011 within India is 20 minutes 21 sec. This

average session time is expected to grow as more users within India connect with more people on Facebook, hence brands should not ignore Facebook as a marketing platform. 3 Idiots is an excellent example of this one, the official fanpage of the movie on Facebook gathered more than 6 lac fans. But creating a page alone would not help. My Name Is Khan and 3 Idiots may have generated equal amount of controversies and news but here 3 Idiots won the race. The reason is that the fanpage of MNIK with merely 50 thousand fans was not planned or well-executed. The updates had YouTube links and interviews while 3 idiots played it smart by frequent updates, adding contests, quizzes and later by posting most liked dialogues from the movie and the outcome was evident.

- **ORKUT**- Google's Orkut was the number one Indian social networking platform between 2005 to July 2010. Although Facebook has taken over the lead, Orkut remains a dominant player in the market, with a continually diminishing user base. As of March 2011, the total number of unique visitors is 15.2 million, down from 19.9 million unique users in July 2010. India is an important market for Orkut, as the users represent approximately 20% of the total worldwide user base of the social networking site. Orkut has been observed to be more popular in "Tier 2 and 3" cities, which are the smaller ones compared to the metropolitan cities such as Mumbai. Facebook on the other hand has been the choice of users in the metropolitan cities.
- **TWITTER**: Currently with about 4.5 million users in India, Twitter is spreading in popularity at a rapid rate just like in the rest of the world. Politicians, Bollywood actors & actresses, sportspeople, and other prominent Indians have joined the community
- **OFFICIAL BLOG**: An official blog is where you can put elaborated information about the movie and generate interest. Movie buffs and fans would love to read about people they like so it is important to write about everyone associated with the film along with all miscellaneous activities and events.
- **WIKIPEDIA**: Signing up on Wikipedia and feeding all the basic and interesting information about the film can make the film get noticed each time anything similar is being searched about. Frequent updating of information and events can continue generating traffic and hence developing curiosity.
- **YOUTUBE**: YouTube is the web hub of the new generation and uploading the movie's trailers, songs and behind the scene videos can definitely help keep the movie on top of minds. a video-sharing website on which users can upload, share, and view videos. A wide variety of user-generated video content is displayed, including film and TV clips as well as amateur content such as video blogging.

Social Media can be a great help to the film industry if the strategic thought is based on consumer participation as was the case with '3 idiots'. The context and content go hand in hand in the hearts of the consumer.

## USE OF INTERNET AND SOCIAL NETWORKS IN INDIA

### INTERNET PENETRATION IN INDIA

According to a recent study, the number of active internet users in India is growing at 28% reaching 65 million in 2011. Regular internet users are 61 million and India is the second fastest growing presence on Facebook with almost 2 million people only in the last year. Currently ranked number 3 in terms of the number of Internet users (behind China and the US), there is plenty of room for growth since current penetration levels are equivalent to just 8.4% of the total population. Youths are driving Internet growth in India – Of the total Internet usage in India in 2009, 44% and 28% can be attributed to school and college students and young men, respectively. Overall, 75% of all youths in India access the Internet on a regular basis. On the other hand, the older generation seems to prefer traditional media to new media. Users from urban India contributed the majority of Internet usage in 2011 (49.96 millions) despite the fact that the rural internet use is growing. While accessing e-mails and searching for information remain the top uses of the Internet in India, 2010 saw a significant jump in Internet users viewing videos and searching for songs 72% of the total active online population in India watched videos online with YouTube serving as the most popular viewing source.

### NOTABLE STATISTICS OF SOCIAL NETWORKING USAGE IN INDIA

- The non-metro cities contribute to 60% of social networking traffic. However, the metropolitan city Mumbai still accounts for the most social networking traffic.
- Social networking sites are most actively used by the age group 15-24. LinkedIn however is actively used by the age group 25-34; graduates looking for jobs.
- 60% of users of the Internet in India use Social media.
- The most popular time for use of social media is 6pm-10pm, i.e. not during work hours. This bit of information could be useful for a social media marketing campaign.
- The maximum users come from the 'less than 2 lakhs p.a.' income category. This is because social networks are primarily driven by the youth.

### RAPID GROWTH IN ONLINE SOCIAL NETWORK USERS

India has seen a wide jump in the number of users on the various online social networks, increasing 43% to approximately 33 million unique users from the start of 2009 to July 2010. What this means for marketers is that online social networks are increasingly becoming tools to consider in order to maximizing the reach of brands or business

### STEPS INVOLVED IN CREATING A SUCCESSFUL SOCIAL MEDIA MARKETING CAMPAIGN

- The campaign has to be owned by the marketing team of the advertiser as a must do project (IT or PR department to have a joint interest and sponsorship).
- A project manager responsible to develop and execute the campaign.
- Advertiser should hire a specialized social media marketing agency which can bring perspective on technology & user engagement.
- The specialized social media marketing agency should be made to work closely with the advertiser's creative agency to bring about brand understanding to the table.
- Advertiser should insist on a proper content team to be deployed by the specialized agency.
- Detailed work and budgeting plan should be made for content development and maintenance
- Advertiser should not be averse to spending media monies to get users to sign up as fans, i.e. advertiser should plan to allocate budget to utilize search engine optimization techniques.

### ADVANTAGES OF USING SOCIAL MEDIA FOR THE BOLLYWOOD

- Increased awareness and popularity of the film.
- Personal interaction and engagement with fans and followers.
- Helps in creating brand reputation of celebrities.
- Decreased marketing cost for the film promotion.
- Useful feedback and reviews from the viewers.
- Helps in making viewers feel a part of the film project.
- Wider reach to viewers.
- Helps reaching international audience.

### OBJECTIVES OF THE STUDY

Social networking can play a significant role in promotion of films and music. The researchers wanted to study how attention and popularity are generated for movies on Twitter, Facebook, YouTube and other social media and the effects of this attention on viewers' perception and sentiments about the films. This research paper focuses on finding out the answers to the following questions-

1. How extensive is the use of social media marketing for film promotion?
2. What challenges and opportunities do social media present for promotion of films and music in Bollywood?

3. Finding out which social networking site is most popular for film promotion.
  4. Does the use of social networking sites by celebrities can help in creating positive sentiments about a film among the viewers?
  5. Finding out which age group can be most influence by film promotion on social networking sites?
  6. Finding out whether the use of positive word of mouth about a film can affect the viewer's thoughts and thus the box office revenues of a movie.
- The findings from this research can help film makers, media agencies to understand the planning, implementation, execution and measurement of social marketing campaign carried out by some of the India's top production houses and media agencies and their use of film marketing techniques specific to social networking sites. The study focuses on analyzing opinion of Facebook, Twitter, YouTube users who directly engage with social networking platform on the daily basis.

## RESEARCH METHODOLOGY

In order to try to answer the research question the researchers undertook the following-

- A literature search for secondary research.
- Questionnaire distribution for primary research.

The methodology for the study was a questionnaire which was distributed to Social networking users .In total, 100 respondents offered their answers. Both open ended and close ended question were asked from the users. The survey aimed at finding out the answers to the following questions:

1. Which Social networking website is being used by most of the users?
2. What is the experience level of the users of social networking sites?
3. What is the age group of the users?
4. Have users become a follower/fan of any celebrity on Social networking sites?
5. Which celebrity users are following on social networking sites?
6. Which is the most popular Social networking website, where users can connect with their favorite celebrities online?
7. How regularly fans/followers stay in touch with the favorite celebrities on social networking sites?
8. How likely users are to read celebrity Blogs on a regular basis?
9. How frequently users forward a movie clip or song to the friends?
10. How often users spend on Social networking sites talking/posting comment/ tweeting about a film/song/celebrity in a week?
11. How likely viewers are to comment or tweet about a movie if they are a first show viewer?
12. How often users seek advice /response about a film before going out for a movie through Social networking sites.
13. Do users go and watch a movie if they get positive response from their friends on Social networking sites?
14. Do users still go and see the movie if the response they are getting through heir friends on social networking sites is poor?

## FINDINGS OF THE STUDY

### 1. POPULARITY OF SOCIAL MEDIA NETWORKS

Social media networks are an effective tool for promotion of films. Facebook is the top social networking site to be used by 33% of respondents. The ones that follow the rank are:-

Facebook –38%

Twitter –29%

Orkut-19%

MySpace and others-14%

The number two choice is Twitter with 29%.Orkut comes at number 3 with 19% users while Myspace and others comes at last rank with 14% of the users.

### 2. EXPERIENCE LEVEL OF THE USERS

As far as the experience level of the users is concerned, 46% respondents are a member of social networking sites for more than 2 years while the remaining 54% respondents reported being beginners or being at it for a few months.

### 3. AGE GROUP OF THE RESPONDENTS

The most likely age group to be using media is 14-25 with 55%. The next most likely age group is 25-40 year age group with 35% and finally the age group of 41 to 55 lies at third rank with 10% of the respondents.

### 4. PERCENTAGE OF USERS FOLLOWING CELEBRITIES ON SOCIAL NETWORKING SITES

79% of the respondents reported following atleast on or more celebrities on the social networking sites while the remaining 21% do not follow any celebrity on any social network.

### 5. MOST FAMOUS CELEBRITY TO BE FOLLOWED ON SOCIAL NETWORKING SITES

Respondents provided open ended answer to this question. Shahrukh khan came out be number one celebrity to be followed on social networking sites. The others which follow in rank are Aamir Khan, Amitabh Bachchan and Salman Khan.

### 6. PREFERRED SOCIAL NETWORKING SITE TO CONNECT WITH THE CELEBRITIES

Among those who follow celebrities on social networking sites, Twitter has been reported to be the top choice to connect with the celebrities by 52% of the respondents.28% respondents chose Facebook to stay connected with their favorite celebrity while Orkut and Myspace both come at third number with 10% of respondents each.

### 7. FREQUENCY OF STAYING CONNECTED WITH THE FAVORITE CELEBRITY ON SOCIAL NETWORK

Among the celebrity followers on social networking sites, 48% respondents reported to regularly stay in touch with the celebrities on social networking sites and regularly comment/tweet on celebrity profile and recent activities while 36% do that sometimes. The remaining 16% respondent have become celebrity fans and followers but never tweets/comments on the celebrity profile or about the recent activities.

### 8. CELEBRITY BLOGS

36% of the respondents reported to read celebrity blogs on regular basis while 23% read celebrity blogs sometimes. Remaining 41% respondents have never read any celebrity blog.

### 9. FREQUENCY OF FORWARDING VIDEO/MUSIC CLIP TO THE FRIENDS

43% of the respondents reported to forward a video/music clip to friends on social networking sites most frequently while 32% respondents reported doing that once in a month.25% of the respondents have never forwarded a video/music clip to any friend.

### 10. FREQUENCY OF TWEETING/COMMENTING ON MOVIE/MUSIC/CELEBRITY

47% of the respondents reported to comment/tweet on a movie/song/celebrity regularly while 25% of respondents do that only once or twice in a month.28% of the respondents have never comment/tweet on any movie/song/celebrity.

### 11. TWEETING/COMMENTING ON MOVIE BY FIRST SHOW VIEWERS

57% respondents reported that they like to comment/tweet about a movie on social networking sites if they have watched it in the first show while remaining 43% respondents did not show any interest on commenting or tweeting about a movie even if they are a first show viewer.

### 12. SEEKING ADVICE FROM FRIENDS ABOUT A MOVIE ON SOCIAL NETWORK

41% of the respondents prefer to ask their friends and seek advice from the friends before going out for a movie through social networking sites and consider it as the most trusted source of movie review while the remaining 59% prefer other sources like Newspaper rating and TV reviews or asking friends out of social networks.



**13. INFLUENCE OF POSITIVE RESPONSE ABOUT A MOVIE ON SOCIAL NETWORK**

Among those who seek advice from the friends on social networking sites 79% of the respondents reported to watch a movie after they got positive response about the movie from their friends. While the remaining 29% don't go for a movie even after confirming it from friends on social networks.

**14. INFLUENCE OF NEGATIVE RESPONSE ABOUT A MOVIE**

74% respondents reported that they would not go and see a movie if they got negative response about a movie from their friends on social networking sites while the remaining 26% said they might still go for a movie even if the response from the friends is poor.

**SUGGESTIONS**

- Integrate the use of all Social networking sites. Use a mix of Facebook, Twitter, Youtube and Blogging as these are the most effective social networking outlets.
- Engage audience at the initial stage of the film project so that social network users feel to be a part of the movie. Ask the viewers about the suggestions on movie title, cast and crew of the movie in the initial stages of the movie
- Conduct timely opinion poll and ask for the feedback from the users about the songs/promotional clips of the movie.
- Educate users on how/why to share the movie clip and songs with their friends.
- Engage celebrities, who are a part of the movie in the social media campaign
- Encourage people to share and talk about the film. Identify the age group that is most likely to share and acts as opinion leader and motivate this group to share and forward movie and music clipping to all the friends.
- Sharing links should be easy to find and use.
- Audio and video clipping of the movies should be interesting; else people will not share.
- Give the rewards/incentives to users who share the most.
- Encourage users to forward the audio and video clip via Email as well; along with the option to share on Social networks.
- Conduct contests, quizzes on the Social networking sites and update the information related to the film on a regular basis.

**CONCLUSION**

People are following celebrities on social networking sites and tend to talk about the movies, music and celebrities frequently. Social networking sites play a significant role in propagating positive and negative word of mouth about a movie thus affects user's sentiments about a movie. Users tend to seek advice from their friends before going for a movie and thus the box office revenues of a movie do get influenced from the way people talk about the movie on social networking sites. A large number of users forward movie and music clips to their friends thus promoting the film and music directly or indirectly. Bollywood is extensively using social media for promotion of Films and Music and there seems to be immense scope of social media as an effective marketing tool for the Film promotion in near future.

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**EFFECT OF FACEBOOK ON PURCHASING BEHAVIOR OF YOUTH**

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**ABSTRACT**

Facebook is relatively an inexpensive platform for organization to implement marketing campaigns with the objectives ranging from creating awareness to customer purchase. Through Facebook sites, company can have interactions with consumers which can have impact on every stage of buying cycle. Due to expensive traditional media, more ways have evolved through which consumers can block themselves of communication. This creates a gap between consumer and company which hinders communication. Facebook can bridge this gap by establishing communication in informal way and can help consumer to make purchase. This study examines the impact of facebook on purchasing behavior of youth. The study tries to identify which mode of communication is more effective i.e. Facebook advertisement is more effective or reviews of friends and other for purchase behavior. Further, it tries to explore the preference of facebook among male and female for various product categories. Descriptive research design was used with the sample of 100 youngsters of Ahmedabad. Structured questionnaire was developed to study the effect of Facebook on purchasing behavior of youth.

**KEYWORDS**

Facebook, Purchasing Behavior.

**1. INTRODUCTION**

*Let's imagine for a moment that the world has gone mute. There's deafening silence. No one speaks. No one hears. No one voices opinion. No one is influenced by an opinion. Communication is dead. Facebook is exactly the opposite"*

Nowadays facebook has become an important source of information and communication for customers. People are more equipped with digital technologies like i-phones, Blackberries, Tablet PCs, search engines, etc. and hence they have more exposure of information. There are various social networking sites like Orkut, You Tube, LinkedIn, Twitter, Facebook etc.

Social networking websites provide platform for virtual networking where anyone can share pictures, music, videos, events, activities, reviews about products and brands, etc. It creates a new forum of consumers Internet Communities. Blogs and Social networks have become a part of life for the youth in India. The explosion and increasing usage of facebook websites provides a platform for nurturing brands and products. As a result, marketers consider these as the best platform for advertising their brands.

Social networking websites allow individuals to interact with one another and build relationships. When products or companies join these sites, people can interact with the product or company and share their views. Social networking sites like Twitter, Facebook, Google Plus, YouTube and Blogs allow individual followers to "retweet" or "repost" comments made by the product being promoted. By repeating the message, the connected people are able to see the message and therefore reaching more people. Social networking sites act as word of mouth. Usage of social networking sites creates more traffic to the product/company.

Through social networking sites, products/companies can have conversations and interactions with individual followers. This personal interaction can instill a feeling of loyalty into followers and potential customers. Also, by choosing whom to follow on these sites, products can reach a very narrow target audience. Facebook marketing refers to the process of gaining website traffic or attention through Facebook sites.

Facebook marketing programs usually center on efforts to create content that attracts attention and encourages readers to share it with their social networks. A corporate message spreads from user to user and presumably resonates because it appears to come from a trusted, third-party source, as opposed to the brand or company itself. Hence, this form of marketing is driven by word-of-mouth, meaning it results in earned media rather than paid media. Facebook has become a platform that is easily accessible to anyone with internet access. Increased communication for organizations fosters brand awareness and often, improved customer service. Additionally, Facebook serves as a relatively inexpensive platform for organizations to implement marketing campaigns.

Forrester Research estimates that "Facebook marketing budgets will grow 34 percent per year from 2009 to 2014- faster than any other form of online advertising."

In the entire world there are more than 292.7 million users of Facebook sites. "Facebook users in India are expected to touch the 45 million mark by 2012" according to a study conducted by the Nielsen Company in collaboration with Absolute Data, almost 45,000 Indians are likely to join social networking sites every day over the next six months. An important finding of the study is that Facebook in India is becoming bigger than email with Indians spending more time on facebook than checking personal email. The study also found that nearly 40 million Indians are using online reviews to make informed purchase decisions.

Indians also want brands to communicate with them using Facebook. Another study notes that 60 percent Indians who are Facebook users are open to being approached by brands indicating that facebook has the ability to change the dynamic between brands and consumers who are typically time-starved and may consider traditional forms of advertising.

Nowadays, consumers prefer to remain away from the traditional medium of communication. As traditional media are becoming more and more expensive and complex, marketers have started focusing on facebook due to its high usage amongst youth. Facebook establishes communication and influences consumer to make purchase. So, it has become very important for marketers to understand how facebook has the influence on purchase decision of youth which is the most preferred social networking site by customers.

## 2. LITERATURE REVIEW

**Alisa Santiesteban(2010)** has done research on The effect of Facebook on purchasing decision and noted that people are using Facebook for personal and business use and purchasing decision can be influenced by the their interaction with brand via Facebook and they purchases those brands because of their interaction. She was not considering Age and gender in her study but time spend on Facebook having a positive correlation with purchasing decision.

**Raghuram Iyengar, Sangman Han, Sunil Gupta, (2009)** investigated “Do Friends Influence Purchases in a Social Network?” They found that use of Facebook in marketing has increased. The potential social effect has significant impact on the success of companies. They focused on social site CYworld at Korea and found that low status user group were not well connected so unaffected by social pressure, the middle-status group is moderately connected, show reasonable non-purchase activity on the site and have a strong and positive effect due to friends’ purchases. The high-status group is well connected and very active on the site and shows a significant negative effect due to friends’ purchases.

**Amrita Pani and Mahesh Sharma (2011)** have done research on innovation in Social Networking Media and their impact on the Buying Behavior of Gennext Consumers in India: A new face of Viral Marketing, According to them Innovation in social networking media has revolutionized the world in 21st Century; it has been found that social networking sites are being widely used to influence Gennext consumers in India apparently increasing their susceptibility to viral marketing. Indian youths have realized changes in their brand choices, shopping behavior and lifestyle pattern resulting from their virtual socialization through Facebook. The main purpose of this study was to examine the pervasiveness of Buzz marketing Practices through social networking sites.

**Narges Delafrooz, Laily H. Paim, and Ali Khatibi (2010)** have done research on Understanding consumer’s internet purchase intention in Malaysia, according to their study Result of path analysis showed that trust and attitude had stronger direct effect on online shopping intention, whereas utilitarian orientation, convenience, prices wider selection, and income had stronger indirect effect on online shopping intention through the attitude towards online shopping as mediation. How consumers form their attitude and make purchase intentions toward online shopping.

**Rainer Olbrich / Christian Holsing (Hagen 2011)** their study focused on Consumer Product Search and Purchasing Behavior in Social Shopping Communities–A Click stream. Analysis according to them user behavior is consistent with rational considerations involving time constraints and cost-benefit trade-offs. While ratings and tags have a positive impact, lists and styles have a negative effect on the likelihood of a click-out Nevertheless, lists and styles could be regarded as an important website design element that stimulate browsing and inspiration, as well as enhancing trust. Hence, lists and styles could lead to positive long-term effects on the click-out rate.

**Mark Renshaw (2010)** has done research on The Socialized Shopper according to his study Social-media shoppers are more engaged with media and spend more time shopping Facebook impacts behavior throughout the shopping process. Social brand-contacts are a communal activity Facebook’s impact on shopping varies widely by category.

**Sebastián, Valenzuela, Namsu Park, and Kerk F. Kee(2008)** have done research on Lessons from Facebook: The Effect of Social Network Sites on College Students’ Social Capital ,according to this study they found moderate, positive relationships between intensity of Facebook use and students’ life satisfaction, social trust, civic participation and political engagement.

**Jure Leskovec Daniel Huttenlocher Jon Kleinberg (2009)** have prepared report on **Predicting Positive and Negative Links in Online Social Networks** suggest social computing applications by which the attitude of one user toward another can be estimated from evidence provided by their relationships with other members of the surrounding social network.

## 3. OBJECTIVES

- 1) To study influence of facebook on purchasing behavior of youth.
- 2) To understand most preferred social networking site among youth.
- 3) To understand impact of facebook on various product categories.
- 4) To study preference of facebook among male and female for various product categories.
- 5) To understand the influence of facebook on various stages of buying cycle.

## 4. HYPOTHESIS

H1: There is a significant difference among males and females in their purchase behavior through facebook.

H2: There is significant difference in gender for being connected with various brands through facebook.

H3: There is difference in preference for different types of product categories among male and female.

## 5. RESEARCH METHODOLOGY

A descriptive research was used to the study the effect of facebook on purchasing behavior of youth. A survey approach was chosen to gather information from youngsters of Ahmedabad. Non-probability sampling technique with convenience sampling was used in the survey. A structured questionnaire was developed which was administered to 100 respondents for the survey. Before finalizing questionnaire, opinion of expert panel was taken and it was followed by pilot survey of 15 youngsters of Ahmedabad. Data and information gathered through questionnaire were analyzed using SPSS Software. Various statistical tests like t-test were performed to study preference of facebook among male and female for various product categories. Further, k-s test was performed to check normality of data and chi-square test was also used during the analysis.

## 6. RESULTS AND DISCUSSION

### 6.1 PREFERRED SOCIAL NETWORKING SITE

To know the preferred social networking site among youngsters, we had used Likert type scale and asked the respondents to rate according to their preference.

TABLE 1: PREFERRED SOCIAL NETWORKING SITE

Facebook Site	Mean
Facebook	1.3846
LinkedIn	2.8889
Twitter	2.8000
Orkut	2.8214
You Tube	1.9545
Google+	2.2353
Other	2.5714

Source: Primary Data

Table 1 shows preferred social networking site. Among all, facebook is the most preferred social networking site followed by youtube. LinkedIn, twitter and orkut are not that much preferred as compared to facebook among youngsters.

6.2 PURPOSE OF USING FACEBOOK

TABLE 2: PURPOSE OF USING FACEBOOK

Purpose	Responses
Keeping touch with friends/Family	96(35.2%)
Looking Photos/Videos	60( 22.0)
Playing Games	25(9.2%)
Applications	29(10.6%)
Product purchase	11(4.0%)
To maintain professional relation	38(4.8%)
Sharing experience about product.	13(0.4%)

Source: Primary Data

The study suggests that youngsters prefer facebook for being in touch with friends/family members (35.2%), viewing photos/video (22%), for application (10.6%). Very less percentage of youngsters prefer facebook for product purchase and sharing experience about product.

6.3 FREQUENCY FOR FACEBOOK USE

TABLE 3: FREQUENCY FOR FACEBOOK USE

Time / Frequency	<30 minutes	30 minutes to 1 hour	1 hour to 2 hour	>hour	Total
Daily	16(34%)	14(29.8%)	12(25.5%)	5(10.6%)	47
Weekly	12(26.1%)	17(37%)	11(23.9%)	6(13.0%)	46
Monthly	1(14.3%)	5(71.4)	1(14.3%)	0(0%)	7

Source: Primary data

From above table, we found that 47% students use facebook sites on daily basis and 46 students use facebook sites on weekly basis. So, majority of students use facebook sites on daily or weekly basis. Further on daily basis ,34% students spend <30 minutes for facebook use and on weekly basis 37% students spend 30 minutes to 1 hour for facebook use.

6.4 SOURCE INFLUENCING MORE FOR PURCHASING DECISION

TABLE 4: SOURCE INFLUENCING FOR PURCHASING DECISION

Sources	Mean
Friends Review	1.8108
Fan club Review	2.9600
Celebrity Review	2.4643
Facebook Advertisement	2.2424

Source: Primary data

To study which source influencing more for purchasing decision we have used rating scale we have asked respondent to rate in scale of 1 to 5. Study suggest that Friends review influencing more for purchasing decision compare to other sources like fan club review, celebrity review.

6.5 PRODUCT CATEGORY ON WHICH FACEBOOK INFLUENCE

TABLE 5: PRODUCT CATEGORY

Product Category	Responses
Books & article	22 (17.7)
Food	11 (8.9)
Accessories	13 (10.5)
Movies	23 (18.5)
Games.	16 (12.9%)
Apparels	9 (7.3%)
Auto mobiles	10 (8.1%)
Electronic devices	19 (15.3%)

Source: Primary data

The above study suggests that for movies, books & articles, electronic devices facebook has more influence. Further, for food, auto mobiles and accessories less influence of facebook among youngsters of Ahmedabad is found.

6.6 PERCEPTION ABOUT FACEBOOK

To study perception about Facebook sites, we have asked the respondents to rate the statement on a scale of 1 to 5 where 1 is for strongly agree and 5 is for strongly disagree.

TABLE 6: PERCEPTION ABOUT FACEBOOK

No.	Statements	Mean
1.	Facebook helps to create more awareness of product or brand.	2.0200
2.	Because of Facebook you have more knowledge about Brands	2.2000
3.	Assessment and comparison of brands become more easy due to Facebook	2.4700
4.	Able to find out more alternatives of brands due to Facebook.	2.2600
5.	Facebook influence purchasing decision of yours.	2.9000
6.	Socialization of brand is good idea.	2.2500
7.	Reviews of friends make it easy to have purchase decision.	2.1600
8.	Purchasing through Facebook saves time.	2.3600

Source: Primary data

Majority of respondents agree in accepting that facebook creates more awareness of product or brand, more knowledge about brand, and also assessment of brands become easier for them. They find out more alternatives, socialization of brand is good idea, reviews of friend make easy to have purchase decision and facebook even saves time. But they have neutral opinion regarding the facebook influence on purchasing decision.

6.7 HYPOTHESES

H1: There is a significant difference for influencing facebook for purchase among male and Female.

TABLE 7: GENDER VS FACEBOOK INFLUENCE

Facebook Influence	Male (55)	Female (45)
Yes	22(40%)	19(42.2%)
NO	33(60%)	26(57.8%)

TABLE 8: CHI SQUARE

Pearson chi-square value	0.822
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Source: Primary data

To study whether there is significant difference for influencing Facebook for purchase among male and female, chi-square test of association was applied (Table 7) for hypothesis 1. The significant level for the hypothesis is at 95% confidence level i.e. 0.05 level of significance. Pearson chi-square value which is 0.822 is greater than level of significance so we accept Null Hypothesis (H0), Hence, we conclude that there is no significant difference for influencing Facebook gender wise.

H2: There is a significant difference according to gender for connecting with brands through facebook..

TABLE 9: GENDER Vs. CONNECTED BRANDS

Connected with brands	Male (55)	Female (45)
Yes	23(41.8%)	32(51.1%)
No	32(58.2%)	22(48.9%)

TABLE 10: CHI SQUARE

Pearson chi-square Value	0.354
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Source: Primary data

To study whether there is significant difference according to gender wise for connected with brands through Facebook, chi-square test of association was applied (Table 9) for hypothesis 2. The significant level for the hypothesis is at 95% confidence level i.e. 0.05 level of significance. Pearson chi-square value which is 0.354 is greater than level of significance so we accept Null Hypothesis (H0), Hence, we conclude that there is no significant difference among male and female for connected with brands through Facebook.

H3: There is significant difference for preference for different type of product category among male and female.

TABLE 11: GENDER VS PRODUCT CATEGORY

Product Category	Levene's test Sig.	T-test Sig.(2-tailed)
Games	0.831	0.768
Apparels	0.030	0.604
Auto mobiles	0.228	0.384
Electronic devises	0.085	0.224
Books& articles	0.347	0.349
Food	0.084	0.585
Movies	0.412	0.538
Accessories	0.162	0.585

Source: Primary data

To explore the difference of influence of facebook for various product categories, we have performed t-test of independent group. First Levene's test was performed for equality of variance. From above table, p-value is less than level of significance and hence t-value of equal variance not assumed has been taken into consideration. For other product categories, p-value of levene's test is greater than level of significance. Hence, null hypothesis is accepted and t-value of equal variance assumed has been taken into consideration. Also, significant t-value for all product categories are greater than level of significance. So, we have accepted null hypothesis and hence there is no difference in preference for different types of product categories among male and female.

7.0 CONCLUSIONS AND FINDINGS

- Facebook is most preferred social networking site among the youngsters.
- Facebook sites are mostly used for being in touch with friends/family members.
- Reviews of friends have positive effect on purchasing decision for movies, books & articles, electronic devices.
- Facebook helps to create more awareness of product or brand.
- Facebook provides more knowledge about brand & assessment of brands becomes easier.
- There is no difference in effect of facebook on purchasing decision of male and female.

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## RESEARCH &amp; DEVELOPMENT IN MANAGEMENT

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**ABSTRACT**

*Internationalization of R&D has unleashed a considerable degree of tension within multinational corporations. This paper explores the nature of such a tension in the Japanese multinational firms. At first glance, the most obvious tension appeared to be on the autonomy and control issue between the headquarters and overseas laboratories. However, taking perception gaps as the primary manifestation of organizational tension within a firm, we learned that the tension appears to be more salient in information-sharing issues than in autonomy-control issues, and that the local side seems more dissatisfied with the current level of information sharing and granted autonomy than the parent side. Inter-industry and inter-laboratory differences regarding such findings were also examined. Qualitative data revealed that the nature of organizational tension actually evolves along the differing stages (i.e. dis-integration and re-integration) of R&D internationalization. Theoretical implications for network and information-processing perspectives were also discussed in the context of the dynamics of organizational tension.*

**KEYWORDS**

R & D, general management.

**INTRODUCTION**

**D**efinition of **R&D management**: is the discipline of designing and leading R&D processes, managing R&D organizations, and ensuring smooth transfer of new know-how and technology to other groups or departments involved in innovation.  
 (or)

R&D management can be defined as where the tasks of innovation management (i.e., creating and commercializing inventions) meet the tasks of technology management (i.e., external and internal creation and retention of technological know-how). It covers activities such as basic research, fundamental research, technology development, advanced development, concept development, new product development, process development, prototyping, R&D portfolio management, technology transfer, etc., but generally is not considered to include technology licensing, innovation management, IP management, corporate venturing, incubation, etc. as those are sufficiently independent activities that can be carried out without the presence of a R&D function in a firm.

**R&D MANAGEMENT MODELS****a) Management models**

Few dedicated management models for R&D exist. Among the more popularized ones are Arthur D. Little's Third generation R&D management, the Development funnel, the Stage-Gate model or Phase-Gate model product development, and Technology integration. All these models are concerned with improving R&D performance and result productivity, managing R&D as a process, and providing the R&D function with an environment in which the inherent technological and market uncertainties can be managed.

**The Path to Developing Successful New Products** a joint research by MIT & McKinsey & Co. points out three key practices that can play critical role in R&D Management: Talk to the customer, Nurture a project culture, Keep it focused.

**b) R&D management tools**

- Simultaneous engineering
- TRIZ
- Voice of the customer
- PACE, Stage-gate model
- Technology intelligence

**R&D MANAGEMENT**

The phrase research and development (also R and D or R&D) has a special commercial significance apart from its conventional coupling of scientific research and technological development. For 2006, the world's three largest spenders of R&D are the United States (US\$330 billion), China (US\$136 billion) and Japan (US\$130 billion). [1]

In general, R&D activities are conducted by specialized units or centers belonging to companies, universities and state agencies. In the context of commerce, "research and development" normally refers to future-oriented, longer-term activities in science or technology, using similar techniques to scientific research without predetermined outcomes and with broad forecasts of commercial yield.

Statistics on organizations devoted to "R&D" may express the state of an industry, the degree of competition or the lure of progress. Some common measures include: budgets, numbers of patents or on rates of peer-reviewed publications.

Bank ratios are one of the best measures, because they are continuously maintained, public and reflect risk.

In the U.S., a typical ratio of research and development for an industrial company is about 3.5% of revenues. A high technology company such as a computer manufacturer might spend 7%. Although Allergan (a biotech company) tops the spending table 43.4% investment, anything over 15% is remarkable and usually gains a reputation for being a high technology company. Companies in this category include pharmaceutical companies such as Merck & Co. (14.1%) or Novartis (15.1%), and engineering companies like Ericsson (24.9%).[1]

Such companies are often seen as poor credit risks because their spending ratios are so unusual.

Generally such firms prosper only in markets whose customers have extreme needs, such as medicine, scientific instruments, safety-critical mechanisms (aircraft) or high technology military armaments. The extreme needs justify the high risk of failure and consequently high gross margins from 60% to 90% of revenues. That is, gross profits will be as much as 90% of the sales cost, with manufacturing costing only 10% of the product price, because so many individual projects yield no exploitable product. Most industrial companies get only 40% revenues.



On a technical level, high tech organizations explore ways to re-purpose and repackage advanced technologies as a way of amortising the high overhead. They often reuse advanced manufacturing processes, expensive safety certifications, specialized embedded software, computer-aided design software, electronic designs and mechanical subsystems.

Although more companies are using more research and development (R&D) metrics these days, the same top five metrics continue to rise to the top, according to a 2004 metrics study recently released by the Needham, Mass.-based Goldense Group, Inc. (GGI). This was the fourth metrics study done by the firm since 1998.

The top metrics were:

1. "R&D spending as a percent of sales";
2. "Total patents filed/pending/awarded";
3. "Total R&D head count";
4. "Number of products/ projects in active development," and
5. "First year sales of new products."

It is not surprising that these five have remained on top over the past six years since it takes many years to sort out the "chosen few" and for practices to be adopted across industry lines.

For those who are using metrics effectively, what makes the difference? What metrics work best? What does it take to make them part of doing business? How should they be managed? We asked several practitioners about this and combined their insights with some of the most salient learning revealed about metrics at the August 2004 PDMA Metrics conference. Here are the results — 10 lessons learned" — to keep in mind.

Lesson 1: Use hard and soft metrics — Just the term "metrics" conjures up the notion of quantitative measures of outcomes like cycle time or defect rate. At Boeing, a leading global aerospace company headquartered in Chicago, Ill., large complex development programs are managed with metrics that assess cost, quality, risk, and schedule reliability. But according to Chris Chadwick, Vice President of the F/A-18 program, some of the most useful metrics are soft metrics. A good example is "help needed." Chris explained that Boeing encourages team leaders to ask for help when they hit a challenge that might throw them off course. If a program has little or no "help needed" events, that's a sign of possible trouble. The very nature of these complex programs is such that help will be needed from time to time, and reaching out to tap broader expertise that is resident across the organization is a great way to resolve problems and avoid trouble. We saw a different example at ChevronTexaco, a leading global energy company headquartered in San Ramon, CA. June Gidman, Strategic Research Manager, says, "Bang for the buck measures can be the most useful but the most difficult to measure. How do you know what part of a successful well was enabled by a certain technology? It takes a certain amount of judgment to get it right."

Lesson 2: Less is more — Almost anyone who gets involved putting together a metrics program will tell you to beware of too much complexity. The many outcomes you might want to measure at the multiple levels that exist, with the variety of possible measures, all make it possible to get quickly mired in metrics. Mike Coffey is Assistant Vice President for Consumer Solutions Product Management at Sprint, a leading communications services provider based in Overland Park, Kan. Mike has put together a balanced scorecard of product metrics for managing products through their life cycle. Mike's counsel is, "Start small and measure just a few things. Then decide which additional metrics to buy." Mike's notion aptly recognizes the cost of additional metrics. The level one scorecard he uses has one or two metrics in each of four distinct categories. It took about six months to get a level one scorecard in place for each product in the portfolio. Mike also recognizes that some metrics are more important than others. "In our business, customer satisfaction and operational performance seem to drive most of the other lifecycle metrics. When customers are happy, that's a leading indicator of their intention to keep using the service." Naser Chowdhury, the Director of Global Product Management at Air Products, agrees. Air Products is a leading global provider of gases, performance materials, and chemical intermediates, headquartered in Allentown, Penn. According to Naser, "Simplicity is key." Air Products uses just a few metrics at each level, such as financial return relative to the plan at the top level, product cost index and marketing efficiency at the second level, and more granular and tactical metrics like engineering change orders at the third level. Structuring metrics into levels is a good way to help keep them simple.

Lesson 3: Avoid the trap of unintended consequences — One of the frustrating aspects of Product Development metrics is that measuring one kind of outcome and working to improve performance against it can cause unintended problems with other outcomes. Take time to market, for example. For a company that is regularly slower to market than its major competitors, products will tend to be less fresh and often less competitive on average, putting it at a disadvantage in many industries. But focusing on time to market alone without also measuring quality, for instance, could lead to disaster. The idea is not to sacrifice speed for quality; it's to be as fast as or faster than the competition, all other things being equal. At Air Products, a similar challenge revolves around conflicts between different metrics, such as engineering efficiency and reuse. Naser Chowdhury at Air Products explains that improving reuse improves the total cost of capital — a good thing. But that lower cost of capital drives up their measure of engineering efficiency, the ratio of engineering cost to total project capital. That kind of metrics conflict needs to be avoided.

Lesson 4: Look backward and forward — Some metrics are like rear view mirrors — they tell you what has already taken place. Others act more like fog lamps, helping you see what might be a bump in the road. Both are important. Take Boeing, for example. Programs use earned value measures to get an accurate read on costs to date relative to progress. But they also use metrics, such as weight maturity, that predict whether the weight will eventually meet target constraints. "We also use trend analysis on static metrics to get a read on possible problems before they occur," says Chris Chadwick at Boeing. A good example he cited was doing trend analysis on software errors as a way to assess if they're gaining more than they're burning off.

Lesson 5: Measure internally and externally — sometimes it's easy to measure only what's in your own four walls and overlook getting measures about the outside world. That is understandable because what you can more easily control is probably easier to measure. But what do you do if your development chain spreads across suppliers and other partners? And what do you do to see how others in your industry match up on key performance metrics? For the latter, companies rely on benchmarking. At ChevronTexaco, June Gidman indicates that the company benchmarks its capital programs, using performance benchmarks provided by an external firm specializing in capital projects benchmarks. This gives ChevronTexaco a way to assess cost, performance, and delivery, for example, relative to similar competitors. As for measuring outside the development chain, Boeing uses an interesting metric they call Supplier Line of Balance, which tracks whether suppliers are accomplishing their work at a rate fast enough to avoid becoming a bottleneck. They also track parts shortages and supplier health as predictive metrics that anticipate issues with the external partners they rely on.

Lesson 6: Close the loop — All too often in New Product Development, forecasts are made that are never validated. What's needed is to close the loop and measure the outcome relative to the original forecast. As simple as this sounds, it can be difficult in practice. First, there is the availability of the information, sometimes hard to come by. Second, there is the tendency to want to move on to the next thing, so no one really wants to know what happened after the fact. Being able to close the loop on metrics can be incredibly powerful. For example, Air Products now uses make-good metrics and ties them to performance incentives. HR sets specific goals with management based on past performance and then rewards achievement of target performance. That may pay off a year or two later, in some cases. Another good example of closing the loop can be found at Sprint where product metrics are determined before products are launched, and product managers are paid part of their bonus based on the accomplishment of that plan.

Lesson 7: Make metrics matter Lesson - This may be the most important lesson learned. "This is the key leadership challenge," says June Gidman of ChevronTexaco. "Metrics fail when people can't see how they can have an impact on them. Individuals need to see how they contribute to the measured outcome." Companies can do this several ways. At Sprint, Mike Coffey explains, "Product managers themselves set lifecycle performance targets. They then work with the supply side, customer service, and marketing to determine what's needed to deliver them. This helps each product manager have a personal level of passion for his or her product." At ChevronTexaco, metrics are tied to decision-making. There are training programs and certification requirements for decision-makers, aimed at ensuring quality decisions. At all four companies, performance goals for key metrics are linked with both the annual planning process and individual incentives. Integrating metrics into the way the business is run is another way to make metrics matter for everyone.

Lesson 8: Don't let metrics go stale - Metrics are not something to simply set and forget. Success with metrics appears to require ongoing tuning. Air Products provides some good examples. "We regularly evaluate metrics to make sure they're getting at what we need as a business," says Naser Chowdhury. "We

recently added a make-good metric to our incentive system. Prior to that, incentives were more focused on project execution alone." Naser also explains that metrics that measure impact can be complicated and ambiguous, making it necessary to simplify them to ensure adoption or change them to accurately capture the effect intended. Naser reports that the company also changes how it interprets metrics over time. At all four companies, it is clear that their metrics programs have been in place for several years, changing along the way, adding new metrics and taking some away.

**Lesson 9: Use metrics to learn** — This lesson follows directly from the previous one. If you are using metrics to learn, then you are bound to be continuously improving them. At Boeing, Chris Chadwick describes a culture of learning where metrics are essential. "If someone says, 'I can't measure it,' I know I have trouble. We encourage our people to devise new metrics all the time and to drop other metrics that are no longer useful." Boeing encourages learning through an approach called the Program Independent Assessment. It is a non-advocate review of a program, focused on helping that program overcome challenges to achieving a successful outcome. According to Chris, "The program independent assessments spread best practices and help create new metrics." Chris indicates that Boeing conducts annual assessments on how well each program is using program management best practices, including how well metrics are used. In other words, they have an explicit mechanism to gain knowledge about what they are learning from metrics in order to help them learn even more. According to Chris, "We want to ensure that there is a help needed culture across the organization — a learning, working-together atmosphere that eliminates surprises. It's when surprises are hidden that there's a problem."

**Lesson 10: Make metrics readily visible** — This final lesson relates to several previous ones, including learning, closing the loop, making metrics matter, and less is more. The more visible metrics are, the more they will be relevant and drive learning. One way to make metrics visible is through good communication — which requires not only clarity but also simplicity. June Gidman of ChevronTexaco indicates that good communication is an important attribute for some metrics. It helps to communicate broad enterprise performance goals, such as "Aiming for Zero Incidents," a ChevronTexaco enterprise performance goal. At Boeing, Chris Chadwick associates visibility with learning. According to Chris, "When a new measure is reported, you can set new chinning bars." Making metrics visible seems to naturally drive people to work to improve performance against the metric. A common practice reported by several of these companies is to present performance against metrics in a simple scorecard that shows status using red, yellow, and green colors where red signifies a problem, yellow indicates a potential issue, and green means performance is within goal. This kind of dashboard alerts users to potential problems, in some cases letting them access more detailed metrics to help diagnose and act on root causes.

## R&D METRICS

### HOW TO IMPLEMENT R&D-DRIVEN OPEN INNOVATION SHARE

Transforming your firm in R&D innovation approach from a closed to an open one promises huge benefits. Increased agility and effectiveness, lowered risk and revenue growth through new products are some of them. In this In-Depth Article Frank Mattes shows how a firm can find the best approach to R&D-driven Open Innovation (Outside-in) based on the insights from a number of projects in this space.

Open innovation in R&D is in the top spots of the agenda for many innovation managers. It describes a concept that after its implementation improves agility, effectiveness and the risk position by opening up the innovation funnel to absorb external expertise.

R&D-driven open innovation is a powerful lever for enhancing the firm's innovativeness since it multiplies the firm's R&D resources. Two examples may highlight the point: Procter&Gamble has 9,000 people employed in its various R&D units — and estimates the global number of experts in its technology fields to be two million. And Merck Inc. estimates that although it is a global leader in its field it produces only one percent of the relevant global patents every year. Both of these firms see open innovation as an effective way for engaging the innovative potential of the thousands of brilliant minds outside the firm.

In the wake of open innovation pioneers, more and more firms from a broad range of industries have also started to open up their approach to innovation. Judging by case evidence and by numerous benchmarking studies most of the firms are pursuing one or the other open approach to innovation already — but only few have a well-architected, fully integrated and managed open innovation portfolio in place.

This article provides the necessary knowledge to do a critical assessment of the existing open approaches to innovation, to identify additional opportunities and to plan for a professional implementation. Learn from experiences and insights from 20 proven approaches from globally leading firms that are highlighted to inspire your organization to put an effective open innovation system in your R&D in place.

#### A SYSTEMATIC OPEN APPROACH TO INNOVATION WILL BENEFIT YOUR ORGANIZATION BY

- having more choices for solving scientific and technical problems
- realizing shorter time-to-market
- offloading R&D risk to innovation partners
- having increased chances for successful breakthrough innovations
- extending the firm's base of external innovators and suppliers

**>> R&D investment decisions are made as part of a systemic, structured, and carefully defined approach used across the whole organization.** By using the same approach to manage the entire R&D portfolio, the organization can see the portfolio from many perspectives. Not only can the reviewers examine how a particular project is performing against objectives and other projects, or what R&D linkages exist across the portfolio, they can also see "snapshots" of how the whole portfolio is performing in relation to important assessment criteria. This report card for the entire portfolio is extremely valuable—particularly when the process is tailored around criteria that are considered the most important investment measures for the organization. Surprisingly, many organizations (even big R&D spenders) use only a bottom-up, project-management approach. They look at each R&D project through a "soda straw" and ignore the important strategic parameters of cross-portfolio analysis and management. This discrete approach is appropriate, but only as part of a comprehensive analysis that includes a top-down systemic view.

From the outset, the organizational team must understand the underlying purpose for using a "systemic" approach for portfolio management. Then the process can be structured for the organization to realize that benefit. For example, one public-sector organization uses a systemic methodology as a change management tool. Because the organization was formed from a number of distinct labs, this process helps the team develop a common perspective and shared language to move the set of labs toward one ultimate goal: to be a preeminent national laboratory.

In the commercial sector, users often think of a systemic approach in terms of efficiency, effectiveness, new product development, and return on investment. Other organizations use the approach as a communications tool. And some use it for all these reasons.

**>> The people who will use the R&D management system also design and implement it.** Key stakeholders from across the company help create the assessment methodology, implement the process, and participate in investment decision-making. They also build a common language or taxonomy to facilitate dialogue. Even in a small organization, such collaboration is difficult. But in a large organization, it can be the source of tremendous frustration. Researchers, management, and funding authorities all have different perspectives—particularly in how they look at the long-term strategy for a healthy technology pipeline versus the customer's short-term needs. Funding authorities often believe they are getting "too little return on their investments." Researchers may find themselves on short leashes—unable to do the fundamental research they believe "will strengthen competitive advantages over the long haul." And the program managers are stuck in the middle. They all need to be involved—and don't forget the customers. They have a perspective too!

**>> The R&D approach balances purposes, timeframes, risks, and rewards.**

At one end of the spectrum, where fundamental research has a long-term horizon, risk is high. Risk is high at the other end too, as an organization transitions its new products into a commercial environment. An effective portfolio methodology lets you see the trade-off between risk and reward, as well as short-, medium- and long-term results. The ability to capture the data graphically to portray the results across the portfolio in many dimensions is critical. This allows you to assess the contributions of each discrete project, of a set of related projects across different criteria, and of the entire portfolio by risk and reward, short- and long-term timeframes, and other dimensions.

>> **Assessments are used to validate resource allocation as part of the management decision-making process.** Start. Stop. Speed Up. Slow Down. Re-scope. Organizations continually make decisions about how to allocate investment dollars across the portfolio. Decisions made in one year affect the portfolio in the next year, and so on. But without a critical assessment of the entire portfolio, organizations are hard-pressed to understand the effect a complete set of decisions has on the portfolio and its return on investment (ROI). An annual assessment captures all decision-making and its impact on the portfolio constitution and its ROI over time.

You can also see how market changes, customer demands, and company policies have affected the research emphasis. Moreover, since an organization continually risks losing "institutional memory" as key staff leave or retire, a consistent approach and a common language let stakeholders view valuable information year over year, regardless of who is at the table.

Importantly, overall assessment dimensions should touch upon some reasonable combination of value/mission/strategy/impact/benefit, feasibility/risk, and cost. Other important criteria can support the assessment though typically, only a few are needed to answer the critical strategic questions. Additional concepts include technology maturity, competitive impact, innovation, and uniqueness of the activity.

>> **Power is not in the criteria or data format, but in how you use the tool to drive high-quality discussions and decision-making.** A systemic approach to R&D planning produces a lot of data from objective and subjective analyses of discrete projects and the portfolio as a whole. The data allow the assessors to create hundreds of "snapshots" that characterize the portfolio. But neither data nor snapshots are the complete answer. The real answer is in the combination of the questions you are trying to answer, the data required to answer these questions, and the perspectives shared around the table by those who have a stake in the outcome. Be sure to listen to all players, regardless of function or seniority. Organizational hierarchy can get in the way of robust conversations.

>> **Though responsive to continuous improvement, the approach does not change often or fundamentally so that year-over-year comparisons are difficult.** It's fine to make minor changes to the methodology to accommodate an evolving organization, changing external factors, or errors in the way the original methodology was constructed. But one of the values of applying a consistent process is to see how the portfolio migrates over time. If you change the methodology dramatically from year to year, you cannot compare results. The lesson is simple: Construct the methodology. Work out all bugs in the first year. Make only minor changes in subsequent years. Some organizations find it helpful to first conduct a pilot, correct the flaws, and then roll it out.

>> **The systemic approach uses illustrations and graphical results to help expedite and communicate R&D priorities throughout.** Pictures are critical. People gain insights more rapidly from graphics or cross-portfolio snapshots, than from quantitative analyses or long explanations. Once the software has completed its calculations, the ability to generate a series of snapshots to illustrate the portfolio performance can help answer strategic questions and educate investment decisions. Pictures also help the research group communicate with management executives who are removed from the R&D process, but are focused on return on investment and other measures. An illustration is also a valuable communication tool in the R&D funding process.

>> **Weighting factors are used to recognize the strategic significance of particular criteria relative to others.** Many criteria are used to assess a portfolio. Each over-arching dimension (benefit, risk, cost) has supportive criteria. When building an approach to R&D portfolio management, start with an understanding of your organization's goals—and determine which assessment criteria to use to measure how the organization is doing against those goals. Remember, all criteria are not created equal. So use "importance" factors to weight criteria in the assessment framework. For example, "uniqueness" may be a very important criterion for a company struggling to define itself in the marketplace.

>> **A mechanism is in place to allow a rapid "roll-up" of information and also to let reviewers dig deeply into the portfolio by posing key questions.** A research portfolio is complex. On average, hundreds of discrete units of activity make up the portfolio and many horizontal and vertical linkages exist across those activities. So the portfolio methodology and analysis must enable the investigators to characterize the overall portfolio across its major dimensions, and create an efficient way to dig deeply into the portfolio, see the linkages, and assess how even one unit of activity is contributing to the portfolio success.

By reviewing a range of graphic displays, one after the other and in logical combinations, reviewers start to build an appreciation for the strengths and weaknesses of the whole portfolio. Patterns emerge. For example, certain work units in the portfolio may routinely appear in sub-optimal (underperforming) quadrants of the charts highlighting those units for analysis. Maybe the activity is poorly designed, under funded, or led by an inexperienced research team requiring guidance. Many times, underperformers are stars elsewhere. The ability to dig deep and roll up the analysis is critical to understanding the productive value of discrete parts and the entire portfolio—and what problem areas to address.

>> **External input and participation are part of the assessment process.** For fear of losing control of the decision-making process, organizations are often reluctant to involve internal or external customers in this process. That's unfortunate because organizations are biased by nature, and sometimes too close to the action to effectively gauge the quality of work under way. If you don't involve the customer or gain some kind of external perspective, bias can creep into the system and corrupt the results. Though remember that customers have a bias too: to get what they need now. So many companies use a two-step process. First, get the kinks worked out of the process and the internal organization up the learning curve to a shared perspective. Then, invite the customer to participate in the process.

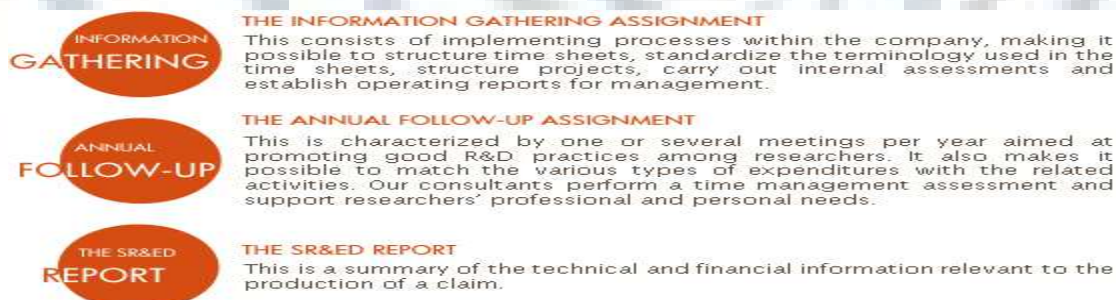
Some organizations overcomplicate the process and analysis. This is not rocket science. You are putting together a common language, an integrated assessment framework, and an experiential understanding of what constitutes good R&D. You can use the analysis results to create graphic illustrations that provide a strategic perspective on the entire portfolio. Over time, this approach helps strengthen the portfolio's composition and improve its overall performance-year in, year out.

**R&D MANAGEMENT: ORGANISE TO INNOVATE**

Have your R&D teams filed the application documents to take advantage of the SR&ED tax credit? If you now want to optimise and facilitate your R&D management, Leyton offers you tailor-made support.

**R&D MANAGEMENT: A COMPLEX PROCESS TO IMPLEMENT**

Managing research and innovation is an exercise which is often difficult for companies to put into practice. Indeed, it often depends on the intuition and experience of the manager, who isn't always prepared to grasp the subtleties.



**LEYTON: EXPERT MANAGEMENT FOR YOUR R&D**

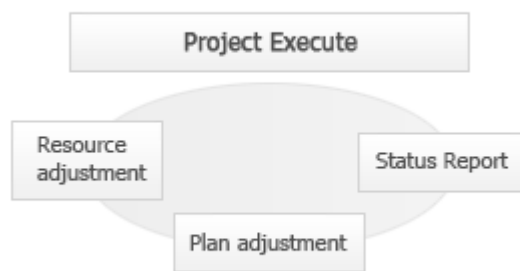
A company must ask the question of how R&D contributes to its objectives. It must also be aware of the delicate balance between research and future income generation. Based on years of analysis and experience, Leyton has developed the necessary management techniques to assist decision makers in these critical areas.

Working with your company’s management and research teams, leyton will implement high performance tools for optimal R&D management.



Leyton will provide assistance to produce your claim for the SR&ED tax credit. Our experts develop the accounting materials for your projects and fill out the required forms to make the claim at the Federal and Provincial levels. Our company also prepares your researchers and project managers for a scientific audit. We provide guidance to general management in order to optimize your tax credit and in the event of an administrative audit.

**R&D PROJECT MANAGEMENT**



**PDCA CYCLE FOR THE LAUNCH OF R&D PROJECTS AND THE FORMULATION, IMPLEMENTATION, MONITORING AND WIND-UP OF PLANS**

A closed loop must be achieved for R&D project management. In accordance with the requirements of PMBOK, ensure that the whole process of project management is uninterrupted through the launch of R&D projects and the formulation, implementation, monitoring and wind-up of plans. Through WBS decomposition, draw up the project’s GANTT and PERT charts to visually show the project’s plan and logical relationship and achieve visual tracking. By setting milestones in the project, monitor delivery at various stages.



**REAL-TIME TRACKING OF PROJECT TASKS AND EARLY WARNING ENSURE THAT PROJECTS ARE COMPLETED ACCORDING TO PLAN**

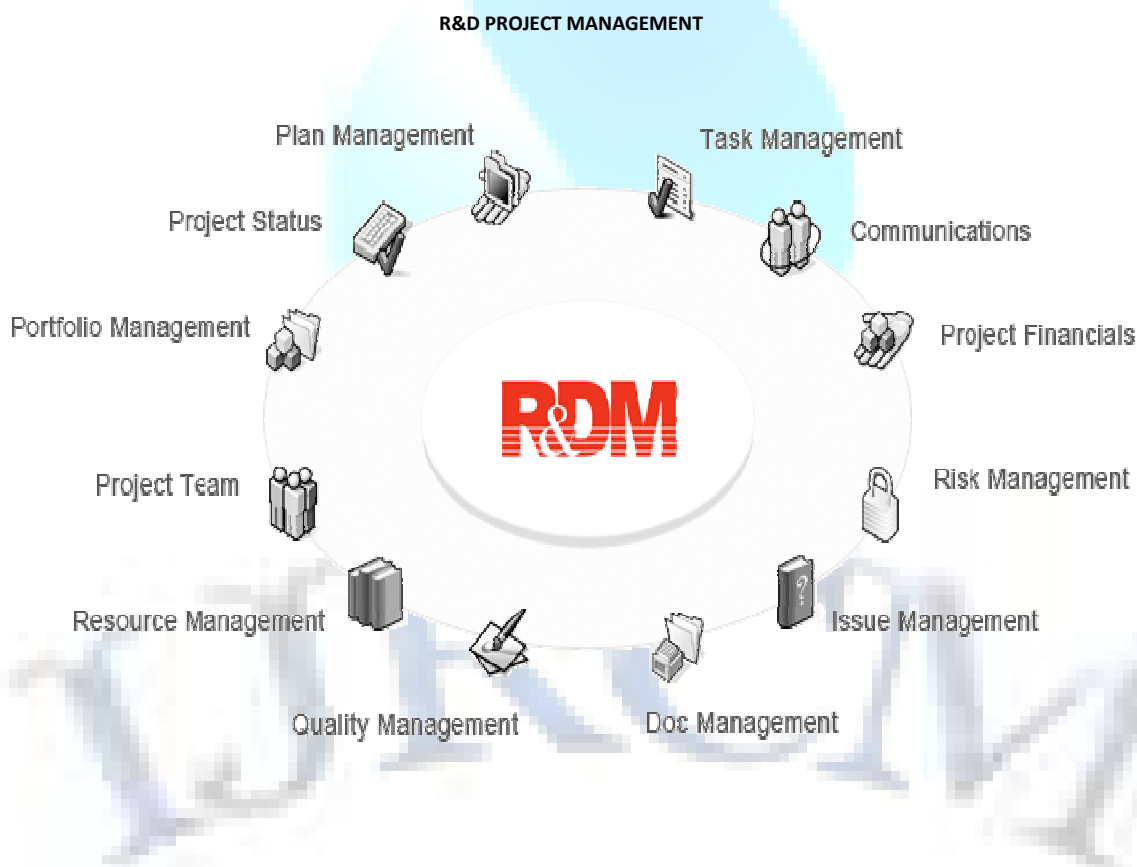
The core of project management is to form unified methods and routines through the building of structured process systems, thus emulating the success of other products. Ensure the successful delivery of projects through monitoring of the process of process management.

To ensure the successful delivery of projects, we need to track and monitor the completion of project tasks in real time, ensure that project tasks are completed on time through an early warning system and at the same time enhance the sense of urgency to the whole team.



**RUN THE PROJECT PLAN AS THE AXIS THROUGH DEMAND, QUALITY, RISK AND PROBLEM MANAGEMENT TO ACHIEVE A SITUATION WHERE ONCE THE KEY LINK IS GRASPED, EVERYTHING ELSE FALLS INTO PLACE**

Hierarchical stratification should be implemented for R&D project plans. WBS task decomposition should be refined into blocks of 4-40 hours. After formulating the project plan, run the project plan as the axis completely through demand management, defect management, document management, assessment management, risk management, problem management, communication management, performance management, resource management and monitoring management. Achieve a situation where once the key link is grasped, everything else falls into place through the axis R&D project plan.



**R&D FINANCING**

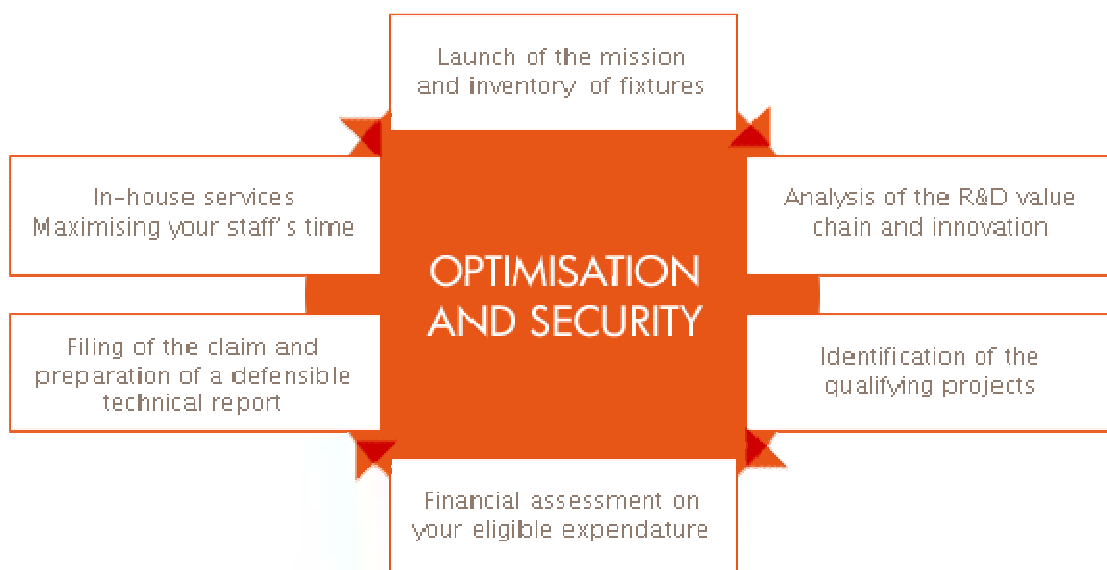
The challenge of innovation plays a key role in the growth of a modern, knowledge-based economy and aims at providing prosperity for all. Many countries have put in place R&D tax incentives, grants and subsidies to retain the best talent and world class R&D labs close to home.

Whether it is about inventing new products, carrying out ground-breaking research or developing and improving industrial processes, the future of your business depends heavily on the quality and sustainability of investments in innovation. We help you leverage instruments that will boost your ability to stay ahead in the global competition.

**SUPPORTING YOUR LONG TERM R&D EFFORTS**

Leyton's multidisciplinary team of experts can make a measurable contribution to the growth of your business. Every day they mobilize the kinds of funding that can advance your R&D projects. They devise solutions appropriate to your legal structure to help you fund your projects eligible under the innovation policies of your country.

Leyton offers specialized services for every stage of the R&D process. Our extensive service begins with assessing potential for eligibility of your various projects. From that basis, we work with you in all of your R&D funding endeavors, at all times keeping one goal in mind – funding your research with the right set of tools.  
 >> Over 1000 customer engagement in the last 12 months



You can rely on the expertise of our scientists and tax consultants, many of them have over 15 years experience in R&D tax credits. They will give you comprehensive support in preparing your claim and defending it should it be audited by the administration. By performing a comprehensive review of your entire R&D management process and using proprietary management tools, we will advise you on your optimal organizational structure and performance criteria.

**A STRUCTURED AND EFFICIENT SERVICE ASSESSMENT**

First we determine whether your company could qualify for the R&D Tax Credit and if it is worthwhile for you to pursue an R&D claim. This is done through a preliminary meeting with one of our business consultants and your key financial personnel at no cost or obligation to you.

>> Example of eligible activities

MECHANICAL ENGINEERING	PHARMACEUTICALS	FOOD INDUSTRY
<ul style="list-style-type: none"> <li>- Design, optimisation and development of innovative products and processes</li> <li>- Investigation and development of ways of increasing production and improving quality</li> <li>- Research and testing of materials, concepts, and prototypes</li> </ul>	<ul style="list-style-type: none"> <li>- Research on new active principles, new assays, development processes</li> <li>- Laboratory research</li> <li>- Study on a known molecule resulting in a change in its activity</li> <li>- Clinical trials</li> </ul>	<ul style="list-style-type: none"> <li>- Design development and/or improvement of manufacturing technology and processes</li> <li>- Reduction of the risk of spoilage, waste and contamination</li> <li>- Development of new packaging systems to improve safety</li> <li>- Development of new clean label products</li> </ul>

**DATA COLLECTION**

Our team works with you to identify and gather relevant technical and financial information required for the claim, thus minimizing your staff's time and allowing them to remain focused on their primary functions.

**TECHNICAL AND SCIENTIFIC ANALYSIS AND ASSESSMENT**

**Technical Audit** – Our engineers meet with your key scientific and technical staff to identify and substantiate the eligible projects or activities in accordance with the requirements of the R&D tax credit legislation and guidelines.

**Financial Audit** – Our financial consultants assist you in identifying, extracting and presenting qualifying R&D expenditure. We assist you in relating it to the eligible R&D projects/activities and calculate the amount of the R&D Tax Credit available to you.

**DRAFTING OF FINANCIAL AND TECHNICAL REPORTS**

Our team prepares a comprehensive report which substantiates your claim from a scientific technical and financial point of view and acts as a robust justification of your R&D tax credit claim in the event of Administration Audit.

**CLAIMING PROCESS AND FOLLOW UP**

Our consultants prepare the necessary paperwork and assist you in filing the claim with your local tax office, providing backup assistance where necessary.

**CONCLUSION**

**R & D Management** publishes articles which address the interests of both practicing managers and academic researchers in R & D and innovation management. Covering the full range of topics in research, development, design and innovation, and related strategic and human resource issues - from exploratory science to commercial exploitation - articles also examine social, economic and environmental implications.

## TREND IN EXPORT OF LEATHER PRODUCTION IN INDIA

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VELLORE

## ABSTRACT

*Leather industry is a traditional industry. The leather and leather goods industry worldwide has emerged as an unexpected site where complex battles over the apparent trade-offs between trade liberalization, economic growth and the environmental consequences of this growth have played out in the past decade. As an industry with production technologies that generate some of the most polluting chemical effluents, the leather sector has emerged as a battleground for current environmental debates. The challenge has been to find ways in which firms and governments can internalize the negative externalities generated by environmentally damaging effluents that have long polluted the groundwater, streams and rivers in sites where leather-processing is concentrated — and to do so without impeding the industry's growth or eliminating the jobs that it generates. Two features of the global leather industry have influenced how this debate has played out on the ground. First, the policy structure and state of technology in the industry is increasingly bi-modal worldwide—with advanced industrial economies employing capital and chemically intensive tanning processes and technologies that require large minimum efficient scales to function effectively. By contrast, the defining feature of the industry in many developing countries (like India) is that it is dominated by small firms and has till recently been characterized by a range of labor-intensive technologies focused on the export of semi-finished leather, skins and hides.*

## KEYWORDS

leather production, Indian exports.

## INTRODUCTION

Leather industry occupies a place of prominence in the Indian economy in view of its massive potential for employment, growth and exports. India is the third largest leather producer in the world after China and Italy. The leather industry occupies a place of prominence in the Indian economy on account of its massive potential for employment, growth, and exports. The industry employs more than 2.5 million people and was responsible for about US\$2.4 billion of exports in 2004-05, much of it to the developed countries. The exports from the leather sector constitute 7% of India's export basket. In 2004-2005, India's market share of the global leather industry is estimated to be 2.51%. There has been increasing emphasis on its planned development, aimed at optimum utilization of available raw materials for maximizing the returns, particularly from exports. Leather industry has been one of the traditional industries operating in India and is essentially located in certain states, but dispersed as cottage industries in rural areas. Indian leather industry is both in the organized as well as unorganized sectors. The predominant decentralized nature and small size makes it difficult to change this industry. As small scale, cottage and artisan sector account for over 75% of the total production it was technologically very under developed in design, manufacturing, packing, and logistics. This makes it necessary to be careful while designing solutions for overcoming the weak technological base. The global competition has been the major driver that forced the leather industry to upgrade its technological base. Though traditionally, the Indian leather industry has been an exporter of tanned hides and skins, it has, in the early seventies, set its sights on becoming a major player in the leather products segments. Over the period of the last twenty years and particularly so in the last ten years, it has become the fourth largest foreign exchange earner in the country. The industry has become an area of export thrust with footwear having been identified as an area of extreme focus. Exports from the leather sector accounted for 4.4 per cent of India's total exports in 2000-01. The industry uses primarily indigenous natural resources with little dependence on imported resources. India is endowed with 10% of the world raw material and export constitutes about 2% of the world trade. It employs 2.5 million persons. In this paper the case of transformation of leather production using an Information and Communication Technology (ICT) platform is presented. The transformation involves improving production process, introducing new technologies and leveraging the Internet.

## INDIAN LEATHER INDUSTRY

For decades, the leather industry was reserved for the small-scale sector in India. But in recent years the government has stepped in with a number of policy initiatives to promote technological upgradation of the industry. Moreover, the leather industry has undergone radical structural transformation from merely exporting raw materials in the 1960s to exporting value-added finished products from 1990s onward. The post liberalization era has opened up a plethora of opportunities for the Indian leather industry. With global players looking for new sourcing options, India stands to gain a bigger share of the global market. Leading brands from the US and Europe is planning to source leather and leather products from India. The major leather products and exports from India are hides and skins such as cow and buffcalf, sheep nappa, goat skin, kid leather, wet blue etc. Footwear and footwear components like shoes, shoe uppers, soles etc., leather garments, leather gloves, leather saddlery goods, leather travel bags and totes, leather purses, wallets, briefcases etc. The major production centres for leather and leather products are located at Chennai, Ambur, Ranipet, Vaniyambadi, Trichy, Dindigul in Tamil Nadu, Kolkata in West Bengal, Kanpur in Uttar Pradesh, Jalandhar in Punjab, Hyderabad in Andhra Pradesh and Bangalore in Karnataka and Delhi. India has the largest livestock population in the world and produces 1.8 billion sq.ft. of leather annually. Today, the leather industry ranks 8th in the export trade of the country. The industry covers a vast spectrum of inputs, activities, skills and products i.e. livestock, hides and skins, tanning, leather products and exports.

## LIVESTOCK

India is the leading livestock holding country in the world. It ranks first in the case of cattle including buffaloes, second in goats and fourth in the case of sheep. While buffaloes and goats have recorded annual growth rates of 1.86% and 3.11% respectively, cattle and sheep have recorded a marginal growth rate of 0.52%.

## HIDES AND SKINS

About 60% of hides and 90% of the skins are obtained from slaughter. It is well known that in India, cattle and buffaloes are reared for milk and draught, and they end up being slaughtered when they become unproductive. On the other hand, goats and sheep are basically reared for meat. Leather Industry occupies a place of prominence in the Indian economy in view of its massive potential for employment, growth and exports. There has been increasing emphasis on its planned development, aimed at optimum utilisation of available raw materials for maximising the returns, particularly from exports. The leather industrial sector comprises of:

- tanneries (where raw hides and skins are converted into leather)
- factories transforming leather into a variety of consumer products such as footwear, garments and outerwear, and assorted leather goods such as wallets, passport cases, key chains, handbags and brief cases.

Apart from the quality of raw material, the process of its conversion into leather and, later, of the design, product development and process of manufacture, of products play a key role in adding value to it.

**SOME FEATURES OF INDIAN LEATHER INDUSTRY**

- The Government policies on leather and leather product export started changing from 1974. Priorities were given for export of value added goods. From the year 1991 onwards only finished leather were exported and export of raw or semi finished leather was banned;
- Many tanners started setting up factories for manufacturing leather products after 1991-92 like shoe uppers, shoes, garments and leather goods. Similarly many shoe and garment manufacturers began to seek backward linkage, by taking on lease or setting up tanneries. This is a unique development in India, a tanner becoming product maker and the product sector setting up tanneries or leasing out tanneries;
- At the same, as incentive to the exporters, the import duties on capital goods have been reduced;
- Until 2002, the leather sector was reserved for small scale sector and this may have prevented Foreign Direct Investment (FDI) in this sector. The FDI in this sector from August 1991 to December 2005, is US\$ 51.84 millions. This is only 0.15% of total FDI inflows and ranked at 30;
- Today the industry ranks 8th in the export trade in terms of foreign exchange earnings of the country;
- India is largest livestock holding country;
- The Indian leather sector meets 10% of global finished leather requirement.

**LEATHER AND LEATHER PRODUCTS**

The leather and leather products industry is one of India's oldest manufacturing industries that catered to the international market right from the middle of the nineteenth century, the demand for its products being both domestic as well as international right from the beginning. About 46 per cent of the production in the sector is exported and it ranks eighth in the list of India's top export earning industries and contributes roughly Rs. 10,000 crores per annum, i.e., about 4 per cent to export earnings. The sector accounts for 2.5 per cent of the global leather-related trade of Rs. 387,200 crores. An estimated 15 per cent of total purchase of leading global brands in footwear, garments, leather goods & accessories, in Europe, and 10 per cent of global supply is outsourced from India<sup>1</sup>. The leather industry employs about 2.5 million people<sup>2</sup> and has annual turn over of Rs. 25,000 crores. The industry is also one with strong links with the social structure through caste and community. Thus a large number of people engaged in the industry (entrepreneurs as well as workers) are even today from traditional leatherworking castes (belonging to the lower castes in the caste hierarchy) and the Muslim community. Due to the age of the industry and its links with the social structure, the organisational structure that has emerged is a very complex one that contains within it elements of continuity with traditional structures as well as those that represent a break with them. In addition to these historical aspects of its evolution, the dynamics of the industry has been shaped to a large extent by export orientation from colonial times. The sector is dominated by small-scale firms although there also exist a significant number of medium and large sized firms in all segments of the industry. The industry is concentrated in several leather clusters in four or five distinct locations in the country, with each cluster containing a wide variety of enterprise forms and organisational structure. To be more specific, the major production centers of leather and leather products are located at Chennai, Ambur, Ranipet, Vaniyambadi, Trichy, Dindigul in Tamil Nadu, Kolkata in West Bengal, Kanpur and Agra in U.P., Jalandhar in Punjab, Delhi, Hyderabad in Andhra Pradesh, Bangalore in Karnataka and Mumbai in Maharashtra. Tamil Nadu is the biggest leather exporter (40%) of the country and its share in India's output on leather products is 70%.<sup>3</sup>The leather industry occupies a place of prominence in the Indian economy in view of its massive potential for employment, growth and exports. There has been an increasing emphasis on its planned development, aimed at optimum utilisation of available raw materials for maximising the returns, particularly from exports. The exports of leather and leather products gained momentum during the past two decades. There has been a phenomenal growth in exports from Rs.320 million in the year 1965-66 to Rs.69558 million in 1996-97. Indian leather industry today has attained well merited recognition in international markets besides occupying a prominent place among the top seven foreign exchange earners of the country.

The leather industry has undergone a dramatic transformation from a mere exporter of raw materials in the sixties to that of value added finished products in the nineties. Policy initiatives taken by the Government of India since 1973 have been instrumental to such a transformation. In the wake of globalisation of Indian economy supported with liberalised economic and trade policies since 1991, the industry is poised for further growth to achieve greater share in the global trade. Apart from a significant foreign exchange earner, leather industry has tremendous potential for employment generation. Direct and indirect employment of the industry is around 2 million. The skilled and semi-skilled workers constitute nearly 50% of the total work force. The estimated employment in different sectors of leather industry is as follows:

**TABLE-1: LEATHER AND LEATHER PRODUCTION EMPLOYMENT**

Sector	Total Employment
Flaying, curing & Carcass Recovery	8,00,000
Tanning & Finishing	1,25,000
Full Shoe	1,75,000
Shoe Uppers	75,000
Chappals & Sandals	4,50,000
Leather Goods & Garments	1,50,000

The Leather Industry holds a prominent place in the Indian economy. This sector is known for its consistency in high export earnings and it is among the top ten foreign exchange earners for the country. India's leather exports touched US\$ 3.40 billion in 2009-10, recording a cumulative annual growth rate of about 5.43% (5 years). The Industry provides employment to 2.5 million people, mostly from the weaker sections of the society. Composition of India's Leather & Leather Products Export Basket (2009-10) can be seen in the Chart 4.1. As per officially notified DGCI & S monthly export data, the export of leather and leather products for the first six months of the current financial year 2010-11 i.e. April-September 2010 touched US\$ 1864.27 million against the performance of US\$ 1630.78 million in the corresponding period of last year, registering a positive growth of 14.32%. In rupee terms, the export touched Rs.85,863.73 million in April-Sept 2010 against the previous year's performance of Rs.79,260.74 million registering a positive growth of 8.33%. A Statement showing the Product-wise Export performance during April-September 2010 vis-à-vis April-September 2009 is given in Table 2.

**TABLE-2: PRODUCE-WISE EXPORT PERFORMANCE (Value in Rs. Millions)**

SL.No	Category	2009	2010	Variation %
1	Finished Leather	13365.73	18705.34	39.95
2	Leather Footwear	29473.30	32188.04	9.21
3	Footwear Components	5250.50	4881.27	-7.03
4	Leather Garments	10895.40	8835.94	-18.90
5	Saddlery and Harness	1906.69	1883.17	-1.23
6	Non-Leather Footwear	1084.30	1289.81	18.95
7	<b>TOTAL</b>	<b>79260.74</b>	<b>85863.73</b>	<b>8.33</b>



TABLE-3: TREND IN INDIA'S EXPORT OF LEATHER &amp; LEATHER PRODUCTS TO DIFFERENT DESTINATIONS (Value in Million US\$)

Country	2009	2010	% Change
Germany	230.87	247.37	7.15
U.S.A.	146.61	168.33	14.81
U.K.	216.27	233.87	8.14
Italy	194.82	221.20	13.54
France	118.70	128.08	7.91
Hong Kong	115.82	169.56	46.40
Spain	104.03	117.16	12.62
Russia	1.57	7.73	391.90
Netherlands	67.10	75.21	12.08
Australia	26.35	22.79	-13.53
New Zealand	1.50	2.36	57.08
Denmark	28.14	25.72	-8.59
Greece	6.57	4.92	-25.07
Canada	13.99	14.33	2.45
Switzerland	13.26	11.03	-16.79
Sweden	17.51	17.54	0.21
S. Africa	11.44	14.26	24.69
Austria	14.87	12.68	-14.74
Belgium	31.64	35.89	13.41
Japan	8.68	9.56	10.04
Portugal	19.17	18.67	-2.63
China	22.76	35.33	55.23
Ireland	2.78	2.38	-14.53
U.A.E.	37.10	35.58	-4.11
Indonesia	3.92	8.48	116.24
Korea Republic	15.03	15.04	0.07
Finland	4.32	6.03	39.62
Saudi Arabia	11.99	11.62	-3.05
Others	143.96	191.57	33.08
<b>TOTAL</b>	<b>1630.78</b>	<b>1864.27</b>	<b>14.32</b>

In Rupee terms, export of finished leather, leather footwear, leather goods and non-leather footwear have recorded positive growth. Export of footwear components, mainly shoe uppers, leather garments and saddler & harness had recorded a decline of 7.03%, 18.90% and 1.23% respectively. In Dollar terms, export of footwear components shows a marginal decline of 1.89% and leather garments recorded a declining trend of 14.42%. All other leather products are showing positive export growth during the first six months of 2010-11. Export performance by destinations during April-September, 2010 is at the major markets for Indian leather products are Germany with a share of 13.27%, UK 12.54%, Italy 11.87%, USA 9.03%, Hong Kong 9.10%, France 6.87%, Spain 6.28%, Netherlands 4.03%, Belgium 1.93%, U.A.E. 1.91%, Australia 1.22%. These 11 countries together accounts for nearly 78.05% of India's total leather products export. Export of leather & leather products to Germany, USA, UK, Italy, France, Hong Kong, Spain, . Netherlands, Russia, New Zealand, Canada, South Africa and Japan is showing positive growth during April-September 2010. Export of leather & leather products to Australia, Greece, Switzerland, Portugal, Ireland, and UAE has declined.

### COUNCIL FOR LEATHER EXPORTS (CLE)

The Leather Industry holds a prominent place in the Indian economy. This sector is known for its consistency in high export earnings and it is among the top ten foreign exchange earners for the country. India's leather exports touched US\$ 3.40 billion in 2009-10, recording a cumulative annual growth rate of about 5.43% (5 years). The Industry provides employment to 2.5 million people, mostly from the weaker sections of the society. Composition of India's Leather & Leather Products Export Basket (2009-10).

### PORT-WISE EXPORT PERFORMANCE

As per the Port-wise compilation for the month of April-September 2010, export of leather & leather products from South, West, East and Central Regions are showing positive trend. However, exports from Northern Region had shown a declining trend (Table 4.10).

TABLE-4: PORT-WISE EXPORT PERFORMANCE (Value in Million US\$)

Region	2009	Share in Total Exports	2010	Share in Total Exports	Variation %
Southern	678.01	41.58%	763.94	40.98%	12.67
Western	336.74	20.65%	425.62	22.83%	26.40
Eastern	185.15	11.35%	227.54	12.21%	22.89
Northern	221.85	13.60%	202.06	10.84%	-8.92
Central	44.22	2.71%	53.08	2.85%	20.02
Others	164.80	10.11%	192.03	10.30%	16.53
<b>Total</b>	<b>1630.78</b>	<b>100.00%</b>	<b>1864.27</b>	<b>100.00%</b>	<b>14.32</b>

As per officially notified DGCI&S monthly export data, the export of leather and leather products for the first six months of the current financial year 2010-11 i.e. April-September 2010 touched US\$ 1864.27 million against the performance of US\$ 1630.78 million in the corresponding period of last year, registering a positive growth of 14.32%. In rupee terms, the export touched Rs.85, 863.73 million in April-Sept 2010 against the previous year's performance of Rs.79,260.74 million registering a positive growth of 8.33%. A Statement showing the Product-wise Export performance during April-September 2010 vis-à-vis April-September 2009 is given in Table 4. India's export of leather & leather products during the first six months of the current year 2010-11 i.e. April-September 2010 touched US\$ 1,864.27 million as against US\$ 1,630.78 million in the corresponding period last year, recording a positive trend of 14.32%. Footwear alone holds a major share of 44.67% in India's total leather products export trade.

## MAJOR MARKETS

The major markets for Indian leather products are Germany with a share of 14.45%, UK 13.41%, Italy 11.72%, USA 8.71%, Hong Kong 7.35%, France 7.53%, Spain 6.43%, Netherlands 4.03%, Belgium 1.92%, U.A.E.2.03% and Australia 1.58%. These 11 countries together account for nearly 79.16% of India's total leather products export.

## EXPORT PROMOTION ACTIVITIES

A total of 8 International fairs (including one fair in Brazil under Focus LAC Programme and 3 Buyer-Seller Meets including one BSM under Focus ASEAN programme) were planned.

Participation in 3 International fairs organized in the first half of the year upto 30th September 2010. About 75 exporters participated. Business generated was about US\$. 57 million.

Other 5 International fairs and 3 BSMs will be organized in the second half of the year until 31st March 2011.

About 24 Seminars/workshops were conducted till 30th November 2010 with presentations from eminent experts/resource persons. About 1070 members were benefited.

About 30 such programs will be organized in remaining period till 31st March 2010. Aggressive publicity programmes undertaken/being undertaken to create better awareness about capabilities of Indian leather industry in global markets, thereby further build-up the image of India.

## POLICY AND SUPPORTIVE MEASURES

Considering the potential offered by the leather industry for growth and employment generation, the leather sector was recognized as a "Focus Sector" in the Foreign Trade Policy (FTP) 2009-14 announced on August 23, 2009. Accordingly, several special focus initiatives were announced for the Leather Sector in the FTP 2009-14 and also in the Annual Supplement 2010-11 to FTP. The measures announced in the Annual Supplement 2010-11 are given below. Duty Credit Scrip benefit under Focus Product • Scheme (FPS) notified under Chapter 3 of the Foreign Trade Policy was enhanced from 2% to 4% for leather products and footwear notified in table 7 of Appendix 37 D the Handbook of Procedures (HBP). Leather sector allowed re-export of unsold • imported raw hides and skins and semi-finished leather from Public bonded warehouses, without payment of any export duty so as to facilitate the logistics for establishment of such warehouses and easy access to raw material for the leather sector. Finished Leather entitled for Duty Credit Scrip • @ 2% under Focus Product Scheme (FPS). Agra was notified as a Town of Export Excellence • (TOEE) for Leather Products in addition to Kanpur, Dewas and Ambur which were earlier notified as TOEE under. Zero duty EPCG scheme, introduced in August • 2009 for certain sectors including the Leather Sector and valid for only two years upto 31.3.2011, was extended by one more year till 31.3.2012.

## CONCLUSION

The leather industry role within the value chain and its impact on the organisation of production and conditions of labour in the Indian leather industry. This was looked at through a detailed examination, through fieldwork, of three clusters, Agra, Chennai (and associated locations) and Warangal. This chapter summarises the findings of the study in terms of an analysis of India's participation in the value chain for leather and comparison and contrast of the three locations where fieldwork was done in terms of production organisation and the labour market.

Economic organisation in the leather and leather products industry has been shaped by three factors: insertion into global markets from colonial times onwards, historical and contemporary links with the social structure and State intervention through government policy geared primarily towards exports. Within this broad understanding of the determinants of economic organisation, the following specific arguments may be made: First, it is the insertion into global markets that has been the primary stimulus causing change and development of the industry and it is the nature of the international market combined with a specific set of policies to cater to it that can to a large extent explain the structure and performance of the industry as a whole as well as the clusters that have been specifically studied. This insertion into the global market has been determined by international relocations of tanning and subsequently various labour intensive operations in the leather products industry from the advanced countries to developing countries. The role of the State has been crucial in determining the nature of integration with the value chain in the leather industry. The most vital aspect of the role played by the State in the leather and leather products industry has been in determining the nature of export orientation and formulating policies to tailor production primarily towards the international market. Thus, while the colonial period saw India entering the international market for raw hides and skins and then semi-finished leather, actively promoted by the colonial state, policies to encourage the indigenous development of value added segments in the industry such as finished leather, shoe components, full shoes and leather goods took place in subsequent stages from 1973 onwards. India's integration with the global value chain for leather, thus, has been conscious and the result of concrete policy.

Second, the structure that developed to cater to the international market through successive value addition resulted in a complete transformation of the production chain in the leather industry. What was a scattered industry with tanning as well as leather product making spread across the country now came to be concentrated towards production in major clusters that focussed on exports. Thus, as the case of Warangal showed, there was a systematic decline in small clusters like this and this reflected in general the thrust of policy of orienting production and channelling raw material supplies towards the major clusters. Further, as the case of Agra showed, even clusters that catered primarily to the domestic market came to be increasingly focussed on exports. A large part of the production chain which consisted, in addition to the activities of carcass collection and flaying centres, also centres for tanning and leather product making, came to be transformed into a structure to permit the transfer of raw material to the large clusters and even within that to production for exports.

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**CONCURRENCY CONTROL MECHANISM IN DBMS**

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**ABSTRACT**

In computer science Concurrency is adopted in all fields like computer programming, operating systems, multiprocessors, and databases so that valuable resources may be utilized efficiently. But the activities which opt concurrency are full of challenges. Many problems like dirty read, lost update problem, security, deadlock, livelock are faced here. In this paper I have discussed the why concurrency is required in DBMS and how it can be controlled. Here, the locking technique is taken into account to control concurrency of DBMS. In multi user system ACID is very important. During concurrency it should be taken into account. We can't say that locking is perfect technique. It depends upon situation to situation which will be the best. Pessimistic lockings are easy to implement and guarantees that your changes to the database are made consistently and safely. But the drawback is that this approach isn't scalable. Therefore this limits the practical number of simultaneous users that your system can support. Optimistic locking let the user decide what to do. The problem of deadlock may occur here. To avoid this time stamping may be used.

**KEYWORDS**

Distribution, Optimistic locking, Pessimistic locking, Recoverability.

**INTRODUCTION**

In information technology and computer science, especially in the fields of computer programming, operating systems, multiprocessors, and databases, concurrency control ensures that correct results for concurrent operations are generated, while getting those results as quickly as possible. Computer systems, both software and hardware, consist of modules, or components. Each component is designed to operate correctly, i.e., to obey to or meet certain consistency rules. When components that operate concurrently interact by messaging or by sharing accessed data (in memory or storage), a certain component's consistency may be violated by another component. The general area of concurrency control provides rules, methods, design methodologies, and theories to maintain the consistency of components operating concurrently while interacting, and thus the consistency and correctness of the whole system. Introducing concurrency control into a system means applying operation constraints which typically result in some performance reduction. Operation consistency and correctness should be achieved with as good as possible efficiency, without reducing performance below reasonable. In this paper I have discussed concurrency issues in DBMS. Concurrency control in database management systems (DBMS) ensures that database transactions are performed concurrently without the concurrency violating the data integrity of a database. Executed transactions should follow the ACID rules. The DBMS must guarantee that only serializable (unless Serializability is intentionally relaxed), recoverable schedules are generated. It also guarantees that no effect of committed transactions is lost, and no effect of aborted (rolled back) transactions remains in the related database.

**MAJOR GOALS OF CONCURRENCY CONTROL MECHANISM**

Concurrency control mechanisms firstly need to operate correctly, i.e., to maintain each transaction's integrity rules (as related to concurrency; application-specific integrity rule are out of the scope here) while transactions are running concurrently, and thus the integrity of the entire transactional system. Correctness needs to be achieved with as good performance as possible. In addition, increasingly a need exists to operate effectively while transactions are distributed over processes, computers, and computer networks. Other subjects that may affect concurrency control are recovery and replication.

**CORRECTNESS**

For correctness, a common major goal of most concurrency control mechanisms is generating schedules with the *Serializability* property. Without serializability undesirable phenomena may occur, e.g., money may disappear from accounts, or be generated from nowhere. Serializability of a schedule means equivalence (in the resulting database values) to some *serial* schedule with the same transactions (i.e., in which transactions are sequential with no overlap in time, and thus completely isolated from each other: No concurrent access by any two transactions to the same data is possible). Serializability is considered the highest level of isolation among database transactions, and the major correctness criterion for concurrent transactions. In some cases compromised, relaxed forms of serializability are allowed for better performance or to meet availability requirements in highly distributed systems, but only if application's correctness is not violated by the relaxation. Almost all implemented concurrency control mechanisms achieve serializability by providing *Conflict serializability*, a broad special case of serializability (i.e., it covers, enables most serializable schedules, and does not impose significant delay-causing constraints) which can be implemented efficiently.

**RECOVERABILITY**

Concurrency control typically also ensures the *Recoverability* property of schedules for maintaining correctness in cases of aborted transactions (which can always happen for many reasons). Recoverability (from abort) means that no committed transaction in a schedule has read data written by an aborted transaction. Such data disappear from the database (upon the abort) and are parts of an incorrect database state. Reading such data violates the consistency rule of ACID. Unlike Serializability, Recoverability cannot be compromised, relaxed at any case, since any relaxation results in quick database integrity violation upon aborts. The major methods listed above provide serializability mechanisms. None of them in its general form automatically provides recoverability, and special considerations and mechanism enhancements are needed to support recoverability. A commonly utilized special case of recoverability is *Strictness*, which allows efficient database recovery from failure (but excludes optimistic implementations; e.g., Strict CO (SCO) cannot have an optimistic implementation, but has semi-optimistic ones).

**DISTRIBUTION**

With the fast technological development of computing the difference between local and distributed computing over low latency networks or buses is blurring. Thus the quite effective utilization of local techniques in such distributed environments is common, e.g., in computer clusters and multi-core processors. However the local techniques have their limitations and use multi-processes (or threads) supported by multi-processors (or multi-cores) to scale. This often turns transactions into distributed ones, if they themselves need to span multi-processes. In these cases most local concurrency control techniques do not scale well.

**LOCKING**

To provide concurrency control and prevent uncontrolled data access, the database manager places locks on buffer pools, tables, table blocks, or table rows. A *lock* associates a database manager resource with an application, called the *lock owner*, to control how other applications access the same resource. Main locking techniques are:

**PESSIMISTIC LOCKING**

Pessimistic locking is an approach where an entity is locked in the database for the entire time that it is in application memory (often in the form of an object). A lock either limits or prevents other users from working with the entity in the database. A write lock indicates that the holder of the lock intends to update the entity and disallows anyone from reading, updating, or deleting the entity. A read lock indicates that the holder of the lock does not want the entity to change while the hold the lock, allowing others to read the entity but not update or delete it. The scope of a lock might be the entire database, a table, a collection of rows, or a single row. These types of locks are called database locks, table locks, page locks, and row locks respectively. The advantages of pessimistic locking are that it is easy to implement and guarantees that your changes to the database are made consistently and safely. The primary disadvantage is that this approach isn't scalable. When a system has many users, or when the transactions involve a greater number of entities, or when transactions are long lived, then the chance of having to wait for a lock to be released increases. Therefore this limits the practical number of simultaneous users that your system can support.

**OPTIMISTIC LOCKING**

With multi-user systems it is quite common to be in a situation where collisions are infrequent. Although the two persons are working with customer objects, one is working with the A object while other is working with the B object and therefore they won't collide. But when both work on same object the situation changes, there may be collision. When this is the case optimistic locking becomes a viable concurrency control strategy. The idea is that you accept the fact that collisions occur infrequently, and instead of trying to prevent them you simply choose to detect them and then resolve the collision when it does occur.

There are two basic strategies for determining if a collision has occurred:

1. Mark the source with a unique identifier. The source data row is marked with a unique value each time it is updated. At the point of update, the mark is checked, and if there is a different value than what you originally read in, then you know that there has been an update to the source. There are different types of concurrency marks:
  - Datetime stamps (the database server should assign this value because you can't count on the time clocks of all machines to be in sync).
  - Incremental counters.
  - User IDs (this only works if everyone has a unique ID and you're logged into only one machine and the applications ensure that only one copy of an object exists in memory).
  - Values generated by a globally unique surrogate key generator.
2. Retain a copy of the original. The source data is retrieved at the point of updating and compared with the values that were originally retrieved. If the values have changed, then a collision has occurred. This strategy may be your only option if you are unable to add sufficient columns to your database schema to maintain the concurrency marks.

We have five basic strategies that you can apply to resolve collisions: Give up., Display the problem and let the user decide, Merge the changes, Log the problem so someone can decide later, ignore the collision and overwrite.

**OVERLY OPTIMISTIC LOCKING**

With the strategy we neither try to avoid nor detect collisions, assuming that they will never occur. This strategy is appropriate for single user systems, systems where the system of record is guaranteed to be accessed by only one user or system process at a time, or read-only tables. These situations do occur. It is important to recognize that this strategy is completely inappropriate for multi-user systems.

- Semi-optimistic - Block operations in some situations, if they may cause violation of some rules, and do not block in other situations while delaying rules checking (if needed) to transaction's end, as done with optimistic.

Different categories provide different performance, i.e., different average transaction completion rates (*throughput*), depending on transaction types mix, computing level of parallelism, and other factors. If selection and knowledge about trade-offs are available, then category and method should be chosen to provide the highest performance.

The mutual blocking between two transactions (where each one blocks the other) or more results in a deadlock, where the transactions involved are stalled and cannot reach completion. Most non-optimistic mechanisms (with blocking) are prone to deadlocks which are resolved by an intentional abort of a stalled transaction (which releases the other transactions in that deadlock), and its immediate restart and re-execution. The likelihood of a deadlock is typically low. Both blocking, deadlocks, and aborts result in performance reduction, and hence the trade-offs between the categories.

**CONCLUSION**

The locking mechanism is not perfect as when dealing with locks two problems can arise, the first of which being deadlock (where two or more processes are each waiting for another to release a resource, or more than two processes are waiting for resources in a circular chain. Deadlock is a common problem in multiprocessing where many processes share a specific type of mutually exclusive resource) and another is livelock (A livelock is similar to a deadlock, except that the states of the processes involved constantly change with regard to one another while never progressing.). So to avoid this time stamping can be used.

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## A STUDY ON OPERATIONAL CONSTRAINS INVOLVED IN STEVEDORING TECHNIQUES AT SEAPOL LOGISTICS PVT. LTD., TUTICORIN

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### ABSTRACT

*The logistics market place is one of major opportunity of global business. In the globalization era, the use of internet has increased the need for a flexible logistics infrastructure to support a global supply chain, enabling the movement of goods from a growing number of source locations to meet market demand. Depending on industry sector, supply chain logistics costs account from 5percentage to 50 percentage of a product's delivered cost. India the fourth largest and the second fastest growing economy in the world, is on the fast track where infrastructure spending is concerned. Some of the infrastructure areas where huge government spending is taking place are, roads, ports major & minor, airports expansion and modernization of existing ones and building of new ones, inland waterways, coastal shipping and railway lines. There is also huge spending by the corporate sector both as public and private enterprises.*

### KEYWORDS

Stevedore, Logistics, Docks, Cargo, Wharf, Warehousing, Crane, Combustion, Demurrage.

### 1.1. INTRODUCTION

The stevedores usually perform a range of tasks in the docks, including loading and unloading of cargo, stacking or stowing them on-board the ship or on-shore, operating cranes, derricks and various cargo-handling equipment. The scope and responsibility of a stevedore, or the stevedoring firm vary from country to country, and even from port to port. Depending on the contractual obligations, as agreed with the principal (who may be the shipping company, steamer agent or the port authority), a stevedore may be responsible for on-shore operations, ship-board operations or the complete terminal handling operations and associated logistics. A stevedore may perform one or multiple roles depending on the contractual binding, statutory and regulatory framework, ongoing practices and the administrative jurisdiction of the local agencies like port, dock labor boards and union bodies.

### 1.2. INDUSTRY PROFILE

The logistics market place is one of major opportunity. The globalization that is a by-product of extensive use of the Internet has increased the need for a flexible logistics infrastructure to support a global supply chain, enabling the movement of goods from a growing number of source locations to meet market demand. Depending on industry sector, supply chain logistics costs account from 5percentage to 50 percentage of a product's delivered cost. As such, supply chain management has been elevated in strategic importance, providing an area of potential strategic advantage for global players. In addition, it is estimated that world-class supply chains hold up to 50 percentages less inventory in their distribution channels.



### 1.3 WORLDWIDE LOGISTICS INDUSTRY GROWTH

Currently the annual logistics cost of the world is about \$3.5 trillion. For any country, the annual logistics cost varies between 9 percentage and 20 percentage of the GDP, the figure for the US being about 9 percentage. The issues and trends in the world logistics market and in the US logistics market, in particular, in their annual surveys of top 25 global logistics service provider. According to the firm, the global logistics market sizes in 1992, 1996 and 2000 were \$ 10 billion, \$ 25 billion and \$ 56 billion, respectively. In 2003 and 2004, the corresponding figures were \$270 billion and \$ 333 billion, registering high growth rates. Though most of the large logistics service providers are headquartered in Europe, the US logistics market is the largest in the world capturing one-third of the world logistics market. In 2003, it was about \$ 80 billion. In 2004, it grew to \$89 billion, and in 2005, it registered an impressive growth rate of 16 percentage to cross the \$100 billion mark for the first time and reach \$ 103.7 billion (Foster and Armstrong, 2004, 2005, 2006). However, considering the fact that the logistics market in the \$ is about 10 percentage of its annual logistics cost (Foster and Armstrong, 2006) there is still immense potential for growth of 3PL in the US in particular, and in the world in general.

### 1.4 INDIAN SHIPPING AND LOGISTICS INDUSTRY

India the fourth largest and the second fastest growing economy in the world, is on the fast track where infrastructure spending is concerned. Some of the infrastructure areas where huge government spending is taking place are, roads, ports major & minor, airports expansion and modernization of existing ones and building of new ones, inland waterways, coastal shipping and railway lines. There is also huge spending by the corporate sector both as public and private enterprises.

### 1.5 SIZE OF THE INDIAN LOGISTICS INDUSTRY

There is however a huge demand for logistic services in India especially with the growth of the Indian economy along with the influx of new companies in sectors that was otherwise unknown. Estimated at a value of \$14 billion this industry is slated for another 9 percentage to 10 percentage growth in the years to come.

The annual logistics cost in India is estimated to be 14 percentage of the GDP, which translates into \$140 billion assuming the GDP of India to be slightly over \$ 1 trillion. Out of this \$140 billion logistics cost, almost 99 percentage is accounted for by the unorganized sector (such as owners of less than 5 trucks, affiliated to a broker or a transport company, small warehouse operators, customs brokers, freight forwarders, etc.), and slightly more than 1 percentage, i.e. approximately \$ 1.5 billion, is contributed by the organized sector. So, one can see that the logistics industry in India is in a nascent stage. However, the industry is growing at a fast pace and if India can bring down its logistics cost from 14 percentage to 9 percentage of the GDP (level in the US), savings to the tune of \$50 billion will be realized at the current GDP level, making Indian goods more competitive in the global market.

### 1.6 LIST OF TOP LOGISTICS COMPANIES IN INDIA

Some of the top logistics companies which came in the top position by a survey conducted by Business today in September 2010.

**TABLE NO. 1.1: LIST OF TOP TEN LOGISTICS COMPANIES IN INDIA**

S. No.	Company name
1	Gati
2	TNT Express
3	AFL
4	DHL
5	Blue Dart
6	Agarwal Packers and Movers
7	Safexpress
8	DTDC
9	First Flight
10	Ashok Leyland

Source: Business Today, Sep 2010

### 1.7 GROWTH RATE OF THE INDUSTRY

The growth in logistics industry is an important for Indian economy because whenever the export and import getting higher the GDP also grow and in 2010 Indian GDP went 11.5-12 percentage.

**TABLE NO. 1.2: GROWTH RATE OF THE INDUSTRY**

Financial year	Growth rate in Percentage
2005-2006	5.32
2006-2007	6.13
2007-2008	5.45
2008-2009	8.50
2009-2010	12.20

Source: Business Today, Sep 2010

### 1.8 LOGISTICS GROWTH RATE IN TAMILNADU

Tamilnadu as a whole has a strategic location on the international seafaring. Its all-weather natural harbor and the large export of goods, especially coal and sea food makes it a very important port in India. Growth rate of logistics industry in Tamilnadu mentioned below.

**TABLE NO. 1.3: LOGISTICS GROWTH RATE IN TAMILNADU**

Financial year	Growth rate in Percentage
2004-2005	3.67
2005-2006	5.32
2006-2007	6.13
2007-2008	8.00
2008-2009	11.5
2009-2010	12.2

Source: Global Tamilnadu, June 2010

### 1.9 INDIAN SHIPPING AND LOGISTICS INDUSTRY

India the fourth largest and the second fastest growing economy in the world, is on the fast track where infrastructure spending is concerned. Some of the infrastructure areas where huge government spending is taking place are, roads, ports major & minor, airports expansion and modernization of existing ones and building of new ones, inland waterways, coastal shipping and railway lines. There is also huge spending by the corporate sector both as public and private enterprises.

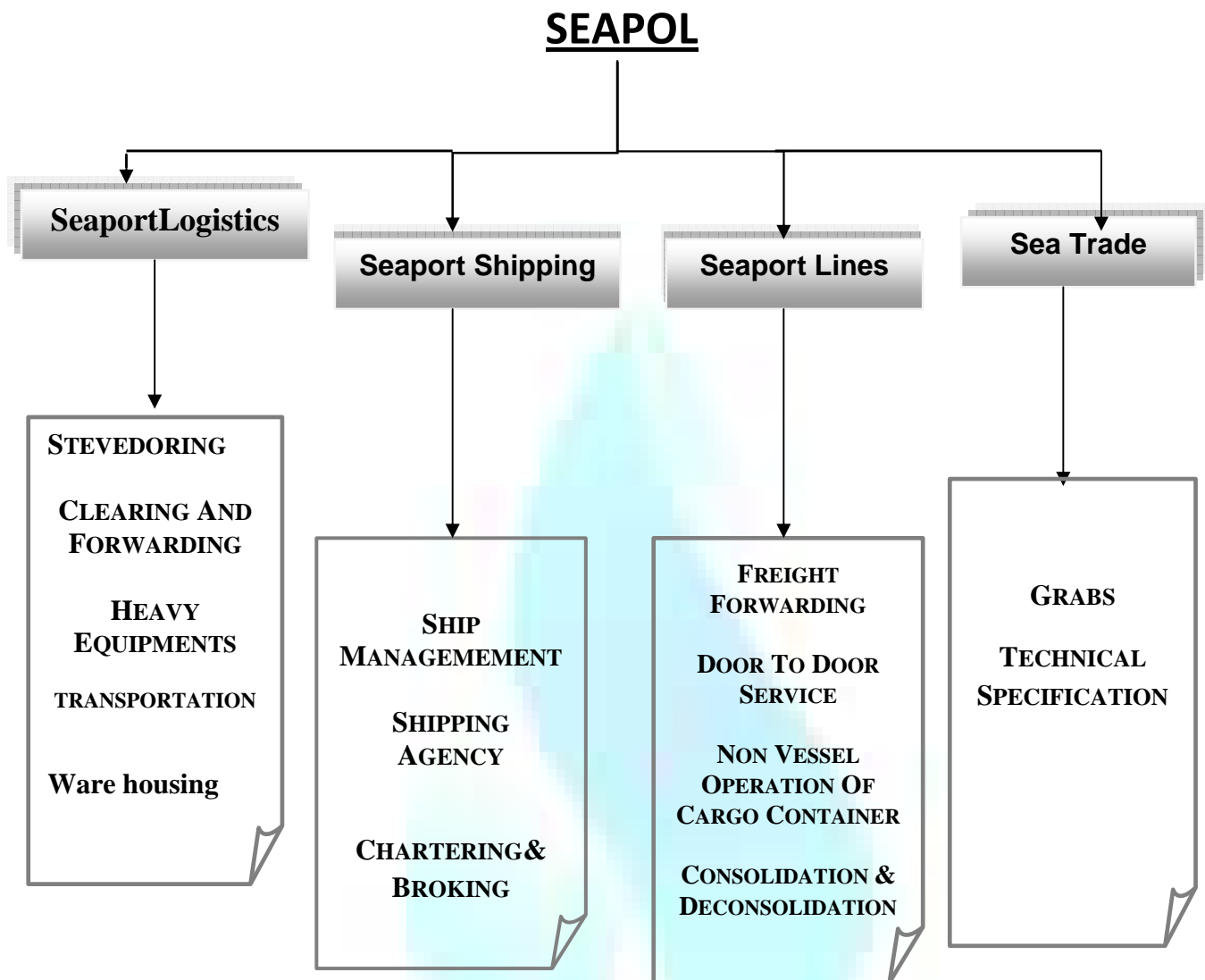
### 1.10. COMPANY PROFILE

Established in the year 1994, Seapol has been able to create a very good name across its operating domains. Seapol have established self among the leading Logistics provider, shipping & transportation services.

Seapol started of handling the imported cargo such as Wheat, Sulphur and Fertilizers for Govt. Organizations like FCI, STC, IFFCO, KRIBHCO etc. under the name of HAJIAR CARGO HANDLING AGENCIES PVT. LTD. Later on during December 1994, Seapol tied up with the conglomerate ETA UAE and firm was renamed and registered as ETA Shipping Agencies Services Pvt.Ltd. As time went on, business expanded rapidly and seapol obtained CHA License and Stevedoring License and finally on 16.03.2000 seapol registered ourselves as an independent identity under the name of SEAPORT LOGISTICS PVT. LTD. With the support of ETA.

At Chennai Port the firm started its business in the year 1995 without any licenses. From the time the firm obtained the Stevedoring License, the receivers using the Chennai port have approached the firm with more confidence and extended their business to the firm. Seaport has its regional office located in Tuticorin which also plays a major role in Tuticorin port in dealing mostly with dry bulk cargos like coal, iron ore, sulphur etc.,

Seapol has got an excellent report with the Customs / Port. Seapol expedites processing of the documents at the earliest with the Customs / Port to clear or to ship the goods by destuffing / stuffing the container or loading / unloading of the cargo on the ship. Seapol are efficiently organized and supervised by a competent team in the specialized division of Seapol.



**1.11 IMPORTS AND EXPORTS OF SEAPOL**

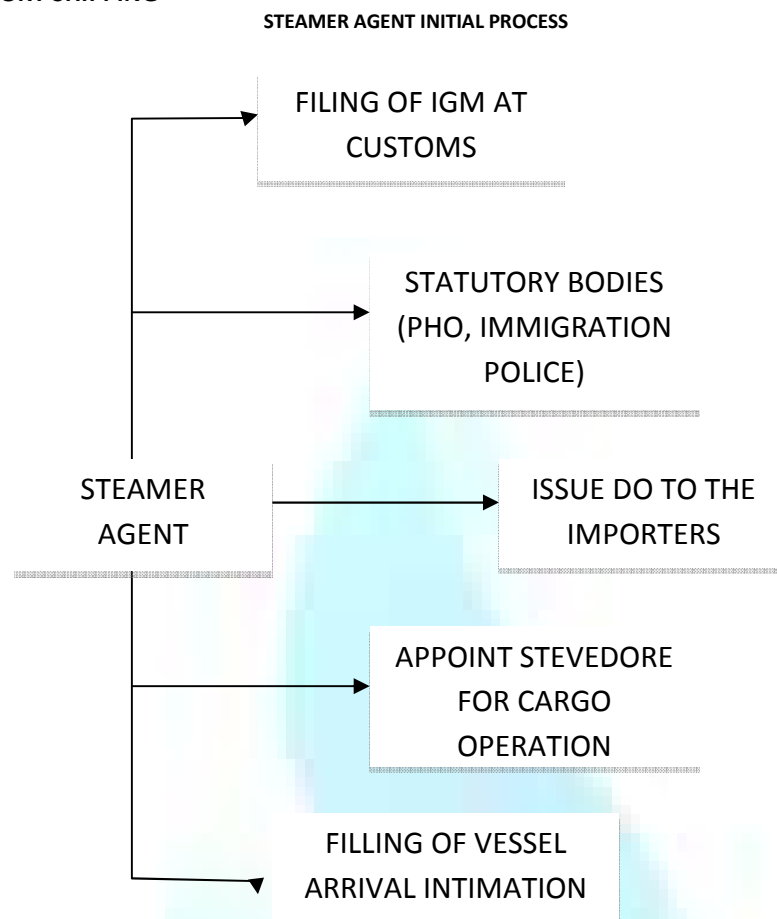
On Imports seapol experience includes the following in addition to the bulk Coal, Fertilizers & Food grains which seapol do on regular basis wood pulp cargo in 20' and 40' Containers, various raw materials/chemicals like Aluminium Fluoride, Costic soda flakes, bath Cryolite and Magnesium Metal Ingots routed through 20' and 40' Containers. Also handles one shipment of bulk clinker to Evrwat, 1st time at chennai port.

**SEAPOL IS PROPOSED TO HANDLE IMPORTS OF THE FOLLOWING**

Atomic Energy Plant Project Cargo, Asbestos Bags, Wood pulp, New & second hand machineries, Wooden logs, Sewing machines, News Print rolls, Various software & electronic equipments in large volumes of 20' & 40' containers

**ON EXPORTS**

On Exports seapol experience includes handling of Rice, Sugar, Fruit pulps, Provisions & other edible commodities. It is proposed to handle the following on exports Cars, Iron Ore at various Indian ports, Agarbathies, Large volume of Feldsper of different grades Chemical Clays. Seapol offer the following Services, Handle bulk cargo such as Coal, Fertilizers, wheat, Iron ores etc.. Customs clearing and forwarding services. Supply of heavy equipments such as Grabs, Payloaders, forklift etc. Offer cargo transport facilities by road & rail. For bulk handling the company provides Storage plots manned round the clock to avoid any pilferage/loss.

**1.12 FUNCTIONS OF SEAPORT SHIPPING****1.13 LITERATURE REVIEW**

1. Chapman (2003), The internal business perspective translates the customer perspective into what the company must do in order to meet its customer's expectations. Continuous change is required. For a logistics service provider these innovations can mean to change business strategies such as a change from short to long distance transport, adding additional activities, new countries, new modes of transport, new communication systems such as RFID or WebServices. Financial performance indicators measure whether the company's strategy, implementation, and execution are contributing to bottom-line improvement.
2. Faber N. (2002), examine information systems for warehouse management. In their exploratory study they examine complexity of warehouses and control structure. Complexity of warehouse management is indicated among others by amount and heterogeneity of handled products, the extent of overlap between them, amount and type of technology as well as characteristics of associated processes. Their 5 findings suggest that warehouses with a high daily amount of processed orderliness and amount of stock keeping units will be best supported by customized software.
3. Mentzer, (2001), Supply chain management is defined as the systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole.
4. Moberg and Speh (2004), study the process of selecting logistics service providers in order to outsource warehousing. Their empirical evidence is based on a survey in the US to customers of logistics service providers that offer warehousing activities. According to their findings, the most important indicators for choosing a particular logistics service provider are related to responding to service requests, general management and ethical issues. Criteria that seem to be less important are the risk affinity of logistics service providers, information technology, company size and coverage.
5. Colson and Dorigo (2004), present a software tool which allows selecting public warehouses. Their extensive list of decision criteria includes: storage surface and volume, dangerous items, possibility for temperature control, separation of storage areas, control for temperature humidity, ventilation, offices on site, geographical distance to highway connection, train, waterways, certification (ISO 9001/9002, SQAS, HACCP), opening hours, assistance with customs, use of technology such as RFID/Barcoding, modem connection, handling equipment (electric, gas and diesel/petrol forklifts) number and characteristics of docks.

**1.14. SCOPE OF THE STUDY**

The study was conducted to evaluate and understand the problems in Logistics operations. The study was done to find out the problems in logistics services and to improve their service level. The study is carried out in Seapol logistics ltd. In future the study will help to improve the service level of Seapol with respect to their customers and also helps to find out the reasons for their lower performance with par with others in the industry.

**1.15 NEED OF THE STUDY**

The need for the study is to assess the problems faced by stevedore agents at Tuticorin port, compared with other organizations of the same industry. The organization also requires relevant data to improve its management policies in order to gain future market share.

**1.16 OBJECTIVES OF THE STUDY**

- To analyse the various operational techniques involved in stevedoring.
- To identify the various problems in stevedores in seapol.
- To study the problems in transportation and safety measures in cargo handling.
- To offer suggestions to overcome the problems in future.



**1.17 TYPE OF RESEARCH**

Descriptive type of research is used for the study.

**1.18 SAMPLING METHOD**

The sampling method used for the study is Simple random sampling method .

**1.19 SAMPLE SIZE**

The selected samples size is 30 stevedoring employees out of 100. Among 30, 15 are loading employees, 10 truck drivers and 5 crane operators.

**1.20 SOURCES OF DATA COLLECTION****PRIMARY DATA**

Primary data are collected by questionnaire, personal interviews and observation method.

**SECONDARY DATA**

Secondary data were obtained from the Company publications, Books and Internet.

**1.21 TOOLS USED FOR ANALYSIS**

The tools used for analysis were Simple percentage method and chi square test.

**1.23 DATA ANALYSIS & INTERPRETATIONS****DATA ANALYSIS**

Data analysis is done on the questionnaire collected from the employees of Seapol in Tuticorin.

**1.24 TYPE OF CARGO MOSTLY HANDLED BY SEAPOL**

The type of cargo mainly handled by Seapol is mainly coal, fertilizers, dolomite and gypsum also other perishable goods. Type of cargo mostly handled is important to study because some kind of cargo cause adverse diseases which will affect effective unloading.

**TABLE NO. 1.4: TYPE OF CARGO MOSTLY HANDLED**

Type of cargo	No. of Respondents	Percentage
Hazardous	24	80
Normal	3	10
Perishable	3	10
Total	30	100

Source: primary data

The main type of cargo handled in Seapol is coal, which is found to be a hazardous cargo. The study reveals that 80 percentage of hazardous coal is imported and the rest 20 percentage leads to other type of Cargos.

**1.25 DIFFERENT MODES OF LOSS OF CARGO WHEN HANDLING**

Loss of cargo takes place at different stage of handling. The researcher has made an attempt to identify the reasons for the loss.

**TABLE NO. 1.5: DIFFERENT MODES OF LOSS OF CARGO WHEN HANDLING**

Mode of Loss	No. of Respondents	Percentage
While storage	6	20
While transport	18	60
While stevedoring	6	20
Total	30	100

Source: primary data

Majority 60 percentage of losses takes place during transportation, 20 percentage take place while stevedoring and another 20 percentage loss during storage. It is evident from the study that safety measures taken at the time of transport is found to be dissatisfactory.

**1.26 EMPLOYEES OPINION ABOUT STORAGE FACILITY PROVIDED BY SEAPOL**

Ware housing is the process of storing of goods. An improved ware house management can reduce the losses during storage. Short time storage of goods called interim storage, for coal Operations Company mostly adopt interim storage techniques. Here an attempt is made by the researcher to analyse the standard of storage facility.

**TABLE NO. 1.6: EMPLOYEES OPINION ABOUT STORAGE FACILITY**

Opinion	No. of Respondents	Percentage
Excellent	6	20
Very Good	12	40
Good	9	30
Poor	3	10
Total	30	100

Source: primary data

The study reveals that majority of the employee's opinion about storage facility as very good. 30 percentage of employees opinion is good and 20 percentage says it as excellent; only 10 percentage states the storage facility as poor. It is proved that the company is following an interim storage technique which is highly beneficial.

**1.27 EMPLOYEES OPINION ABOUT DRIVERS USED FOR TRANSPORTATION**

Transportation of the goods is an another important operation in stevedoring. As per the information collected transport facility carries a major role on loss of cargo which is caused due to the irresponsibility of drivers. The vehicles used may be own or hired.

TABLE NO. 1.7: EMPLOYEES OPINION ABOUT DRIVERS USED FOR TRANSPORTATION

Mode of Transportation	No. of Respondents	Percentage
Own transportation	9	30
Hired vehicles	6	20
Both	15	50
Total	30	100

Source: primary data

It is revealed that 30 percentage of the transportation is done through the own vehicle and 20 percentage says that hired vehicle is used. This shows that the company does not have enough transport facility; hence they rely upon private vehicles for transportation.

### 1.28 REASONS FOR THE DELAY IN GOODS DELIVERY

Delay in delivering goods on port make many problems, delay may cause losses or any other issues to the company. So, an attempt is made here to understand the problems encountered in delay in goods delivery.

TABLE NO. 1.8: EMPLOYEES OPINION ABOUT DELAY IN GOODS DELIVERY

Reasons for Delay	No. of Respondents	Percentage
Slow running of hired vehicles	18	60
Technical problems	6	20
Problems of ship	6	20
Total	30	100

Source: primary data

The study reveals that majority of the delay is due to the slow running of hired vehicles, 20 percentage of employees says that the delay is due to the technical problems and 20 percentage employee says the problem is due to delay of ship.

### 1.29 REASONS FOR LOSS OF CARGO

There are various reasons for the loss of cargo. It may be through leakage, or while unloading the goods may be dumped heavily on wharf of the trucker or through combustion or any natural factor without the involvement of human being.

TABLE NO. 1.9: REASONS FOR LOSS OF CARGO

Reasons for Losses	No. of Respondents	Percentage
Improper dumping of cargo	18	60
Leakage when transporting	9	30
Combustion	3	10
Total	30	100

Source: primary data

From the above table majority of respondents says that improper dumping of cargo leads to heavy cargo losses, 30 percentage employees says leakage is another constraint during transportation and 10 percentage of employees says combustion is occurring naturally which accounts for 10 percent only.

### 1.30 REASONS FOR CARGO WEIGHT LOSS

Cargo weight loss on port is the next problem after the transportation, loss of weight of cargo can be caused by various factors such as drying of water which was sprayed to prevent combustion and air pollution or theft in the port may lead to cargo weight loss.

TABLE NO. 1.10: REASONS FOR CARGO WEIGHT LOSS

Reasons for cargo Weight loss	No. of Respondents	Percentage
Drying of water content	6	20
Leakage when stevedoring	12	40
Improper unloading	12	40
Total	30	100

Source: primary data

From the study 40 percentage of employees states that leakage of cargo while stevedoring create weight loss and improper dumping of load on port are the major problems and 20 percentage of employees states that drying of water content is the reason for weight loss, it can be overcome by irrigating the cargo.

### 1.31 EMPLOYEES OPINION ABOUT MAJOR TECHNOLOGY USED BY SEAPOL

It is essential to identify the technologies used to reduce losses on stevedoring. Cargo conveyor belt and grabs is used to stevedore coal and fertilizers and cranes were mainly used for loading and unloading of containers.

TABLE NO. 1.11: EMPLOYEES OPINION ABOUT MAJOR TECHNOLOGY USED BY SEAPOL

Technology	No. of Respondents	Percentage
Conveyor belts	9	30
Grabs	15	50
Crane	6	20
Total	30	100

Source: primary data

It is encapsulated that majority of cargo is unloaded mainly using grabs in stevedoring of cargo, 30 percentage of employees reveals conveyor belt is used in unloading or loading of cargo.

### 1.32 RELATIONSHIP BETWEEN THE OVERALL LOSS AND TYPE OF CARGO

The company is handling different cargos like coal, Dolomite, Chemicals and fertilizers and gypsum. Here doing Chi square test for checking is there any significant losses between dumping and type of cargo customers is exporting.

TABLE NO. 1.13: RELATIONSHIP BETWEEN THE OVERALL LOSS AND TYPE OF CARGO HANDLED

Factors	coal	Dolomite	Chemical & minerals	Gypsum	Total
During transportation	4	2	1	0	7
During unloading	0	2	1	0	3
During stevedoring	4	5	3	2	14
During storage	5	0	1	0	6
Total	13	9	6	2	30

Source: primary data

**HYPOTHESIS**

Ho: There is not significant relationship between operational loss and type of cargo handled

H1: There is a significant relationship between operational loss and type of cargo handled

Degree of freedom (df) = (r-1) (c-1) = (4-1) (4-1) , (3\*3)=9

9 degree of freedom at 5percentage significance

$E_{11} = (13*7) / 30 = 3.03$ ,  $E_{12} = (9*7) / 30 = 2.1$ ,  $E_{13} = (6*7) / 30 = 1.4$   $E_{14} = (2*7) / 30 = 0.5$ ,  $E_{21} = (13*3) / 30 = 1.3$   $E_{22} = (9*3) / 30 = 0.9$   $E_{23} = (6*3) / 30 = 0.6$   $E_{24} = (2*3) / 30 = 0.2$ ,  $E_{31} = (13*14) / 30 = 6.1$ ,  $E_{32} = (9*14) = 4.2$ ,  $E_{33} = (6*14) / 30 = 2.8$   $E_{34} = (2*14) / 30 = 0.93$ ,  $E_{41} = (13*6) / 30 = 2.6$   $E_{42} = (9*6) / 30 = 1.8$   $E_{43} = (6*6) / 30 = 1.2$   $E_{44} = (2*6) / 30 = 0.4$

$\sum(O_i - E_i)^2 / E_i = 14.316$

For df 5percentage significance table value is 16.92

There for table value is greater than calculated value

16.92 > 14.316

There for Null hypothesis is accepted

Here the table value is greater than the calculated value. So we accept the null hypothesis and there is no significant relationship between significant relationship between operational loss and type of cargo handled

**1.33 REASONS FOR FINANCIAL CONSTRAINTS**

Finance is also one of the problems involved in stevedoring. Demurrage is the fine paid for delay of unloading which is a liability for the company. Hiring vehicles also create financial constraint to the company.

TABLE NO. 1.14: REASONS FOR FINANCIAL CONSTRAINS

Reasons	No. of Respondents	Percentage
Demurrage	21	70
Hire	9	30
Total	30	100

Source: primary data

Majority of the employees says that demurrage is a major problem faced in stevedoring because on delay in cargo delivery. Hiring other transport vehicle also creates financial constrain to the company. It can be overcome by providing own vehicle or hire a vehicle with cheap cost.

**1.34 FINDINGS OF STUDY**

- The main type of cargo handled in Seapol is coal, which is found to be a hazardous cargo. The study reveals that 80 percentage of hazardous coal is imported and the rest 20 percentage leads to other type of Cargos.
- Majority 60 percentage of losses takes place during transportation, 20 percentage take place while stevedoring and another 20 percentage loss during storage. It is evident from the study that safety measures taken at the time of transport is found to be dissatisfactory.
- The study reveals that majority of the employee’s opinion about storage facility as very good. 30 percentage of employees opinion is good and 20 percentage says it as excellent; only 10 percentage states the storage facility as poor. It is proved that the company is following an interim storage technique which is highly beneficial.
- It is revealed that 30 percentage of the transportation is done through the own vehicle and 20 percentage says that hired vehicle is used. This shows that the company does not have enough transport facility; hence they rely upon private vehicles for transportation.
- The study reveals that majority of the delay is due to the slow running of hired vehicles, 20 percentage of employees says that the delay is due to the technical problems and 20 percentage employee says the problem is due to delay of ship.
- From the above table majority of respondents says that improper dumping of cargo leads to heavy cargo losses , 30 percentage employees says leakage is an another constrains during transportation and 10 percentage of employees says combustion is occurring naturally which accounts for 10 percent only.
- From the study 40 percentage of employees states that leakage of cargo while stevedoring create weight loss and improper dumping of load on port are the major problems and 20 percentage of employees states that drying of water content is the reason for weight loss, it can be overcome by irrigating the cargo.
- It is encapsulated that majority of cargo is unloaded mainly using grabs in stevedoring of cargo, 30 percentage of employees reveals conveyor belt is used in unloading or loading of cargo.
- While studying the relationship between the overall loss and type of cargo there seems to be no significant relationship between significant relationship between operational loss and type of cargo handled
- Majority of the employees says that demurrage is a major problem faced in stevedoring because on delay in cargo delivery. Hiring other transport vehicle also creates financial constrain to the company. It can be overcome by providing own vehicle or hire a vehicle with cheap cost.

**1.35 SUGGESTIONS**

- Around 90 percentage of the cargo is coal so the company should provide various health protective programs like providing masks to reduce respiratory problems, and also the company can start a health center inside the port.
- Company must supervise the transportation of goods and vehicles by formulating transport rules and regulation which helps to reduce delay running of cargo. Similarly company have to increase own transport facility system.
- While hiring transportation from outside the company should check the fitness of vehicle.
- Company can better facilitate the interim storage system.
- To reduce the cargo loss on port there must be a supervisor who should control all the activities in the port which will helps to reduce loss of cargo.
- When dumping of cargo in the port, it should be transported or cross docked by company for reducing over dumping on port.
- Company should try for various technologies for stevedoring to increase conveyor belt facility which will helps in preventing over dumping.
- Introducing new technology to avoid delay in loading and unloading will help reduce financial losses like demurrage.

### 1.36 CONCLUSION

The services provided by the stevedoring businesses are predominantly directed towards the handling of container cargoes. However, this should not obscure the fact that break bulk and special cargoes are still an important component of the total market, and that stevedores are required to be equipped to handle a range of cargo types depending upon the port itself and the predominant types of cargoes handled through that port. Given the extreme changes that have occurred in logistics management concepts and practices during the past several decades, the primary determinant of the shape and form of future logistical requirements will be the nature of demand that will need to be serviced. The port's main focus should be on making available all the services to meet the growing demand of the customers. It can be concluded that stevedoring has got a great opportunity of development in future, so suitable measures should be taken by the company to achieve mastery in the industry.

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## IMPACT OF MERGER AND ACQUISITION ON THE FINANCIAL PERFORMANCE OF SELECT PUBLIC SECTOR BANKS IN INDIA

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### ABSTRACT

*The present paper examines the impact of mergers and acquisitions on the financial efficiency of the selected public sector banks in India. The post merger performance of acquirer banks were analyzed by using the ratio analysis. The changes in the efficiency of the sample banks during post and pre merger periods by using t test. We found significant changes in the financial performance of the acquirer banks. The result of the study indicate that forced merger deals in Indian banking does not give improved financial performance during post merger period except State Bank of India.*

### KEYWORDS

Merger and Acquisition, Financial Performance, Post Merger.

### INTRODUCTION

The Indian Banking system has an age old place when in 1964. The first major banking reforms took place when 14 banks were nationalized. It led to the rising of Indian public sector bank. Financial sector reforms were initiated in India with a view to improving efficiency in the process of financial intermediation, enhancing the effectiveness in the conduct of monetary policy and creating conditions for integration of the domestic financial sector with the global system. The first phase of reforms was guided by the recommendation of the Narasimhan committee. The first phase approach was to ensure that the financial services industry operator on the basis of operational flexibility and financial autonomy with a view to enhancing efficiency, productivity and profitability. The second phase guided by Narasimhan committee aimed at strengthening the foundations of the banking system and bringing about structural improvements.

As the banking system formed with the most dominant segment of the financial system, accounting for 80% of the funds flowing through it, the reforms were crucial to the banking industry. Liberalization, privatization, Globalization and information Technology are currently transforming the Indian banking radically. The metamorphosis in the banking is taking place significantly in the areas of ownership, structure, system, process, Market Place, delivery channel, products, technology etc.,

Indian Banking Industry visualizes development of the domestic financial sector into a mature and dynamic industry, both at the national and international levels. The vision statement of the Banking industry sets goals for the bank as "The best way to predict the future is to invent it"

In the future as domestic and international competition heats up, banks may have to shift their focus to "cost" which will be determined by revenue minus profit. In other words, cost control in tandem with efficient use of resource and increase in profitability will determine the winners and losers in the future. The growth of banking will be more qualitative than quantitative in the coming years.

### MERGERS AND ACQUISITIONS

As the financial services industry becomes increasingly international, the more narrowly defined and historically protected national financial markets become less significant. Consequently, financial institutions must achieve a critical size in order to compete. Bank Mergers & Acquisitions analyses the major issue associated with the large wave of bank mergers and acquisitions in the 1990's. While the effects of these changes have been most pronounced in the commercial banking industry, they also have a profound impact on other financial institutions; insurance firms, investment banks, and institutional investors.

Bank mergers & Acquisitions is divided into three major sections; A general and theoretical background to the topic of bank mergers and acquisitions; the effect of bank mergers on efficiency and shareholders' wealth and regulatory and legal issues associated with mergers of financial institutions. It brings together contributions from leading scholars and high-level practitioners in economics, finance and law.

Bank mergers and acquisitions are actually quite common, especially during a financial crisis such as the one recently experienced by the world. When handled properly, this type of action within the banking industry can be beneficial but because this is such a serious change, numerous factors must first be considered.

With the completion of bank mergers and acquisitions, the greatest value typically seen is a greater number of locations, giving the primary bank a stronger presence. However, this type of merger also results in an increased customer base for the primary bank. Today, both private and government banks are following policies for this type of action, realizing that a number of benefits exist. In fact, global and multinational banks are now seeing the value that comes from bank mergers and acquisitions, allowing operations to be extended.

### STATEMENT OF THE PROBLEM

Indian economy is currently witnessing a sea change from the "controlled" to the market driven environment. Increasing share values is the global rule which India's corporates are increasingly focusing on as a means and end to service and grow under the fast changing economic scenario. Merger and acquisition activity have become a part and parcel of the Banking sector. M & A is a sporadic event and there is very little scope for Banking companies to learn from their past experience. Therefore, to determine the success of a merger it has to be ascertained there will be any economic gain from mergers. Post merger economic gain will be generated only if the two banking companies are worth more together than apart.

Therefore, this is a need to study the performance of pre and post-mergers which will be helpful in assessing the scope and degree of their financial success. Many researches have been conducted in USA and UK in this regard, however a comprehensive empirical study is lacking in India. This study attempts to fill this void on the Indian context.

### OBJECTIVE OF THIS STUDY

To analyze the impact of merger on profitability of selected merged banks.

### HYPOTHESIS

The following hypothesis is formulated for the study:

There is no significant difference between pre-merger and post-merger financial performance of the selected merged banks.

**METHODOLOGY**

**PERIOD OF THE STUDY**

This study covers a period of ten years, five years before and five years after the merger.

**SELECTION OF BANK MERGERS**

Mergers and Acquisitions that occurred post 1991 have been considered for the study. There were 18 merger deals in the post reform period, of which five mergers deals from public sector banks were selected for the analysis of performance changes based on the availability of data for the five pre and post-merger periods.

**SOURCES OF DATA**

The present study is based on secondary data. The required data for the study were obtained from the PROWESS, the corporate database software of CMIE and CAPITALINE, the database software developed by Capital Market Publishers Private India Ltd, news papers and journals.

**FRAME WORK OF ANALYSIS**

The Ratio analysis is the important tool of accounting which has been used for measuring the financial performance and simple statistical tool mean and 't' test is carried out to assess the significance of the difference in the performance between pre-merger and post-merger.

**REVIEW OF LITERATURE**

Beena (2000), provided evidence for increase in post-merger operating performance. But the studies of Berger and Humphrey (1992), Piloff (1996) and Berger (1997) Vardhana Pawaskar (2001) do not find any evidence in post-merger operating performance. Berger and Humphrey (1994) reported that most studies that examined pre-merger and post-merger financial ratios found no impact on operating cost and profit ratios. The reasons for the mixed evidence are: the lag between completion of merger process and realization of benefits of mergers, selection of sample and the methods adopted in financing the mergers. Further, financial ratios may be misleading indicators of performance because they do not control for product mix or input prices. Chummar John Mathew and Raju (2004) in their study "Mergers in the banking sector a case study of HDFC and Times Bank" profitability, total income, efficiency of branch, deposit mobilization efficiency, working fund and performance variables have been looked into. The study concluded that the merger between. Times and HDFC Bank has turned out to be successful. Hetal K. Machhi and Preeti V. Menon (2004) in their study "Corporate merger and acquisition", opined that acquirer firms initially no doubt initially will face difficulty but slowly it will come out. Laxman (2004)<sup>31</sup> in his study "Impact of M & A on financial performance of private sector banks," made an attempt to analyse the impact of M & A on financial performance of private sector banks by comparing pre-merger and post - merger scenario. The study concludes that the Bank of Madhura merger with ICICI Bank resulted into decreasing tendency in spreads of CAR and increasing tendency in NP As. However these indicate more indicators of the private sector banks during the period under study. Selvam, Vanitha and Babu (2004) suggest that Whatever be the reasons for approving the merger, the planners and supervisors in the merger process should consider the issues like conflict where trade unions of two companies, training cost, change of systems and procedures, synchronization of longstanding system, waste of company specific technology, additional overheads cost, apprehensions of top level staff, reluctance of shareholders, attention on business targets, communication delays, customer service, confusion of customer, poor credit management, reconciliation of outstanding, insider frauds, market capture by players to plan a smooth transition of merger. Vijay Shrimali and Karunesh Saxena (2004) concluded that merger and acquisitions were always advantageous to the organizations seeking expansion and consolidation and strengthening competitive position. Bhanu (2005) in her study "Merged companies and their profitability performance found in terms of financial performance, the merged companies have been more successful during the post merger period.

The academic studies motivate the examination of two important issues relating to mergers in Indian banking. First, do mergers in Indian banking improve operational performance and efficiency of banks? But in India, guided by the central bank, most of the weak banks are being merged with healthy banks in order to avoid financial distress and to protect the interests of depositors. Hence the motivation behind the mergers may not be increase in operating efficiency of banks but to prevent financial distress of weak banks. Hence we do not examine the long term performance and efficiency gains from bank mergers.

**FINANCIAL DATA ANALYSIS**

In this study an attempted has been made to study the various ratios suggested for measuring the performance of selected acquirer banks in relation to profitability during pre and post-merger period. To asses the post merger performance the profitability ratios i.e., Return on Assets (ROA), Return on Capital Employed (ROCE), Return on Total Assets (ROTA), Total Income to Total Assets (TITA), Ratio of Spread to Working Fund , Ratio of Spread to Total Income, Ratio of Burden to Working Fund, Ratio of Burden to Total Income are used.

**TABLE 1: PROFITABILITY RATIO OF SELECT PUBLIC SECTOR MERGED BANKS DURING POST AND PRE MERGER PERIOD**

Banks	ROA			ROCE			RONW			TITTA		
	Pre Merger	Post Merger	t'	Pre Merger	Post	t'	Pre Merger	Post	t'	Pre Merger	Post	t'
Public Sector Banks												
Bank of Baroda (BOB)	7.16	5.11	6.971*	7.62	5.35	7.106*	13.42	13.26	0.112	10.28	8.07	8.702*
Oriental Bank of Commerce (OBC)	8.31	6.45	4.755*	8.56	6.69	4.860*	19.94	9.98	4.559*	6.31	5.30	2.153**
Punjab National Bank (PNB)	7.47	5.36	6.052*	7.90	5.67	6.113*	20.35	17.23	2.311**	11.11	8.44	19.339*
State Bank of India (SBI)	6.34	7.05	2.244**	8.05	8.42	0.818	10.97	14.99	1.376	10.73	10.38	1.002
Union Bank of India (UBI)	7.26	6.48	1.449	7.56	6.73	1.482	12.99	17.56	1.263	10.61	9.58	2.444**

Source: Compiled and calculated from the annual reports of the sample banks

\*\* Significant at 5% level \*Significant at 1% level

Table 1 presents the profitability ratio of selected public sector merged banks during the pre and post merger period. Profitability in terms of Return on Assets and Return on Capital Employed of all the select acquirer banks declined in the post – merger period except for SBI and the decline is significant in case of Bank of Baroda, Oriental Bank of Commerce, and Punjab National Bank. Profitability in terms of Return on Net worth improved only in case of UBI during post merger period. OBC and PNB are faced significant decline in Return on Net worth after merger. Total Income to Total Assets ratio declined for all the banks during the post merger period but significant differences were noted for BOB, PNB, and UBI.

**TABLE 2: PROFITABILITY RATIO OF SELECT PUBLIC SECTOR MERGED BANKS DURING POST AND PRE MERGER PERIOD**

Banks	Spread to Working Fund			Spread to Total Income			Burden to Working Fund			Burden to total Income		
	Pre Merger	Post Merger	t'	Pre Merger	Post	t'	Pre Merger	Post	t'	Pre Merger	Post	t'
Public Sector Banks												
Bank of Baroda (BOB)	2.90	2.74	1.087	21.03	23.95	1.580	28.26	34.03	4.055*	2.16	1.92	1.275
Oriental Bank of Commerce (OBC)	3.23	2.04	3.652*	18.75	15.96	1.092	29.71	24.40	1.196	2.05	1.33	3.637*
Punjab National Bank (PNB)	3.23	3.20	0.217	21.41	25.66	2.062	29.13	37.94	5.328*	2.36	2.16	0.997
State Bank of India (SBI)	3.21	2.92	2.185**	27.28	21.11	3.465*	29.87	28.08	2.028**	2.93	2.19	3.991*
Union Bank of India (UBI)	3.19	2.98	1.838	23.66	21.88	1.484	30.08	31.3	0.563	2.50	2.10	3.114*

Source: Compiled and calculated from the annual reports of the sample banks

\*\* Significant at 5% level \* Significant at 1% level

Table 2 unveils spread to working fund, spread to total income and Burden to working fund ratio of select public sector merged banks during pre and post merged period. It is significant to note that the Ratio of spread to working fund declined for all the select acquirer banks during post merger period of which that of OBC and SBI were significant. Spread to Total Income in the post merger period showed significant improvement for BOB, PNB and SBI. Burden to working fund got reduced significantly during the post merger period in case of OBC, SBI and UBI. Burden to Total Income declined significantly for SBI during post merger period indicating the better efficiency

### TESTING OF HYPOTHESIS

**There is no significant difference between pre-merger and post-merger financial performance of the select merged banks.**

It is evident from the analysis that the calculated value of 't' is statistically significant at 5% level of significance. These results indicate that there was a significant difference in the financial performance of merged banks during post merger period compared with pre merger. Hence, the hypothesis is stands invalid.

### FINDINGS AND CONCLUSIONS

- Profitability in terms of Return on Assets and Return on Capital Employed of all the select acquirer banks declined in the post – merger period except for SBI
- OBC and PNB are faced significant decline in Return on Net worth in the post merger.
- Profit Margin presented significant improvement for BOB, PNB, SBI and SCB during post merger period.
- Total Income to Total Assets ratio declined for all the merged banks during the post merger period
- Ratio of Spread to Working fund declined for all the select acquirer banks during post merger period.
- Spread to Total Income in the post merger period showed significant improvement for BOB, PNB and SCB.
- Burden to working fund got reduced significantly during the post merger period in case of OBC, SBI and UBI.
- Burden to Total Income presented decline for SBI significantly in the post merger period indicating improvement in profitability.

In the present study there has been a decline in profitability of all the select acquirer banks, The banks have also failed to use the merger and acquisition deals for improving their financial position. It is envisaged from the analysis that there has been only partial fulfillment of merger objectives... The Government and Policy makers should not promote merger between strong and distressed banks as a way to promote the interest of the depositors of distressed banks, as it will have adverse effect upon the asset quality of the stronger banks.

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**NEUROMARKETING: INNOVATIVE FOCUS ON THE FEMALE BUYING BRAIN**

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**MUMBAI**

**ABSTRACT**

Marketing has been evolving in all its forms. In its present scope, it has metamorphosed from barter system, to production concept, to product concept & so on. New discoveries in neuroscience are revolutionizing twenty-first century life and marketing is no exception. Neuromarketing can be considered as another milestone, which is still evolving. Neuromarketing is a dynamic package of medical knowledge, technology & marketing. It can be a powerful tool in market research; where advertising is becoming more scientifically advanced. The human brain hasn't changed much in last 1, 00,000 years. But the role of women has changed dramatically. From the right to vote and own property to the right to govern your own reproduction, women have stepped into a new role. In today's situation there are more women than men at work place. In many cases women are the sole bread winners and the decision makers for the products they buy. Thus women worldwide have greater spending power. Covering everything from product development to packaging to point-of-sale marketing neuromarketing is the guide to access today's newest business frontier: human brain. The paper attempts to throw light on the growing perspective of Neuromarketing in & around. The paper will bring forward the messaging elements the female brain loves. It will try to highlight the difference between a female brain and mummy brain. It is interesting to know that all mummies have female brain but not all females have mummy brains. This is reflected in their spending power as well as pattern. It will also focus why and how maternity enhances certain brain functions. Through various applications of neuromarketing study the paper will attempt to show what specific consumer behavior and preferences mummy brains share.

**KEYWORDS**

Advertising, Brain Mapping, Market Research, Mummy Brain, Neuromarketing.

**INTRODUCTION**

Objective of all marketing communication is to induce or enhance purchase. Advertising is one of the major components of promotional mix and that of marketing communications. Every year more than 5 lakh million dollars are invested in advertising campaigns worldwide. The total media spent worldwide is increasing by 6.5% (average) every year.

**TABLE: 1**

Major Media (newspapers,magzines,television,radio,cinema,outdoor,internet)					
	2006	2007	2008	2009	2010
North America	183,520	188,415	194,990	200,271	207,570
Western Europe	113,513	119,976	124,420	129,770	135,781
Asia Pacific	<b>94,719</b>	<b>102,807</b>	<b>111,534</b>	<b>119,001</b>	<b>127,916</b>
Central & Eastern Europe	25,799	31,563	37,041	42,628	48,424
Latin America	22,638	26,329	30,924	35,130	38,920
Africa/M.East	13,406	16,490	18,606	21,871	25,938
<b>World</b>	<b>453,595</b>	<b>485,580</b>	<b>517,515</b>	<b>548,671</b>	<b>584,550</b>

Source: ZenithOptimedia

(US \$ million, current prices; Currency conversion at 2007 average rates)

The following table highlights the Indian scenario

**TABLE: 2**

Spends in Crores				
Year	TV	Press	Radio	Total
2008	9309	14359	924	<b>24593</b>
2009	11077	15119	1108	<b>27304</b>
2010	13369	16138	1431	<b>30938</b>
Until Jul 2011	9592	9406	854	<b>19852</b>

This does not include Cinema ,Digital and OOH

Marketing researchers have started questioning the premise that a target consumer would reflect 'what he/she really thinks' in response to a question in a questionnaire. If the consumer does not reflect his/her actual feelings to a marketing researcher, how can we assume that the results arrived at after such a research would be reliable.

We depend on the principle of marketing research to find out consumer preferences, attitudes, likes and dislikes. We analyze consumer responses and reach certain conclusions. On this basis, marketing and promotional mix is decided. However research has revealed that consumers do not necessarily provide the real answer to researcher. At times they do not even know as to what is that they really think about a given question.

Researchers all over the world are trying to find answers to questions on the unfathomable behavior of the target consumers in the fields other than those of consumer behavior, marketing and advertising.

Remember the pre-poll survey where the results declared that some political party would come to power at centre and actually the opposite happened. The survey was conducted by one of the best research organizations. Sometimes the consumers themselves do not know their real feelings about a given situation. They would act in a particular manner at the spur of the moment. It may also happen that, they know their actual feelings but do not intend the marketing researcher to know the same. This brings us to neuro-marketing. The field has unprecedented potential of showing the path to those managing brands, marketing communication.

**NEUROMARKETING-WHERE BRAIN SCIENCE AND MARKETING MEET**

In very simple terms, Neuromarketing is medical knowledge, technology and marketing. Neuromarketing is a new field of marketing that studies the consumer's response to marketing stimuli. Neuromarketing is the application of neuroscience to marketing. Neuromarketing includes the direct use of brain imaging, scanning, or other brain activity measurement technology to measure a subject's response to specific products, packaging, advertising, or other marketing elements. In some cases, the brain responses measured by these techniques may not be consciously perceived by the subject; hence, this data may be more revealing than self-reporting on surveys, in focus groups, etc.

This concept was developed by psychologists at Harvard University in 1990. The word Neuromarketing was coined by Ale Smidts in 2002. It is an emerging branch of neuro science in which researchers use medical technology to determine consumer reactions to particular brands, slogans and advertisements. The first ever



Neuromarketing conference was held in 2004 at Baylor College of Medicine in Houston. The base of Neuromarketing is “meme”. Meme is a unit of information stored in the brain. These units are effective influencing human who is making choices and decisions within 2.6 seconds. If mem is chosen properly we remember the good, joke or song and would share it. Memes stay in our memory and are affected by marketers. Examples of memes-aroma of fresh bread, biscuits, sweets, characters in fairy tales, stories of grandmother.

Thus, Neuromarketing is a promising and emerging field with tremendous potential for application in the functional areas of marketing, brand management and advertising. It has emerged after bringing together applicable concepts from the field of neural-science, psychology, human neuro-physiology and even neuro-chemistry.

**INTRODUCTION OF THE BUYING BRAIN**

*“Understanding the human mind in biological terms has emerged as the central challenge of science in the twenty-first century.”*

-By Dr. Eric Kandel, Neuroscientist and winner of the Nobel Prize for Physiology or Medicine

Millions of people in our global economy have jobs that depend on communicating with and persuading the human brain. So it is vital for us to understand how the human brain really works, what is attractive to it, how it decides what it likes or dislikes or how they decide to buy or not buy the infinite variety of products and services.

*“We have learned more about the brain in the last five years than in all human history combined”.*

-By Charlie Rose

The basic lesson is that human brains process much of their sensory input subconsciously. Most of the works our brains are doing day and night are below our personal consciousness. Our senses are taking in about 11 million bits of information every second. Most of that comes through our eyes but all other senses are contributing-hearing, touch, smell, taste. Research has shown that our conscious brain can process at best 40 bits of information per second. All the other is processed subconsciously. That is why our brain appears to be a mystery.

This has really widened the scope of Neuromarketing. The concepts of Neuromarketing provide a real competitive advantage in a crowded and cluttered market. The languages of consumers change from country to country and culture to culture, however the language of human brain is the same i.e. universal. Thus, Neuromarketing has greatly affected products, brands, packaging, and advertising as well.

**STRUCTURE OF HUMAN BRAIN**

Human brain is made up of billions of cells. These cells are called neurons. The neurons can communicate with one another through small junctions. These junctions are called synapses. When a neuron is active, it sends an electrical impulse to its own terminal or end. The impulse generates a sequence of physico-chemical events leading to the release of a chemical molecule. This chemical molecule is called a neurotransmitter and serves as a messenger. This neurotransmitter forms a bridge between the two neurons and the impulse gets transferred. Once a neuron is activated it is described as ‘a neuron has fired’. A single neuron connects with 600 to 1500 other neurons. Neurons form circuits, circuits form networks, networks form systems, systems form super systems and the super systems are equivalent to galaxies.

*“Neurons are the basic working units of the brain and the central nervous system, designed to transmit information to other nerve, muscle or gland cells.”*

By Dr. A. K. Pradeep Founder and CEO, Neurofocus Inc.

**Our brain is a part of central nervous system which has following parts**

The table below shows the importance of different parts of brain to marketing and advertising managers

TABLE: 3

Area of Brain	Function	Importance
Spinal cord	Sending message from nerves to different parts of the body	0
Medulla oblongata	Respiration, controls blood pressure, senses of taste and hearing	1
Pons	Controls movement, respiration and sleep	0.5
Cerebellum	Maintains postures, controls head and eye movements, muscle movements, language as well as cognitive functions	1.5
Midbrain	Co-ordination of visual and auditory reflexes	0.5
Thalamus	Taste,smell,touch	2
Hypothalamus	Eating,drinking,growth,motivation	3
VMFL(Ventro-medical Frontal Lobe)	Decision-making	4
Hippocampus	Memory	4

Source: Neuromarketing a Peep into Customer`s minds by J.K. Sharma, Deepali Singh, K.K.Deepak, D.P.Agarwal

Value range 0 to 5

**THE SHE FACTOR**

Till date only 17% of medical research was conducted on women. The main hindrance was the body cycle each month which is never static. As a result, no concrete baseline can be established. But this was the scenario before the Right for Inclusion of Women in Clinical Research was passed in 1995.Now the female brain is the prime focus for study.

The marketers can now target those five magic days to market their products or services that make women more attractive. New research shows that woman`s purchase behavior is unconsciously influenced by their hormones. Therefore, women at peak fertility unconsciously choose products that enhance appearance in order to outdo the attractive rival women. This research has practical implications for marketers as for about 5 to 6 days every month normally ovulating women may likely purchase clothing, shoes, accessories, health supplements, diet programmes etc.This has opened a new avenue in Neuromarketing- doing a blood draw along with brain scans & biometrics to evaluate the hormonal levels of female subjects.

**WHY SHE**

Women in India have several layers to them. Marketers cannot afford to look at them as ‘One Mass’ due to their various life cycle stages, distinct life styles as well as consumption psyche. They play a significant role not only in consumption but in household buying decision-making as in India three-fourth of all families are nuclear.

*Juxt Indian Women Study 2010 reveals following facts:*

- There are only 40 million working women in India (i.e. 9% of all women).148 million are students while 260 million are housewives
- 72% of working women are working mothers
- Housewife mothers is the largest occupational-marital segment among women (50%)
- Only 1 woman in 10 works in corporate world. Southern region contributes the highest proportion of working women

TABLE: 4

Segment	Description	% of Indian women population	No. in millions
Women students	Unmarried & studying	33	148.5
Working maidens	Unmarried & working	2	7.2
Housewives	Married & not working	8	34.2
Housewife mothers	Married with children & not working	50	225.4
Working wives	Married & working	1	4.3
Working mothers	Married with children & working	6	28.6
<b>Total</b>		<b>100</b>	<b>448.2</b>

Source: Juxt Indian Women 2010 Study

### A PEEP INTO THE SHE BRAIN

The female brain is fundamentally different from the male brain. She has four times more neurons connecting the right & the left brain. She processes information through both rational & emotional filters unlike men who use either one side or other to process the information. Therefore while constructing messages to her marketers need to include some emotional component. This balances of two hemispheres makes the female brain multitasker of all the time. It is easy and natural for the female brain to move from home to work, from shopping to signing of contract and even combine all the activities. Men tend to focus on one activity with one hemisphere at a time. The female brain is capable of more uneasiness and to do more planning than the male brain. She will always be interested in finding the best deal for her time, money and effort. It may happen that the best deal is not sufficient as she is willing to pay more if your product or service satisfies her requirements as well as of her family. Thus the goal of a male brain is autonomy while that of female brain is community.

Following are some interesting facts about the female brain helpful for marketers by *Louann Brizendine author of The Female Brain*:

- The female brain is smaller than the male brain by about 9% i.e. the brain matter is more tightly packed in the female brain
- Women have about 11 % more neurons in the language centers of the brain
- A woman has slightly smaller amygdala (controls sex & aggression). Therefore, sex is both emotional as well as physical for women
- Women have slightly larger prefrontal cortexes than men which allows them to control emotions during peak times of anxiety

### TIPS FOR MARKETERS

- The advertisements targeted towards female consumers must pay attention to facial expressions as well as tone of voice not just the text matter
- Social connections are vital for female consumers as a result shared stories are more appealing
- Avoid challenging the female consumers with messages like; "Don't wait" or "Call now"
- Since both her hemispheres are connected, make sure that the message in the advertisement is based on some positive emotion than statistics or numbers

### THE HANDS THAT ROCK THE CRADLE RULE THE WORLD

Birth of a child is a powerful catalyst for the brain changes. Brain changes begin from pregnancy. Mothers are famous for their superior instincts and intuition skills. The enhanced prefrontal cortex gives her the ability to control emotions. Human mothers also build networks to support as well as bond with their babies. Mothers excel at what someone else is thinking. Just like human GPS (Global Positioning System) mommy brain has increased vigilance on all aspects i.e. safety and stability of her young one. Birth of a baby is rebirth of her too. Therefore, it is rightly said that all mommies have female brain but not all females have mommy brain.

### TIPS FOR MARKETERS

- Show activities that the mother would like to engage with her baby
- The more she feels understood the more likely she will give attention or rely on the brand
- One negative view of your product, its promotion, packing, environment can easily spread amongst millions of mommies as they are socially very well connected
- Target the mommy brain from a new perspective i.e. emphasize safety in a positive emotional context and not through fear

### SUCCESS STORIES OF THE APPLICATIONS OF NEUROMARKETING

#### FRITO-LAY

Women snack more than men but research showed that they did not prefer Frito-lay snacks. The organization conducted an extensive research campaign which brought forward the following results:

- Women snack only 14% of the time on salty foods
- 24% of the time on sweet food
- Other 61% includes drinks, fruits and vegetables

Later the organization decided to make use of various Neuromarketing techniques for adjusting their marketing strategy. The research suggested that communication centre in a woman's brain is more developed due to which they process advertisements with more complexity and more pieces of information. She is especially interested in the guilt factor. Almost 100 females were asked to keep a log of their lives for about two weeks. The outcome of this exercise was that women feel guilty about a lot of things in life.

The following was the **action plan** of Frito-lay after applying Neuromarketing techniques:

- They focused on their ad campaign as "guilt-free" snack. The organization spread message that; "Snacking should make you feel good, not guilty."
- They toned down their packing and showed healthy ingredients like 0% fat, fibre etc
- After acquiring SmartFood it introduced new line of sweet, low calorie popcorn with flavors like canberry-almond. The packing highlighted nutritional ingredients like: Calcium, wheat, almond, fiber.
- Frito-lay started with the campaign "Only in a Womans World". The campaign has four cartoon women whose names are Anna, Cheryl, Maya, Nikki each possessing a distinct personality. These women are termed as fabulous, funny, and fearlessly female.
- Frito-lay came up with TV, print, online and webisodes at [www.AWomansworld.com](http://www.AWomansworld.com)

Frito-lay came up with following variants for guilt-free women:

- **Baked Lays-"Eating better can be yummy."**

These are naturally baked with 65% less fat than regular potato chips. Baked Lays are light-tasting, crispy and full of flavors.

- **Smartfood Popcorn clusters-"Getting your fiber can be delicious"**

Popcorn clusters with excellent source of calcium, 5gms of fiber and no artificial colors or preservatives. Available in mouth watering flavors like: canberry almond, honey multigrain and chocolate cookie caramel pecan.

- **100 Calorie sun Chips-"Treat you to portion control".**

A 12 Gms of whole grain snack in interesting flavours like: harvest cheddar, white cheddar, asteroids.

- **Flat Earth-“We snuck some veggies in your crisps.”**

Half a serving of real vegetables in every ounce of crisps which are naturally baked with excellent source of vitamin A & C. Available in flavors like: tangy tomato, garlic & herb, spicy salsa.

### FUTURE OF NEUROMARKETING

There is no element of doubt that Neuromarketing will enable advertisers to be very specific in providing products that the consumers really want. The more senses you trigger about your products and service you can influence the buying behavior. Still Neuromarketing is in ones infancy and not free from critics as well as issues.

NeuroFocus, Inc. is an American multinational Neuromarketing company with headquarter in Berkeley. NeuroFocus combines neuroscience research with consulting and marketing practices. NeuroFocus is the global market leader in neurological testing. In India too they have set up an office in Chennai. First *annual Neuromarketing awards* were announced by media brands IPG Media Lab and Affectiva at Cannes Lions International Advertising Festival in June 2011.

Inspite of all these issues Neuromarketing is here to stay. All advertising campaigns are not commercial as many focus on changing the behavior of the people. For example to convince people not to smoke, don't drink and drive or talk on a cell phone while driving.

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## CONSUMER SATISFACTION IN INDIAN CELLULAR INDUSTRY USING SERVICE QUALITY MODEL- AN EMPIRICAL ASSESSMENT

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### ABSTRACT

*Satisfaction is a major outcome of marketing activity and serves to link processes culminating in purchase and consumption with post-purchase phenomenon such as attitudinal change, repeat purchase and brand loyalty. It is a feeling, which a consumer gets from a process of evaluating what was received against that expected, the purchase decision itself and the fulfillment of needs and want. The key to consumer satisfaction lies in meeting these expectations. Expectations are created in the consumer mind from a variety of causes and reasons like past-experience, promotional claims, word-of-mouth and third party information. Kotler<sup>2</sup> also noted that satisfaction is a function of perceived performance and expectations that identifies feelings of a person resulting from comparing a products perceived performance in relation to his/her expectations. Consumer satisfaction is a multi-dimensional in nature and lies with multiple experiences with the service provider. This paper presents the results of a service quality gap study designed to measure consumers' expectation and perception of service quality in Indian cellular industry. SERVQUAL model, developed by Parasuraman et al. (1985-88), is the most widely used model for measuring the satisfaction gap, which is objective and quantitative in nature.*

### KEYWORDS

Satisfaction, expectations, perceptions, consumer satisfaction, SERVQUAL model.

### 1. INTRODUCTION

Telecom has been one of the fastest growing sectors in India. Due to the explosive growth of telephone networks world over, there is a steep increase in the teledensity. With the unification of basic and cellular licenses, the number of mobile service players has leapfrogged. All the cellular service providers are fighting it out for subscriber base. Consumer satisfaction has been a buzzword for most firms that wish to create and keep a competitive advantage in today's highly competitive world.

Consumer satisfaction is a feeling which a consumer gets from a process of evaluating what was received against that expected. Consumer satisfaction for cellular mobile service providers are based on services provided by the operators. The price is nowhere seen as a tool for attracting and retaining consumer, which is at rock bottom. It is time for service providers to look at other determinants to consumer satisfaction for getting competitive edge. The determinants to consumer satisfaction are dependent on service provider's related attributes such as level of service and call charges, over charging by service providers and etc. The effect of product attributes can be moderated by individual consumer differences such as age, gender, education, occupation and consumers' expertise. In cellular market, there exist differences in buying criteria among different gender and age groups.

The rising expectations of the consumers, the explosion in availability and accessibility of technology and increasing pressure from competition is forcing service providers to take a serious look at the enigma, that is consumer. Consumer satisfaction has emerged as the new age mantra to keep the service users hooked to an organization's offering. Now, quality is an important factor in determining the overall competitiveness of the service-providers.

This paper presents the results of a service quality gap study designed to measure consumers' expectation and perception of service quality in Indian cellular industry. SERVQUAL model, developed by Parasuraman et al. (1985-88), is the most widely used model for measuring the satisfaction gap, which is objective and quantitative in nature.

### 2. INDIAN CELLULAR INDUSTRY

Till early 1990's, India had one of the most backward and stagnant telecom infrastructure facilities though telecommunications came almost at the same time as in other advanced countries. Telecommunication was ridden with ineffective government regulations and inadequate financial resources available and unaffordable for the common man.

In the last decade or so, the scene of Indian telecommunication sector has been changed. Indian telecommunication industry has been emerged as one of the fastest growing telecom markets in the world. India's present telephone network of 846.32 million lines is one of the largest in the world. Initially, Metros and A category circles, which include the circles of Maharashtra, Tamilnadu, Karnataka and Andhra Pradesh, grew at a rapid pace. After NTP'99, action intensified in the B and C circles. NTP'99 led to the reduction in tariffs caused by the migration to the revenue sharing model and the falling prices of cellular handsets.

As in many developing countries, the telecom growth in India has also been witnessed due to growth in wireless subscriber base. The cellular segment began in 1994 with a few subscriber bases of around 17.4 million and has crossed 811.59 million at the end of March 2011. This has included subscriber base for both GSM and CDMA. Private operators who accounts for more than 85% of market share dominate the Indian cellular service market. The market share of the major mobile service providers are like Bharti (24.03%), Vodafone (18.87%), Idea/Spice (16.83%), Reliance (10.77%), BSNL (11.98%), Aircel (7.1%), Tata (6.75%) etc.

### 3. REVIEW OF THE LITERATURE

Kennedy & Schneider (2000) stated that in the changing economy, knowledge is as important as product/service, which is becoming globally standardized. Companies gain competitive advantage through constant innovation; better targeting consumers and additional services. Consumer satisfaction has been an important aspect for every organization due to constant innovation in components or services. Kotler and Armstrong (1993) stated that consumer/customer satisfaction is determined by the relationship between the consumer's expectations and product's perceived performance.

Oliver (1999) defined, "Satisfaction as pleasurable fulfillment. Satisfaction is the consumer's sense that consumption provides outcomes against a standard of pleasure versus displeasure. It is judgment that a product or service feature, or the product or service itself, provides a pleasurable level of consumer-related fulfillment". Fe and Ikova (2004) added that the perception of the word "satisfaction" influences the activities, which a consumer conduct to achieve it. Researchers have also identified consumer satisfaction as a multi dimensional in nature and viewed overall satisfaction as a function of satisfaction with multiple experiences with the service provider. Tse and Wilton (1988) stated consumer satisfaction as the consumer's response to the evaluation of the perceived discrepancy between prior expectations (or some norm of performance) and the actual performance of the product as perceived after its consumption.

Woodside et al (1989) found from the research study that consumer judgment of service quality is positively associated with overall satisfaction with the service encounter. The overall satisfaction varies with the service quality and consumer satisfaction. Overall consumer satisfaction with the service encounter is associated with behavioral intention to return to the same service provider. Now, quality is an important factor in determining the consumer satisfaction. Service quality and consumer satisfaction are important concept as a means of creating competitive advantages and consumer loyalty. According to Berry et al. (1997), service quality has become a significant differentiator and the most powerful competitive weapon, which all the service organizations want to possess.

McCune (1989) suggested that due to increased public desire for improved services with the dramatic growth in the service industry, companies has led to assess quality of service for an increased consumer satisfaction. Service quality and consumer satisfaction are widely recognized as key influences in the formation of consumer’s purchase intentions in service environment. From the study of Taylor and Baker (1994), it appeared that consumer decision-making which included the interaction of satisfaction and service quality provided a better understanding of consumer purchase intentions. Zeithaml et al. (1996) made attempts to understand the characteristics of services and what providers should possess in order to project a high quality service articulated by their consumers. They made a conclusion that consumers’ provided service quality is a different concept from their satisfaction level and service quality can be known by measuring the gaps between consumers’ expectations and their performance.

Cronin and Taylor (1992), however, argued that the conceptualization of service quality as a gap between expectations and performance is inadequate. According to them, the concept of satisfaction defined as a gap between expectations and performance of disconfirmation of expectations. Satisfying consumers is a challenge for any service company. Anderson et al. (1994) stated that when quality and expectations increase, there is a positive effect on consumer satisfaction in the long run, but increased expectations may have a negative impact in the short run. Expectations have a positive effect on consumer satisfaction in the long run because they capture the accumulated memory of the market concerning all past quality information and experience. Wisniewski (2001) found an overall conclusion from the study that SERVQUAL approach was conceptually attractive and operationally useful. It offered a cost-effective way of ensuring that services remained consumer-focused and helped to identify the gap between performance and consumer expectations about a service that resulted in improvement.

**4. OBJECTIVES OF THE STUDY**

Based on the inputs from the various literature studies, a research study was carried out with the following objectives:

1. To give an overview of growth of cellular industry in India.
2. To find out the demographic characteristics of the cellular telephone use in Hyderabad city.
3. To determine consumer perceived service quality as a role for consumer satisfaction.

**5. HYPOTHESIS**

The hypothesis that can be established from the research objectives is:

There is a significant difference between average ratings of expectations and perceptions by the cell phone users.

H0: There is no significant difference between average ratings of expectations and perceptions by the cell phone users.

Ha: There is a significant between average ratings of expectations and perceptions by the cell phone users.

**6. RESEARCH METHODOLOGY**

As satisfaction is basically a psychological state, therefore care should be taken in the effort of quantitative measurement. Parasuraman, Zeithaml and Berry between 1985 and 1988 provided the basis for the measurement of consumer satisfaction with a service by using gap between the consumer’s expectation of performance and their perceived experience of performance. This has provided the way for measuring the satisfaction gap, which is objective and quantitative in nature. Therefore, in addition to consumer satisfaction model measurement, SERVQUAL was also used to measure the satisfaction gap. A structured and standardized questionnaire was used with 22-items SERVQUAL scale for measuring service quality. The items were measured on a 7-point Likert scale ranging from “strongly disagree” as 1 to “strongly agree” as 7. Out of 22-items, there were four items determined tangibility dimension, five items determined reliability dimension, four items determined responsiveness dimension, four items determined assurance dimension and five items determined empathy dimension.

For this study, present users of cell phone were only considered as respondents. A sample size of 305 respondents from Hyderabad city was interviewed. The researcher followed convenience sampling method because respondents who were seen using or have possession of mobile phones happen to be in right place at the right time (Jain and Hundal, 2006).

Data analysis is a significant function of the study. After the collection of data, it was processed with the help of computer. Data were processed with MS-Excel, which is essentially spreadsheet. But for managing quantum and type of data, SPSS (12.0) package was used to summarize and analyze the responses. Reliability analysis was tested using the Cronbach Alpha coefficient. Paired t-test was used to test whether any significant difference exists between average ratings of expectations and perceptions by the cell phone users.

**7. RESULTS**

**SERVICE PROVIDERS**

There are many service providers available in the market and the consumers are using their services. The respondents were asked to indicate their service provider. It was seen that out of 305 surveyed who were current users of mobile services, 30.8% of respondents were using Vodafone services, followed by Airtel services (30.5%), BSNL (11.8%), Reliance (10.5%), Idea (10.2%) and Tatateleservices (6.2%).

**DESCRIPTIVE STATISTICS**

Vital socioeconomic parameters of interest were investigated to bring to the fore salient characteristics of the respondents. The key demographic characteristics of the consumers shows that 226 (74%) of cell phone users were male followed by female 79 (26%). 150 (49.2%) of the respondents were using cell phone services belong to less than 25 years age group, students comprised the maximum proportion 120 (39.3%) and 104 (34.1%) respondents were working in private sector. Dependent were 123 (40.3%) and 71(23.3%) were earning Rs. 10,000 to Rs. 20,000.

**RELIABILITY ANALYSIS**

A reliability analysis was performed to test the reliability and internal consistency of the research instrument used in this study. The internal consistency of each scale was quite high as shown in Table: 1. The Cronbach’s Alpha coefficients range from 0.685 to 0.84, which were high. Nunnally (1978) suggested that for early stages of any research, the reliability of 0.50 to 0.60 is sufficient. He also recommended that instruments used in basic research have reliability of about 0.70 or better. Based on the results, the reliability of all value in the study found to be above the standard set by Nunnally. It was concluded that all scales behaved consistently.

**TABLE 1: RESULTS OF RELIABILITY ANALYSIS**

SERVQUAL Dimensions	No. of Items	Cronbach’s Alpha	
		Expectation	Perception
<b>Tangible</b>	4	0.685	0.765
<b>Reliability</b>	5	0.780	0.838
<b>Responsiveness</b>	4	0.801	0.803
<b>Assurance</b>	4	0.761	0.809
<b>Empathy</b>	5	0.797	0.813

Source: Primary Data

**SERVQUAL GAP MODEL**

The result of study includes analysis of SERVQUAL gap, which is shown in Table: 2. Means and standard deviation scores are presented for cellular mobile subscriber respondent’s expectations and perceptions. The mean scores ranged from 4.21 (Std. deviation = 1.271) to 5.29 (Std. deviation = 1.353), with an overall mean of 5.02 (Std. deviation = 1.353) for SERVEXP scale and mean of 4.56 (Std. deviation = 1.381) for SERVPERC scale. The total SERVQUAL score is negative (-0.458).

SERVQUAL gap is the difference between the perception and expectation scores. It was found from the calculation that a negative gap showed that respondent's of service in cellular service industry were exceeding the respondent's perceptions. Expectations and perceptions scores were measured on a 7-point Likert scale on which the higher the number the better the expectation/perception about the service.

In the current competitive market, the service quality performance with comparison to consumer's expectation can lead to a satisfied consumer. The average ratings for expectations are higher than the average perception ratings in all dimensions of service quality. This results in a negative total consumer satisfaction gap. The less (more) consumer satisfaction gap reflects consumer is satisfied (dissatisfied) with the service. The widest gaps are those in the dimensions of assurance (-0.556) and empathy (-0.617). Consumers are more satisfied with the appearance of the service provider's physical facilities, equipment, personnel and communication materials, therefore the gap in the dimension of "tangibles" is the narrowest (-0.302). The result of the SERVQUAL model shows that the expectations of consumers are higher than their perception. The present study reveals a satisfaction gap of -0.458. The result of hypothesis showed that there is a significant difference between average ratings of expectations and perceptions by the respondents of cellular subscribers.

TABLE 2: SHOWING SERVICE QUALITY GAP

Items	Expectations (SERVEXP Scale)		Perceptions (SERVPERC Scale)		SERVQUAL Gap	Paired Sample
	Mean	Std. Deviation	Mean	Std. Deviation		
1	5.08	1.25	4.74	1.346	-0.344	-3.805
2	4.84	1.25	4.43	1.309	-0.407	-4.865
3	4.82	1.114	4.55	1.138	-0.266	-3.431
4	4.98	1.267	4.79	1.244	-0.190	-2.113
5	4.82	1.508	4.50	1.426	-0.321	-3.363
6	5.05	1.361	4.60	1.397	-0.452	-4.789
7	4.93	1.431	4.61	1.401	-0.328	-3.523
8	5.28	1.402	4.56	1.506	-0.721	-7.683
9	5.11	1.449	4.70	1.519	-0.407	-4.127
10	5.08	1.284	4.71	1.467	-0.364	-4.029
11	4.97	1.410	4.72	1.330	-0.252	-2.616
12	5.11	1.434	4.61	1.431	-0.502	-5.468
13	4.71	1.592	4.36	1.462	-0.357	-3.355
14	4.98	1.375	4.49	1.313	-0.495	-4.980
15	5.24	1.293	4.61	1.410	-0.630	-6.502
16	5.14	1.28	4.56	1.375	-0.574	-6.077
17	5.29	1.313	4.75	1.420	-0.531	-5.733
18	5.03	1.345	4.34	1.420	-0.689	-7.860
19	5.07	1.387	4.40	1.461	-0.675	-6.520
20	4.92	1.376	4.21	1.271	-0.711	-7.276
21	5.03	1.256	4.47	1.350	-0.561	-5.675
22	5.06	1.398	4.61	1.396	-0.449	-4.766
<b>Overall SERVQUAL Gap = -0.458</b>						

Source: Primary Data

## 8. CONCLUSIONS AND SUGGESTIONS

As the consumer satisfaction gap found to be narrow, it was found that most of the mobile users were satisfied with the service provider's physical facilities, equipment, technology, personnel and communication materials. Since most of the users were young, they felt the technology and infrastructure should be improved to provide quality service. Most of the user's felt that the service provider should mention the cost of providing service clearly in the brochure to avoid confusion. Service is intangible in nature. This issue should be taken care of by the service providers. Tangibility of service has impact on consumer satisfaction. So to ensure better tangibility of services, service providers has to ensure that the brochure containing information should be appealing and informative in nature and also materials associated with the service are in keeping with the type of services provided to the consumers.

Most of the mobile users felt that to increase the satisfaction level, the service providers should have ability to perform the promised service and priority to resolve problems. It was also observed that users were unhappy about the long waiting hours in resolving problems by the service provider's employees. All these factors accounted for larger negative service gap.

There were some users who expressed their dissatisfaction as for not getting information on the type of service facilities that are provided for the costs incurred at the time of activation of their mobile number. Some users felt that employees of the service provider are neither busy nor willing to help consumers. Therefore, the employees of the service provider should emphasize on the responsiveness.

In the personal interviews with mobile users, it was found that most of the consumers were unhappy with the customer care representative's response towards resolving a problem. The knowledge and courtesy of the service providers' employees and their ability to convey trust and confidence on consumers will result in narrowing the negative gap. The customer care department should emphasize more on providing prompt response to any problem of the consumers. Assurance should be given extra care because in telecommunication service, consumers seek for confirmation that his/ her problem is going to be performed as promised. Consumers need to be assured about uninterrupted service. If bills are paid or recharged in case of prepaid users, mobile should be connected within a very short time, any kind of discrepancy can affect consumer satisfaction as well as the trust of the subscribers on the company.

Cellular mobile market in India is getting more competitive, therefore, firms expecting to build and maintain competitive advantages in the market, according to the result of the study, must try their best to achieve higher consumer satisfaction and improve service quality. Service providers must pay attention to and invest more on consumer relationship management programs for their consumers to survive in the market. Service providers' priority should be to identify the most important factors in assessing service quality. Service support is an important quality element for achieving high consumer satisfaction level. Problems can happen in the service provision process, service providers should build an efficient service supporting system to resolve the problems quickly and sufficiently based on consumer's inconvenience. Employees who are involved in providing service should be provided with adequate training in order to offer a consistently high standard of service delivery.

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## SECURITY STANDARDS IN SERVICED APARTMENTS – WITH SPECIAL REFERENCE TO BANGALORE AND CHENNAI (SOUTH INDIA) - AN ANALYSIS

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### ABSTRACT

*Serviced Apartment is a type of well-furnished apartments available for short term or long term stays providing amenities for daily use. Generally, serviced apartments are less expensive than hotel rooms. Since the beginning of cheap international travel, serviced apartments played a very important role in keeping costs low both for international and domestic travellers across the world. As the industry evolved, travellers realised the importance of serviced apartments. Its primary benefits are more space and privacy, convince when travelling with family and cost savings associated with cooking own meals in the apartments. The industry got the biggest boost with real estate prices moving up very fast for the hotel industry. More over recession forced companies to look for affordable serviced apartments across the world. In the late 1950s and early 1960s the concept of serviced apartments came into existence in United States of America. The full service hotel industry as well as the budget hotels absorbed existing demand, at the same time the serviced apartments created a new category for itself by attracting long stay travellers who had previously used residential or hotel accommodation. Safety is crucial for any accommodation. In this paper the Safety aspects of the Serviced Apartment in Metropolitan cities of south India, Bangalore and Chennai, is discussed.*

### KEYWORDS

Safety, Security standards, Serviced Apartment.

### INTRODUCTION

The serviced apartment is typically designed for someone who is going to stay for seven or more consecutive days. The rooms and amenities are more oriented for someone looking for residential atmosphere.

The high occupancies in the service apartments lead to heightened interest in this segment. The depth of the service apartments increased from economy class to first class. This leads to the direct competition between the full service hotel and budget hotels with serviced apartments. The true depth of the extended-stay segment's demand remains difficult to ascertain, although managers of the lower-rated extended-stay products often find themselves competing with operators of conventional limited-service hotels, while higher rated extended-stay products often compete with all-suite hotels or the high-end category of rooms in luxury hotels. Sometimes, the hotels succeed, as the strong investment in the guestroom offerings present a strong price-value perception for guests. Nevertheless, the operating efficiencies in the design and operating concept diminish as the length of the guest's stay shrinks.

With the ongoing expansion of the Indian economy and the increasing number of multinationals coming into India has seen a number of professionals entering the major cities because of business for medium to short term. This has resulted in a demand for quality accommodation for longer periods at cheaper cost. Companies prefer settling their expatriate staff in extended-stay accommodation like serviced apartments, as they are a cost effective alternative to extended-stay hotel accommodation. In addition they also work out cheaper than quality unfurnished or furnished accommodation that companies need to provide to their expatriate employees. This concept is already developing and in the near future should see a number of such facilities operational. However, the size is quite limited at present, because serviced apartments have only been offered in a few cities in India. Safety for any accommodation facility is crucial.

### LITERATURE REVIEW

The literature review of this research provides background information on what safety and security really stand for and what their main purpose is. When discussing safety and security, it is important to understand the two main parts of safety and security "(1) Physical-safety attributes and (2) organisational systems and plans to ensure safe operation" (Enz & Taylor, 2002). The terms safety and security are defined as two different concepts. First, safety deals with the guest and the hotel staff and is designed to prevent any person from being harmed in any way at the property. These precautions aim at threats like fires, dangerous substances or any other forms of potential injuries. Second, security is described in this context as a measure that is in place in order to provide protection to the hotel or the customers' belongings; any elements of crime are also involved and the attempt is made to prevent them.

When discussing safety and security at hotels, all departments have to take part in the implementation. First, in kitchen, safety and security measures are done by implementing HACCP. HACCP stands for Hazard Analysis of Critical Control Points (Riemersma, 2001). HACCP is a system which identifies, evaluates, and controls hazards which are significant for food safety; a systematic prevention to minimize or eliminate risks of contamination by giving intensive intention and accurate design for operation (Emiati, 2004, in lecture of Safety, Security & Hygiene).. Second, safety and security orientation and training is crucial to be implemented in housekeeping department, since here not only machinery is handled but also dangerous chemicals, mounting ladders and unhealthy postures can cause damage to the health of the employees and in some cases (chemicals) also the guests (Kappa et al, 1997, p.189). Other departments that are involved and important when discussing safety and security are the front office and the restaurant. Front office staff plays a particularly important role. Front desk agents, door attendants, bell persons, and parking attendants have the opportunity to observe all persons entering or departing the hotel. Suspicious activities or circumstances involving a guest or visitor should be reported to the hotel's security department or a designated staff member (Kasavana & Brooks, 1995).

In addition, there are several procedures front desk agents should use to protect guests and property, for example, front desk agents should never give keys, room numbers, messages, or mail to anyone requesting them without first requiring appropriate identification. Similarly, the front desk agent should not announce an arriving guest's room number (Kasavana & Brooks, 1995). Restaurant staffs also play an important role in safety and security. Based on the experiences and observation of one of the writers when the writer had traineeship (August 2001 – July 2002) at a hotel, the restaurant staffs should protect the guests and property. For example, the staffs should ensure the security of guest's belonging by giving attention to suspicious activities or person. Others, the staffs should clean the broken glass in the restaurant immediately so that no guests are having accident. As a hotel staff has an important role related to safety and security, it is expected that the staff has good competencies. (Spencer & Spencer, 1993) defines competency as "an underlying characteristic of an individual that is causally related to criterion-referenced and/or superior performance in a job or situation", or in the simplest definition is the person's ability to do something well. Underlying characteristic means the competency is part of a person's personality and can predict behavior in every situations and job tasks (Spencer & Spencer, 1993).

It is obvious that safety and security are some-thing very important nowadays in all departments in a hotel, and as hotel staff, someone has an important role related to the safety and security, it is expected that the staff have good competencies and can implement the measures. If the staff cannot implement the safety and security measures, it could be dangerous for the guests and the staff themselves, and the management have to react on it, this situation has to be changed. One of the extreme reactions can be done by the management which is applying change management (Carpon, 2004). The management applies changes when it faces gaps between the capabilities that its firm has and those that the firm needs to operate in the current competitive environment or in the



competitive environments that it expects to face in the future. According to Hiatt and Creasey, change management is the process, tools and techniques to manage the people-side of business change to achieve the required business outcome and to realize that business change effectively within the social infrastructure of the workplace. Change management is needed since there are new values of business today that require a different approach to the way businesses change. Besides, the response of the employee has shifted from "yes, sir" to "why are we doing that", and the change leader must adapt (Hiatt and Creasey). In implementing changes (Strebel, 1997) issued model of contrasting change paths. After the path is chosen, the plan should be put in place and the plan should be evaluated after a certain period to see if the plan is successful. This is an important step in quality management since the constant evaluation and improvement in process will lead to a total quality.

### OBJECTIVE OF THE STUDY

To see whether security standards are met and require no further improvements. If not so, then identification of key domain(s) that would perhaps require further improvement in order to have flawless security standards in Serviced Apartments.

### RESEARCH METHODOLOGY

In order to achieve the objective as outlined, the following primary research was undertaken:

- Detailed interviews with the help of structured Questionnaire with male and female residents of Serviced Apartments.
- Sampling was done using Geographical Clustering method. Survey was conducted in two Indian cities, Bangalore and Chennai. They have a good number of Serviced Apartments- mainly due to International and Domestic travellers visit these cities. A total of 200 Customers with a ratio of 129: 71 to Male: Female were interviewed with 78 Male from 40 Apartments in Bangalore and 51 Male from 31 Apartments in Chennai.

### DATA ANALYSIS AND INTERPRETATION

A combined sample size [N] of 100 apartments was selected for the analysis with 61 samples [n1] from Bangalore city and 39 samples [n2] from Chennai city. The results presented in Table-1 and Table -2 are based on the combined sample size [N=100]. The data is measured on a nominal scale (in this case - dichotomous) with 1 as 'yes' and 0 as 'no'.

#### SAFETY ASPECTS

All the subjects [items/questions] pertaining to safety measure in serviced apartments is classified or factored into six aspects [see Table-1] as safety in hotel room [13 items], Night Duty/safety of Guests [7 items], Front Desk [7 items], Security [7 items], Supervision/Inspection aspect [14 items] and Fire [5 items]. As all items were of dichotomous nature, Cronbach's test could be not used to test the reliability or internal consistency of the scale. Further more, the classification of aspects is not based on the correlation coefficients - most often done through factor analysis, but only on subject matter.

#### DESCRIPTIVE STATISTICS

Firstly, the weighted average number of serviced apartments was arrived because of different sample sizes [at Bangalore city and Chennai city]. This has been done both set of apartments having the facility [saying 'yes'] and not having the facility [saying as 'no'] as against each item defined [see Table-1]. The overall mean of all items falling under each safety aspect or component is obtained. Accordingly, the overall average number of apartments accepting the fact that there exist facilities as defined under each item of safety in Hotel Room aspect is 80 and 20 apartments agreeing of not enjoying the facility. A Standard Deviation [S.D] of 6 apartments indicate that, if another sample [apartments] of homogeneous nature is drawn from other region or population, one would expect [at a confidence level of 95 %] that the number of apartments agreeing of having facilities defined across items under the safety in Hotel Room aspect would be in the range of 77 to 83 apartments

[Confidence Interval = mean - (1.95 x S.E), mean + (1.64XS.E),  $80 - 1.95 \times 1.63 = 77$ ,  $80 + 1.95 \times 1.63 = 83$ , where S.E = 1.63].

Equation (1)

However, looking at each item under the first safety aspect, considerably about 31 apartments do not have SoS telephone. Similarly, it is seen that one-fourth of apartments do not have the display of escape plan clearly displayed near the room door in every room and another 28 apartments saying that proper display of information on procedures in the event of an emergency.

Similarly, the overall average number of apartments accepting the fact that there exists facility as described under each item of Night Duty/Safety of Guests aspect is 78 and apartments not having the facility is 22 apartments, with an overall deviation [s.d] of about 6 apartments from the average. Again as like the previous aspect, the more concerning subject is the sum of the negatively valued balances of the category standards as 35 apartments indicating pessimistically, which perhaps is a significant variable concerning the security standards.

The overall average number of apartments accepting the fact that there exist facilities as defined under each item of Front office aspect is 81 and 19 apartments agreeing of not enjoying the facility. A Standard Deviation [S.D] of 6 apartments indicate that, if another sample [apartments] of homogeneous nature is drawn from other region or population, one would expect [at a confidence level of 95 %] that the number of apartments agreeing of having facilities defined across items under the Front office aspect would be in the range of 77 to 83 apartments

[Confidence Interval = mean - (1.95 x S.E), mean + (1.64XS.E),  $81 - 1.95 \times 1.63 = 77$ ,  $81 + 1.95 \times 1.63 = 83$ , where S.E = 1.63].

Equation (2)

The overall average number of apartments accepting the fact that there exist facilities as defined under each item of Security Condition aspect is 84 and 16 apartments agreeing of not enjoying the facility. A Standard Deviation [S.D] of 6 apartments indicate that, if another sample [apartments] of homogeneous nature is drawn from other region or population, one would expect [at a confidence level of 95 %] that the number of apartments agreeing of having facilities defined across items under the Security condition aspect would be in the range of 81 to 87 apartments

[Confidence Interval = mean - (1.95 x S.E), mean + (1.64XS.E),  $84 - 1.95 \times 1.63 = 81$ ,  $84 + 1.95 \times 1.63 = 87$ , where S.E = 1.63].

Equation (3)

Number of apartments accepting the fact that there exist facilities as defined under each item of Supervision/Inspection aspect is 69 and 31 apartments agreeing of not enjoying the facility. A Standard Deviation [S.D] of 6 apartments indicate that, if another sample [apartments] of homogeneous nature is drawn from other region or population, one would expect [at a confidence level of 95 %] that the number of apartments agreeing of having facilities defined across items under the Supervision/Inspection aspect would be in the range of 66 to 72 apartments

[Confidence Interval = mean - (1.95 x S.E), mean + (1.64XS.E),  $69 - 1.95 \times 1.63 = 66$ ,  $69 + 1.95 \times 1.63 = 72$ , where S.E = 1.63].

Equation (4)

The overall average number of apartments accepting the fact that there exist facilities as defined under each item of Fire aspect is 77 and 23 apartments agreeing of not enjoying the facility. A Standard Deviation [S.D] of 6 apartments indicate that, if another sample [apartments] of homogeneous nature is drawn from other region or population, one would expect [at a confidence level of 95 %] that the number of apartments agreeing of having facilities defined across items under the Fire aspect would be in the range of 74 to 80 apartments .

[Confidence Interval = mean - (1.95 x S.E), mean + (1.64XS.E),  $77 - 1.95 \times 1.63 = 74$ ,  $77 + 1.95 \times 1.63 = 80$ , where S.E = 1.63].

Equation (5)

<sup>1</sup> Weighted average calculation is as follows: For time-1, under safety in Hotel Room aspect [see table-1], 79 % of serviced apartments in Bangalore and 87 % in Chennai had the facility described in item -1, while 21 % of apartments in Bangalore and 13 % in Chennai did not had this facility. The sample size for Bangalore is 61, while it is 39 in Chennai. Hence, the weighted average [in percent] was found to be appropriate and thus was calculated  $[(0.79 \times 61 + 0.87 \times 39)/(61+39) \times 100]$  for apartments having this facility. Similarly, the weighted average (in percent) for apartments not having facility described or mentioned in item-1 is  $[(0.21 \times 61 + 0.13 \times 39)/(61+39) \times 100]$ . Thus obtained weighted average in percentage form was converted into absolute figure to make it convenient for analysis.

The test of significance [see Table-2] was tested on the hypothesis that there is no significant difference in the number of apartments saying “yes” and “no” for each of the safety aspects considered. The significance was tested through the parametric chi-square goodness of fit (see Table -2). The chi-square goodness of fit is the sum of the difference between the observed outcome and the expected outcome. Using the nominal scale, the expected outcome [calculated] is 78 apartments saying ‘yes’ [enjoying the facility] and 22 apartments saying ‘no’ [not having the facility] under each aspect for arriving at a conclusion that security standards have been met and requires no much of improvement. Now, the observed results [see table-2] falling closing with a difference of about six apartments expect for service/maintenance where it is about 9 apartments. As the p-value 0.176 [the phi value for Nominal scale, [table – 2 (b)]] is higher than the 0.05 (the significance level alpha), the null hypothesis is accepted. Thus, the result indicates that security standards have been met and perhaps doesn’t require any further radical improvement.

## DISCUSSION AND CONCLUSION

In a broader perspective, though it looks that security standards are met, yet, as observed from descriptive statistics, it still requires improvement in certain areas such as; Supervision/inspection aspect – This is clearly emerging from the result, that this aspect needs further improvement especially with respect to enterprise’s technical ability and Instruction of employees-Orientation of employees on-Technical equipment. These two issues are being flagged by almost 30 % of apartments and perhaps considerably a significant number to address on a priority basis. Hence, measures have been taken by the concerned management to retain the technical ability and perhaps more orientation in the form of training could be provided to their employees.

The fire desk – Again, it emerged from the result as part of Fire planning, Internal alarm plan is not available in about 35 % of apartments and also fire system currently not available in about 30% apartment. However, this seem to be real major concern that need to be addressed as it involves human cost during any fire break out [which occurs rarely] in the serviced apartments.

Thirdly, though it might not be significant from statistical point of view, yet two items under safety of namely (a) not having the display of escape plan clearly displayed near the room door in every room and another 28 apartments saying that proper display of information on procedures in the event of an emergency.

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<sup>1</sup> Other statistical techniques such as logistic regression and OLS regression could not applied due to the nature of data. In a sense, this data did not hold the underlying assumptions for using above techniques.

TABLE-I: DESCRIPTIVE STATISTICS OF SAFETY ASPECTS IN SERVICED APARTMENTS [BANGALORE & CHENNAI COMBINED]

Aspect	Weighted Average (# of apartments)		Aspect	Weighted Average (# of apartments)			
	Yes	No		Yes	No		
<b>I. Safety in Hotel Room</b>			<b>III. Front Desk</b>				
24-hour alarm organisation in writing for emergencies with internal SOS phone	82	18	Tariff and prices lists/booklet are available on desk and visible for customers	86	14		
Security officer with corresponding job Description (including monitoring) appointed	77	23	Paid phone	85	15		
Safety in the room and hotel-Fire safety checklist filled out accurately and completely and signed	79	21	Minimum standard met yes/no	87	13		
Safety in the room and hotel-The hotel employees are informed about the safety measures in writing	79	21	Direct dial telephone in all accommodation units, incl. information on SOS numbers	81	19		
If all rooms are not equipped with a telephone, a free emergency telephone must be	69	31	Minimum standard met yes/no	77	23		
The hotel's entrance areas are to be Monitored and closed at night	81	19	Subtotal of unmet minimum standards	78	22		
The escape plan is clearly displayed near the room door in every room	75	25	Sum of the negatively valued balances of the category standards	75	25		
Proper display of information on procedures in the event of an emergency	72	28	<b>Overall Mean</b>	<b>81</b>	<b>19</b>		
Occupiers has been provided with a key to the entrance door of their unit	84	16	<b>Standard Deviation</b>	<b>6</b>	<b>6</b>		
Adequate level of lighting for safety and comfort including sufficient light on	82	18	<b>IV. Security – condition</b>				
Safety in the room and hotel-Minimum standard met yes/no	83	17	To be completed by all enterprises	94	6		
Possibility of storing valuables at the enterprise in a safe	89	11	The security officer shall, at least, carry out the tasks pursuant to clauses 1-3. An employee is to be named	78	22		
Safe/Lockers-Minimum standard met yes/no	89	11	His/her right of representation must be guaranteed	89	11		
<b>Overall Mean</b>	<b>80</b>	<b>20</b>	He/she is to report directly to the management in respect to his functions	87	13		
<b>Standard Deviation [of each apartment from the average]</b>	<b>6</b>	<b>6</b>	In smaller enterprises, the manager himself must attend to security concerns	85	15		
<b>II. Night Duty/Safety of Guests</b>			Is direct communication to the fire centre ensured?	74	26		
Night porters, employees/hoteliers or representatives	82	18	Is the security officer registered with the fire department in writing (building insurer)?	82	18		
Technical communication (night bell/telephone etc.) must be directly connected to the night duty job description	76	24	<b>Overall Mean</b>	<b>84</b>	<b>16</b>		
Minimum standard met yes/no	80	20	<b>Standard Deviation</b>	<b>6</b>	<b>6</b>		
Subtotal of unmet minimum standards	77	23	<b>VI. Fire</b>				
Sum of the negatively valued balances of the category standards	65	35	Yes	No	Yes	No	
1 lift for 3 or more floors	80	20	Fire alarm system available	69	31	69	31
Guest Elevator-Minimum standard met yes/no	83	17	Fire planning - Internal alarm plan available	64	36	64	36
<b>Overall Mean</b>	<b>78</b>	<b>22</b>	Fire planning - Instructed employees	77	23	77	23
<b>Standard Deviation [of each apartment from the average]</b>	<b>6</b>	<b>6</b>	Fire planning - Plan of action agreed with the fire brigade	88	12	88	12
<b>V. Supervision/Inspection/Monitoring – condition</b>			Fire planning - Guest list up to date at all times	88	12	88	12
Supervision of building work in the enterprise, such as	73	27	<b>Overall Mean</b>	<b>77</b>	<b>23</b>	77	23
Inspection and maintenance of the enterprise's technical	65	35	<b>Standard Deviation</b>	<b>6</b>	<b>6</b>	6	6
Monitoring of general order, particularly the storage of	71	29	Instruction of employees-Implementation of drills, in particular in the operation	77	23	77	23
Inspection and maintenance of technical fire safety	67	33	Instruction of employees-Orientation of employees on-What to do in the case of a fire	72	28	72	28
Monitoring of alarm organization Guest information, notices, SOS telephone, connections	65	35	Instruction of employees-Orientation of employees on-Rescue measures (people, animals, goods)	68	32	68	32
Monitoring Entrance areas, monitoring of the closure system	61	39	Instruction of employees-Orientation of employees on-Technical equipment	68	32	68	32
Instruction of employees-Implementation of drills, in particular in the operation	77	23	Duty to supply information- Management	72	28	72	28
Instruction of employees-Orientation of employees on-What to do in the case of a fire	72	28	Duty to supply information- Security	71	29	71	29
Instruction of employees-Orientation of employees on-Rescue measures (people, animals, goods)	68	32	Number of floors underground (UG)	-	-	-	-
Instruction of employees-Orientation of employees on-Technical equipment	68	32	Number of floors above ground (G/AG)	-	-	-	-
Duty to supply information- Management	72	28	<b>Overall Mean</b>	<b>69</b>	<b>31</b>	69	31
Duty to supply information- Security	71	29	<b>Standard Deviation [of each apartment from the average]</b>	<b>6</b>	<b>6</b>	6	6
Number of floors underground (UG)	-	-					
Number of floors above ground (G/AG)	-	-					

TABLE II: ASPECT AND EXISTENCE OF FACILITY IN SERVICED APARTMENTS UNDER STUDY

Aspect		Existence of Facility		Total
		NO	YES	
Safety in Hotel Room	Count	20	80	100
	Expected Count	22	78	100.0
Safety of Guests	Count	22	78	100
	Expected Count	22	78	100.0
Front Desk	Count	19	81	100
	Expected Count	22	78	100.0
Security	Count	16	84	100
	Expected Count	22	78	100.0
Supervision/inspection	Count	31	69	100
	Expected Count	22	78	100.0
Fire	Count	23	77	100
	Expected Count	22	78	100.0
Total	Count	131	469	600
	Expected Count	131	469	600.0

TABLE II a: CHI-SQUARE TESTS RESULTS FOR SERVICED APARTMENTS

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.666 <sup>a</sup>	5	.176
Likelihood Ratio	7.432	5	.190
Linear-by-Linear Association	1.271	1	.260
N of Valid Cases	600		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 21.83.

TABLE II-b: SYMMETRIC MEASURES - SERVICED APARTMENTS

		Value	Approx. Sig.
Nominal by Nominal	Phi	.113	.176
	Cramer's V	.113	.176
	Contingency Coefficient	.112	.176
N of Valid Cases		600	

a. Not assuming the null hypothesis.  
 b. Using the asymptotic standard error assuming the null hypothesis

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## TO DISCUSS THE EFFECT OF SUPPLIERS' INVOLVEMENT, OPERATIONAL CAPABILITIES & SOURCING PRACTICES ON SUPPLY CHAIN FLEXIBILITY

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### ABSTRACT

*The global marketplace has become increasingly competitive in recent times and organizations are faced with the challenge of effecting continuous improvement in services for sustained user satisfaction. Today's companies are forced into functioning in a challenging business world with extensive uncertainties. The role of supply chain flexibility (SCF) has become increasingly important for firms in highly competitive markets, and also in economic downturns. A well-synchronized supply chain process is difficult to replicate for competitors since it becomes more difficult to compete on product level. Globalization and liberalization in the market place are important drivers for the growing competition together with the changing demand of the consumer. A shift arose from a more technology-oriented view (in the past) towards a point in time where collaboration and trust become important along the partners in the supply chain. Effective management of relationships in supply chain management is a necessity in order to withstand competitive pressures and economic downturns. Hence, as the importance of Supply Chain Flexibility is increasing day by day in global business market place, it is more essential to understand and stimulate various parameters having an impact on the enhancement of level of flexibility in supply chain. Various factors like suppliers' involvement, sourcing practices and operational capabilities are demonstrated and their consequence on supply chain flexibility has been formulated.*

### KEYWORDS

Supply Chain Flexibility, Operational Capabilities, Sourcing Practices, Suppliers' Involvement.

### 1. INTRODUCTION

Fierce competition in today's global markets, the introduction of products with shorter life cycles, and the heightened expectations of customers have forced business enterprises to invest in, and focus attention on, their supply chains. This, together with continuing advances in communications and transportation technologies (e.g., mobile communication, Internet, and overnight delivery), has motivated the continuous evolution of the supply chain and of the techniques to manage it effectively. Currently, changes in the environment (socio-political, changing demand etc.) are the cause for increasing uncertainty in the market place, (Kumar et. al., 2006). In order to deal with this, flexibility in the supply chain becomes more and more important. High volatility, massive swings in customer demand, and challenges in ensuring sufficient supply are the current reality for global supply chain executives, making supply chain flexibility the new imperative for growing company revenues while keeping supply chain costs under control, (Beach et. al., 2000). Supply chain flexibility is applied by companies across the globe due to its demonstrated results such as delivery time reduction, improved financial performance, greater customer satisfaction, building trust among suppliers, and others, (Henry et. al., 2008).

Supply Chain Flexibility is described as a series of units that transform raw materials into finished products and deliver the product to the customers. This is a typical 'push' approach, pushing the raw materials into the next processes of the chain, towards the end market, (Cua et. al., 2006). Supply chain flexibility is more holistically defined as managing business activities and relationships within an organization, with immediate suppliers, with first and second tier suppliers and customers along the supply chain. According to (Kumar et. al., 2006), a supply chain is a network of facilities and distribution options that performs the functions of procurement of materials, transformation of these materials into intermediate and finished products, and the distribution of these finished products to customers.

To achieve the level of flexibility that adds value to the customers, supply chain organizations must look beyond manufacturing flexibility. From the perspective of filling customer orders, no single part of the value chain working alone can significantly reduce customer lead-time, (Cua et. al., 2006). Only cross-functional and cross-company efforts to increase flexibility and eliminate uncertainties can create the level of performance needed to create competitive advantage. By the early 1990s, business communities realized the importance of creating an alliance with their upstream and downstream activities. Today many firms have taken bold steps to break down both inter- and intra-firm barriers to form alliances, with the objective of reducing uncertainty and enhancing control of supply and distribution channels, (Hussain et. al., 2010). This concept is known as supply chain management. Moreover, according to (Fisher et. al., 1997), SCM is known the systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain, for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole. Hence, Supply Chain Management is the coordination of production, inventory, location, and transportation among the participants in a supply chain to achieve the best mix of responsiveness and efficiency for the market being served (Fisher et. al., 1997).

### 2. LITERATURE REVIEW

In modern organizational/corporate management, the area of Supply Chain Management (SCM) has been considered as a competitive strategy for integrating suppliers and customers with the objective of improving responsiveness and flexibility of manufacturing/service organizations. The optimal design of a supply chain is therefore a crucial issue of SCM researchers and practitioners. An effective supply chain policy can reduce average holding inventory level as well as expected cost (Fisher et. al., 1997). Significant advances have recently been made in the theory and in applications under the drive of the inevitable prevailing

trend of globalization and today's competitive knowledge-based economy. Hence considering all the available databases, three factors have been selected which acts as the three pillars of a supply chain and on which the core research work is based. They are as following:

1. Suppliers Involvement
2. Operational Capabilities
3. Sourcing Practices

### 2.1 SUPPLIERS' INVOLVEMENT

The modern economical environment is gaining far reaching complexity and competition. Companies of all sectors are facing continuous changes in the market forces due to the liberalization of trade and the impact of new communication means, improved logistics services and electronic banking systems, and other factors, that have lead to a clear increase in global competition. Organizations had to rethink their way of doing business, based solely on their internal resources toward a more dynamic strategy, benefiting from their internal improved operations and closer communication with their business partners to overcome those challenges, (Simona Daniela Grigore, 2007). The modern information technology is making traditional borders obsolete. Not only between nations, but especially between organizations, creating a "global village". This phenomenon has created a new business environment in which companies compete no longer as a single legal entity, but as supply chains.

Consequently, supply chain management and purchasing performance are increasingly recognized as an important determinant of a firm's competitiveness. Therefore, in order to support the great variety of product and services purchasing processes and to integrate different business partners in an electronic network. Supplier relationship management systems were developed to coordinate and automate the process concerned with the supplier integration and communication, (Wolffried Stucky et. al., 2007). Supplier Relationship Management (SRM) is defined as a set of methodologies and practices needed for interacting with suppliers of products and services of varied criticality to the profitability of the enterprise, (Ferrie et. al., 2008), SRM is a means of building closer relationships with selected strategic suppliers, the purpose being to discover the added features that could enhance the relationship while improving business performance as the firms work in a network environment for mutual benefit and increase the likelihood of creating profitable new revenues together, (Wagner and Hoegl, 2006).

### 2.2 OPERATIONAL CAPABILITIES

Globalization has had a major impact on manufacturing, both locally and internationally. With the globalization broadening the marketplace and increasing competition, customers are placing greater demands on manufacturers to increase quality, serviceability, and flexibility while maintaining competitive costs. In order to survive in the fierce international competition of delivering quality products at lower cost, numerous manufacturers around the world have vigorously pursued programs like statistical quality control, just-in-time production, worker training, flexible manufacturing systems, design for manufacture, materials requirements planning, and many others, (Ferrie et. al., 2007).

Operational Capability is defined as the quality of being capable; to have the capacity or ability to do something, achieve specific effects or declared goals and objectives. Operational capability is the ability to align critical processes, resources and technologies according to the overall guiding vision and customer focused value propositions coupled with the ability to deliver these processes effectively and efficiently. Indicators of operational capability include process management and performance measurement. Operational capabilities revolve around the design, leadership and control of the productive assets/resources of the enterprise, which includes both people and technology and synchronizes with business strategy. Operational Capability (OC) is the business function that plans, organizes, coordinates, and controls the resources needed to produce a company's goods and services, (Spina et. al., 2002). It is a management function. It involves managing people, equipment, technology, information, and many other resources. Operational Capability is the central core function of every company. This is true whether the company is large or small, provides a physical good or a service. Every company has the capability to perform operations. Actually, all the other organizational functions are there primarily to support the operations function. Without operations, there would be no goods or services to sell, (Twig, 1998).

### 2.3 SOURCING PRACTICES

Sourcing and Procurement has become a critical area for companies implementing cost-cutting measures. Core procurement processes and strategic business areas have emerged as key focus areas to drive cost savings. Several companies are outsourcing tactical Sourcing and Procurement processes to third-party vendors. Outsourcing of activities traditionally performed internally by firms to third party partners has become increasingly important in recent years. While in the past outsourcing was primarily relegated to the procurement of non-core components and services, today the outsourcing trend has expanded to include virtually every activity of a firm, including core and non-core components, business processes, information technology processes, manufacturing and distribution activities, and customer support activities, (Venkatesan, 1992). Today's hyper-competitive environment, characterized by constant change, market unpredictability, and the pressure to reduce costs and cycle times, coupled with the globalization trend, has provided further impetus to the growth of outsourcing, (Venkatesan, 1992). It is also evident that manufacturing firms are now outsourcing functions and processes across the supply chain, including research and design, product development, product component manufacturing, product final assembly and distribution and logistics functions, (Petroni and Braglia, 2000). The growth of outsourcing has led outsourcing strategies to become an increasingly important component of firm's success, (Srinivas and Narasimhan, 2004).

## 3. RESEARCH METHODOLOGY

- a) The thesis work has been carried out in the medium scale manufacturing organizations in the north region of country (India) in order to study the impact of suppliers' involvement, operational capabilities and sourcing practices on the level of flexibility on supply chain of an organization.
- b) The report moves toward describing some new aspects of supply chain which have valuable brunt on the enrichment of flexibility for the transformation of raw materials into consumer goods.
- c) For effectively conducting the survey, the outlook of the manufacturing organizations regarding the requirement of supply chain flexibility has been explored through plant visits, interviews/discussions with managers and workers, and close analysis of the competitive advantages is done which is attained by manufacturing organizations having high level of flexibility in supply chain.
- d) To evaluate the level of flexibility in supply chain in northern region Indian manufacturing industries, a questionnaire has been specially designed and the questionnaire has mailed to industries on the lookout for response and statistical analysis of data collected through questionnaire has been done to check the height of competitive advantage attained by manufacturing organizations having high level of supply chain flexibility.
- e) In the questionnaire on SCF the inputs categories deal with the Executive Paradigms towards the enhancement of supply chain flexibility and other management related issues, while the output categories deal with the Flexibility Indicators of which signify the level of flexibility inside an organization.

## 4. ANALYSIS OF DATA

A suitable and optimal questionnaire is the back-bone of this entire dissertation process. Hence after designing a suitable questionnaire covering all the possible aspects relating with supply chain flexibility, it was necessary to make sure that the results obtained from those questionnaires must be accurate and suitable enough to study their impact on the flexibility of a supply chain. Hence after receiving back the questionnaires from the respondents, those answers are represented in the form of graph and compared with Likert Scale, in order to check weather our selected parameters pose any impact on the level of supply chain flexibility in an organization or not. The data collected through the questionnaire has been critically analyzed to evaluate the impact of suppliers' involvement, operational capabilities and sourcing practices on supply chain flexibility. The questionnaire has been divided into two parts, namely Executive paradigms and Flexibility Indicators. The following Inputs and Outputs have been deployed in the study:

TABLE 1: INPUTS AND OUTPUTS DEPLOYED IN THE STUDY

Inputs Variables (Executive Paradigms)	Output Variables (Flexibility Indicators)
Competitive Priorities (X1)	Supply Flexibility (Y1)
Operational Capabilities (X2)	Demand Flexibility (Y2)
Program Capabilities (X3)	Sourcing Practices (Y3)
Suppliers Involvement (X4)	

So the values of both these parameters have compared with Likert scale and the results are shown in the form of graphs.

Fig 1 depicts relation between Executive Paradigms consist of four parameters, namely Suppliers' Involvement, Program Capabilities, Operational Capabilities and Competitive Priorities. The value of these four parameters taken out of the questionnaire has compared with Likert Scale. Likert scale has five values offering the respondent to fill the most suitable answer to a particular question. Hence after calculating those values, most of the values lie towards the favorable options. Therefore, considering the results obtained from the graph, Competitive Priorities (3.5), Operational Capabilities (3.4), Program Flexibility (3.3) and Suppliers Involvement (3.6) have values ranging between Neutral and Agree scale, which is an optimal solution.

FIGURE 1: RELATIONSHIP BETWEEN EXECUTIVE PARADIGMS AND LIKERT SCALE

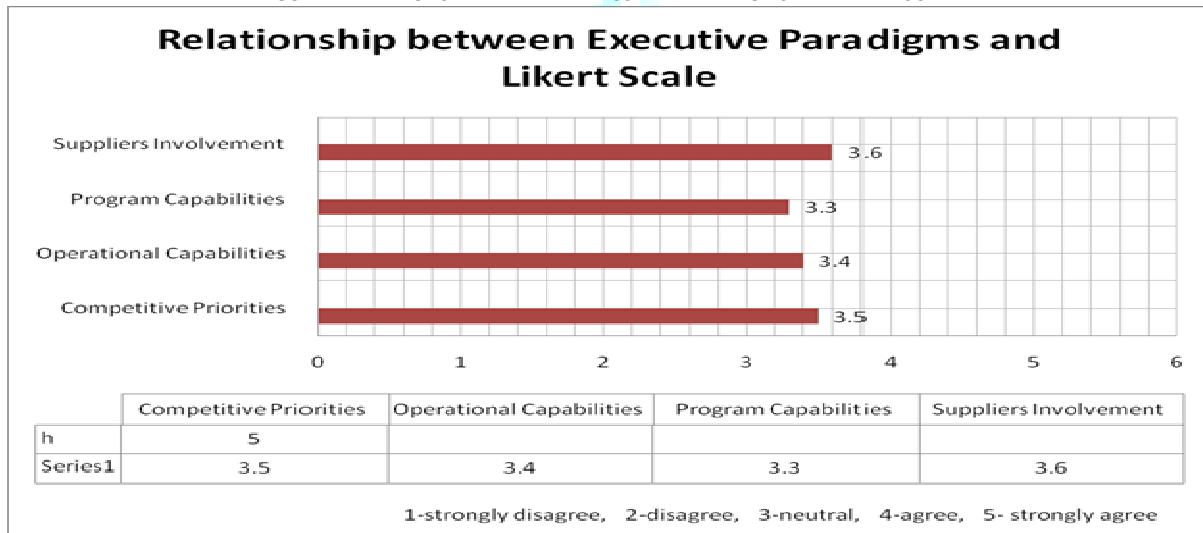


Figure 4.1.2, represents the relation between Flexibility Indicators and Likert scale. Supply Flexibility (3.5), Demand Flexibility (3.6) and Sourcing Practices (3.6) have value ranging between neutral and agree scale resulting in an optimum solution.

FIGURE 2: RELATIONSHIP BETWEEN FLEXIBILITY INDICATORS AND LIKERT SCALE

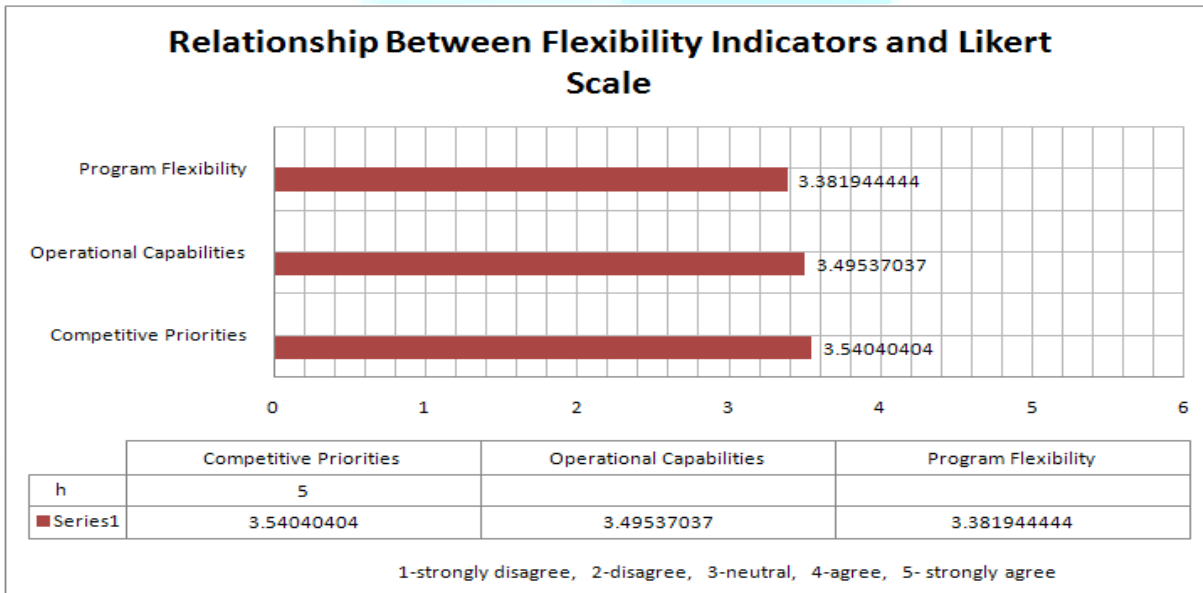
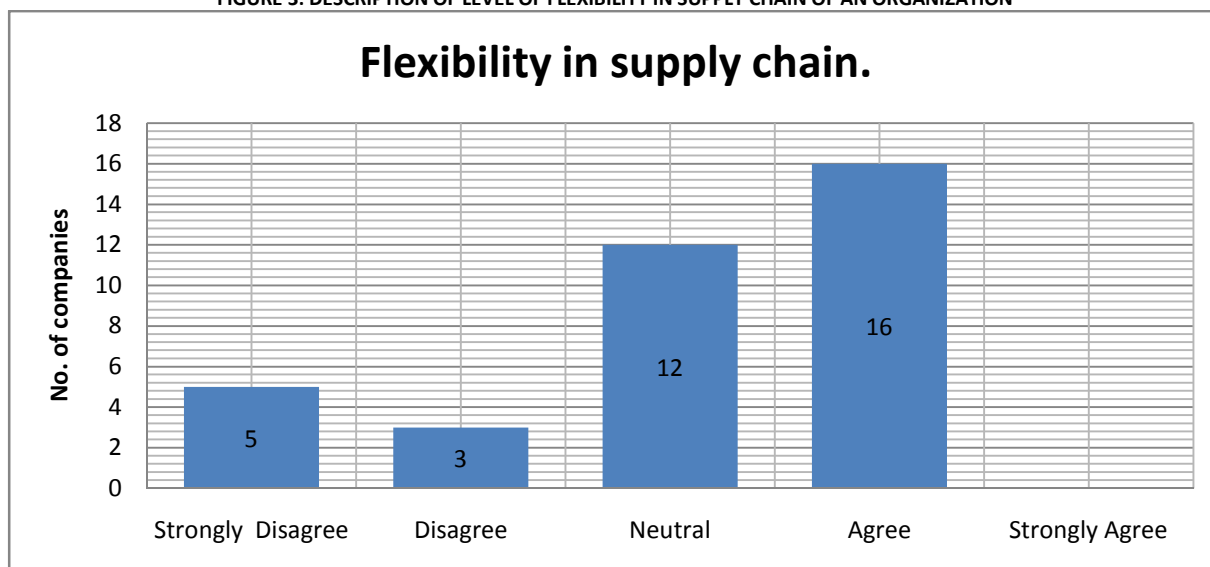


Figure 3 depicts the presence of flexibility in supply chains in various organizations. The data reveals that 5 out of 36 surveyed organizations strongly disagree with the presence of flexibility in supply chain, 3 out of 36 organizations disagree with any relationship with flexibility in their supply chain. On the other hand 12 out of 36 stands neutral on this issue and quite notably 16 out of 36 agrees with the presence of flexibility in their supply chains. Hence more organizations are shifting their base in achieving a high level of flexibility in their organizations because this is a necessity in this ever changing business dynamics.



FIGURE 3: DESCRIPTION OF LEVEL OF FLEXIBILITY IN SUPPLY CHAIN OF AN ORGANIZATION



4.1 VALIDATION OF DATA OBTAINED FROM RESPONDENTS TO QUESTIONNAIRE

Cronbach's alpha is a coefficient of reliability. It is commonly used as a measure of the internal consistency or reliability of a psychometric test score for a sample of examinees. The Cronbach's alpha for various categories of inputs and outputs has been evaluated to ascertain the reliability of the input data (Table 1) and output data (Table 2).

TABLE 2: CRONBACH'S ALPHA FOR INPUT CATEGORIES (EXECUTIVE PARADIGMS)

Category	X1	X2	X3	X4
Cronbach's alpha	.654	.646	.664	.511

TABLE 3: CRONBACH'S ALPHA FOR OUTPUT CATEGORIES (FLEXIBILITY INDICATORS)

Category	Y1	Y2	Y3
Cronbach's alpha	.824	.747	.759

The Pearson correlation coefficient is a measure of the strength of a linear association between two variables and is denoted by r. Pearson product correlation attempts to draw a line of best fit through the data of two variables. The Pearson's Correlation coefficient 'r' between executive paradigms and flexibility indicators has also been computed to study the contributions of specific executive paradigms to achieve the desired level of flexibility of supply chain to attain competitive advantage.

TABLE 4: PEARSON'S CORRELATION 'R' BETWEEN EXECUTIVE PARADIGMS AND FLEXIBILITY INDICATORS

	Y1	Y2	Y3
X1	0.653673	0.625379	0.368349
X2	0.608299	0.528712	0.47929
X3	0.754562	0.663655	0.542198
X4	0.53575	0.575345	0.336643

In order to achieve critical success factors for achieving results, the significant correlations thus obtained as a result of Pearson's Correlation are validated through 'Multiple Regression Analysis'. The general purpose of multiple regressions is to learn more about the relationship between several independent variables and a dependent variable.

TABLE 5: RESULTS OF MULTIPLE REGRESSION ANALYSIS BETWEEN EXECUTIVE PARADIGMS AND FLEXIBILITY INDICATORS

Performance Parameter	Significance Factor	Beta Value β	t Value	Significance (p Value)	R Value	F Value
Y1	X3	0.687111	6.704694	<0.0001	0.816343	32.96282
	X1	0.50565	3.098545	0.003958		
Y2	X3	0.67029	5.173186	<0.0001	0.74239	20.26005
	X1	0.598987	2.852897	0.007424		
Y3	X3	0.582207	3.7626	0.000636	0.542198	14.15716

It has been observed that Supply Flexibility (Y1) is closely associated with Competitive Priorities of an organization (X1); and Program Capabilities (X3) for the optimal enhancement of level of flexibility of an organization. The Demand Flexibility (Y2) is closely associated with Competitive Priorities of an organization (X1); and Program Capabilities (X3). Demand Flexibility can be achieved by streamlining the production facilities, improvements in equipment reliability, ensuring better upkeep of the production facilities, ensuring zero defects. Hence additional initiatives in operational capabilities of manufacturing can contribute towards quality enhancements by eliminating deteriorations in production systems, thereby improving the manufacturing performance even beyond design capability in many instances. The adoption of Sourcing Practices (Y3) has exhibited significant linkage with competitive priorities of an organization (X1). Sourcing and Procurement has become a critical area for companies implementing cost-cutting measures. Core procurement processes and strategic business areas have emerged as key focus areas to drive cost savings. Several companies are outsourcing tactical Sourcing and Procurement processes to third-party vendors. Outsourcing of activities traditionally performed internally by firms to third party partners has become increasingly important in recent years.

5. CONCLUSION

The research provides an empirical evidence of a strong relationship between executive paradigms and flexibility indicators. The critical examination of the Pearson's correlations results clearly portray that executive paradigms taken by an organization have significant impact on the supply chain flexibility in the organizations and moreover it tends to enhance the level of flexibility in supply chain. Depending upon the factors selected to check their impact on level of supply chain flexibility inside an organization, it has been clearly and well coordinately interpreted that the selected factors i.e. Suppliers' Involvement, Operational Capabilities and Sourcing Practices, leads toward the enhancement of supply chain flexibility in an organization. Suppliers' Involvement simplifies various critical elements in reaping the potential benefits of giving suppliers a greater involvement in product development and design, Sourcing Practices helps

the organizations to differentiate between developing their own facilities, technologies and staff or hiring some professionals from the outside organization, so that after competing the task, those professionals are not anymore an organizations responsibility. And Last but not the least; operational capabilities assist an organization to design a suitable layout for manufacturing a product in order to attain a best possible optimal solution.

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## INFORMATION AND COMMUNICATION TECHNOLOGY (ICT): NEW DEAL FOR INTERNATIONAL DEVELOPMENT SMEs SERVICES

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### ABSTRACT

*This article presents the results of research on the development international small and medium-sized enterprises (SMEs) in business services. The main issue for the strategic analysis of international SMEs and the new opportunities offered by the recent development of information and communication technologies (ICTs). Strategic models of international development that reference is based on cases of very large companies with difficulty and applies to small businesses: my research therefore seeks to identify strategic priorities of SMEs and to identify the differences and similarities between large firms and SME services. It is based on a survey that allowed us to build a database of 183 service SMEs located in the south of France and with international activities.*

#### KEYWORDS

Business services, information and communication technologies (ICTs), international development, small and medium-sized enterprises (SMEs).

### 1. INTRODUCTION

One of the achievements of the 1990s has been the recognition of the importance of service activities in international economic relations. The General Agreement on Trade in Services (GATS), Agreement on Financial Services, NAFTA, the creation of the single market in Europe and the deregulation of public and private, have shown the existence of international trade in services and rules for trade are being set up and are sometimes very controversial. The position of SMEs in this movement has long been marginal due to the large investment requirements and most studies have been devoted to large multinationals in the areas of finance, transportation and even the board. Yet SMEs in the services sector are increasingly interested in the many development opportunities abroad and a number of them are actually engaged in internationalisation strategies. Foreign markets offer growth opportunities effect that may be preferable to continued expansion in the domestic market. The service sector is unique in the market share leaders are much lower than in manufacturing (Leo and Philippe, 1991); the increase in the market is facing rapidly rising costs and competition everywhere. From a relatively low penetration rates, market shares become more expensive to win. Companies are quickly confronted with the need to diversify if they want to continue to grow in their country of origin. Foreign markets offer an alternative because you can find room for growth while providing the same service, sometimes at the cost of some adjustments at the margin. The company can keep his job specific and speciality based its competitive strength in the domestic market. When engaging in foreign markets, service SMEs face many difficulties are mainly due to costs of development abroad and the difficulty of the emergence of economies of scale. The new information technology and communication have greatly reduced the cost of access to information and customers. In some cases I can speak of a collapse of barriers to entry and small business services are probably the first to step into the breach. These recent developments in information technology and communications that facilitate access and monitoring of international markets can be a new deal for SME service providers. These technologies greatly increase trade opportunities for service firms. The smaller they are now with access to distant markets that they can theoretically prospect and, in some cases used without costly travel or investment. They also establish control structures and information exchange in line with the strategies pursued and makes easier the control of any network and its operation. SMEs in business services are likely to peak in this area as having a small number of customers with whom they often share a lot of information; they are directly affected by modern technological advances.

The big question that remains unresolved is the importance of the consequences of new technologies on international development opportunities of service SMEs: do they constitute a new mode of access and development to do without the lengthy and costly implementation of the network or are they an improvement of existing methods with the consequences and therefore a much more limited? The purpose of this communication is to provide some answers to these questions by relying on surveys that were conducted by us with the support of Chambers of Commerce of Marseille and Toulouse as part of a Search more vaste1 initiated to better awareness and understanding of the extent of international openness of firms in the sector business services. In this paper, after asking what terms arise for us the issue of international development services for SMEs, I will identify how the survey was conducted and the results: first on their debut at the International then how they organise their relations with customers abroad and the role of networks and ICT in them, and finally I propose an evaluation the role played by information technology and communication in their international development.

### 2. INTERNATIONAL DEVELOPMENT ISSUES OF SERVICES SMEs

By bringing to the international service firms are, in principle, subject to a tension between two broad options: adapting their services to make them comparable and acceptable in a context different from the usual national context, or standardise their services, This often requires a redefinition of the concept of service including in their home market, which in turn greatly facilitates the development outside the boundaries and remote control of the homogeneity and quality of services. This issue of adaptation or standardisation is obviously present for SMEs who opt for International Development (Leo and Philippe, 2004). From another point of view, I can consider that the need for adaptation of a service is very sensitive to the activity and the concept of service: the more technology services are often less dependent on culture country of origin and can often be accepted as awarded (or with little adaptation) by foreign clients. The presumption of excellence (Munos, 1999) can play the same role for services with the highest cultural content as soon as the company is seen as a reference or because of his clean image (which is rare for SMEs) is because of the territorial image that is associated by prospective foreign (country, region or city). The fundamental strategic choice as analysed by Bartlett & Ghosal (2002) is therefore often to SMEs as they do not seek to challenge their distinctive competence in developing internationally. Lovelock and Yip (1996) consider that it is rather the overall strategy is the horizon of development of international service firms but it must be noted that this overall strategy, as the transnational strategy, concerns only a handful of very large companies: most service SMEs with access to international markets may embrace strategies multi domestic but most often opt for international strategies. The latter form, which seems the least accomplished, brings together the votes of the majority of companies. For cons, the problem of how to implement for International Development is extremely present for SMEs in the services sector because the costs of international development can quickly become unbearable. The great difficulty in the service sector comes from the scarcity of sources of economies of scale. International Development increases the distances involved as much mileage in terms in terms cultural and regulatory. The information is initially more difficult (and therefore more expensive) to obtain. Enter the market is widely regarded as the best way to overcome these difficulties and costs. But this requires an investment that can be cumbersome and that few SMEs can consider. In contrast, the image of free and immediacy offered by ICT focus certainly many hopes of leaders.

#### 2.1 The organisation of the customer relationship, central variable for services

O'Farrell and Wood (1994) identified the characteristics of international trade in services activities. Direct investment abroad complements trade for many business services. The international trade can be observed by the border crossing and the change of ownership taking place. In the case of services there is no clear border activity to determine if there was an exchange, unlike goods: "production" may take place in the importing country where the customer is

located. Services can be delivered through the usual channels of communication, usually not dedicated to international trade (telephone, postal services, fax, and internet). Trade in services can be conducted in many ways that have been identified very early (Richardson, 1987) by analysts as by the practitioners: the movement of providers, client flow, movement of the two protagonists, and no movement at all (designated sometimes *'cross-border exchange pure'*). This complexity is that the barriers to entry are more diffuse and may relate to regulatory requirements or preferences that are essential to know. Service activities operate in an environment significantly different from that exporting manufacturers have accustomed us: first, the distinction between investment and trade is not as obvious, and secondly, most services require more of As the goods and finally, the simultaneity of consumption and production characteristic of many services means that the establishment of an office on site (for direct investment abroad or by contractual agreement) is often a requirement but regulatory restrictions on direct investment in services are generally more restrictive than for the creation of a factory producing manufactured goods. SME service that address a new market abroad must overcome two major obstacles in succession: first, the difficulty of obtaining relevant information in this market, they share with disabilities manufacturing SMEs that want to develop abroad. The cost of travel, missions, visits to prospects and potential partners, the time spent searching for regulatory information (essential for most service activities), those on business practices and competition can reach significant amounts, comparable to a real investment without ensuring that they never lead to a new stream of business. Second, and differs from the manufacturing sector, if the new market seems to be realised, I must quickly hire new financial means to access a form of more permanent presence than the movement of personnel service provider or the client. These considerations provide insight into the enthusiasm shown for simple strategies of internationalisation remain modest and pragmatic. Information and networking are important elements of the internationalisation strategy because they define the organisation set up to remotely manage the client relationship. Research on international marketing services have favoured some elements of the problem and customer contact management "front office" taking into account the consequences of specific services (Nicoulaud, 1989), the network and local presence (Campbell and Verbeke, 1994) and already the impact of information technology (Vandermerwe and Chadwick, 1989). The emphasis was placed on the development of networks abroad and how to implement to enable an organisation to type *'servuction'* run in different environments. The *'back office'* is yet also an essential element of internationalisation strategies because it allows for information systems managing large volumes of transactions, responding to requests in a very short time and can offer services additional. Paul Collin (2002) stresses that the emergence of reservation services and transaction banking services in fact based on a standardised back office and creates economies of scale. Moreover, research on intercultural management (Warner and Joynt, 2002) provides interesting insights on the impact of the heterogeneity of cultures and contexts on the management of human resources and the design of the multinational organisation. Until now, research work devoted to international development services firms have mainly focused on the development of networks abroad and the various practical ways to implement, since export *'pure'* to the local establishment. These modes are not all present, far from it, the same level of financial involvement. The financial aspect is covered by a basic difficulty in services: the reproducibility constant quality of the service in an establishment other than the parent. This difficulty exists at the national level, but is greatly amplified at the international level because of differences in culture, legislation and communication difficulties. Technological developments in the fields of information and communication can affect the primary service SMEs who can see at once opened a range of international opportunities.

### 2.2 ICT and open international business services

The evolution of telecommunications technology affects this analysis in depth: a lot of information on foreign direct from foreign databases become easily accessible, so that some services may be exported without ever being physically present in the foreign country. Prospecting and customer relationship may in some cases take place entirely online, ignoring the boundaries and regulations. Opportunities for strategic, technological, legal and are actually very competitive amplified by relatively simple software to use and monitor the *'web'* like so many semi intelligent sensors potentially interesting information for each company (Gadille and Amabile, 2002). In a completely different note, the same technologies introduce novel organisational possibilities by allowing the decoupling of the different stages of benefits and geographical separation of the *'back'* and *'front offices'*. ICTs facilitate the control of today's geographically dispersed facilities and permit coordination procedures far more cumbersome to implement (Roche and Blaine 2000). Some studies (Zimny and Mallampally, 2002) even propose to conclude that the main contribution of ICT would enable a better complementarity and a better integration of different relational modes more than they would actually promote a mode at the expense of another and it is important to realise that the data they use are very comprehensive and leave no room to open perspectives for SMEs. In summary, the changes introduced have several impacts: first, the transportability many services is enhanced, especially when it comes to business services processing information, developing the use of cross-border mode of service delivery without moving the staff and clients on the other hand, the access to foreign markets and customers is greatly improved, some firms may also rely on the development of ICT to create innovative processes, the basis of international or territorial expansion by offering new services, additional devices to the basic service (Lovelock, 2001) or by separating the core business (*'back office'*) activities in contact with the customer (*'front office'*) and finally, management and coordination of the institutions are geographically dispersed facilities and the cost of this management is reduced. These technological developments thus relate directly the issue of international development services. Many publications have focused on the new opportunities offered by ICT for businesses or SMEs. Few have focused specifically on the service sector and there is still very difficult to identify what practices and what practices are favoured of these SMEs, especially internationally. Yet the question of international development of service activities can arise in a new way: to what extent the use of ICT allows it to overcome the constraints of location identified in the past? In theory, the forms of presence to find clients no longer pass by the location must trade through the use of information technology. These not only affect the relationship service but also help to increase sales, reduce organisational costs and gain knowledge in some cases with an efficiency level comparable to that of a local institution.

Internationally, SMEs in some respects similar to services to SMEs Manufacturing: modest financial capacity, decreased organisation is sometimes at odds with the diversity of situations to deal with, highly flexible and adaptive structure. But these similarities should not mask the sectorial context are placed in strategic perspectives very different: even fewer gains of scale, greater sensitivity of the intangible cultural differences and regulatory balance of non-tariff barriers tariff, a frequent need for production (*'servuction'*) total or partial on-site stress that for most manufacturers that during the post-sale. It is clear that different types of antennas that SMEs can use to build their networks do not identically available to them: subsidiaries and joint ventures require financial investment, up a franchise network requires an upstream work on the concept and control means for remote control of quality and it is not a strong point for SMEs and it is easier to develop a network of agents and it is a formula that has the support of SMEs, but often these networks limited to a role in the exploration and representation, benefits assigned to the remaining parent. If agents must provide the services, the problem of their training and their control arises again.

Finally, there are all kinds of partnership agreements more or less formal that have the potential to have support in foreign countries without having to invest too. These forms of *'soft'* are the advantages and disadvantages of their often informal, but it seems they have the support of many SMEs. The use of ICT to enable SMEs to develop cross-border exchange by the *'pure'* when used to make the service available to the foreign customer. They also facilitate access to information about prospects, customers and partners and brought in to support the intermediate stages of development. Finally, they allow richer communications with subsidiaries where they exist and can renew the role of the parent as *'back office'* generates external economies and contributing in part to the benefits provided by the network.

### 3. THE SURVEY

The first problem faced by researchers interested in service businesses open to the international is to identify these companies. There is no reliable database and recognised in this field. If I add that you want to look at SMEs, independent businesses and small size and the scope of investigation for the use of modern communication technologies and the network developed for the international business, I easily understand that the use of a survey is difficult to avoid. My surveys were conducted in 2000, as part of larger projects and in the dual aim of providing information to professionals and to answer research questions, including those that are the basis of this communication. I thus have a database of 274 firms in the market services sector companies and I can quickly brush characteristics. Respondents are institutions for 84% of firms with local headquarters, 82% of them having only one institution. 74% of responses come from independent companies. A quarter of the responses emanating from subsidiaries of larger or smaller are set apart. The vast majority of independent firms are small or very small (57% have less than 10 active), but there are also seven responses from large firms with over 500 employees, too, are treated separately.

Once all these criteria intersected, my analysis focuses on the 183 companies that are unquestionably of SMEs (independent for their capital, with fewer than 200 employees and less than 25 million euros of turnover). The other 91 (subsidiaries or large) will serve to highlight what is really specific to SMEs.

The answers come from four main areas of activity. First the engineering and information technology provides 41% of responses. Two areas followed with weights comparable activities of logistics and transport (21%) and consulting activities for business and management (25%). Firms in this sector are more international than could have been thinking a priori and, in my sample, it is mainly SMEs that responded. Finally, a number of operational services (cleaning, security, investigations, translation, secretarial services, factoring) are also present (12%). The information requested relates to the identity of the company in order to clearly identify those that rely on larger organisations (legal form, ownership of capital, decision-making autonomy, the parent company if any), the international debut (when, how, why, the first choice of country), the current international business (exports, services provided abroad, adaptation or not they, way of relating with customers, network set up, countries served, use ICT), a number of opinions requested from the manager (challenges, strengths and potential weaknesses of the company, strong sales) finally, the usual quantitative data are collected (numbers, frame rate, number of business). Questions are asked in the form of closed questions with, in general, a free response at the end of enumeration. The assessments were requested on rating scales of importance to 5 or 7 levels. The preliminary discussions in developing the questionnaire helped clarify the answers that could be offered to each question, they also showed that it would be difficult to obtain precise figures on the economic performance and financial companies; data is often considered too sensitive to be disclosed.

**4. RESULTS**

Here I present some highlights from these investigations first beginnings of the international opening of SME business services and forms of relationship they establish with their customers and, finally, the role of ICT in international development of SMEs.

**4.1 The initial strategies**

Service companies operating internationally are becoming more numerous and among them, SMEs are becoming increasingly common: they benefit from new demands from their customers who are becoming too. In addition, new information technologies are opening unprecedented opportunities for organisation by allowing a separation in space activities of the 'back' and 'front offices'. But the very services interactive, such as advice, are probably more sensitive to lower costs of transport including air transport. My investigations confirm a number of these trends.

**4.1.1 A phenomenon that is accelerating and growing importance of SMEs**

Openness to international SME service seems to undergo acceleration. It is very sensitive since 1989 and my surveys indicate an accentuation of this trend after 1995 (GATS Agreement), even clearer after 1992 (European single market), then combining the two measures their effects. If the phenomenon of internationalisation in the service sector is quite old, it concerned mainly the beginning of large firms. It can be observed in my investigation that the recent increase is mainly due to small opening to international markets and foreign. In my total sample, there are 12 firms that were brought to the International prior to 1965, 26 to 70 years, and 43 during the 80. They are 91 to 97 from 1990 to 1995 and from 1996 to 2000. These waves of internationalisation are driven more by SMEs: they account for only 40% until the late 70's, 63% in the decade 80, 70% in the first half of the 90 and 78% in the most recent period. There is a clear specificity of the activities of advice on the most recent period, the oldest openings under most logistics activities. Operational services, relatively less numerous in this field also seem to know an internationalisation later.

For 83% of SMEs internationalisation was more than two years, the start was made with a number of schools the same as they do today. This seems to confirm that access to foreign markets is when some of their French market saturation occurs. The general law which would not be interested in the markets foreigners once exhausted the possibilities of the internal market does not seem to be necessary for large companies, 54% continued to expand their network of business in France after their international openness.

**4.1.2 Forms starting**

Often requires a service to set up a delivery system for the physical meeting with the client. This is a real difficulty for SMEs tertiary means necessarily very limited. This constraint is much less present in the manufacturing sector where exports can grow for years without need for a physical location on the market. 79% of SMEs in my sample discussed their first foreign market by a simple export. The majority of services are counselling and education, with benefits and valuable point that accommodate the movement of the provider or client. In addition, the cost of travel has declined and new forms of distance communications were established. Openings based on an early settlement, whatever its nature, are extremely rare (7%) which is quite specific for SMEs (25% of large companies surveyed starting their international business this way). The most recent period (1996-2000) sees SMEs use more (15% of starts) to other forms of openness, more indirect (outsourcing or international networking working 'back office') concerning certain consulting activities as well as operational services such as secretarial and translation.

**4.2 Networks and Client Relations**

Providing services to the international forces companies to control the distance to make their services available to their customers and to develop or maintain relationships with them. 69% of SMEs in my sample move their staff to meet the foreign customer to ensure their benefits. 34% are foreign customers to come get the service in France and 13% have set up procedures for cross-border exchange a 'pure', similar to material goods. SMEs in significant numbers (38%), however, developed branches abroad in order to ensure their benefits even after starting with simple exports. Using the network, if it is not required at start up (RESER, 1995), seems to be an effective form when international trade will be sustainable: 12% of beginners (less than two years) 18% of recent (2 to 5 years) but 28% of confirmed (5 to 10 years) and 38% of senior (10 years or more) developed at least one local branch to ensure the services. The degree of international involvement in this development also includes: SMEs who make less than 10% of their foreign sales are 31% to be set up antennas; those who are between 10 and 35% 33% this case, while 46% of the most committed (over 35% of sales) have developed a network. With the exception of the cross-border exchange 'pure', these modes of relationship are not mutually exclusive and the other two modes (sometimes three) coexist within the same company in 49% of cases. In most cases, when only one type of relationship is used, it is the movement of personnel to service foreign customers (63% of cases). Very few firms (7) are limited to making their services in France to foreign customers who go there. By cons, 28% of SMEs with foreign partners entrust all of their services abroad.

**TABLE 1: TYPES OF RELATIONS WITH FOREIGN CUSTOMERS BY INDUSTRY**

Forms of relationship	Tech Tips number		Business Management Tips & number		Logistic number		Operational services number	
	no.	%	no.	%	no.	%	no.	%
Border pure	11	15.0	3	6.7	8	20.5	2	9.5
Movement of people	51	69.9	36	80.0	23	59.0	13	61.9
Moving the customer	26	35.6	17	37.8	10	25.6	7	33.3
Delivery by air	23	31.5	18	40.0	21	53.8	7	33.3
All firms	73	100.0	45	100.0	39	100	21	100.0

NB: Column totals exceed 100% because multiple responses, field 178 replies (5 missing)

In terms of industry, the modes of relationship with foreign clients oppose the logistics activities in two areas of consulting and operational services: cross-border provision 'pure' and that provided by the local branches are more frequent. The network forms the most frequently cited by SMEs are partner networks more or less informal (58% of firms with an overseas network) and networks of sales agents under contract (30%). There are also 19% of branch networks, as opposed to 58% of large firms in my sample who have them. These proportions change significantly if I exclude purely commercial antennas and I consider only the antennas that are responsible for providing services abroad (Table 2): SMEs in this case are much more likely (31%) to adopt the form subsidiary, as expensive but better control. However, they remain far from the largest firms of which 75% use this method in providing services abroad.

TABLE 2: FORMS OF THE DELIVERY NETWORK BY TYPE OF BUSINESS

Business Type Network forms	SME		Large companies		Set	
	no of firms	%	no of firms	%	no of firms	%
No network	70	38.2	11	12.1	81	29.6
Purely commercial network	44	24.0	21	23.1	65	23.7
Delivery Network	69	37.7	59	64.8	128	46.7
Which: *						
Subsidiaries	20	31.3	43	75.4	63	52.1
Joint ventures	9	14.1	8	14.0	17	14.0
Franchises	2	3.1	1	1.8	3	2.5
Contract staff	20	31.3	31	54.4	51	42.1
Other Partners	40	62.5	23	40.0	63	52.1
Set	183	100.0	91	100.0	274	100.0

\* Totals exceed 100% in a column due to multiple responses from the delivery systems, but there are seven missing responses (5 small and 2 large firms) in this regard.

In general, firms do not multiply types of networks they develop. Most (71%) are confined to a single type of antenna, others manage two types, exceptionally three (5 cases). 84% of networks composites combine a relatively flexible to a more controlled. This simple network is even more pronounced for networks that do not purely commercial benefits: 79% are consistent and none has more than two types of antenna. Features are observed depending on the country where the services are performed: the Western Europe, local market, is subject to fewer settlements or settlements purely commercial. Other developed countries have a profile close but yet more firms operating in these markets from a delivery network. The use of network seems even more necessary in developing countries and it seems affiliate form preferred by SMEs in the service of the joint venture may be more difficult to control. This survey seems to reveal the pragmatism that guide most of the leaders who choose to intervene by multiple means. The attractive idea of an internationalisation process would take place in stages must be seriously reconsidered. While it is clear that a firm cannot do everything at once in this area, and a learning process can lead to more complex forms of temporary networks during their experiment. But it is also likely that the terms most convenient and most appropriate will vary from one country or context to another.

4.3 Use of ICT in international

Classical relational modes are doubled in 85% of cases by the use of media, traditional or not. Telephone or fax is mobilised by 73%, the mail by 54%. The new means of telecommunication (Internet, EDI, databases), 60% are employed by SMEs, which shows the rapid penetration of these technologies and their adaptation to the needs of such firms. However, the IDE seems a way reserved for large organisations because, in my survey, only one SME is used to make its services available to its customers abroad (15% of large company's surveyed do). SMEs, few in my survey, which use the cross-border exchange "pure" maximum use of these new ways of relating, 71%, operate new telecommunications facilities, 67% of the traditional means of telecommunication. The use of ICT is far from homogeneous in my sample. Having specifically identified these practices, I propose to assess their impact on performance variables available in my data (the dynamic international) by putting them in competition with other variables such as firm size or characteristics its network.

4.3.1 Practices for SMEs

The use of new materials applications of information technology and communication has long favoured larger companies who were only able to engage in the necessary investments in both hardware and human resources. Structured and hierarchical networks could take full advantage of data transfer by EDI procedures that proved of little use to SMEs whose networks are often more flexible and not hierarchical. The revolution in information technology had put the micro computing power within the reach of smaller companies; it seems that the Internet now plays a similar role in the communications field. SMEs in my sample do not contradict this view because they appear almost as many users of ICT than larger firms I surveyed 77% have an email address, 48% have created their site on the 'web', these figures are very close to those given to us by big companies or subsidiaries of my sample (75% and 46%, respectively). I have distinguished several levels of use of ICT. Just use the Internet to communicate (having an email address) is now very widespread and is thus not very discriminating. The first significant step towards the integration of ICT in the process of internationalisation probably just wants to be on the "canvas" for a specific website. A second stage is reached where the SME began to search for information or to engage in prospecting through ICT. A company that manages to deliver its service 'online' is probably to a greater degree of control and use of ICT. Finally, companies that perform all these operations are clearly those most integrated all the possibilities offered by ICT. This interpretation reveals a split among SMEs, greater than for large companies, between those who engage fully in the use of ICT and those who remain behind, not exceeding the stage of the site or even a simple email address.

TABLE 3: USES OF ICTS INTERNATIONALLY BY SMES BY SECTOR OF ACTIVITY

Forms of relationship	Tech Tips		Tips for Business & Management		Logistics		Operational services	
	no.	%	no.	%	no.	%	no.	%
No of use	12	16.4	8	17.8	20	52.6	3	13.6
Simple web site *	7	9.6	1	2.2	2	5.3	1	4.5
Prospecting or information *	5	6.8	3	6.7	2	5.3	7	31.8
Provision of service*	21	28.8	23	51.1	8	21.1	3	13.6
All these uses	28	38.4	10	22.2	6	15.8	8	36.4
Have an email address	66	89.2	39	84.8	19	46.3	20	90.0
Have a website	45	60.8	17	37.0	9	22.0	15	68.2
All firms	73	100.0	45	100.0	38	100.0	22	100.0

\* Excluding other types of use

Analysis by sector in Table 3 highlights the peculiarities enough trenches. SMEs in the logistics sector differ significantly from the others: a majority isn't use of ICT, while in other areas of work I do is never more than 20% in this case. This delay is confirmed when one considers the rate of endowments email addresses or websites. SMEs in this sector have often started their internationalisation very early, well before the advent of ICT and have established networks and procedures for internal communication on previous generation technology (telex, fax ...). They will have to evolve on this point to stay competitive with larger firms in the sector which is constantly growing range of services through ICT (tracking, order tracking, delivery etc.). The second lesson of the analysis by sector is to show that the activities of engineering and technical advice, which include consultancy services in IT, are the main area where the use of ICT has grown toward the international. This sector benefits from the technical mastery of these tools and can sell its services abroad without any adaptation because of their high-tech. Both areas were heavily consultancy engaged in strategies to sell their services through ICT. Operational activities are quite limited and their area of operation is a priori not well prepared for international development. Those who have answered almost all rely on ICT but more for information to ensure that their benefits. These results support the hypothesis that ICT allows a larger opening of SMEs to international service.

TABLE 4: USE OF ICT AND THE INTERNATIONAL NETWORK FOR SMEs

Network forms Use of ICT	No of network		Sales network		Delivery Network	
	no of firms	%	no of firms	%	no of firms	%
No of use	12	21.8	11	28.2	17	32.7
Simple web site *	1	1.8	3	7.7	2	3.8
Prospecting or information *	5	9.1	5	12.8	3	5.8
Provision of service*	18	32.7	9	23.1	12	23.1
All these uses	19	34.5	11	28.2	18	34.6
All firms	55	100.0	39	100.0	52	100.0

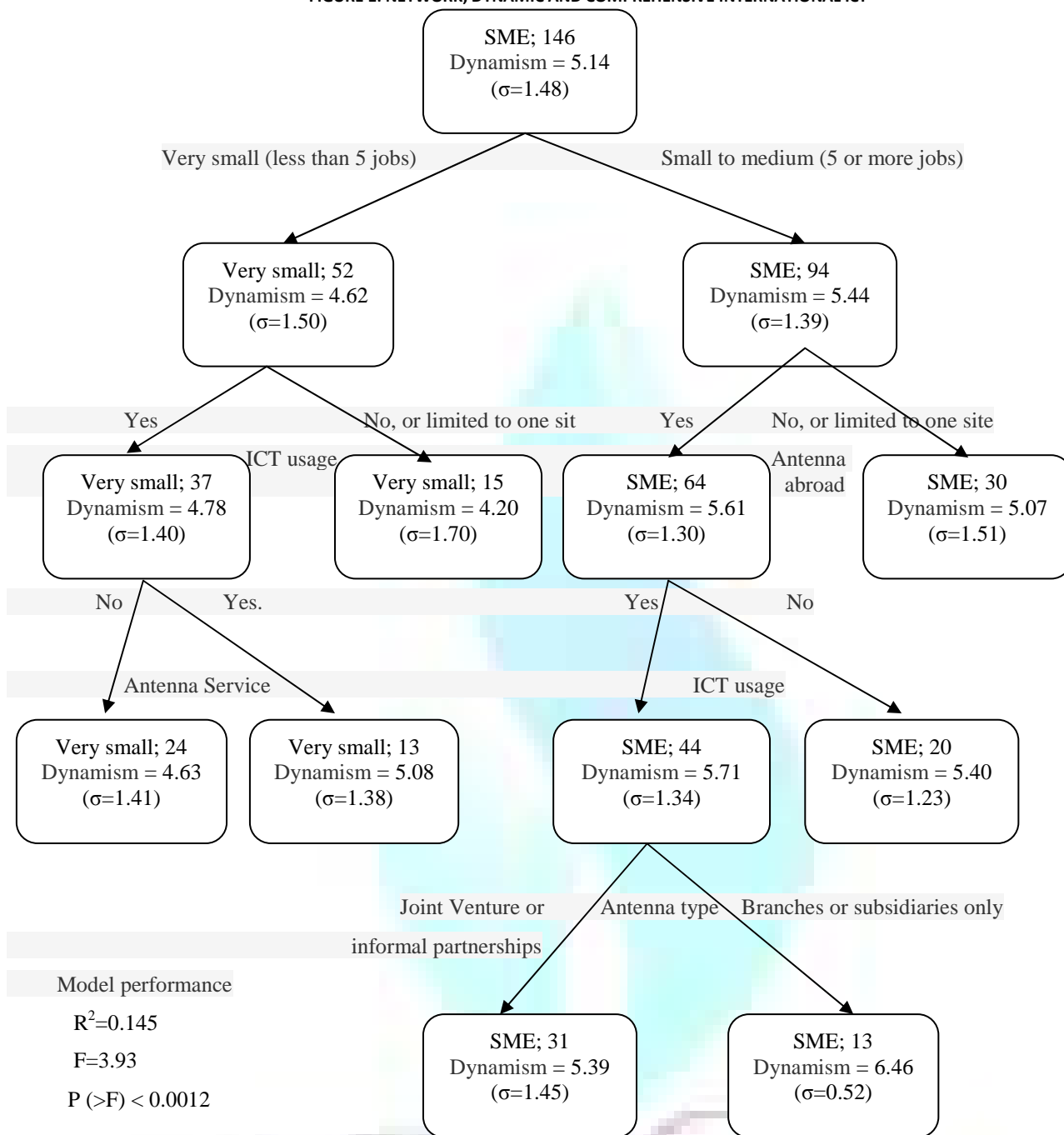
\* Excluding other types of use

From Table 4 reinforces this impression: when no antenna is available abroad, the proportion of firms that use ICT to make the service is the highest (67.2%) and those who have not using ICT are less numerous. But this table also shows that ICT also strengthen the network and when there are therefore not only a palliative for the absence. The possibility of selling 'online' service accelerates its international development. Thus, of the 17 SMEs in my sample who sell 20 or more countries, 12 international has started within the last 10 years and 83% of them use ICT to make their service available to customers abroad.

#### 4.3.2 Networks, ICT and dynamic international

The results presented so far remain largely descriptive. My data allow us to go a bit beyond if one connects a variable performance of the company with the choice of network type and type of use of ICT. Authors who have analysed the performance of international firms (Madsen, 1987; and Ramangalahy Julien, 2003) generally hold the view that the concept is multi-dimensional and discuss the value of an objective accounting measure and only deal with strategic objectives quite varied. These reflections show the interest there is to consider how these results are received and evaluated by the leader when it may be questioned. The indicator used here is admittedly one-dimensional since it concerns only one aspect of performance, the strength of international sales, but he decides to move away from strict accounting ratios for preference assessment that in fact the leader. This preference is also justified by the inadequacy of accounting measures in the context of services exports. Revenues from international operations that can be considered as the amount of exports after consolidation of results of subsidiaries, is often used to compare the large companies but it is difficult to use when a portion of benefits abroad is the fact of unauthorised subsidiaries, which is often the case when it comes to utilities medium or low. Speaking of internationalisation services and not for export, is precisely this uniqueness of the development of service activities that can be done by creating a network more or less controlled with each antenna providing the services in its area of competence. Ideally, I should consider affiliate sales and sales by partners (joint ventures, agents, franchisees and others). However these cannot be integrated because all these companies have their own activity, independent of the activity due to the network. Each firm establishes its own rules for evaluation and control within the network so that it does little good to apply directly for encryption of international activity due to the heterogeneity of responses that would be provided. In reality, the degree of internationalisation of a firm relative to another is actually very difficult to measure (Huault, 1998). Taking into account the network and the strategic objectives that differ from one firm to another, moves the measurement capabilities to more qualitative indicators. The leader is normally the person who best knows the reality of the international activity of the company and its network. The momentum indicator used here directly expresses how he evaluates the evolution of the overall figure on a scale of 7 points. To improve the quality of responses, this question has been grouped with other requests for assessments on sales figures more accurately known by the leader (CA general, sales in France, and exported CA subsidiaries). An observation must be made here: this indicator shows no significant difference in the four major sectors covered by this research (logistics, engineering, management consulting and operational services) unless it is considered that these four sectors experiencing increases parallel to the internationally, it is likely that leaders have more or less stalled on the evaluation of their activities. The tree shown in Figure 1 was prepared by method C & RT (Classification and Regression Trees) to explain the differences in the indicator of dynamic depending on network features, the intensity of use of ICT and the size of the enterprise (workforce). The analysis of binary cascade used to identify groups of firms experiencing international tertiary dynamics significantly different. The quality of the 'diagnosis' loses reliability gradually as one move down the tree that can be more or less developed depending on the size thresholds for identified groups a priori. Given the size of my sample (Reduced by 146 SMEs because of incomplete responses), I asked the program not to divide groups of less than thirty companies and not to accept groups of under ten. The explanatory variables were: size class (jobs in the company into seven classes), the fact of having an office abroad whether commercial or delivery (3 classes), the composition network (subsidiaries, joint ventures, agents and other partners), and finally an indicator of the use of ICT the company: no use, a simple website, use selective (limited to the exploration or the provision of services), Prospecting involving extensive use and availability. The program operates at every stage, comparisons between different groups as possible and, in the case of ordinal variables with more than two terms; the dichotomy holds the most effective. C & RT method was developed by Breiman et al (1984). She chooses at each stage the division of the sample which produces the two sub-samples as homogeneous in terms of the dependent variable. It is implemented in the software marketed by SPSS Answer Tree.

FIGURE 1: NETWORK, DYNAMIC AND COMPREHENSIVE INTERNATIONAL ICT



The lessons can be drawn from this analysis are manifold. First a caution: the model explains only 14.5% of the variance in the dependent variable. The international dynamism depends on other factors but the dichotomies obtained have still significant differences it is interesting to observe. The first distinction occurs between the very small firms (less than 5 assets) of others. The very small services show an average energy International (4.62) significantly lower than other SMEs in the sample (5.44). For these very small, it appears that the use of ICT opens up new opportunities for dynamic, provided they are not limited to simply create their website. The intensive use of selective media does differs, however, the dynamic performance of very small if not associated with a network, even embryonic, providing direct benefits to the country market. In this case, it does not seem the type of antenna (commercial or service) significantly influences the dynamic. The lack of air seems significantly burdening the development potential of becoming comparable to the most dynamic very small. The analysis does not show whether firms can overcome this lack in part through the use of ICT: those that use them are too few (they are 6 in my sample). If one overcomes the limits imposed on the dichotomous analysis can be observed that these six companies appear less dynamic than the other 24 (average 4.67 against 5.17 for those who use ICT). Companies that have established a network abroad experience different dynamics depending on their use of ICT: those that are absolutely no use of ICT are less dynamic. Finally, the type of network developed outside influence on the dynamic potential of SMEs is using ICT: those subsidiaries or agents (relatively homogeneous categories on the test modelled and combined to avoid too small numbers) show increases much faster than others. It is interesting to note that the use of joint ventures (joint ventures), often advocated for small businesses as an inexpensive way to have a quasifiliale does not seem to be as effective in the service sector; it does not seem to allow such rapid development that the simple network of agencies and would be closer to the informal network that is not characterised by rapid turnover. This seems to confirm that this type of partnership should be difficult to service activities, probably posing more problems than it does to solve.

These results deserve to be verified in larger samples, because here I reach the limit of the significance of the statistical analysis, some of the numbers involved are small and I had to make combinations. SMEs involved in joint ventures are in fact only nine in my sample. I also find that there are eight SMEs were able to acquire a foreign subsidiary, are also those which are most dynamic (6.63 on average, with a standard deviation of 0.74) but their small numbers requires caution. From the perspective of an SME may consider establishing a subsidiary, the way the dynamic is still possible. It passes through the branch network is a development often enjoyed by such companies, including industry, for its flexibility and low initial cost: the 11 SMEs in my sample who are also very well



structured dynamics (6.18 on average, with a standard deviation of 0.60), significantly more so than, yet twice as many who have resorted to informal partnership arrangements (5.41 on average, with a standard deviation of 1.59).

## 5. CONCLUSIONS

The service sector has entered the last ten years a new phase of internationalisation. International agreements and economic integration of Europe and North America have liberalised trade in services. The new communication technologies create favourable conditions in some sectors for the international deployment of medium-sized moderate who can start by avoiding the high cost of installation or removal. New areas and new companies are likely to expand beyond their national borders and, in the same way, I can expect increased penetration of Foreign Service companies in France. Companies try to differentiate their services to gain competitive advantage perceived by their customers. There are many ways to distinguish itself from its competitors, but the choices on the methods and the nature of relational benefits are two vectors of differentiation very powerful, even essential, services for SMEs. The state of competition and skills each firm affect the choices made but it remains essential that the various components of the strategies are kept consistent. The question at the end of this analysis is the specifics of service SMEs compared to larger firms in this sector. Do they have really different internationalisation strategies; they are especially on some strategic vectors for successful internationalisation? To the first question can be answered that the internationalisation strategies followed by the SMEs they are not really specific. Regarding the second question, thereby against that SMEs are more willing to use local partners to serve their customers and forming networks and inexpensive but often informal, however, less easy to control, especially in terms of the quality of services that networks of foreign subsidiaries. Although my investigation starts to date, the use of ICT appears widespread among the companies studied. No doubt they are carrying must now support the international development strategies of service SMEs. This support is particularly clear for all matters concerning the operation of networks set up abroad. However, the data in my sample do not show whether they are really a sustainable alternative development of the network remains the main differentiating factor between firms.

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**HUMAN RESOURCE MANAGEMENT: BROADENING THE CONCEPT OF HUMAN RESOURCES**

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**ABSTRACT**

*The relationship between HRM and firm performance has been a hotly debated topic over the last decade. Globalisation, information communication technology etc. led different scholars have different opinion on the topic. The scholars have their own theories on the issue. Through this paper, we tried to highlight some of these theories. As Human Resource Development Programmes concentrate on the varied categories of raw human resources to be processed into the work force, no one can deny and underestimate its valued role in reconstructing the economy. Moreover, it is an inescapable fact that in respect of total manpower dispersion in business organizations whether productive or service, the bulk of the personnel are skilled labour force working at operative level. This is the force which produces quality and which ultimately affects the organizational image and the economy of any country. It is highly needed to highlight the importance of the human resources, as India is one of those countries that are rich in human resources but still unable to utilize it to its fullest. It's a small effort on the part of the authors to play up the importance of the human resources management as any country would have a sound and healthy economy if it exploits and develops its natural and human resources that enables and boosts the economic development of the country. If this skills and knowledge managed properly, can and will change the shape of an economy's future.*

**KEYWORDS**

Human resources management, skills development programme, philosophical orientation.

**INTRODUCTION**

The relationship between HRM and firm performance has been a hotly debated topic over the last decade. Are human beings 'resources'? On this question there is a sharp division in opinions. There are scholars, not much ethically inclined, who adore the practice of considering human beings as resources. They visualize a continuum – from the inert objects to the most refined intellectual endeavors – from the one end to the other, as resources to productive activities. On the other hand, there are a plenty of scholars who abhor considering human beings just a complement to other means (e.g. animals, plants and inanimate objects) of production. To those scholars it appears debasing to consider labour - menial or mental, vulgar or artistic, raw or polished - as a commodity and by the same logic, human beings a source of the flow of labour and its power as resources.<sup>9</sup> They view workers in the holistic perspective of their psychology and their fitness to their work environment and work assignment, rather than as interchangeable parts. They place emphasis on how leadership, cohesion, and loyalty play important roles in organizational success. They also consider the instinct of workmanship as an important source of value added to the output they produce. Human resources development is considered as one of the contributing factors to a country's economic development and global competitiveness. Studies and researches on human resource development focused on the global and regional levels proved that growth and development of developed countries and newly industrializing countries (NICs) is partly a result of sustained investment in human resource development interventions.<sup>10</sup> Globalization made rapid changes on the economy and society of both developed and developing countries. These changes are further facilitated by advancements in information communication technology (ICT), developments in trade liberalization, and reduction of tariff and other trade barriers. Not known to many, globalization was already taking place during the early stages of internationalization of organizations.

Human resource development (HRD) in itself can be understood in different ways: HRD in its broadest sense is an all-inclusive concept, referring to the process of 'increasing the knowledge, skills and capacities of all people in a society'<sup>11</sup>, encompassing in economic terms the accumulation of human capital, in political terms preparing people for participation in democratic political processes, and in social and cultural terms helping people to lead fuller lives, less bound by tradition. The dominant human capital theory has, however, narrowed HRD down to its economic aspects, or its human capital component.<sup>12</sup>

**THE BASIS OF HUMAN RESOURCE MANAGEMENT**

It is been realized that the country's most valuable asset is its people and the social solidarity present in Eritrean society, a society characterized by a high sense of community as well as a strong commitment to development.<sup>13</sup> Furthermore, it is intended to produce a society that is equipped with the necessary skills to function with a culture of self-reliance in the modern economy.

In the past 30 years, the field of HRD has changed dramatically. Gone are the days of providing training events that miraculously improved employees' knowledge and skills. Today, HRD professionals are expected to pro-vide interventions, initiatives, activities, and services that help organizations achieve their strategic business goals and objectives.<sup>14</sup> As stated previously, Vaill<sup>15</sup> referred to unprecedented organizational changes as permanent whitewater. Further, he suggested that organizational white water means that organizational life will be (a) full of surprises; (b) increasingly complex; (c) poorly organized, structured, and ambiguous; (d) quite costly; and (e) brimming with problems. Quite simply, organizations are in a constant state of change. As such, dedicated and determined professionals spend their energy and efforts helping their organizations develop learning cultures, create performance management systems, and implement change initiatives.<sup>16</sup>

<sup>9</sup> Coleman, J. (1994), "Nationalism and Development: Selected Essays." University of California Press, Berkeley, CA.

<sup>10</sup> Storey, J. (1987) "Developments in the Management of Human Resources: An Interim Report" Warwick Papers in Industrial Relations Coventry, Warwick University, SIBS.

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<sup>15</sup> Vaill, P. (1996) "Learning as a Way of Being," Jossey-Bass, San Francisco.

<sup>16</sup> Gilley, J. W. and Maycunich, A. (2000) "Organizational Learning, Performance and change: An Introduction to Strategic HRD," MA: Perseus, Cambridge.

## CATEGORIZING THEORIES ON HRM AND PERFORMANCE

Drucker<sup>17</sup> distinguished three dominant modes of theorizing in the literature on strategic human resource management: the universalistic, the contingent and the configurational.

The universalistic mode is associated with the terms 'best practice' and 'high performance work practices', and its underlying assumptions or arguments may seem somewhat simplistic:

- i) that there is a linear relationship between HR practices or systems and organizational performance
- ii) that 'best practices' are universally applicable and successful
- iii) that organizational success is best measured in terms of financial performance indicators like profits, or by market share and sales levels.

Osterman (1994), Pfeffer (1994) and Huselid (1995) may be taken to represent those who take a universalistic perspective. Pfeffer argues, for example, that a greater use of 16 specified practices, such as participation and empowerment, incentive pay, employment security, promotion from within, and training and skill development, results in higher productivity and profit across all types of organization.

Delery and Doty's (1996) contingency mode says that the relationship between the relevant independent variable and the dependent variable will vary according to such influences as company size, company age, technology, capital intensity, the degree of unionization, industry/sector, ownership and location. Contingency arguments imply potentially complex interactions between HRM variables, between HRM variables and performance indicators, between HRM variables and contingency factors, and between performance and contingency factors. Delery and Doty (1996) cite Schuler and Jackson (1987) and Gomez- Meija & Balkin (1992) as mainstream contingency theorists, but the tradition goes back much further and includes the work of Woodward (1965), Pugh and Hickson (1976), Pugh and Hinings (1976), Pugh and Payne (1977), and Mintzberg (1979).

The configurational mode is rather more complex. Arthur's (1994) control and commitment HR systems are based on the idea that "the closer an organization's HR practices resemble the correct prototypical system (for its business strategy), the greater the performance gains."<sup>18</sup> MacDuffie's (1995) research findings in the automobile industry are seen as representative of the configurational perspective, where the holistic principle of inquiry identifies a unique pattern of factors, the assumption of equi-finality holds, and the configurations themselves are ideal types not empirically observable phenomena.

Guest (1997) takes a somewhat different approach. He recognizes three broad categories of general-level theory on HRM: strategic theories, descriptive theories and normative theories. Strategic theories are primarily concerned with the relationship between a range of external contingencies and HRM policy and practice. The central theme here is that "a good fit (strategy, policy and practices with the context) will be associated with superior performance" (Guest, 1997). The work of Miles and Snow (1984), Schuler and Jackson (1987) and Hendry and Pettigrew (1990) are examples of this type of HRM theory. Guest (1997) concludes that strategic theories are simplistic in characterizing HRM, are weak in specifying the process which links HRM to performance, and adopt a limited view of performance (concentrating too heavily on measures like profits and sales).<sup>19</sup>

Descriptive theories of HRM set out to describe the field in a comprehensive way. Researchers try to capture the broad field and to address some of the relationships (e.g. Beer et al., 1985; Kochan et al., 1986). It essentially seeks to map the field and classify inputs and outcomes, with an emphasis on an open systems approach. The perspective can be labeled as realistic but, says Guest (1997), fails to provide a clear focus for any test of the relationship between HRM and performance.

Normative theories of HRM are more prescriptive in their approach, taking the view either that a sufficient body of knowledge exists to provide a basis for prescribed best practices or that a set of values indicates best practice (Guest, 1997). Walton (1985), Lawler (1986), Guest (1987) and Pfeffer (1994) represent this approach. According to Guest (1997) normative theories are predominantly focused on the internal characteristics of HRM at the expense of broader strategic issues, while leaving unclear the basis for specifying the list of HRM practices.<sup>20</sup>

## SKILLS DEVELOPMENT PROGRAMME

Enabling citizens through education and skill enhancement is more critical today than at any other time. There is fairly well founded concern that in the next decade the country could find itself performing a difficult balancing act, catering to the needs of a significantly growing population while trying to find opportunities for a newly emerging workforce of youth that does not have marketable skills. However, no nation can be exempted from the sufferings of illiteracy and unemployment. The degree of suffering may be different but their existence in an economy is unavoidable and uncontrollable (Rena, 2004). Unless a nation knows the ways to manage this ailment in a proper way, it would crop up as a major problem showing up an economy to the external world as a bad example. Having understood these consequences, the need is to make strenuous efforts in embracing the major portion of human resources like marginalized youth, returnees, ex-combatants, unemployed and unemployable communities.<sup>21</sup>

Skill development programmes, are like converting raw human resource into the usable labour force transmitting the present ailing state into the very healthy one. The imparting of skills largely depends on the Industrial Training Institutes (ITIs) and/technical schools that have a base in the public and private sectors in the country, besides, the State-run programmes, and NGO efforts. These are simply not equal to the task.

## PHILOSOPHICAL ORIENTATIONS OF HRD

Bierema (2000) and Swanson and Arnold (1996) asserted that the field of HRD is more divided today than ever before. The mission and purpose of HRD provide an explanation as to why this is true. Gilley, Egglund, and Maycunich Gilley (2002) reported that HRD's mission is to provide

1. *individual development* focused on performance improvement related to a current job;
2. *performance management systems* aimed at improving organizational performance; and
3. *organizational development activities* that optimize human potential and organizational performance, which together improve the efficiency of the organization.

Thus, HRD professionals' primary purpose is to provide interventions and initiatives that (a) improve employees' skills and competencies, (b) improve performance, and (c) enhance organizational effectiveness. Accordingly, three philosophical orientations of HRD have emerged: (a) organizational learning, (b) organizational performance, and (c) organizational change.<sup>22</sup> HRD professionals that adopt an organizational learning perspective believe that learning is the primary purpose of HRD, whereas those HRD professionals who embrace organizational performance believe that performance improvement and management are the essential components of HRD.

Still others embrace organizational change by believing that the more important activities they can perform are to alter the organization's culture, structure, work climate, mission, and strategy to improve organizational effectiveness (Nadler, 1998). These differences in philosophy and practice affect the decisions,

<sup>17</sup> Drucker, P.F. (1954) "The Practice of Management" Harper & Row, New York.

<sup>18</sup> (Delery and Doty, 1996)

<sup>19</sup> Myers, C. and Harbison, F. (1965) "Education, Manpower and Economic Growth: Strategies of Human Resource Development," McGraw-Hill, New York.

<sup>20</sup> Nienhuser, W (2004) "Political [Personnel] Economy – A Political Economy Perspective [Explain Different Forms of Human Resource Management Strategies]", Management Revue, vol. 15 (2), pp. 228-248.

<sup>21</sup> Kahsu, Rena, Ravinder and Kahsu, Biniam (2006) "Labour Market Needs and Development of Technical and Vocational Education in Eritrea – An Analytical Study", Manpower Journal 41(4) pp.137-154, New Delhi (India).

<sup>22</sup> Gilley, J.W., Quatro, S., Hoekstra, E., Whittle, D. D., and Maycunich, A. (2001), "The Manager as Change Agent: A Practical Guide for High Performance Individuals and Organizations. MA: Perseus, Cambridge

priorities, actions, behaviors, and efforts of HRD practitioners. Furthermore, each domain is attempting to assert its influence over the direction of the field, which is affecting the interaction, cooperation, and partnerships between and among HRD practitioners.<sup>23</sup>

Those HRD professionals that embrace the performance and change domains focus their attention on the organization rather than the individual. In practice, they adopt a planned, data-based approach, which involves goal setting, action planning, monitoring feedback, and evaluating results (French & Bell, 1999). They would also use a systems approach that closely links human resources to technology, business processes, and change while utilizing behavioral science technologies, research, and theory (Nadler, 1998).

### THE VALUED-ADDED NATURE OF HRD

According to Ehrlich (1997), a fundamental requirement of HRD is to add value to the organization. Torraco and Swanson (1995) and Brinkerhoff and Gill (1994) agreed that linking learning and performance interventions and change initiatives to the organization's strategic business goals and objectives is critical to the success of HRD.<sup>24</sup>

When HRD goals are compatible with and responsive to the organization's strategic goals and objectives, HRD's value increases. Conversely, when they are not aligned, the value of HRD diminishes. Such an expectation affects the way HRD practitioners embrace change. As such, they focus their attention on those things that will enhance their credibility in the organization.

These include the six principles identified by Ehrlich (1997, pp. 167-170). First, an HRD strategy must be anchored to business strategy, not programs. Thus, the HRD professional understands the strategy and economic realities of the business they support and must be regarded as essential contributors to the business mission. Second, HRD is not about programs; it is about relationships. Thus, the HRD professional's primary role is to create an environment in which individuals are committed to the success of the enterprise that employs them (Brinkerhoff & Gill, 1994). Third, HRD must be known as a function that anticipates change and understands what is necessary to implement it. Thus, Burke (1992) suggested that HRD professionals understand and champion the process of change by working closely with managers who are leading change and assisting those who are struggling to implement change. Fourth, HRD is an outspoken advocate of employee interest. Thus, the HRD professional understands that business decisions must balance a range of factors that often conflict with one another (Nadler, 1998). Fifth, HRD focuses on issues rather than personalities. Hence, the HRD professional keeps issues rather than individuals the topic of discussion, grounds communications, and helps manage conflict (Rosenberg, 1996). Sixth, HRD accepts that constant learning and skill enhancement are essential to their contributions to the business. Thus, HRD professionals continuously expand their knowledge to avoid perpetuating old skills, notions, and styles (Gilley & Maycunich, 2000).

### SOME MAJOR NODES OF DECISION MAKING FOR HUMAN RESOURCE MANAGEMENT

Human resource management in a typical organization comprises the following processes that may be considered as the major nodes of decision making and choosing one of the (many permissible) paths to proceed. These are:

1. **Workforce planning:** It is mainly concerned with the visualization of different activities, processes and their inter-linkages in the organization and need for persons, with requisite skill, to perform those activities. The quality as well as the number of persons required for various activities is to be determined.
2. **Recruitment:** The next step is to recruit the workforce. It has two major processes under it. The first relates to 'attraction' and the second to 'selection'. Attraction needs a planned strategy to draw the attention of qualified persons to the organization. Sometimes this is done by advertisement but at others the organization has to personally contact the prospective employees. To strike at the correct strategy to attract right type of persons is considerably complex. A wrong strategy might be either ineffective or leading to problems in future. Likewise, the selection of right type of workforce is very involved. No foolproof method exists to guarantee that the selection made by any process is best suited to the interests of the organization.
3. **Induction and Orientation:** As it has been noted earlier, no educational institution can turn out pupils cut and dried to the specific needs of any particular organization. Education is always 'general'. Once a person has been selected to join the workforce of an organization, he/she has to be inducted and oriented to the specific job. He/she has also to be made aware of the major objectives of the organization and the environment in which he/she has to work. It has been observed that at times the managers 'over-manage' and in showing loyalty to the organization tend to over-describe. At other times, managers fail to induct and orient the new recruits to their job, leaving them to discover their roles by themselves. Over-description as well as under-description tends to give a wrong orientation to the new recruits.
4. **Skills management:** It refers to making a matrix of skill or competencies of different levels required in performing different jobs on the one hand and the assessment as well as stocktaking of skills of different employees on the other. Their matching often discloses the gaps between the required and the available skill, which may suggest additional recruitment or need of training and development of the (existing) employees. It may be noted that skills management is an ongoing process in view of the changing internal (within the organization) as well as external environment.
5. **Training and development:** Training and development may be needed first to bridge the current gap between the required skill for performing a job and that available with the workforce, and the second in view of the future requirements of the organization. It is a commonplace that of late the rate of changes in technology has been very fast. The span of service life of an employee is always far too larger than the span for which a particular technology is in mode. As a result, the employees must be trained and retrained to fit to the technology. Training may be in-house; it may be given by those organizations that supply new technology or even by a third party. It may be noted, however, that all employees are not equally amenable to appreciate the value of training. Nor all of them are equally responsive to training or interested in learning. The management has to take necessary measures to induce the employees to be more receptive to learning. The management also has to look into the quality of training imparted by the trainers whether individuals or organizations.
6. **Time management:** It refers to identification, listing, sorting and prioritizing the tasks to be done and allocating time on them. The management should train its employees to manage their time when at work or at home (since performance of a person at either place impinges on the performance at the other place). Although an exercise in time management itself may take some time, but ultimately it increases efficiency. There are many methods of prioritization of tasks, among which the ABC method, the POSEC (prioritize, organize, streamline, economize and contribute) method and Eisenhower method are notable. The Eisenhower method uses importance and urgency as the two coordinates making four categories of tasks. The less urgent and less important tasks are the last in priority while the most urgent and most important tasks are the first to attend. It is advisable to use a 'secondary memory' device (such as written task list or a computer note pad/diary) than the 'primary memory', i.e. keeping the list and the priorities in mind, which is easy to forget or get confused. As computers are easily available now, one may use software that have built-in task hierarchy schedulers and support numerous chores of ordering and listing of tasks with their details. The management should also keep information on how the employees have planned the use of their time in performing the tasks and rationalize them where needed. The culture of time management has to inculcated and promoted among the employees.
7. **Travel management:** It refers to rationalization of movement of the employees from their residence to the workplace and their return back home as well as their movement elsewhere for performing certain sort of tasks related to the organization. It may encompass residential planning, including availability of amenities and facilities, for the employees as well. A properly done travel management may increase the efficiency of employees manifold.

<sup>23</sup> Schuler, R.S. and Jackson, S.E. (1987) "Linking Competitive Strategies with Human Resource Management Practices", *Academy of Management Executive*, 1(3): 207-19.

<sup>24</sup> Swanson, R. A., and Arnold, D. E. (1996) "The Purpose of Human Resource Development is to Improve Organizational Performance," Edited by R. Rowden, *Workplace Learning: Debating the Five Critical Questions of Theory and Practice*, Vol. No. 72 (pp. 74-92), Jossey-Bass, San Francisco.

8. **Management of payroll, compensation in wage/salary and benefits administration:** Various methods may be adopted to pay salary/wages to the employees that save their time on the one hand and the cost/time of the organization in disbursement. For example, instead of paying them in cash on a fixed day every month (which may make long queues and kills the entire day), payments may be made to employees' savings accounts. Charges for certain types of benefits given to the employees may be deducted from their salaries directly. Employees' benefits encompass all non-wage or non-salary benefits given to them partly to increase their economic security and partly to induce them to be more effective and loyal to the organization. These benefits include perks, housing, conveyance, group insurance, health care, day care, children's tuition fee reimbursement, funding of education, various types of leave, vacation, travel allowances, subsidized lunch during the work hours, voluntary retirement schemes, retirement benefits, etc. All these benefits increase the cost on the part of the organization, but if properly planned and administered, they may also increase the returns from the employees manifold. On the other hand, a faulty planning and execution of these benefits may result into employees' dissatisfaction and a consistent resistance from the employees' unions, often leading to loss of workdays and degeneration of the relationship between the employees and the organization/management.
9. **Performance appraisal:** It refers to the regular assessment and review of the performance of employees in terms of quantity, quality, cost and time. Its objectives are to (i) give feedback to employees as to their performance so as to make them aware of their contribution, (ii) identify employee for training and skill augmentation, (iii) document criteria used to allocate organizational rewards, (iv) form a basis for promotions, disciplinary actions, special raises in personal salaries, etc. (v) provide the opportunity for organizational diagnosis and development, (vi) facilitate communication between employee and management, and (vii) validate selection techniques and human resource policies to meet certain norms. In many cases, the performance appraisal is done through the 'upward feedback system' in which the managers get a feedback through reports or they review the performance of the employees directly. However, the '360-degree feedback system' also is very often used for performance appraisal. This method relies on the feedback received from different internal sources such as subordinates, peers and managers, self assessment of the employees, as well as external sources such as customers and suppliers or other stakeholders. The 360-degree feedback system often works better than the simple upward feedback system. Drucker (1954) suggested that management by objectives (MBO) is often very successful in understanding of objectives of the organization and enhancing the performance. Management by objectives is a process in which the management and the employees discuss and reach at a consensus on the objectives of the organization, the degree of success in meeting them, obstacles to meet them and the ways and means to meet them better. We have mentioned before how and why the objectives of an organization become clearer to the employees only gradually. The MBO method is only a process to that end. It introduces the criteria of specificity, measurability, achievability, reality and time-specificity in the objectives and thereby promotes performance of employees (including management). For a healthy functioning of the organization it is required to develop the management information system to help monitor the 'reach ratio' (a ratio of achievement to target).

### BROADENING THE CONCEPT OF HUMAN RESOURCES

So far, the scope of human resource management has been limited to the in-house persons employed by the organization. It also concentrates mainly on production (and distribution to some extent). However, of late, the scope of human resource management has been widened in view of the generalized definition of human resources. Now, under human resources one includes all those people – employees, agents, dealers, distributors, retailers and customers including consumers in the forward chain and the suppliers of inputs in the backward chain – who are related to an organization and whose behaviour may have some effect on the performance of the organization. This change has brought in the concept of 'crowd-sourcing'.

It 'can improve productivity and creativity while minimizing labor and research expenses. Using the Internet to solicit feedback from an active and passionate community of customers can reduce the amount of time spent collecting data through formal focus groups or trend research, while also seeding enthusiasm for upcoming products. By involving a cadre of customers in key marketing, branding, and product development processes, managers can reduce both staffing costs and the risks associated with uncertain marketplace demand.'<sup>25</sup>

It is obvious that the broadening of definition of human resources has chiefly been a result of the revolution in the information and communication technology. As Alsever (2007-b) points out, with the rise of user-generated media such as blogs, Wikipedia, MySpace, and YouTube, the traditional distinctions between producers and consumers have been blurred. Although the idea of soliciting customer input is hardly new, the advent of open-source software movement has shown that now it can be done with ever large number of people. The difference is that today's technology makes it possible to enlist ever-larger numbers of non-technical people to do ever-more complex and creative tasks, at significantly reduced cost.

Proctor & Gamble has used crowd-sourcing for research and development of their Pringles Prints Chips. O'Reilly Media, a publishing company, has done it for sales reporting. Chipotle Mexican Grill, a restaurant chain, has applied crowd-sourcing for advertising and Threadless, a youth-oriented fashion manufacturer, has benefited in product designing and selection by crowd-sourcing. Alsever (2007-c) It may be noted, nevertheless, that the methods of managing the employees differ significantly from the methods of managing the non-employees, especially the customers/consumers. The organization must not expect to control them, but to allow them to be creative and be themselves. The organization may lay out ground rules about how much control it is willing to cede, how much information it is willing to share, and what will happen to the work that the participants create. Alsever (2007-a) points out that people will do many things (for an organization) just for free, simply because they think it is fun. Products and companies can become hobbies unto themselves, and many consumers will derive satisfaction from feeling like an insider at a company they're passionate about. In return, the concerned organization should give them recognition, exclusive perks, the opportunity to interact with senior company managers, or free products.

### CONCLUSION

As Human Resource Development Programmes concentrate on the varied categories of raw human resources to be processed into the work force, no one can deny and underestimate its valued role in reconstructing the economy. In line with this the relations between national and international actors in HRD have to be developed. Moreover, it is an inescapable fact that in respect of total manpower dispersion in business organizations whether productive or service, the bulk of the personnel are skilled labour force working at operative level. This force is instrumental in transforming raw materials into the products. It is this level at which major share of human resource investment and working capital are consumed.<sup>26</sup> This is the force which produces quality and which ultimately affects the organizational image and the economy of any country. The organisations can accomplish the desired objective through the skill development programmes that can build the skilled manpower and the economy of the country. Certainly, any country would have a sound and healthy economy if it exploits and develops its natural and human resources that enables and boosts the economic development of the country. It can be viewed that the skills and knowledge that can and will change the shape of an economy's future.

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