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Case Studies

EDITORIAL NOTE

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Most cordially,
Dr. José Carlos Arias
Business Intelligence Research Centre of London
Member of the Board of Editors

Business Intelligence Journal

Profile of Authors Included in this Number

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Gurau C (2006). Multi-channel banking in Romania: a comparative study of the strategic approach adopted by domestic and foreign banks Afr. J. Financ. Servic. Manage. 1(4): 381 – 399.

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STRATEGIC HUMAN RESOURCE MANAGEMENT AND ORGANIZATIONAL PERFORMANCE IN THE NIGERIAN INSURANCE INDUSTRY: THE IMPACT OF ORGANIZATIONAL CLIMATE

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Abstract

This study investigates the impact of strategic HRM practices on organizational performance of insurance companies in Nigeria as well as examining whether the effectiveness of strategic HRM practices on organizational performance is contingent on organizations' work place climate. A multi-respondent survey of 18 insurance companies was undertaken and data collected was subjected to regression and correlation analysis as well as descriptive statistics in pursuance of the study's stated objectives. Organizational climate was measured through a set of questionnaire that we developed based on the eight organizational climate dimension proposed by Koys and De Cotiis (1991). Study results suggest that strategic HRM alignment, line management training, career planning system and job definition are the key strategic HR practices that influence organizational performance in the Nigerian insurance industry. Results also suggest that the relationship between strategic HRM practices and organizational performance in the Nigerian insurance industry is moderately influenced by organizational climate. This study was therefore, able to prove the hypotheses proposed and provide support to the existing theories. **Key words**: Strategic HRM, Performance, Organizational Climate, Insurance Companies.

In the past few years, there has been a considerable deal of research focusing on the relationship between strategic Human Resource management (SHRM) practices and organizational performance. These studies were fuelled by the argument that access to capital and technology, are becoming less effective as they can be easily imitated by competing organizations. Human resource is argued to represent an asset that can provide a source of competitive advantage because it's often difficult to duplicate by competitors and hard to substitute even within the same organization. Strategic HRM can therefore, be used by organizations to acquire and develop this valuable capital. A number of studies have actually demonstrated that SHRM practices, either individually or as a system, are associated with higher levels of performance (see, Huselid, 1995; Huang, 1998; Dimba and K'Óbonyo, 2009; Abdulkadir, 2009).

One of the issues that have featured prominently in the discussion of these interactions is the question of whether the relationship between Strategic HRM practices and indicators of organizational performance is universal or contingent. The universalistic view suggests that certain types of HRM practices are more effective than others

(Pfeffer, 1994; Huselid, 1995). For example, organizations that use innovative recruitment and selection systems should typically have more effective, efficient and motivated workforce than organizations that do not. The contingency view, on the other hand, suggests that the effectiveness of HRM practices is contingent upon other factors such as organizational climate, culture, competitive strategies, e.t.c. According to this argument, HRM practices that enhance the knowledge, skills, ability and motivation of employees would have a greater impact on performance if the organization is using a strategy that requires highly skilled and motivated employees (Neal, West and Paterson, 2005).

The main objective of this study is to determine the impact of strategic HRM practices on organizational performance of insurance companies in Nigeria as well as examining whether the effectiveness of strategic HRM practices on organizational performance is contingent on organizations' work place climate. In the sections that follow, we define the main constructs used in this study, review relevant literature and empirical findings on strategic HRM as well as the methodology used.

Review of the Literature

Nature of Strategic HRM

Strategic Human Resource Management implies a managerial orientation that ensures that human resources are employed in a manner conducive to the attainment of organizational goals and mission. The concept of Strategic Human Resource Management (SHRM) evolved in the 1990s with an increased emphasis on a proactive, integrative and value-driven approach to human resource management (Schuller,1992). Strategic HRM focuses on several issues including the fit between human resource management practices and organizational strategic goals, the integration of human resource management in the organizational strategic management, the involvement of human resource function in senior management teams, the devolvement of human resource practices to line managers and taking of strategic approach to employee selection, compensation, performance appraisal and the value that is added to the organizational performance by HRM. It has also been defined as the pattern of planned human resource deployments and activities intended to enable an organization to achieve its goals (Wright and McMahan, 1999). The latter definition highlights the two important dimensions that distinguish SHRM from traditional HRM. It links HR practices with the strategic management process of the firm vertically and horizontally, it emphasizes that HR practices are integrated and support each other.

Strategic Human Resource Management Practices

Integration of HRM with Corporate Strategies:
Integration of HRM refers to the involvement of HRM in the formulation and implementation of organizational strategies and the alignment of HRM with the strategic needs of an organization (Schuler and Jackson, 1999). Buyens and De Vos (1999) argue that in order for HR to be a strategic partner, HR managers should be involved in strategic decision making alongside other senior managers, providing greater opportunity to align HR goals, strategies, philosophies and practices with corporate objectives and the implementation of business strategy. This involvement would include the membership of HR managers in the most senior management teams in the organization. This would provide an opportunity for HRM to represent its concerns and influence business strategy from the outset of decision making. The chances of integration and value creation may be further increased if the senior HR manager and the CEO

have an opportunity to establish a relationship. In this role, HR managers need to have knowledge of core markets, competitors, costs, profit indicators and stakeholders to be considered equal business partners (Chaddie, 2001). The involvement of a senior HR manager in a firm's senior management team provides an important channel for interactive information flow and communication.

To achieve strategic integration and alignment of HRM with business strategies, a documented HRM strategy would also be useful (Budhwar, 2000; Teo, 2002) as it can make more concrete the role and authority of HR managers in corporate decision making and increase capacity to cope with externalities such as a tight labour market (Cunningham and Deborah, 1995). A documented HRM strategy helps the organization to develop an HRM vision and objectives and to monitor performance. Some empirical evidence from previous research indicates that the full impact of HR practices on organizational performance occurs when HR practices are strategically congruent and consistent with each other (Khatri, 1999).

Delegation of HR practices to Line Managers:
To make HR managers more available for participation in strategic decision-making process, Budhwar and Khatri (2001) argued that the responsibility of routine execution and administration of HR practices should be delegated to line managers as they have direct and frequent contact with employees.

However, for the benefit of devolvement to be realized, line managers will need to possess appropriate skills to execute HR practices competently and effectively to a benchmarked standard advocated by HR managers (Hall and Torrington, 1998). This means that the senior HR manager needs to be a strategic partner with line managers, providing training, resources, incentive and a communication channel to ensure these HR practices are carried out in accordance with HRM policy (Teo, 2002).

Innovative Recruitment and Selection System:
A rigorous, valid and sophisticated recruitment and selection system helps in identifying a right candidate with potential to perform. A rigorous selection system generates a sense of elitism, creates high expectations of performance, and signals a message of importance of the people to the organization (Pfeiffer, 1994). The mismatch between the person and the job can hamper performance levels, whereas a sophisticated selection system can ensure a better fit between the person's abilities and the organization's requirement. Also, selection has been found to be positively related to firm performance (Terpsra and Rozell, 1993).

Training and Development System:

Organizations can develop and enhance the quality of the current employees by providing comprehensive training and development. Indeed, research indicates that investments in training employees in problem-solving, teamwork and interpersonal relations result in beneficial firm level outcomes (Barak et al., 1999).

Performance Appraisal System:

Organizations can monitor the development of desired employee attitudes and behavious through the use of the appraisal mechanisms. This appraisal-based information could be used for changing the selection and training practices to select and develop employees with the desired behaviour and attitudes. However, the effectiveness of skilled employees will be limited unless they are motivated to perform their jobs.

Compensation System:

Firms can affect the motivation of employees in several ways. They can use performance-based compensation to provide rewards to employees for achieving the specific goals and objectives of the firm. A substantial body of work has provided evidence that incentive-based compensation has an impact on firm performance (Milkovich and Boudreau, 1998).

Career Planning System:

A well-functioning career planning system may also encourage employees to take more responsibility for their own development, including the development of the skills viewed as critical in the company. A well-planned career development system along with internal advancement opportunities based on merit, results in high motivation among employees, which has an impact on firm performance Milkovich and Boudreau (1998).

Organizational Climate

The term organizational climate has been defined in numerous ways. Basically, various definitions of organizational climate given by scholars comprised two different types of climate within organization, namely: organizational climate and psychological climate (Jensen, 2003; James and Jones, 1974). When climate is measured in relation to organizational attributes, it is called organizational climate and treated as organizational property. Organizational climate in this view is considered as average meanings that employees attach to a particular work setting. Whilst at the individual level, climate is a cognitive interpretation of an organizational situation that has been labeled psychological climate which represents how work environments are cognitively appraised and represented in terms of their meaning and significance for individual employees in organizations. Psychological climate is considered as meanings that individuals attach to their work context (Jensen, 2003; James and Jones, 1974).

Organizational climate is also defined as a global impression of one's organization and personal impact of the work environment, which influences the individual's work behaviors and job-related attitudes. It describes the perception of employees towards their organizations which would link to work attitude formation (Litwin & Stringer, 1968; Pritchard & Karasick, 1973). French et al (1985) see organizational climate as the relatively resistant set of perceptions held by organization members concerning the characteristics and quality of organizational culture. They further distinguish between the actual situations (i.e. culture) and the perceptions of it (climate).

Measuring Organizational Climate

Organizational climate measures attempt to assess organizations in term of dimensions that are thought to capture or describe perceptions about the climate. Different definitions of organizational climate as mentioned earlier show a general disagreement among researchers on what actually constitutes the climate construct. As a result, several researchers tried to construct their own dimensions that form organizational climate, which eventually will produce several types of climate. Basically, according to Ainuddin and Ling (1998), different organizations with different practices and procedures will have different climate constructs since organizational climate deals with inter-perceptions of employees toward their own organization.

Perceptions about climate can be measured by questionnaires such as that developed by Litwin and stringer (1968) which covers eight categories:

i.   Structures – feelings about constraint and freedom to act and the degree of formality or informality in the working atmosphere;

ii.   Responsibility – the feeling of being trusted to carry out important work;

iii.   Risk – the sense of riskiness and challenge in the job and in the organization;

iv.   Warmth – the existence of friendly and informal social groups;

v.   Support – the perceived helpfulness of managers and co-workers;

vi. Standards – the perceived importance of implicit and explicit goals and performance standards; the emphasis of doing a good job;

vii. Conflict – the feelings that managers and other workers want to hear different opinion;

viii. Identity – the feeling that you belong to a company; that you are valuable member of a working team.

A review of a number of questionnaires was carried out by Koys and De Cotiis (1991), which produced the following eight typical dimensions of organizational climate:

i. Autonomy – the perception of self-determination with respect to work procedures, goals and priorities;

ii. Cohesion – the perception of togetherness or sharing within the organization setting, including the willingness of members t provide material risk;

iii. Trust – the perception of freedom to communicate openly with members at higher organizational levels about sensitive or personal issues, with the expectation that the integrity of such communications will not be violated;

iv. Resource – the perception of time demands with respect to task competition and performance standards;

v. Support – the perception of the degree to which superiors tolerate members' behaviour, including willingness to let members learn from their mistakes without of fear of reprisal;

vi. Recognition – the perception that members' contributions to the organization are acknowledged;

vii. Fairness – the perception that organizational policies are non-arbitrary or capricious;

viii. Innovation – the perception that change and creativity are encouraged, including risk-taking into new areas where the member has little or no prior experience.

Types of Organizational Climate

Besides constructing various measurements of organizational climate, different scholars also formed numbers of organizational climate types, which show different kind of work atmosphere perceived by staff. Using Organizational Climate Description Questionnaire (OCDQ) with eight dimensions of organizational climate, Halpin and Croft (1963), conducted their own research among school managers and teachers of elementary schools in Chicago, while Alavi and Jahandari (2005) conducted it among university staff in Iran. Both studies by Halpin and Croft (1963) and Alavi and Jahandari (2005) produced the same types of climate, which consisted of six types of climate, range according to the rate of their

openness, as follows: 1) open, which has characteristics of high motivation for personnel, while the manager and the personnel have honesty and sincerity in their behavior. The manager leads the organization through providing a suitable combination of structure and consideration. The personnel work well with each other and are committed to their duties because the manager's leadership is realistic. There is no necessity for close supervision (emphasis on production) or a set of rules and regulations; 2) autonomous; 3) controlled (the emphasis on the duties of the personnel, but little emphasis on the personnel's relationships); 4) familiar (a loving environment but without attention to the efficiency); 5) paternal (with emphasis on commandments and continuous supervision; and 6) closed, which within closed organizational climate, the manager has a close supervision (emphasis on production). Disappointment and indifference are seen in the personnel. The manager is not effective in guiding the personnel activities. They do not work with each other well, thus, achieving the group success is rarely possible, and the morale is low. This shows low job satisfaction and low social satisfaction.

Burton, Lauridsen and Obel (1998) research's findings indicated four different types of organizational climate, derived from Zammuto and Krakower's (1991) type of climates, specifically: a **group climate** which refers to low on tension and high on resistance to change. The **developmental climate** is similarly low on tension, but is also low on resistance to change. Here, the climate entertains change and is much more oriented to the outside world with a sense of adventure. The other two climates are higher on tension. The **rational goal climate** has a low resistance to change, driven by an external orientation to success as measured by outside measurements and competition. The **internal process climate** also has high tension and high resistance to change; it sees change as threatening to current ways of doing things. Their data indicate that the concepts of tension and resistance to change capture well the basic aspects of the organization and can be used as basic dimensions of climate.

Prior Studies on Strategic Hrm

The era of strategic HRM was ushered in nearly two decades ago and since then, a behavioral perspective has emerged as the predominant paradigm for research. However, it was only in the 1990s that the concept of bundling of human resource practices became popular and attracted numerous studies. Ferris et al. (1990) made one of the first major attempts to examine how effective

management of human resources might contribute to positive organizational performance. In their study of 2,236 firms from the U.S. construction industry, the Ferris group addressed the roles played by three important organizational functions and activities on firm performance: the status and importance of the HRM function, the role of unions and strategic planning. They found that firms that had HRM departments were generally high performers (i.e., larger total sales volume), firms that had a higher percentage of their workforce unionized also performed better than firms with a lower percentage and, finally, firms performed better when they engaged in more formalized strategic planning.

In a comparative study of strategic HRM practices among American-owned, Taiwan-owned and Japanese-owned firms, Huang (1998) examines the strategic level of HRM at 315 Taiwanese business firms. Using the General Linear Model (GLM) and Scheffe multi-range test as methods of statistical analysis, the findings indicate that American-owned businesses were discovered to engage in strategic human resource management (SHRM) more frequently than Japanese- or Taiwan-owned enterprises. A positive relationship was also found between the amount of capital resources available to firms and the extent to which they practiced SHRM. Huang also reported that firms engaging in SHRM received a higher rating than other firms on the indices of organizational morale, financial performance, and overall performance.

Also, based on the questionnaire responses by heads of human resource departments in 191 companies in Singapore, David et al. (2002) examined the relationship between strategic HRM and organizational financial and human resource performance in Singapore. Using descriptive statistics and regression to analyze the data, the results indicate that with the exception of team-based work and performance-based pay, all the other strategic HRM components have a positive impact on the financial performance of a firm. Results also show that all the strategic HRM variables have a positive impact on HR performance.

Singh (2004) investigated the relationship between six HRM practices and firm level performance in India. 359 firms were drawn from firms listed in the Centre for Monitoring Indian Economy (CMIE) database. Of these 359 firms, 82 responded positively to the survey. Using regression and correlation analysis, the study found a significant relationship between the two HR practices, namely, training and compensation, and perceived organizational and market performance of firms.

Green et al., (2006) reported that organizations that vertically aligned and horizontally integrated HR function and practices performed better and produced more committed and satisfied HR function employees who exhibited improved individual and organizational performance. Tessember and Soeters (2006) examined how, when and to what extent HR practices affect performance in Eritrea, Africa's youngest and poorest country. They reported that successful implementation of HR practices could enhance individual and civil service organization of Eritrea, but the economic and political environment within which HR practices operate are not conducive. Their study tried to shed some light on the HRM-performance debate within the context of a developing country.

Using a stratified random sampling by industry, Kai et al. (2007) surveyed 231 firms listed on the Australian Stock Exchange (ASE). Using descriptive statistics and correlation analysis, results indicate that strategic integration and devolvement of HRM were practiced to a moderate extent in the firms sampled, and that the degree of alignment of HRM with business objectives and strategies had a positive relationship with perceived firm financial performance.

Som (2008) sampled 69 Indian companies with a view to examining the impact of innovative SHRM practices on firm performance. Using descriptive statistics and regression analysis, results indicate innovative recruitment and compensation practices have a positive significant relationship with firm performance. Their results also show that recruitment, role of the HR department and compensation practices seem to be significantly changing within the Indian firms in the context of Indian economic liberalization. The synergy between innovative HRM practices was not found to be significant in enhancing performance during the liberalization process.

Dimba and K'Óbonyo (2009) investigated the nature of the effect of SHRM practices on organizational performance. The study sought to determine whether the effect of human resource management practices on organizational performance is direct or indirect through employee motivation, and whether employee cultural orientations moderate the relationship between strategic human resource practices and employee motivation. 50 multinational manufacturing companies in Kenya were sampled. One HR manager, 2 line managers and 3 employees from each organization were chosen for the survey. The study adopted the measures developed by Hofstede and Huslid. Using regression analysis, the results indicate that all the variables of SHRM practices, except recruitment and selection were positive and significantly correlated with performance; relationship between SHRM

practices and firm motivation did not depend on employee cultural orientations when cultural values were considered; motivation mediated the relationship between SHRM practices and firm performance and motivation affected firm performance.

Okpara and Pamela (2008) examined the extent to which organizations in Nigeria use various HRM practice and the perceived challenges and prospects of these practices. Data were collected from 253 managers in 12 selected companies in 10 cities. Their findings reveal that HRM practices, such as training, recruitment, compensation, performance appraisal and reward systems are still in place and that issues of tribalism, AIDS, training and development and corruption are some of the challenges facing HRM in Nigeria.

Research Hypotheses

In order to achieve the objectives designed for this study, the following research hypotheses are stated in their null form based on the revelations in the review of literature concerning SHRM practices and firms' performance.

Hypothesis One:
Strategic human resource management practices have no significant effect on the performance of insurance companies in Nigeria.

Hypothesis Two:
SHRM is not practiced by insurance companies in Nigeria.

Hypothesis Three:
There is no significant relationship between the different SHRM practices and organizational performance.

Hypothesis Four:
The relationship between strategic HRM practices and organizational performance in the Nigerian insurance industry is not influenced by organizational climate.

Research Methodology

Data Collection

The population of this study is made up of all the insurance companies operating in the Nigeria. The study made use of a sampling frame consisting of 20 insurance companies listed on the Nigerian Stock Exchange (NSE)

as at 10th December, 2010. A total of fifty four (54) questionnaires accompanied by a covering letter were sent to the heads of human resource departments of eighteen insurance companies using stratified random sampling method.

The unit of analysis in this study is the firm and multi-rater (multi respondents) response approach was adopted. Gerhart et al. (2000) contended that SHRM effects based on single respondent surveys were significantly undermined by the presence of measurement error in the SHRM measures. To minimize this error, three (3) questionnaires were sent to each company and it was addressed to the head of Human Resource Department who was required to be part of the three respondents. For each company, the composition of the respondents is: the head of HR Department, one senior HR staff and one other senior management staff outside the HR Department.

Since, the unit of analysis is the firm, the scores for each variable was aggregated and average over the three respondents for each company. For companies where the number of expected respondents is less than three, the average scores of the actual respondents were taken for each variable.

Definition and Measurement of Variables

Dependent Variables

Corporate performance is measured by the following variables: growth rate of revenue, financial strength (liquidity, reserve, borrowing capacity, e.t.c.), return on equity, return on assets and profitability. The variables are closely related conceptually to some of the hypothesized precursors of performance, such as HRM practices (Bae et al., 2003; Katou and Budhwar, 2007). These indicators are rated anonymously by the respondents on a 5-point likert scales *(1 =Very Poor; 5 = Very Strong)* and each rating is done in relation to the perceived performance of indicator of the best performing organization(s) in the industry to which the firm belongs. Respondents are asked the following questions: *"compared to the performance of best performing organizations in your industry in Nigeria, how does your organization rate on each of the following in the last five years?"* The ratings of all the indicators are aggregated and averaged across the respondents from the organization to derive an organization's score on the index of relative perceived corporate performance.

Independent Variables

The independent variables (which collectively are a measure of SHRM practices) in this study are : strategic HRM alignment with business objectives and strategies, line management devolvement and line management training in HR practices, selection system, performance appraisal system, training and development system, compensation system, and career planning system. The items were derived from a comprehensive review of the literature on strategic HRM practices that are considered to relate to firm performance.

'Strategic HRM alignment' with business objectives and strategies is measured by ten (10) items, each rated on a 5-point scale ranging from 1 *'not at all' to 5 'to a great extent'*. A sample questions is *'HRM strategy is formulated based on your company's vision and mission'*.

The 'Line management devolvement' variable is measured by asking respondents to indicate the involvement of line managers in the execution of five HR practices chosen on the basis of findings from previous research (e.g. Budhwar, 2000). Items are worded to emphasize the involvement of line managers in the execution of the following HR practices: 'recruits new people', 'select applicants', 'train employees', 'execute performance assessments' and design job roles'. An index is constructed by adding the five HR practices. Companies that indicate the involvement of line managers in one HR practice are scored a 1, two practices a 2, and so on, up to 5. The range of the line management devolvement index is thus 0 to 5.

The 'Line management training in HR practices' variable is measured by asking respondents to indicate the proportion of line managers trained in the firm to execute HR practices. The percentage of line managers training is scored on an ordinal scale from 1 'less than 10%', to 10 'more than 90%'. Firms that do not train its line managers in human resource practices are scored zero.

'Selection system' is measured by an instrument having 5 items each rated on a 5-point scale. The respondents are asked to indicate on a scale of 1 'strongly disagree' to 5 'strongly agree' the importance their organizations attached to the usage of selection tools and tests. A sample question is *'the selection system followed in our company are highly scientific and rigorous'*.

'Performance appraisal' was measured through an 8-item scale. The respondents are asked to indicate the extent to which performance is evaluated on the basis of quantifiable results and usage of performance appraisal data. In other words, they are to indicate on a scale of 1 'strongly disagree' to 5 'strongly agree' their agreement with some performance appraisal system practices in their organizations. A sample question is *'performance of the employees is measured on the basis of objective quantifiable results'*.

'Compensation' system is measured through a scale having 5 items. The respondents were asked to indicate on a scale of 1 'strongly disagree to 5 'strongly agree' the extent to which compensation is linked to the performance and qualification of employees in their organizations. A sample question is *'in our company salary and other benefits are comparable to what is generally obtainable in the industry'*.

'Training and development' variable is measured by an instrument having 7 items, each rated on a 5-point scale. The respondents are asked to indicate on a scale of 1 'strongly disagree to 5 'strongly agree' the extent to which training and development needs in their organizations are identified and met. A sample question is *'employees in each job will normally go through training programs every year'*.

'Career planning system' variable is measured by an instrument having 7 items, each rated on a 5-point scale. The respondents are asked to indicate on a scale of 1 'strongly disagree to 5 'strongly agree' the clarity and usage of career planning system in their organizations. A sample question is *'our company provides clear career path information to employees'*.

Control Variables

Wall and Wood (2005) emphasized the need to control for third factors (also called nuisance factors); that is, variables that may account for an association between strategic human resource management practices and organizational performance. Based on objective of this study, organizational climate was identified and control for.

Organizational climate was measured through a set of questionnaire that we developed based on the eight organizational climate dimension proposed by Koys and De Cotiis (1991). It was specifically measured by an instrument having 12 items, each rated on 5-point likert scale. The respondents were asked to indicate their degree of perceptions about their workplace environment covering the following eight dimensions: autonomy, cohesion, trust, resource, support, recognition, fairness and innovation.

Analytical Procedures

Data collected is subjected to two main types of analysis. In order to gain perspectives into the socio-demographic

characteristics of respondents, frequency distribution of responses is calculated while descriptive statistics is employed in determining the extent of strategic HRM practices in the companies under scrutiny. Other analytical procedures adopted include the correlation analysis and regression which are used as tools to refute or validate the research hypotheses.

Results and Discussions

Of the 54 questionnaires distributed to 18 companies, a total of 32 completed and usable questionnaires from 12 companies representing a response rate of about 77 percent are returned.

To address issues of possible common method variance, Cronbach Alpha reliability test is conducted for all the measures. Reliabilities are checked and they fall between 0.68 and 0.77, which is satisfactory for study that is exploratory in nature (Nunnally, 1978). The overall Cronbach alpha of the scales used in this study is 0.71. This indicates the reliability of the scales is reasonably high thus, depicting high internal consistency among the measurement items.

Demographic Characteristics of the Respondents

Table 1 shows the demographic characteristics of the respondents. Majority of the respondents (94 percent) possess educational qualification higher than diploma or its equivalent and about 78 percent of the respondents are in the rank of senior manager and above. This is an indication that the respondents are highly rated employees who should know more about the human resource management practices of their respective companies.

About 91 percent of the respondents have put in at least 5 years of service and majority of them (75 percent) are married. About 91 percent of the respondents are at least than 30 years old.

In general, the study gives a favourable picture concerning the level of education of the respondents. A substantial proportion of the respondents have at least a first degree. This is an indication that the respondents are composed of highly educated people.

Majority of the respondents have put in at least five years of service. This is also an indication that the respondents have actually spent enough time in the service to know how strategic the management of their companies is.

Table 1: Demographic Characteristics of the Respondents (N = 32)

Characteristics	Frequency	Percentage
Level of Education		
Diploma or its equivalent	2	6
B.Sc or its equivalent	10	31
Master Degree	20	63
Total	**32**	**100**
Job Title		
Assistant managers	7	22
Senior Managers	18	56
General Managers & Above	7	22
Total	**32**	**100**
Years of Service		
1 – 4 years	3	9
5 – 10 years	17	53
10 years & above	12	38
Total	**32**	**100**
Marital Status		
Single	6	19
Married	24	75
Divorced/separated	2	6
Total	**32**	**100**
Age of Respondents		
21 – 30 years	3	9
31 – 40 years	19	60
41 years & above	10	31
Total	**32**	**100**

Source: Field Survey, 2010

Test of Hypotheses

Hypothesis One: Effect of Strategic HRM Practices on Organizational Performance

As shown in Table 1, there is a strong positive relationship between strategic HRM practices and organizational performance with a multiple correlation (R) of 0.997. The adjusted R^2 of 0.962 implies that 96.2% of the variations in organizational performance are adequately explained by strategic HRM practices used in this study.

The results also show that strategic HRM alignment with overall corporate objectives and line management devolvement has a positive effect on organizational performance with coefficients of 0.63 and 0.93 respectively. Line management training and selection system were also found to have a positive effect on organizational performance with coefficients of 0.07 and 1.05 respectively.

Table 2: Regression Results on Perceived Organizational Performance

Independent Variables	Standardized Coefficients	t-values
Strategic HRM Alignment	0.626	3.614
Line Mgt. Devolvement	0.934	4.130
Line Mgt Training in HR	0.070	0.340
Selection System	1.046	2.896
Training & Development	-0.268	-1.224
Compensation System	0.672	2.122
Career Planning System	0.160	0.507
Job Definition	-1.181	-3.958
Organizational Climate	0.157	1.504
R	0.997	
R^2	0.993	
Adjusted R^2	0.962	
F	32.283	
N	12	

Source: Author's Computations using SPSS, 2010

Compensation and career planning systems are also found to have a positive effect on organizational performance with coefficients of 0.67, 0.16 respectively.

Surprisingly, training and development and job definition were found to have a negative effect on organizational performance with coefficients of - 2.68 and - .1.181 respectively.

Performance appraisal system with standardized coefficient of 11.78 and a t-value of 8.06 was excluded from the model estimation.

At 5 percent level of significance, the F-statistic shows that the model is useful in determining if any significant relationship exists between strategic HRM practices and organizational performance. Overall, results therefore, suggest that SHRM practices have significant effect on the performance of insurance companies in Nigeria, thereby, providing support for alternative hypothesis one.

Hypothesis Two: Extent of Strategic Human Resource Management Practices

Table 3 presents the descriptive statistics of the variables. The mean score of the strategic HRM alignment with the overall organizational goals and objective is 40.92 out of a possible maximum score of 50, suggesting a high (81.8%) extent of strategic HRM alignment with the overall business objectives.

To assess the tendency of organizations to devolve human resource practices to line officers, two criteria are used, namely, the involvement and training of non-personnel officers (e.g. Accountants) in human resource practices. Based on a possible maximum score of 5 in five HR practices, the results reveal that line mangers executed a mean of 4.25 (85%) human resource practices indicating an impressive involvement of line managers in the execution of human resource management practices.. In terms of the second criterion for devolvement (i.e. training provided to line mangers to execute HR practices), the finding shows a low level of training given to non-personnel officers as only 30% of line managers are trained to execute HR practices.

Table 3: Descriptive Statistics of the Measurement Variables

Measurement Variables	Mean	Standard Deviation
Strategic HRM alignment	40.92	6.345
Line Management Devolvement	4.25	0.622
Line Management Training	1.64	1.536
Selection System	15.75	4.413
Training and Development	24.83	4.783
Performance appraisal system	25.17	8.266
Compensation System	16.64	3.086
Career Planning System	24.50	5.385
Organizational Climate	39.50	2.195
Organizational Performance	15.58	3.801

Source: Author's Computations using SPSS, 2010

Employee selection system records a mean score of 15.75 (63%) out of possible maximum score of 25. The result indicates a moderate fit between the prospective employee's abilities and qualifications and the organization's requirements. Training and development on the other hand, has a mean score of 24.83 (70.9%) out of a possible maximum score of 35 depicting a high level of employees' participation in training and development programs.

The mean score of performance appraisal system is 25.17 (53%) out of a possible maximum score of 40. Results reveal that personnel appraisal system currently being practiced is not too impressive to be able to allow the companies to monitor the development of desired employee attitudes and behavious through the use of the appraisal mechanism. Compensation system has a mean score of 16.64 (66.6%) out of a possible maximum score of 25 depicting an impressive fit between perceived

compensation system in the Nigerian insurance sector and the overall industry policy on compensation of workers.

The mean scores of career planning system and job definition are found to be 24.50 (70%) and 13.67 (68.4%) out of a possible maximum scores of 35 and 20 respectively. The results indicate a high level of effective career planning system and employee participation within the Nigerian insurance sector.

Hypothesis Three: Relationship Between Strategic HRM Practices and Organizational Performance

As shown in Table 4, the zero-order correlation between line management devolvement and organizational performance is r = 0.71. Similarly, training and development and compensation system have an insignificant positive relationship with organizational performance with a correlation (r) of 0.51 and 0.34 respectively.

Strategic HRM alignment and line management training in HR have a significant positive relationship with organizational performance with a correlation (r) of 0.71 and 0.74 respectively. Selection system is also found to be positively correlated with organizational performance with a correlation (r) of 0.64.

Table 4: Correlation Matrix of the Measurement Variables

Variables	1	2	3	4	5	6	7	8	9	10
1. Strategic HRM Alignment	1.00	-.11	.55	.41	.55	.38	**.72**	**.67**	**.66**	**.71**
2. Line Mgt. Devolvement		1.00	.20	-.04	-02	.33	-.38	.23	.15	.39
3. Line Mgt Training in HR			1.00	**.82**	**.82**	**.83**	**.64**	**.82**	**.89**	**.74**
4. Selection System				1.00	**.78**	**.88**	.48	**.85**	**.77**	**.64**
5. Training & Development					1.00	**.72**	**.76**	**.75**	**.92**	.51
6. Performance Appraisal						1.00	.39	**.91**	**.83**	**.73**
7. Compensation System							1.00	.47	**.76**	.34
8. Career Planning System								1.00	**.85**	**.86**
9. Job Definition									1.00	**.64**
10. Organizational Performance										1.00

Note: Bold correlations are significant at either 0.05 or 0.01 level of significance (two-tailed).
Source: *Author's Computations using SPSS, 2010*

Similarly, career planning system and job definition have a significant positive relationship with organizational performance with a correlation (r) of 0.86 and 0.64 respectively. These results provide preliminary support for hypothesis three.

Hypothesis Four: The Relationship Between Strategic HRM Practices and Organizational Performance in the Nigerian Insurance Industry is not Influenced by Organizational Climate

Table I above shows that organizational climate has a positive effect on organizational performance with coefficient and significant values of 0.157 with 0.272 respectively. Though, the result is not too significant, it never the less, suggests that the relationship between strategic HRM practices and organizational performance in the Nigerian insurance industry is moderately influenced by organizational climate.

Discussions

The results of this study indicate that SHRM is impressively being practice in the Nigerian insurance industry. HRM were found to be highly integrated into the overall organizational goals and objectives of the sampled companies. In contrast, the empirical evidence regarding devolvement reflects a mixed story. While line managers are highly involved in the execution of HR practices, on average the level of training given to line mangers to perform these practices is low (30 percent) which indicates that the transfer of HRM knowledge to line managers is somewhat limited. Insufficient training offered to line managers would greatly undermine the capacity of line managers to perform HR activities effectively. The other six practices were also found to be moderately practiced.

The results also indicate that though, all the strategic HRM practices tested in this study are found to be positively related to perceptual measures of organizational performance in the Nigerian insurance industry, only the

following are statistically significant: : strategic HRM alignment, line management training, career planning system and job definition.

Overall the model is supported by data and the results suggest that strategic HRM alignment, line management training, career planning system and job definition are the key strategic HR practices that influence organizational performance in the Nigerian insurance industry. It therefore, implies that companies operating in the Nigerian insurance industry should pay more attention to these practices with a view to improving their implementation across the industry.

Conclusion

The results obtained from this study indicate that strategic HRM is moderately practiced by companies operating in the Nigerian insurance industry and that performance symbolized by growth rate of revenue, financial strength, return on equity, return on assets and profitability is reasonably enhanced by six out of the nine strategic HRM practices tested. The study, to this extent, has provided evidence for the value-added by strategic HRM through the integration of HR function within the organization's key strategies and operations. Be that as it may, questions need to be asked on the results of moderate levels of involvement in Strategic HRM practices as against high levels reported elsewhere. Can this be simply passed off as problems of new concept, data specification, procedures or even interpretation? Can this result even be attributed to factors other than strategic HRM practices and organizational climate? These are questions that can be resolved under different settings. However, managers everywhere face the same challenges of tackling complex problems with limited resources, determining priorities, motivating staff, initiating change and demonstrating measurable results. Strategic HRM in concept and practice is about managers standing in the front lines to tackle these challenges to achieve organizational objectives. We should be reminded that people may know everything about line management devolvement but not practice it; people may know the virtues of employee participation but not apply it. It is therefore, down to commitment as the missing link.

To achieve employee commitment, the weather of the work place has to be supportive to lead to and sustain staff motivation and high performance (Litwin and Stringer, 1968; Stringer, 2002). No doubt, Strategic HRM practices identified in this study should play this role creditably well and to act as catalyst, organizations should consider the benefits of integrating their HR function with its overall strategies and operations.

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THE STUDY EXAMINING THE EFFECT OF EXPORT GROWTH ON ECONOMIC GROWTH IN IRAN

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Abstract

Economic growth and its related factors, both theoretical and experimental aspects have been considered economists and policy makers of countries. Also, more than two decades the relationship between exports and economic growth has been had special importance. Hence in this article, we want to do Feder model and econometrics conventional methods to survey effect of exports on economic growth (industry & mining sector, services and agriculture). The data were collected from 1961-2006 and were analyzed using Ordinary Least Squares (OLS) model. The theoretical framework was designed based on this assumption that the total product in the economy was divided into two parts, production for inside (N) and production for exports (X) and each two section production is a function of factors allocated capital and labor. The results of this study show that each section export growth has a positive effect on the growth of value added in the same section. But the effect of export growth on the value added in industry and mining sector is more than other sectors.

Key words: Export, Oil Export, Non-Oil Exports, Ordinary Least Square (OLS), Economic Growth, Iran.

Economic growth is a phenomenon that normally to express it as percentage changes increasing national income in comparison the previous year or previous period. Myrdal defined economic growth as an increase in Gross Domestic production (GDP). Continued economic growth enables level life higher for population and Economic development with improve the material prosperity, creates the necessary transformation all institutions and processes social and cultural rights, so that the development process, be prevented return community to earlier stages. The proposed definitions of the words growth and development show the differences between these two concepts, the difference between these two words rooted in the characteristics and causes of changes. According to the commandment Schumpeter, development consists of continuous changes and spontaneous in developing countries after political independence, have lost available Balance in the economy. While growth is the following slow changes and gradual in economic conditions in the long-term is caused result of gradual increase in savings rates and population. Opinions Schumpeter about economic growth and development has been widely accepted by neoclassical economists. Because of the importance of exports in economic growth in two dimensions theoretical and experimental the study using a practical approach explains to review important goals of economic growth.

In Iran such as other countries, growth and achieve the high rate is one of the goals of government. Hence review factors impact on growth including exports can be the way for economic policy maker's framework intended purpose. In this study we want to estimate model the using Ordinary Least Squares (OLS) and time-series data of 1961-2006 published by central bank of Iran and statistical center of Iran and then to test hypotheses related to research based on statistical inference and also we want to answer this question, can be export a cause for economic sectors growth?

Review Value-Added Process in Economic Sectors in Iran

In this section we review processing economic sectors value added in Iran. The following table shows the average annual of value-added and growth it in economic sectors in the period of 1961-2006.

Table 1: Average annual value Added and growth value-added economic sectors

Period	Average annual growth of value added (percent)			Average annual value added (billion Rials[1])		
	Services	Agriculture	Industry and mining	Services	Agriculture	Industry and mining
1961-1972	8.79	3.17	13.08	32298	10058.55	7724.73
1973-1977	16.26	6.74	16.95	93012.67	15656	24234.17
1978-1988	-2.05	4.71	-0.44	117373	23834	30816.82
1989-1993	6.52	6.45	10.62	118625	35205.6	41899.2
1994-1999	4.16	2.25	5.39	151466	43849	55599.2
2000-2004	5.69	4.01	10.23	189306.45	49625	83280.22
2005-2006	6.52	6.93	10.48	236185.5	59761.5	116712.5

Source: central bank of Iran

Industry and Mining Value Added Sector[2]

Industry and mining section have involved effective during 1961-1968 in Iran's economic development. In1970 industry prospered in High level by government's support of industry and donations industrial Bank and increasing investment. Hence growth in industry and mining sector reached to 13.8 percent. Value added growth in industry and mining section reached to the 13.5 percent in 1971 and was more than predicted goal in the fourth development plan. With widespread strikes in 1998, industrial and mining activities was decreased too much, therefore economic in Iran was faced with the relative stagnation by the Islamic Revolution and problems such as shortages of imported raw materials in small industries. In despite of these conditions the added value in industry and mining section increased about 5.1 percent. Industry and mining section in first Five-year Development Plan (FYDP)[3] III executive (2000) situation was relatively stable. Improving government financial, country's balance of current account surplus and monetary policy supplier financing economic development leaded to fixed Price and exchange rate and to fall inflationary expectations and provided the appropriate to support this sector and the value added in this section grew amount of 9.5 percent than 1999 year.

Process Value-Added Agriculture and Services[4]

Generally, from the Islamic Revolution to 1990 (except 1988) value added in only agriculture sector has had always uptrend, especially in 1985-1988 years agricultural sector has had an effective role to prevent increasing economic recession while more economic sectors have had negative growth because there was war Problems and shortages of raw materials and economic recession society. Share of services value added sector have decreased during the period 1982-1990 from 58.3% in 1982 to 50.9% in 1990 year. In 2004 services value added sector has reached the highest growth (8.1% growth) during these few years and has increased to 51.7%.

Export Process in Economic Sectors (Oil Exports and Non-Oil Exports)

Table 2: Average annual export and export growth rates in economic sectors

Period	Average annual export growth (percent)				Average annual exports (million dollars)			
	Oil	Services	Agriculture	Industry and mining	Oil	Services	Agriculture	Industry and mining
1961-1971	16.9	36.41	18.24	20.32	1535.44	127.19	131.82	37.23
1972-1977	46.5	63.08	12.52	15.01	16857.83	2176	407.1	407.1

[1]IRR is monetary unit in Iran. Based on ISO-4217 standard Iran's Rial is shown with the symbol IRR In global trading.

[2]Summary of balance sheets and economic reports central bank in the years 1961-2006.

[3]Iran's FYDP was initiated since the end of Iran-Iraq war in 1988. High rates of economic growth for a decade is a strategic approach as well as an outstanding issue in the 4th five-year development plan of Iran (March 2005-2010).

[4]Summary of balance sheets of central banks and economic reports in the years 1961 to 2006.

Period	Average annual export growth (percent)				Average annual exports (million dollars)			
	Oil	Services	Agriculture	Industry and mining	Oil	Services	Agriculture	Industry and mining
1978-1988	2.84	-16.58	13.98	15.32	14741.09	1435.91	527.07	527.07
1989-1993	10.6	24.69	29.57	52.08	15451	930.4	1676.38	1676.38
1994-1999	9.51	23.81	-12.29	6.47	15373.4	1466.8	1537.76	1537.76
2000-2004	18.5	39.28	5.52	19.67	26050.91	4735.7	1750.95	1750.95
2005-2006	31.7	11.30	26.43	42.97	57915.5	8138.81	2778.48	2778.48

Source: Central Bank of Iran

Table 3: The average combined share of exports in economic sectors (percent)

Period time	Oil	Agriculture	Industry and mining	Services
1961-1971	84	7	2	7
1972-1977	85	3	1	11
1978-1988	88	4	1	7
1989-1993	83	9	3	5
1994-1999	76	9	8	7
2000-2004	73	5	9	13
2005-2006	74	4	11	10

Source: Central Bank of Iran

Export Process in Industrial and Mining Sector

The most important disorder that occurred in the first Five-year Development Plan (FYDP) was oil shock in 1974 and increasing exchange incomes obtained from exports so that was leaded to the release of uncontrolled boundaries for imports and much damage had exposed industries that compete with similar foreign products. In during 1979-1988 with Islamic revolution, export in industrial and mining sector has had several fluctuations due to: investment impairment, get out a number of capitalists and revenue operators, macro debt companies, factories to the banking system and imposed war and economic boycott. During 1979-1982 export in industrial and mining sector was a decreasing trend but from 1982 onwards exchange requirement and decreasing incomes result of crude oil exports by export incentive policies. During this period, export from 173.9 million dollars in the beginning period has reached to 265.5 million dollars in the end. In during 1989-1993 (end of war and beginning first-year development plan) export value has climbed in industry and mining sector due to fluctuations in the amount. In second-year development plan became more attention to export in industrial and mining sector and has climbed according to developments in 1994-1995, exchange rate fluctuations and uncontrolled price increases. In third-year development plan trade liberalization and realization of export mutants was the desired goals. In this period export value in industrial and mining sector from 2299.5 million dollars in 2000 reached to 4955.6 million dollars in 2004.

Export Process in Agriculture and Services Sector

The export of traditional and agricultural products is as one of the main pillars in non oil export so that during 1961-1965 agricultural export has climbed continuously and during 1973-1978 domestic demand has increased strongly due to increasing oil incomes and the unprecedented growth and in this period agricultural export has negative grown and from 505.1 million dollars in 1973 reached to 367.9 million dollars in 1978 year. In during 1980-1988 agricultural export growth was low because of terms of revolution and war and various boycotts economic. The export of traditional and agricultural products from 770 million dollars in 1988 reached to 2516 million dollars in 1993 so that being included over 70 percent of total non oil export and during third-year development plans the export of traditional and agricultural products from 1463.2 million dollars in 2000 reached to 1892 million dollars in 2004 due to favorable weather conditions, supportive government policies and rising oil incomes. In during 1968-1977 export

in services sector has climbed but during 1979-1988 has climbed down due to terms of revolution and war and various boycotts economic and during 1995-1998 has climbed to 2023 million dollars in 1998 and also during 2000-2006 has climbed from 2012.17 million dollars in 2000 reached to 8554 million dollars in 2006 due to rising oil price.

The Oil Export Process[1]

Oil export makes more country's export incomes so that based on these incomes are regulated more economic programs. In during 1968-1970, oil export has climbed fairly balanced and in 1974 oil incomes has increased immediately due to price shock so that became almost fourfold than previous year and in 1977 reached to highest level and this incremental process has continued to 1978 year. In 1980 oil incomes decreased by Iraq attacks on Iran and the occupation of oil-rich regions and in 1986 reached to the lowest. After the war, oil export has climbed but in 1998 decreased again due to economic boycott in South East Asia and rising OPEC production ceiling and after these years oil export increased to 2006 year because increasing oil price due to political problems in Venezuela and America's war in Iraq.

The Previous Studies

Hamuda, Elbeidi and Gazda (2010) studied the relationship between export and economic growth the using time-series data of 1980-2007 in Libya Arabic Union. Results showed that in the short term export growth has positive effect on Gross Domestic product (GDP) growth. Export, GDP and exchange rate are converging and there is long-term bilateral relationship between export and GDP growth. pandey (2006) in his article reviewed export and Economic Growth by causality relationship the using time-series data of 1950-2002 in India. He used the following model:

$$Y_t = a + \sum_{i=1}^{m} \alpha_1 Y_{t-1} + \sum_{i=1}^{n} \alpha_2 X_{t-1} + U_t$$

$$X_t = b + \sum_{j=1}^{k} \beta_1 X_{t-1} + \sum_{j=1}^{k} \beta_2 Y_{t-1} + V_t$$

[1]Summary of balance sheet and Bank Economic Report Years 1961-2006.

Where Y is GDP and x is exports.

Result show that in short term there is bilateral relationship between exports and GDP and in the long term exports and GDP aren't convergent in constant prices but are convergent in current prices. Jordam (2007) in his article studied exports and Economic Growth the using time-series data of 1970-2005 in Namibia. He used the following models:

$$Export_t = \sum_{j=1}^{p} \alpha_j Export_{t-j} + \sum_{j=1}^{p} GDP_{t-j} + U_t$$

$$GDP_t = \sum_{j=1}^{p} \alpha_j Export_{t-j} + \sum_{j=1}^{p} Y_j GDP_{t-j} + V_t$$

The result showed that exports in the short term lead to economic growth. Also, there is positive long-term relationship between exports and economic growth. Shan and Sun (1998) studied causal relationship between exports and growth the using time-series data of 1996-1978 in Hong Kong, Korea and Taiwan by VAR method and they have used the Matrix model. Their results showed that there is a two-way relationship between exports and economic in Hong Kong and Korea but for Taiwan lead to economic growth only by export.

Methodology

In this section we want to estimate the process variables used in the model then introduce the Feder model in the study and then stationary and non stationary variables will be examined by the ADF test. Model used in this study is Feder model. In this model, the total production in the economy is segregated into two parts production for inside (N) and production for exports (X) and production each one of two parts is a function of factors allocated capital and labor. In addition, production the non-export section depends on volume of export:

N = F (K_n, L_n, X) (1)
X = G (K_x, L_x) (2)
Y = N+X   (3)

Where N: non export sector, X: export sector, (K_n, K_x): capital stock in two sector, (L_n, L_x): Labor in two sector. We assume that the productivity of production factors is greater in export section and is establish the following equation:

$$\frac{G_k}{F_k} = \frac{G_l}{F_l} = 1 + \delta \qquad (4)$$

Where δ is a rate difference production factor in the marginal productivity in two sections. For obtain the growth relationship we make differential from equations (1) and (2) and after doing mathematical equations will be as follows:

$$\frac{\dot{Y}}{Y} = \alpha \frac{I}{Y} + \beta \frac{\dot{L}}{L} + \theta \frac{\dot{X}}{X} \qquad (5)$$

Where, Y: economic sectors value-added, I: investment in economic sectors, L: employment economic sectors and X: export in economic sectors

Unit Root Test by Augmented Dickey – Fuller (ADF)

The review stationary or non stationary for time series is one of the major topics in time series analysis and generally when a time series is stationary that during time Mean, variance, covariance and correlation coefficient remain constant. One of the methods for determining stationary is Unit root test by Augmented Dickey – Fuller (ADF), this test is based on following equation:

$$\Delta Y_t = \alpha + \beta t + m Y_{t-1} + \sum_{i=1}^{m} \alpha_i \Delta Y_{t-i} + \varepsilon_t \qquad (6)$$

Where is operator difference first order and error pure impaired.

$$\begin{cases} H_0 : m = 0 \\ H_1 = m < 0 \end{cases} \qquad (7)$$

Zero hypothesis is that time series variable has unit root. In fact, this test is the assumption having unit root (non stationary) or having no unit root (stationary).

Heteroskedasticity and Serial Correlation

One of fundamental acceptability for regression is equality of variance sentences impaired. If variance disturbing sentences not be fixed in different observations, we will be faced to heteroskedasticity problem. Consequences due to heteroskedasticity variance disturbing sentences is that Ordinary Least Square (OLS) estimators are not efficient and estimated variances coefficient slant and also doing heteroskedasticity test and making confidence interval is rejected from the degree of credibility therefore heteroskedasticity test is necessary. Other fundamental acceptability for regression is being non-correlation disturbing sentences in different observations. If fundamental to be violated, we will face to serial correlation problem. Therefore Serial correlation test is necessary.

Results

In this section we survey stationary variables used because of to avoid regression false by ADF test and the result of this test has presented in the following table:

Table 4: Result of unit root tests by Augmented Dickey-fuller (ADF)

variable	statistic	Critical value	variable	statistic	Critical value
GVAG	-8.17	-3.58[001]	GEMIN	-5.15	-3.58[001]
GVIN	-6.14	-3.58[001]	GEMS	-2.76	-2.60[001]
GVSER	-4.26	-3.58[001]	GXAG	-6.85	-3.58[001]
GIAG	-8.22	-3.58[001]	GXIN	-4.72	-3.58[001]
GIIN	-4.56	-3.58[001]	GXSER	-6.54	-3.58[001]
GISER	-5.09	-3.80[001]	GXOIL	-6.6	-3.58[001]
GEMAG	-2.86	-2.60[001]	GXNOIL	-5.4	-3.80[001]

Estimation Model Using the Ordinary Least Square (OLS) Method

In this section we estimate model for industry-mining, agriculture and services sectors by time series data of 1961-2006 and Ordinary least square (OLS) method separately. Then we survey heteroscedasticity and serial correlation problems by Brush - Pakan and LM tests. Estimated Feder model for industry and mining sector is as following:

$$GVIN = -30.546 + 2.533\,GEMIN + 0.058\,IVI + 0.053\,GXIN - 19.686\,DU67 + 0.292\,XOX$$

$$(-2.84) \quad (10.11) \quad (1.97) \quad (2.78) \quad (2.18) \quad (-15.53)$$

$$R^2 = 0.82 \quad R^{-2} = 0.79 \quad F = 35.93 \quad DW = 2.50$$

Where:

IVI: ratio of investment to value added in the mining and industry sector

XOX: ratio of oil exports to total exports

DU67: Dummy variable

Estimated Feder model for agricultural sector is as following:

$$GVAG = -5.682 + 0.146\,IVA + 0.034\,XAXNO + 0.002\,D\,(VA) + 0.097\,EAE$$

$$(3.498) \quad (2.444) \quad (1.941) \quad (11.398) \quad (2.734)$$

$$R^2 = 0.77 \quad R^{-2} = 0.75 \quad F = 35.8 \quad DW = 2.23$$

Where:

IVA: ratio of investment to value- added in the agricultural sector

XAXNO: ratio of agricultural exports to non-Oil exports

D (VA): Changes in agricultural value Added

EAE: Ratio of agricultural employment to total employment

Estimated Feder model for services sector is as following:

$$GVSER = -15.882 + 1.345\,GEMSER + 0.323\,IVS + 0.019\,GXSER - 25.605\,DU1971 + 0.821\,AR\,(1) - 0.937\,MA\,(4)$$

$$(-5.146) \quad (8.745) \quad (4.638) \quad (2.999) \quad (-11.063) \quad (9.813) \quad (-23.502)$$

$$R^2 = 0.85 \quad R^{-2} = 0.82 \quad F = 36.43 \quad DW = 1.88$$

Where, IVS is ratio of investment to value- added in the services sector and DU1971 is dummy variable for 1971-1973 year.

Discussion

The result of ADF test show that all variables are stationary and regression can be performed on variables without fear of being pseudo. According to estimating Feder model in industry and mining sector, positively and significantly related to the coefficient of export growth show positive role of exports on value added and also show that industry and mining value added increase to 0.053 percent due to a one percentage increase in industry and mining export. Variable coefficients in ratio of oil export to total export show that industry and mining value added increase to 0.292 percent due to a one percentage increase in ratio of oil export to total export. Based on F and t statistic, in the whole regression and all coefficients are significant and based on Durbin Watson (D.W) statistic, there is no serial correlation problem between error sentences. Also result of Brush - Pakan and LM tests in industry and mining sector show that there is no serial correlation and heteroskedasticity problem between error sentences.

According to estimating Feder model in agricultural sector, positively and significantly related to the ratio of agricultural export to non oil export coefficient show positive role of the ratio of agricultural export to non oil export on agricultural value added and also show that agricultural value added increase to 0.034 percent due to a one percentage increase in ratio of agricultural export to non oil export. Also result of Brush - Pakan and LM tests in agricultural sector show that there is no serial correlation and heteroskedasticity problem between error sentences. According to estimating Feder model in services sector, positively and significantly related to the coefficient of GXSER variable show positive role of export on value added in services sector and also show that services value added increase to 0.019 percent due to a one percentage increase in services export. According to result of the estimating models in industry and mining, agricultural and services sectors is confirmed the first hypothesis[1].

[1]The first hypothesis is that export growth lead to growth of economic sectors.

Conclusion and Recommendations

In every three models the estimating performed showed that all variables coefficients are significant and their marks conform to theoretical debates. Variable Coefficient of export growth is positive and equal to 0.053 in industry and mining sector and variable Coefficient of the ratio of agricultural export to non oil export is positive and equal to 0.034 and variable Coefficient of services sector is positive and equal to 0.019, so second hypothesis[1] is not confirmed. Therefore increase in explanatory power models with login export variable states that increasing export lead to improvement in condition of economic sectors because export development leads to attract the part of the exchange incomes result of exports to relevant sections provides economic growth areas. So is recommended applying policies that will be provided growth areas economic sectors, for this purpose a few policies of encouraging exports has included: policy of export subsidies, policy of support for agricultural inputs, reduce taxes on exports, reduce customs tariff, bond cut for outsourcing in goods export, exchange rate adjustment by the rate reductions, using of bank credit and establishment export guarantee funds. Survey the effect each of the mentioned factors on export growth depends on doing research separately. General suggested in this study is that strategy of economic sectors should be based on exporting products policy.

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[1]The second hypothesis is that the effect of export growth on services sector is more than other sectors.

PROGRESS OF BANKING IN INDIA: CUSTOMERS' PERSPECTIVES

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Abstract

The present paper is concerned with the various ways of doing banking electronically. This paper has been divided into four sections dealing with four aspects of E-banking i.e. ATM, Internet banking , Mobile banking and Credit cards. Paper is basically concerned with the customer aspect of banking searching for customer satisfaction level. This is a comparative study of Public sector bankis, Private sector Indian banks and Private sector foreign banks. **Key words:** E_Banking, ATM, Internet banking, Credit cards, Mobile banking, Traditional banking, Credit frauds, Security, Competition, Customer satisfaction etc.

Banking has come a long way from the time of ledger cards and other manual filing systems. Most of the banks today have electronic systems to handle their daily voluminous tasks of information retrieval, storage and processing. Irrespective of whether they are automated or not, banks by their nature are continually involved in all forms of information management on a continuous basis. The computer is, of course, an established tool for achieving a competitive edge and optimal resource allocation. Competition and the constant changes in technology and lifestyles have changed the face of banking. Nowadays, banks are seeking alternative ways to provide and differentiate amongst their varied services. Customers, both corporate as well as retail, are no longer willing to queue in banks, or wait on the phone, for the most basic of services. They demand and expect to be able to transact their financial dealings where and when they wish to. With the number of computers increasing every year, the electronic delivery of banking services is becoming the ideal way for the banks to meet their clients' expectations.

E-banking refers to the effective deployment of IT by the banks. It is about using the infrastructure of the digital age to create opportunities - both local and global. It enables the dramatic lowering of transaction costs and the creation of new types of banking opportunities that address the barriers of time and distance. Banking opportunities are local, global and immediate in e-banking. The current web-based variant of banking is the latest of several generations of systems: ATM was the first well-known machines to provide electronic access to customers of retail banks. With advent of ATM, banks are able to serve customers outside the banking hall. Next came phone banking where users call their bank's computer system on their ordinary phone and use the phone keypad to perform banking transactions. PC banking superseded phone banking and allowed users to interact with their bank by means of a computer with a dial-up modem connection to the phone network. PSBs, which are the foundation of the Indian banking system, account for more than 78 per cent of the assets of total banking industry. Unfortunately, they are burdened with excessive NPAs, massive manpower and lack of modern technology. On the other hand, the PSIBs and PSFBs in India are witnessing immense progress. They are leaders in Internet banking, mobile banking, phone banking, ATMs. Given this background, it is interesting to analyze the e-banking scenario in India. In a quest to seek an answer, the present study is undertaken with specific research objectives as envisaged in the following section.

Objectives of the Study

The present study aims to examine the progress of e-banking in India. In this broader framework, an attempt is made to achieve the following specific objectives:

- To analyze the present e-banking scenario concerned with ATM, Internet banking, Mobile banking and Credit cards in India.
- To examine the impact of ATM, Internet banking, Mobile banking and Credit cards on customer satisfaction by analyzing the problems faced by the customers.

Research Hypotheses

To achieve the objectives of the study, the following hypotheses are formulated:

H_{01}: *There is no significant difference in the present e-banking scenario of ATM, Internet banking, Mobile banking and Credit cards in India.*

H_{a1}: *There is a significant difference in the present e-banking scenario of ATM, Internet banking, Mobile banking and Credit cards in India.*

H_{02}: *There is no significant difference in the impact of ATM, Internet banking, Mobile banking and Credit cards on customer satisfaction in PSBs, PSIBs and PSFBs in India.*

H_{a2}: *There is a significant difference in the impact of ATM, Internet Banking, Mobile banking and Credit Cards on customer satisfaction in PSBs, PSIBs and PSFBs in India.*

Research Methodology

Data Collection

The present study is of analytical and exploratory nature. Accordingly, the use is made of primary data. The primary data is collected with the help of pre-tested structured questionnaires from a sample of 450 respondents from Haryana, Delhi, Chandigarh and Punjab using the services provided by the various branches of PSBs, PSIBs and PSFBs. A sample of 450 respondents/customers is taken (150 respondents from each group) with the help of judgment or purposive sampling method.

Data Analysis

The collected data in the present study are analyzed through descriptive and inferential statistical techniques. The analysis has been in conformity with the objectives of the study and the hypotheses formulated to achieve those objectives. In order to examine the level of customer satisfaction regarding various e-banking services and their interplay in different banks, various statistical techniques have been applied like frequency distribution, percentage, mean, standard deviation, chi-square and ANOVA. The application of normal distribution has been followed in order to categorize the different variables. The level of customer satisfaction of the respondents regarding ATMs, Internet banking, Mobile banking and Credit cards is assumed to be normally distributed. The level of customer satisfaction of the respondents is divided into three categories, i.e. below average, average and above average levels. The lower and upper limits of average level have been calculated with the help of the following formula:

> **The lower limit of average level = Mean + 1 Standard deviation**
>
> **The upper limit of average level = Mean – 1 Standard deviation**

Source: Bhatnagar and Bhatnagar (1992), Measurement and Evaluation', pp. 116-120.

The below average, average and above average levels have been defined as Low, Medium and High respectively. The two stage analytical approach is used to analyze the data. In the first stage, total CSL and usage rate of various services is analyzed. Total CSL shows the total weighted value of all the variables of customer satisfaction. In the second stage, ANOVA is used for summarizing the difference between the levels of customer satisfaction.

Analysis and Interpretation

E-banking scenario is analyzed regarding four major e-banking products i.e. ATMs, Internet Banking, Mobile Banking and Credit Cards in terms of customer satisfaction level on the basis of various variables like length of the use of service, information about change, frequency of complaints,

problems faced, reliability of service and level of satisfaction for the service, etc.

Period of Use

The present scenario of ATMs, Internet Banking, Mobile Banking and Credit Cards is measured in terms of the length of the period the respondents are using a particular service. For this purpose, time is divided into five sub-heads i.e. less than 6 months, 6 months to 1 year, 1 to 2, 2 to 3 and more than 3 years.

Table - 1: Period of Use

No. of Respondents (percentage)

Period of use	ATMs	Internet Banking	Mobile Banking	Credit Cards
a) Less than 6 months	30(07)	48(13)	90(38)	30(08)
b) 6 months to 1 year	06(01)	30(08)	24(10)	30(07)
c) 1 year to 2 years	18(04)	66(18)	30(12)	84(21)
d) 2 years to 3 years	42(09)	60(17)	30(12)	66(16)
e) More than 3 years	354(79)	162(44)	66(28)	192(48)
Total	450(100)	366(100)	240(100)	402(100)

Chi-Square = 3.938

Source: Compiled from the responses obtained from respondents

Fig.1: Period of use
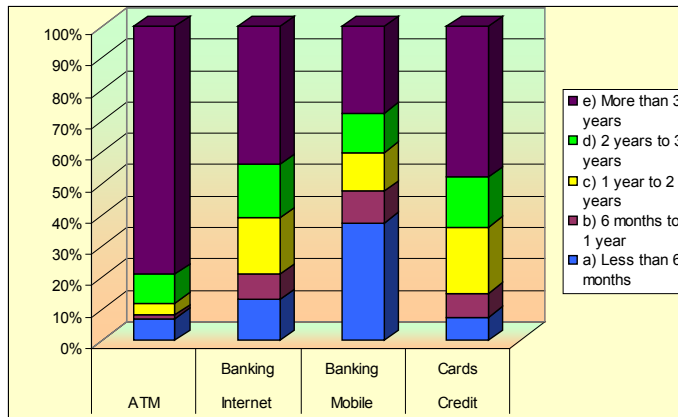
Table 1 and figure 1 envisages that ATM is the oldest service in use. Out of total respondents, maximum 79 per cent respondents are using it for more than 3 years. Credit cards are at 2nd position with 48 per cent users. Internet and Mobile banking are at 3rd and 4th position with 44 per cent and 28 per cent users respectively.

Complaints Regarding Services

To find out the frequency with which customers are having complaints against their banks with regard to these services, five parameters of complaints are considered which are very often, often, sometimes, rarely and never.

Table - 2: Complaints Regarding Services

No. of Respondents (percentage)

Complaints	ATMs	Internet Banking	Mobile Banking	Credit Cards
a) Very often	30(07)	12(03)	-	48(12)
b) Often	24(05)	18(05)	27(11)	66(16)
c) Sometimes	78(17)	42(11)	27(11)	72(18)
d) Rarely	198(44)	204(56)	126(53)	132(33)
e) Never	120(27)	90(25)	60(25)	84(21)
Total	450(100)	366(100)	240(100)	402(100)

Chi-Square = 5.880

Source: Compiled from the responses obtained from respondents

Fig. 2: Complaints regarding Services
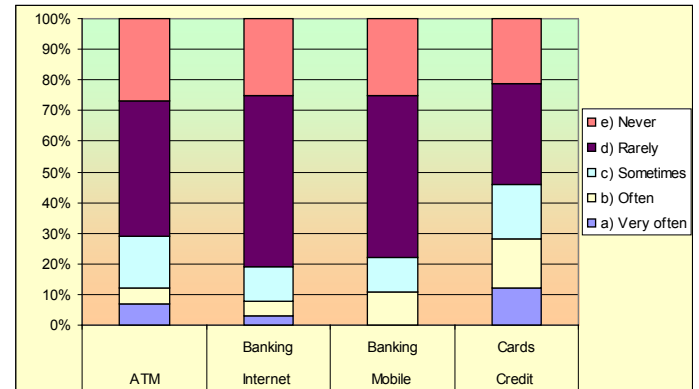
Table 2 and figure 2 reveals that there are maximum 27 per cent respondents who never had problems with ATMs. In case of credit cards, this per cent is lowest, i.e. 21 per cent. The table also shows the positions of Internet and Mobile banking in this context where this percentage is 25 per cent in each case.

Grievance Settlement System

The information has been collected from the respondents about the grievance settlement system for these products in banks to know whether this system is satisfactory or not.

Table - 3: Grievance Settlement System

No. of Respondents (percentage)

Grievance settlement	ATM s	Internet Banking	Mobile Banking	Credit Cards
a) Highly satisfactory	72(22)	66(24)	36(17)	48(15)
b) Satisfactory	234(71)	186(67)	113(52)	156(49)
c) Indifferent	18(05)	18(07)	30(14)	42(14)
d) Unsatisfactory	06(02)	06(02)	36(17)	42(13)
e) Highly unsatisfactory	-	-	-	30(09)
Total	330(100)	276(100)	215(100)	318(100)

Chi-Square = 2.864

Source: Compiled from the responses obtained from respondents

Fig. 3: Grievance Settlement System
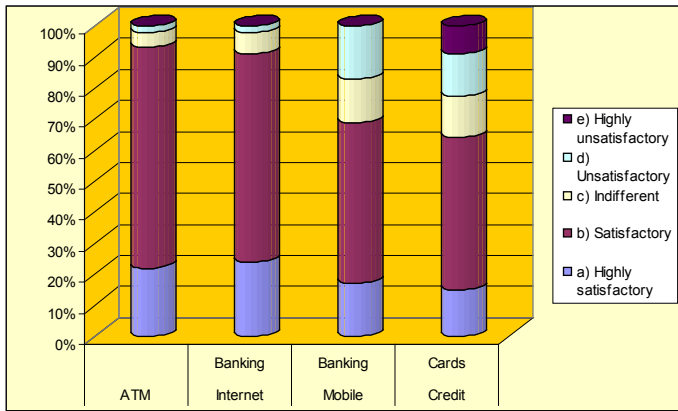
The table 3 and figure 3 shows that out of the total respondents having problems, maximum number of respondents, i.e. 22 and 71 per cent are highly satisfied and satisfied respectively with the grievance settlement system of ATM, whereas this percentage is 24 and 67 per cent in case of Internet banking, 17 and 52 per cent in case of Mobile banking and 15 and 49 per cent in case of credit cards.

Reliability of Services

Reliability of e-banking products is another dimension, which constitute the present status of e-banking and is analyzed on the basis of three parameters i.e. very reliable, reliable and unreliable.

Table - 4: Reliability of Services

No. of Respondents (percentage)

Reliability	ATMs	Internet Banking	Mobile Banking	Credit Cards
a) Very reliable	234(52)	96(26)	43(18)	66(16)
b) Reliable	216(48)	210(57)	128(53)	240(60)
c) Unreliable	-	60 (17)	69(29)	96(24)
Total	450(100)	366(100)	240(100)	402(100)

Chi-Square = 2.600

Source: Compiled from the responses obtained from respondents

Fig. 4: Reliability of Services
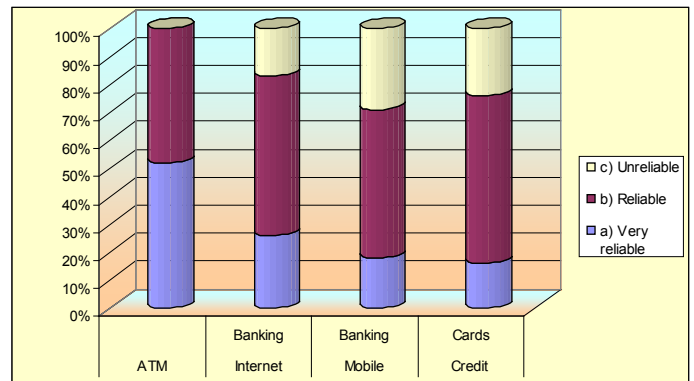
Table 4 and figure 4 depicts that out of the four services ATM is the very reliable with maximum number of respondents, i.e. 52 per cent and credit card is at the minimum with 16 per cent. The table also shows that reliability is highest in credit cards and lowest in ATM with 60 per cent and 48 per cent respondents respectively. This percentage is 57 per cent and 53 per cent in case of Internet and Mobile banking respectively. Whereas the unreliability is maximum i.e. 29 per cent in case of mobile banking followed by credit cards having 24 per cent respondents.

Level of Satisfaction

Level of satisfaction after using a particular product has also been examined to find out the clearer picture regarding their status on the basis of five parameters i.e. highly satisfied, satisfied, indifferent, dissatisfied and very unsatisfied.

Table - 5: Level of Satisfaction

No. of Respondents (percentage)

Satisfaction Level	ATMs	Internet Banking	Mobile Banking	Credit Cards
a) Highly satisfied	180(40)	78(21)	16(07)	84(21)
b) Satisfied	270(60)	246(67)	117(49)	228(57)
c) Indifferent	-	36(10)	96(40)	30(08)
d) Dissatisfied	-	06(02)	11(04)	30(07)
e) Very unsatisfied	-	-	-	30(07)
Total	450(100)	366(100)	240(100)	402(100)

Source: Compiled from the responses obtained from respondents

Fig. 5: Level of Satisfaction
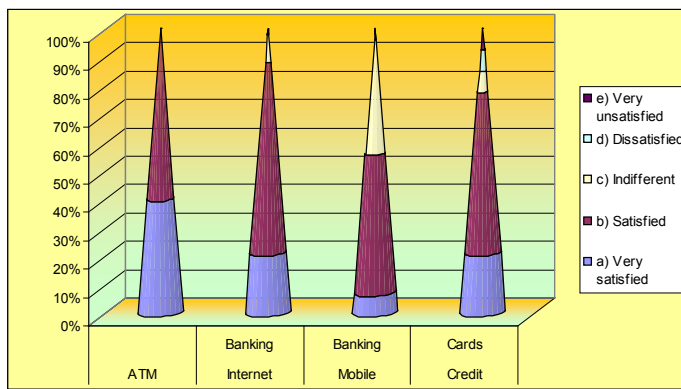
Table 5 and figure 5 present that satisfaction level, which is highest in case of ATM as all the respondents are highly satisfied/satisfied, followed by Internet banking, credit cards and M-banking. The table also reveals that dissatisfied level is highest in case of Credit card and lowest in Internet banking. On the other hand, indifferent level is highest, i.e. 40 per cent in case of Mobile banking.

Status of All E-banking Products

The present status of e-banking services is analyzed in all the banks with the help of total CSL and total number of respondents using these products. Total CSL includes the total weighted value of all the variables discussed above.

Table - 6: Status of E-Banking Products

No. of Respondents (percentage)

Name of Bank	Total CSL	Total No. of Users
ATM	7650(85)	450(100)
Internet Banking	5694(78)	366(81)
Mobile Banking	3252(68)	240(53)
Credit Card	5964(74)	402(90)

Source: Compiled from the responses obtained from respondents

Fig. 6: Status of E-Banking Products
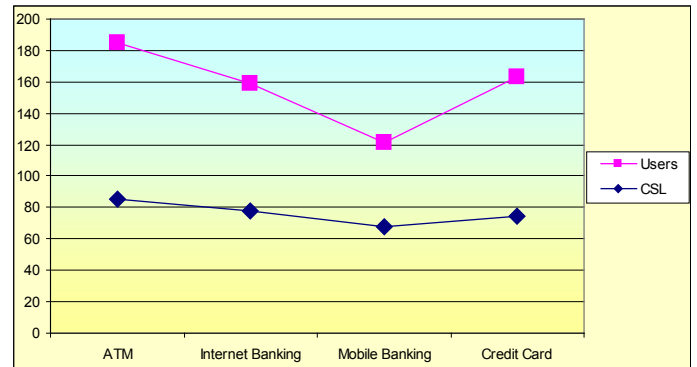
Table 6 and figure 6 elucidate the present status of e-banking products. It is clear that ATM is having maximum 85 per cent CSL and respondents using it are also maximum 100 per cent. Position of mobile banking is worst with minimum 68 per cent and 53 per cent CSL and users respectively. Internet banking is at second place with 2nd highest CSL (78 per cent) and in usage, it is at third place with 81 per cent usage rate. Credit card is at third place in terms of CSL (74 per cent) but its usage rate is second highest.

To study the level of customer satisfaction further, the respondents are divided into three categories i.e. below average, average and above average levels, which have been defined as Low, Medium and High respectively.

CSL of ATMs

Table 7 and figure 7 project that out of the total 84 per cent respondents have medium CSL. On the other hand, only 4 per cent fall in high CSL and 12 per cent in low CSL.

Table - 7: CSL of ATMs

No. of Respondents (percentage)

CSL	Frequency	Percentage
Low (Below 15)	54	12
Medium (15-19)	378	84
High (Above 19)	18	04
Total	450	100

Mean Value = 17.00, Std. Dev. = 1.97
Source: Compiled from the responses obtained from respondents

<div style="text-align:center">*Fig. 7: CSL of ATMs*</div>

<div style="text-align:center">*Fig. 9: CSL of Mobile Banking*</div>

CSL of Internet Banking

Table 8 and figure 8 envisages that 82 per cent respondents have medium CSL for Internet banking. Whereas low and high CSL is 11 per cent and 7 per cent respectively.

<div style="text-align:center">*Table - 8: CSL of Internet Banking*</div>

<div style="text-align:right">*No. of Respondents (percentage)*</div>

CSL	Frequency	Percentage
Low (Below 13)	42	11
Medium (13-18)	300	82
High (Above 18)	24	07
Total	366	100

Mean Value = 15.56, Std. Dev. = 2.30

Source: Compiled from the responses obtained from respondents

<div style="text-align:center">*Fig. 8: CSL of Internet Banking*</div>
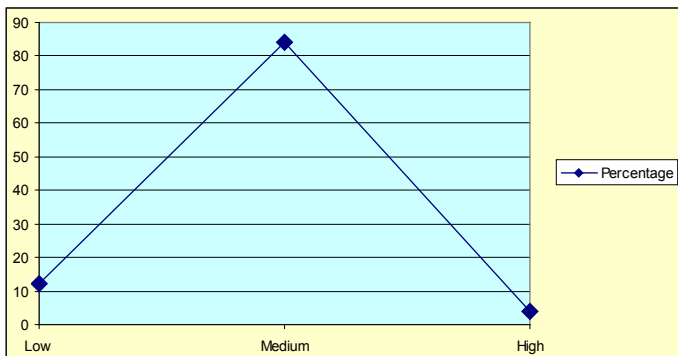
CSL of Mobile Banking

Table 9 and figure 9 reveals that 75 per cent respondents of mobile banking have medium CSL and 15 per cent respondents fall in low CSL, whereas only 10 per cent respondents have high CSL.

<div style="text-align:center">*Table - 9: CSL of Mobile Banking*</div>

CSL	Frequency	Percentage
Low (Below 11)	36	15
Medium (11-16)	180	75
High (Above 16)	24	10
Total	240	100

Mean Value = 13.55, Std. Dev. = 2.58
Source: Compiled from the responses obtained from respondents
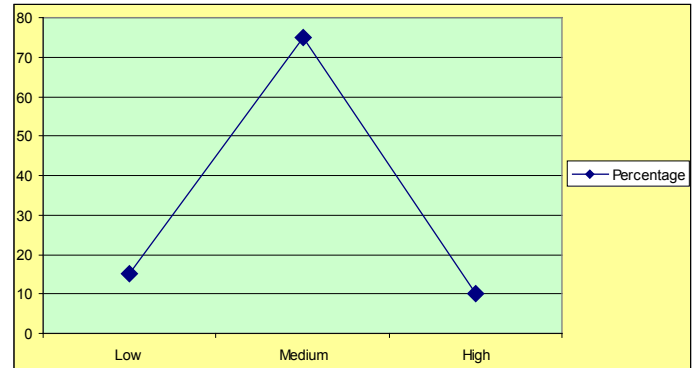
CSL of Credit Cards

Table 10 and figure 10 shows that 76 per cent out of total respondents have medium CSL and 15 per cent have low CSL, whereas only 9 per cent respondents fall in high CSL.

<div style="text-align:center">*Table - 10: CSL of Credit Cards*</div>

<div style="text-align:right">*No. of Respondents (percentage)*</div>

CSL	Frequency	Percentage
Low (Below 12)	60	15
Medium (12-18)	306	76
High (Above 18)	36	09
Total	402	100

Mean Value = 14.84, Std. Dev. = 3.00

Source: Compiled from the responses obtained from respondents

<div style="text-align:center">*Fig. 10: CSL of Credit Cards*</div>
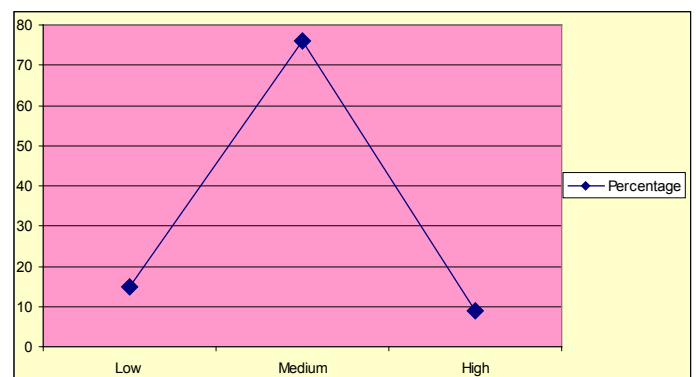
Combined CSL of All E-banking Products

Table 11 and figure 11 depicts that medium CSL is maximum in case of ATM with 84 per cent and minimum in case of Mobile banking with 75 per cent respondents.

Internet banking and credit card are at 2nd and 3rd position with 82 per cent and 75 per cent CSL respectively. The table also shows that maximum 15 per cent respondents have low CSL in Mobile banking. High CSL is highest in Internet banking and lowest in ATM with 10 per cent and 4 per cent respondents respectively.

Table 11: Combined CSL of E-Banking Products

No. of Respondents (percentage)

Products	Low	Medium	High	Total
ATM	54(12)	378(84)	18(04)	450(100)
Internet Banking	42(11)	300(82)	24(07)	366(100)
Mobile Banking	36(15)	180(75)	24(10)	240(100)
Credit Card	60(15)	306(76)	36(09)	402(100)

ANOVA: F = 634.82 (F.05, 2, 9 = 4.26)
Chi-Square = 8.000 *(Significant at 5 per cent level)*
Source: Compiled from the responses obtained from respondents

Fig. 4.1k: Combined CSL of E-Banking Products
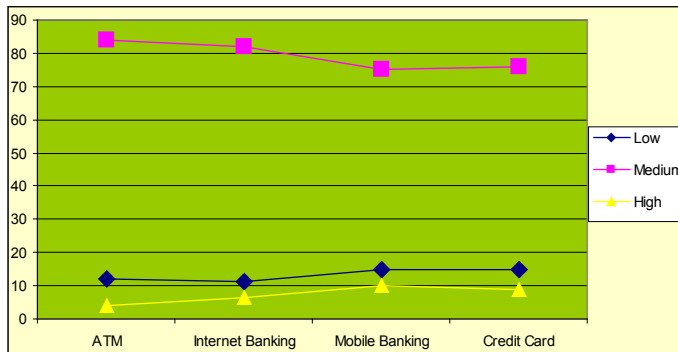
As depicted by the above table, the calculated value of F is greater than the tabulated value, therefore the null hypothesis, i.e. there is no significant difference in the present e-banking scenario of ATM, Internet banking, Mobile banking and Credit cards in India, cannot be accepted. It means that the alternative hypothesis, i.e. there is a significant difference in the present e-banking scenario of ATM, Internet banking, Mobile banking and Credit cards in India can be accepted. This view point is also supported by the value of chi square, which is also significant at 5 per cent level of significant.

The analysis also shows that among all the e-banking products, CSL of ATM is highest and the number of users of ATM is also highest as compared to other services. Internet banking and credit card are at second and third position as far as CSL is concerned but the number of users is more in case of credit cards as compared to Internet banking as depicted by table-6. Mobile banking is at the lowest position in terms of CSL and also in number of users. Therefore, the null hypothesis i.e. there is no significant difference in the impact of ATM, Internet banking, Mobile banking and Credit cards on customer satisfaction in PSBs, PSIBs and PSFBs in India cannot, be accepted.

To sum up, opportunities in e-banking are immense but the only need is to explore them. The nature of banking services may still be the same but the way in which they are being offered has been changed dramatically. Banks must realize the seriousness of challenges ahead and develop a strategy that will enable them to leverage the opportunities presented by e-banking. E-banks need to shift now from product centric to customer centric i.e. to design services according to the needs dreams and expectations of the customers. Opportunities and challenges offered by e-banking can only be met fruitfully if banks assemble different dimensions services including banking, broking, insurance, channel delivery, sales culture, back office processes and knowledge management under one corporate name . Most of the market is still untapped in India especially in rural areas. There is a lot of scope for banking institutions to expand their e-banking services to have a more sophisticated customer base. ICT infrastructure facilities are also not well developed and the banks are unable to extend the e-banking services, therefore, good infrastructure need to be developed.

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Questionnaire
Progress Of E-Banking In India: Customer's Perspectives
(Personal Information)

A. Gender

Male ☐   Female ☐

B. Age group (years)

18-24	25-34	35-49	50-64	65 and above

C. Educational qualifications

Below Matric	Matric and Senior secondary	Graduate	Postgraduate and above

D. Occupation

Business	Service	Professional	Others

E. Income group (annually)

Less than Rs.2,00,000	Rs.2,00,000-5,00,000	Rs.5,00,000-10,00,000	Above Rs. 10,00,000

F. Marital status

Married ☐   Unmarried ☐

1. Which of the following E-banking services do you use? (Please rank 1, 2, 3….. in order of frequency of use)

E-Banking Services	Rank
a) ATM	
b) Mobile Banking	
c) Internet Banking	
d) Credit Card	
e) ATM cum Debit Card	

2. How long you had been using the following E-banking services? (Please tick)

	ATM	Internet Banking	Mobile Banking	Credit Cards
a) Less than 6 months				
b) 6 months to 1 year				
c) 1 year to 2 years				
d) 2 years to 3 years				
e) More than 3 years				

3. What are the main reasons that you have not availed the following E-banking services? (Please tick)

	ATM	Internet Banking	Mobile Banking	Credit Cards
a) Never heard of the same				
b) Don't have knowledge				
c) Concerned about security				
d) Don't have time				
e) Don't see any real value in this				
f) Too new, I would like to see how it works, then I may start this				
g) Not available through my bank				
h) No need felt				

4. Do you have an account with more than one bank? (Please tick)

Yes ☐   No ☐

If yes, rank the reasons for having more than one bank, in order of importance. (Please rank 1, 2, 3.....)

Reasons	Rank
a) Convenience	
b) To obtain E-banking services like D-mat, Internet banking etc.	
c) Diversification of income in different banks to reduce risks	
d) Compulsion due to being at distance	
e) House and office being at distance	
f) Due to organizational compulsion (salary etc.)	

4. To what extent do you agree that E-banking services and processes save time? (Please tick)

Highly agree	Agree	Indifferent	Disagree	Highly disagree

5. Is your bank a One-stop window for all banking requirements?

Yes ☐   No ☐

If No, what are the deficiencies? (Please tick)

Deficiencies	
a) Lack of D-mat facility	
b) Lack of bills (telephone, insurance etc.) deposit facility	
c) Lack of E-banking facilities	
d) Lack of bills discounting	
e) Any other (please specify)	

6. How frequently do you have complaints against your bank with regard to following E-banking services? (Please tick)

	ATM	Internet Banking	Mobile Banking	Credit Cards
a) Very often				
b) Often				
c) Sometimes				
d) Rarely				
e) Never				

7. If some new services are provided or terms/conditions related to particular service are revised, does your bank intimates you in time? (Please tick)

	ATM	Internet Banking	Mobile Banking	Credit Cards
a) Yes				
b) No				

9. At what level, have your problems been often resolved in the bank, with regard to following E-banking services? (Please tick)

	ATM	Internet Banking	Mobile Banking	Credit Cards
a) Head office level				
b) Regional office level				
c) Branch level				
d) Customer care centre				
e) Problem not solved				

10. How satisfactory is the complaint/grievances settlement system of your bank with regard to following E-banking services? (Please tick)

	ATM	Internet Banking	Mobile Banking	Credit Cards
a) Highly satisfactory				
b) Satisfactory				
c) Indifferent				
d) Unsatisfactory				
e) Highly unsatisfactory				

11. How reliable you have found following E-banking services? (Please tick)

	ATM	Internet Banking	Mobile Banking	Credit Cards
a) Very reliable				
b) Reliable				
c) Unreliable				

12. Overall how satisfied are you by using following E-banking services? (Please tick)

	ATM	Internet Banking	Mobile Banking	Credit Cards
a) Very satisfied				
b) Satisfied				
c) Indifferent				
d) Dissatisfied				
e) Very unsatisfied				

COMPANY ATTRIBUTES AND THE TIMELINESS OF FINANCIAL REPORTING IN NIGERIA

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Abstract

   This study examines the impact of company attributes on the timeliness of financial reports in Nigeria based on a sample of 61 companies' annual reports for the years 1999-2008. The data were analyzed and results estimated using Ordinary Least Square (OLS) Regression which was complimented with the panel data estimation technique. The findings reveal that the age of company is the major company attribute that influences the overall quality of timeliness of financial reports in Nigeria. It was also observed that there is a significant difference in the timeliness of financial reporting among industrial sectors in Nigeria. The banking sector is found to be more timely in financial reporting. Though the results suggest that regulations are not enough to ensure that the quality of financial reports are timely in Nigeria, reporting lag may however be reduced by the existence and strict enforcement of rules and regulations of regulatory bodies. **Key words:** Audit Firm, Age, Companies Attributes, Company Size, Financial Reports, Financial Year, Information, legal Requirements, Nigeria, Nigeria Accounting Standards Boards Act, Profitability, Timeliness, Stakeholders.

   The growing information needs of stakeholders who have operational interest in financial reporting has resulted in the quest for timely and credible financial reports. According to the International Accounting Standards Board (IASB, 2008:40,) timeliness of financial reports is the "availability of information needed by decision makers for useful decision making before it loses its capacity to influence decisions." In emerging economies, the provision of timely information in corporate reports assumes greater importance since other nonfinancial statement sources such as media releases, news conferences and financial analysts forecasts are not well developed and the regulatory bodies are not as effective as in Western developed countries (Ahmed, 2003).

   In Nigeria, the need for high quality and timely financial information has become particularly imperative due to the increasing exposure of Nigerian business organizations to international capital markets. Thus, the business organizations are being obliged to satisfy the information demands of foreign investors and to provide them with more timely information in   annual financial reports. Recognizing the importance of timely release of financial information, regulatory agencies and laws in Nigeria have set statutory maximum time limits within which listed companies are required to issue audited financial statements to stakeholders and also file such reports with relevant regulatory bodies.

   In-spite of the existence of the various enactments, there has, however been a number of criticisms (Okike, 2004) from various groups, including the World Bank, concerning perceived inadequacies in the financial reporting outcome of firms in Nigeria. For instance, the World Bank , in its Report on the Observance of Standards and Codes (ROCE) conducted in 2004, noted that the accounting and auditing standards in Nigeria suffer from "institutional weaknesses in regulation, compliance and enforcement of standards and codes." And timeliness in financial reporting is one of the requirements to be enforced and complied with by firms in Nigeria.

   Though prior empirical studies examined the timeliness (reporting lag or delay) of corporate reporting and its determinants, little information exists on the reporting lag of corporate financial statements in emerging economics other than (Abdullah,1996; owusu-Ansah, 2005; Ahmed, 2003). To our knowledge, little or no information exists on the relationship between company attributes and the timeliness of financial reporting in the context of Nigeria. This provides the motivation for this study. Therefore, the main objective of this study is to attempt to contribute to the corpus of knowledge regarding the impact of company attributes on the timeliness of financial reporting in Nigeria.

   The remaining part of this paper is organized as follows: section 2 describes the institutional and legal requirements for financial reporting in Nigeria. Section 3 is a review of

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recent literature and hypotheses development. Section 4 describes the data and methodology used in this study and Section 5 reports the result of the study and finally Section 6 contains the conclusion and recommendations.

Institutional and Legal Requirements for Financial Reporting in Nigeria

There is a multiplicity of agencies and regulations that have provisions with implications for accounting practice in Nigeria. Though the agencies and regulations are many, the main legal framework for accounting practice is the Companies and Allied Matters Act (CAMA) (1990). The CAMA requires that financial statements (in all of the sectors of the Nigerian economy) comply with the Statement of Accounting Standards (SAS) issued by the Nigerian Accounting Standards Board. The objective is to reduce or minimize variability in accounting practice in Nigeria. Prior to 2003, compliance with accounting standards and provisions of the agencies as they relate to accounting practice was more of persuasion. However, the NASB Act, which took effect on 1 July 2003, was essentially enacted to enhance enforceability of Statement of Accounting Standards (SAS) and other provisions of the relevant agencies. The Act changed the mechanism for enforcing compliance with SASs to a more stringent regulatory regime wherein non-compliance with SASs and other regulations is illegal. That is, it moved sanctions for non-compliance to a legally enforceable regime with stiff penalty for breaches. The agencies/regulations and the enabling instruments are as presented below.

Table 1 Agencies and Enabling Instruments

Agencies	Enabling Instrument(s)	
-Nigerian Stock Exchange (NSE)	Stock Exchange Act, 1961	
-Institute of Chartered Accountants of Nigeria(ICAN)	Act of Parliament, No 15, 1965	
-Nigerian Deposit Insurance Corporation(NDIC)	-do-	1988
-Companies and Allied Matters Act (CAMA)	-do-	1990
-Corporate Affairs Commission(CAC)	-do-	1990
-Central Bank of Nigeria (CBN) via Banking and Other Financial Institutions Act	-do-	1991
-Association of National Accountants of Nigeria (ANAN)	-do-	1993

Agencies	Enabling Instrument(s)	
-Securities and Exchange Commission(SEC)	-do-	1991(amended 2007)
-National Insurance Commission(NAICOM)	-do-	2003
-Nigerian Accounting Standards Board(NASB)	-do-	2003

These agencies and regulations are meant to ensure that the nature of information disclosed by firms follows required standards in terms of timeliness, reliability and comparability.

Review of Related Literature and Hypothesis Development

There are three major criteria used in evaluating the quality of financial reports- timeliness, reliability and comparability (Owusu-Ansah and Yeoh, 2005:33 and Afolabi, 2007:5). Thus, the provision of timely and reliable information to interested parties to make economic decisions is one of the main objectives of financial reporting. The timeliness of financial report is important in choosing between different information that might be reported while reliability is attained when the depiction of an economic phenomenon is complete, neutral and free from material error- it is precision in accounting practice. Similarly, comparability is a qualitative characteristic of financial statements that is widely believed to improve the usefulness of accounting information in making investment decisions (IASB, 2008).

There is evidence that company attributes influence the firm's choice of internal governance mechanism especially with respect to performance measures (Karuna, 2009). Engel et al.,(2002) in examining company attributes, divided them into three categories: uncontrollable, partially controllable and controllable. Controllable attributes are those which fall outside the direct control of the firms and include organizational size and structure. Partially controllable attributes are those that can not be changed at will by the firm but susceptible to change in the long run and include organizational resources and organizational maturity. And the controllable attributes are those under the control of the firm.

Considering that there is always a day of reckoning, the attributes, whether controllable or uncontrollable, are susceptible to manipulation by the managers of firms.

This assertion suggests that company attributes may be an important determinant of the quality of accounting practice in terms of timeliness. Several company attributes which could impact the timeliness of financial reporting have been identified in prior literature. To investigate their impact on the level of timeliness of financial reporting in Nigeria, the study focused on the following attributes which have identified in prior literature and are considered relevant in the Nigerian context -Company Size (COMPS), Profitability (PROFT), Company Age (AGE), Size of Audit Firm (SAF) and Company Financial Year-end (FINYR).

Company Size

The size of a company has been found to influence the timeliness of financial reporting. Several reasons have been adduced to support the relationship between timeliness and company size. First, large firm have more resources to institute and enforce strong internal control system in their organizations and can afford continuous audit (Ng and Tai, 1994). All of these should make it easier to audit large number of transactions in a relatively shorter time. Second, large firms are more visible to the public view and face a lot of pressures from media analysts to release financial information on a more timely basis (Owusu-Ansah, 2005 and Ahmed, 2003). Accordingly, the larger the firm, the shorter its financial reporting time should be. Hypothesis 1 tests for this assertion.

H1: Company size and timeliness of financial reporting are negatively related.

Profiatability

It is natural to expect that managers would be more willing to report good news (profit) faster than reporting bad news (loss) because of the effect such news could have on the share price and other indicators. Though in common law countries firms tend to speed the recognition of good news and slow the recognition of bad news in reported earning; while in code law countries firms tend to slow the recognition of good news and speed the recognition of bad news (Bushman and Piotroski, 2006), however, prior research documents the fact that managers are prompt to release good news (profit) faster compared to bad news (loss) (Chambers and Penman, 1984; Ng and Tai, 1994). However, where an auditor believes that a loss is going to increase the likelihood of financial failure or management fraud, and therefore the probability of litigation by the shareholders for failure to take due care and diligence,

he would be more cautious in carrying out the audit and thus the financial report would not be timely. Overall, it is expected that companies would be more eager to release 'good news' without delay and be reluctant in releasing 'bad news'. That is, good news (profit) will reduce reporting lag. Based on the foregoing, a negative association between the quality of accounting practice in terms of timeliness and profitability is tested in hypotheses 2.

H2: There is significant negative association between the profitability (profit) and the timeliness(reporting lag) of financial reporting in Nigeria.

Age of Company

The age of a company has been identified in prior literature as an attribute having likely impact on the quality of accounting practice in terms of timeliness. The older the firms, the more likely they are to have strong internal control procedures. Thus, fewer control weaknesses that could cause reporting delays are expected in older firms. Similarly, younger firms are more prone to failure and have less experience with accounting controls (Hope and Langli, 2008). That is, age has the potential to reduce reporting lag. Though Courtis (1976) did not find age a significant attribute in his study of 204 listed companies in New Zealand however, Owusu-Ansah (2005) employs a two-stage least square regression model and finds size, profitability and company age as significant determinants of reporting lags of Zimbabwean listed companies. It is inferred from these studies that the older a firm is, the more likely that its financial reports would be timely. Thus, a negative sign between timeliness of financial reporting and age of company is hypothesized. This relationship is tested in hypotheses 3.

H3: There is a significant negative relationship between the age of a company and the timeliness(reporting lag) of financial reporting.

Size of Audit Firm

The larger an audit firm is in terms of partners, audit personnel, facilities and international affiliations, the chances are that it would complete an audit assignment faster and more accurately than a smaller audit firm would. For instance, Ng and Tai, (1994) and Iman, Ahmed and Khan, (2001) argue that larger audit firms are expected to complete audits more quickly than smaller firms because they have more resources in terms of staff and experience in auditing listed companies. The large audit firms are also

expected to be more thorough in their audit assignments due to availability of the right caliber of personnel and resources and thus spend less time on the audit assignment. Therefore, a negative association between audit firm size and reporting delay (timeliness) is posited in this study.

H4: There will be negative association between the size of audit firm and timeliness of financial reports.

Company Financial Year End

Most firms in Nigeria have their financial year-end in the busy month of December. According to Ng and Tai (1994) and Ahmed, (2003), performing audit during the busy months is expected to cause delay because of difficulties with scheduling. The delay could also have impact on the quality of the audit exercise. To mitigate delays during such periods and increase the quality of work, audit firms may need to recruit more audit staff and pay overtime. However, in developing countries like Nigeria, there are not enough qualified accountants to employ. For instance, whereas Australia and USA have as many as 552 and 210 accountants per hundred thousand population, Nigeria has 26 accountants per hundred thousand population (Iyoha, 2009). Therefore, recruiting additional staff may not be an option and so the audit would be delayed. The financial year ends of companies in Nigeria are therefore expected to affect timeliness of financial reporting. That is, the more the reporting period is within the busy months of the year, the longer will be the reporting lag. Consequently, a positive association between financial year end and timeliness of financial reporting is posited in this study.

H5: There will be a positive association between financial year end and the timeliness of financial reporting in Nigeria

Methods

Data Collection

The data set for this study is based on cross-section and time series secondary data collected in respect of industry attributes for the period 1999-2008. The target population was made up of the companies that were listed on the Nigerian Stock Exchange as of December 2008. There was a total number of two hundred and five of such companies (SEC, 2009). As at the time of collecting the data, financial reports of companies for the 2009 financial year were not yet available. In determining the sample size, the following factors were considered- firms must be listed and active

on the Nigerian Stock Exchange (between January, 1999 and December, 2008), the industry that the firms belong has at-least three firms (due to the small size of the capital market) and availability of financial statements during the test period.

Based on the above criteria, a sample size of sixty one firms (from seven industrial sectors) was arrived at. The distribution of the firms along industrial sectors is shown in the table below.

Table 2. Industrial Sectors and Organization Sampled

Industrial sector	No of organizations	% of total
Banking	17	27.9
Insurance	16	26.2
Conglomerates	5	8.10
Petroleum	9	14.8
Agriculture	3	4.9
Food/Beverage	7	11.5
Health	4	6.6
Total	**61**	**100**

Source: Author's field survey.

The annual reports were analyzed for a total number of sixty one companies (61) and for nine years and this gave five hundred and forty nine (549) firm years.

Model Development and Variables

Ffive company specific attributes have been selected in order to evaluate their association with the timeliness of financial reporting in Nigeria. In estimating the relationship between company attributes and the timeliness of financial reporting, both pooled OLS and Panel Data Estimation were used. The use of Panel Data estimation technique enabled the individuality of the industries to be taken into consideration by letting the intercept vary for each industry but still assuming that the slope coefficients are constant across industries.

Using Ordinary Least Squares (OLS) for the pooled cross-section time series data, the relationship between company attributes and the quality of accounting practice in terms of **Timeliness** (TIMS) can be written in functional form as follows:

(1)

TIMS = f (COMPS, PROFIT, AGE, SAF, FINYR)

Assuming a linear relationship between the variables, the specification of the regression equations for 1 above could be explicitly stated as:

$$ \text{TIMS}_{it} = \mu_0 + \mu_1\text{COMPS}_{it} + \mu_2\text{PROFIT}_{it} + \mu_3\text{AGE}_{it} + \mu_4\text{SAF}_{it} + \mu_5\text{FINYR}_{it} + u_i \tag{2} $$

Using LSDV (Panel Data Estimation), equation 2 above becomes:

$$ \text{TIMS}_{it} = \mu_0 + \mu_1 D_{1i} + \mu_2 D_{2i} + \mu_3 D_{3i} + \mu_4 D_{4i} + \mu_5 D_{5i} + \mu_6 D_{6i} + \mu_1\text{COMPS}_{1it} + \mu_2\text{PROFIT}_{2it} + \mu_3\text{AGE}_{3it} + \mu_4\text{SAF}_{4it} + \mu_5\text{FINYR}_{5it} + u_{it} \tag{3} $$

Where:

TIMS   :   Interval of days between the Balance Sheet closing date and the signed date of the auditor's report.

D_{1i} to D_{6i} : 1 if the observation belongs to Insurance, Health, Food/Beverage, Conglomerates, Petroleum and Banking, 0 otherwise. Since there are seven industries, six dummies are used to avoid falling into dummy variable trap and α_0 represents the intercept of the Agricultural industry.

U_1 :   the error term.

The parameters of the models are such that:

μ_1, μ_2, μ_3 and $\mu_4 < 0$; and $\mu_5 > 0$

I= 1, 2 ......7 and t = 1,2.......9 (1999-2007)

Table 3: Proxies and Predicted Signs for Explanatory Variables

Hypotheses	Predicted signs	Proxies
Company Size	- sig.	This yeT Book value of total asset at the end of financial year
Profitability	- sig.	Dummy variable: 1, if the company reports operating profit, otherwise 0;
Age of company	- sig.	Number of years of existence of a company since the first Annual General Meeting (AGM)
Size of audit firm	- sig.	Coded 1 for international audit firms/local firms with international affiliation and 0 for local audit firms.
Financial year end	+ sig	Coded 1, if financial year ends in the last quarter (October to December) and 0 otherwise.

Univariate Analysis

Descriptive Analysis

Pattern of Corporate Reporting Date

Table 4 shows the pattern of reporting dates among the sampled companies in Nigeria. The table reveals that companies have different periods for financial reporting.

Table 4. Pattern of Corporate Reporting Date

Reporting Month	March		June		September		December		Total	
Industry	No	%	No	%	No	%	No	%	No	%
Banks	4	24	-		6	35	7	41	**17**	**100**
Insurance							16	100	**16**	**100**
Conglomerates							5	100	**5**	**100**
Petroleum			1	11			8	89	**9**	**100**
Food/Beverage	2	25			2	25	3	50	**7**	**100**
Health							4	100	**4**	**100**
Agriculture							3	100	**3**	**100**
Total Sample	**6**	**9.6**	**1**	**1.6**	**8**	**12.9**	**46**	**75.9**	**61**	**100**

Source: Author's field survey

From the above table, the most popular months are September and December with 88.8% of the sampled companies balancing their books in these two months. Though the government fiscal year ends in December in Nigeria, 24.1% of the sampled companies have chosen to report in months other than December. Of the four months that are popular (March, June, September and December) June is the least with only one company reporting out of sixty one companies sampled. The implication of this is that most of the companies report during the busy months of the year.

Descriptive statistics on reporting days by Industry

Table 5 shows the reporting pattern (number of days after the close of the financial year) of the companies in the seven industries considered in the study.

Table 5 Descriptive statistics on reporting days by Industry

Industry	Min	Max	Mean	Std Dev
Banking	11	226	81.69	32.2
Insurance	46	361	152.5	48.8
Food/Tobacco/Beverage	46	332	144	91
Petroleum	20	334	136.85	56.9
Health	97	197	145.31	31.4
Agriculture	49	167	96.25	26.98
Conglomerates	36	199	119.4	32

The minimum number of reporting days after year end is recorded in the Banking sector (11 days) followed by the Petroleum (20 days) and the Conglomerate (36 days) respectively, while the longest is recorded in the Insurance sector (361days). Similarly, the Banking sector has the lowest mean reporting days (81.69), followed by the Agricultural sector (96.25) and the longest is recorded in the Insurance sector (152.5). The respective standard deviations also confirm that the number of reporting days is widely dispersed.

Profile of Reporting lags (Statutory vs Actual)

Table 6 shows the mean reporting period in terms of number of days as compared with the statutory requirements in respect of each of the industries.

Table 6. Profile of Reporting lag (Statutory vs Actual)

Organ	Days (Statutory vs Actual		Banks	Insurance	Health	Petro	Conglo	Agric	Food/Bev
SEC and CAC	Statutory	Actual							
	90 days	Mean Days save/(loss)	81.69 8.31	152.5 (62.5)	145 (55)	136.85 (46.85)	119.4 (29.4)	96.25 (6.25)	144 (54)
BOFIA	120 days	Mean Days save/loss	81.69 30.31						
INSU Act	180 days	Mean Days save/loss		152.5 27.5					

Note: Apart from the banking and Insurance industries, other industries are not expected to comply with the provisions of BOFIA and Insurance Act respectively

It was observed that the banking industry comply with the requirements (in terms of reporting lag) of both the Securities and Exchange Commission (SEC) and the Corporate Affairs Commission (CAC) as well as the provisions of the Banking and other Financial Institutions Act (BOFIA). The variance in the reporting days was favourable. Similarly, the insurance industry recorded favourable variance in reporting days when compared with the number of days within which reports are to be rendered by virtue of Insurance Act, 2003. In all other cases, with the exemption of the banking industry, the mean reporting days exceeded the requirements of both the SEC and CAC.

The implication of this situation is that on the average, the sampled companies deny users prompt financial information needed for investment and other decision making purposes.

Multivariate Analysis

In testing the hypotheses, a pooled OLS regression and fixed effects regression were carried out on the company attributes (size, profit, age, financial year end and size of audit firm) which represent the independent variables and timeliness as the dependent variable. The results are presented in the table below.

Table 7 Estimation Results (Pooled OLS and Fixed Effects Regressions)

Variable	Equations					
	(1) (Fixed Effects Regression)			(2) (Pooled OLS Regression)		
	Dependent Variable –**Timeliness**			Dependent Variable –**Timeliness**		
	Coefficient	(t-statistic)	P-value	Coefficient	(t-statistic)	P-value
Constant	101.711***	(9.077)	0.000	135.89***	(14.704)	0.000
COMPS	-9.620	(-0.501)	0.616	-1.1E007***	(-6.217)	0.000

Variable	Equations					
	(1) (Fixed Effects Regression)			(2) (Pooled OLS Regression)		
	Dependent Variable –**Timeliness**			Dependent Variable –**Timeliness**		
	Coefficient	**(t-statistic)**	**P-value**	**Coefficient**	**(t-statistic)**	**P-value**
PROFIT	-6.053	(-0.98)	0.324	-5.185	(-0.745)	0.457
AGE	0.311***	(2.784)	0.005	0.218**	(2.099)	0.036
FINYR	-0.091***	(-3.132)	0.001	-4.912**	(-2.323)	0.021
SAF	-0.112	(-0.053)	0.957	0.301	(0.126)	0.900
INSURANCE	62.287***	(6.219)	0.000			
HEALTH	47.370***	(3.908)	0.001			
FOOD/BEVE	47.008***	(4.330)	0.000			
CONGLOM.	12.126	(0.982)	0.326			
PETROLEUM	42.274***	(4.078)	0.001			
BANKING	-8.19	(-0.792)	0.428			
AGRICULT.	101.714***	(9.077)	0.000			
R²	**0.307**			**0.087**		
R² adj.	**0.293**			**0.079**		
F-test	**21.575**			**10.365**		
P-value	**0.000**			**0.000**		
No of obser	**547**					

***, ** Significant at the 1% and 5% levels respectively.
t-values (in parenthesis)

From Table 7, the overall models are useful (F statistics are significant,21.575 and 10.365 for models 1 and 2). Similarly, the predictive powers of the model also varied (R^2 =0.087 and 0.037). and the p-values for equation are 0.000 and 0.001. The coefficients for COMPS and PROFIT are as predicted, though only significant for COMPS under the OLS. Though not significant, the negative direction of the sign is consistent with extant literature and partially support hypotheses 1 and 2.

A negative association was hypothesized between AGE and timeliness(reporting lag) of financial reports. The empirical result under both model does not support it as shown in the table above. The positive direction of the coefficient of AGE is not consistent with extant literature which suggests that older companies are more timely in terms of financial reporting. That the coefficient for AGE is positively significant implies that the older a company is, the longer the reporting lag. This could be partly explained by the observation that in developing countries like Nigeria, there are not enough qualified accountants to employ for accounting positions in industry. Therefore, recruiting qualified and experienced accounting staff may not be an easy option for the companies and so finalizing the annual accounts for audit exercise would be delayed.

Consequently, the result is at variance with expectation and H3 is not supported.

The SAF is hypothesized to have negative association with timeliness of financial reports. That is, the bigger the audit firm, the lower the reporting lag. Though the coefficient for SAF is negative under model 1 as predicted and positive under model 2, they are however not significant. The inference is that SAF as an attribute does not significantly impact on the timeliness of financial reporting in Nigeria. Therefore, hypothesis 4 is not supported.

FINYR is hypothesized to be positively related to reporting lag. That is, the closer the financial year end of a company is to the busy months of the year, the longer the reporting lag. Surprisingly, the coefficients under both models are negative and significant, implying that though most companies in Nigeria have their financial year ends close to the busy months of the year, timeliness of financial reports is not adversely affected. This could be due to the fact that most big companies in Nigeria are audited by large international audit firms that have the required resources to speed up the audit process. The results are not in consonance with extant literature and the hypothesis, thus, hypothesis 5 is not supported.

For the industry-specific effects, the results are mixed. For some of the industries, industry-wise individual attributes have positive/negative influence on the timeliness of financial reporting. Except for Conglomerates and the Banking sector, the industry specific effect/influences are positive and significant in terms of timeliness of financial reporting. This implies that the industry attributes contribute to the reporting lag in the industries concerned. Perhaps, the tight regulatory framework under which banks operate and the affiliation of conglomerates to their home countries made their individual industry specific attributes not significant and therefore not adversely affecting reporting lag.

Summary and Concluding Remarks

The main objective of this study was to examine the impact of company attributes on the quality of timeliness (reporting lag) of financial reporting in Nigeria. To address this, relevant data were collected and analysed and from the analysis, results were obtained and discussed. From the discussion of the results, AGE was found to be significant in determining timeliness. Company size, Profitability, Size of audit firm and Financial year end do not appear to have any adverse bearing on financial reporting lag. Most of the findings are consistent with findings of other studies. Overall, two explanatory variables, AGE and FINYR did not show predicted signs. However, there is a significant difference in the timeliness of financial reporting among industrial sectors in Nigeria. The banking sector was found to be more timely in financial reporting. The results showed that reporting lag may be reduced by the existence and enforcement of rules and regulations of regulatory bodies. Therefore, the findings of this study can be used in the debate on the effectiveness or otherwise of regulatory provisions regarding timeliness of financial reporting in Nigeria. To mitigate the problem of reporting lag in financial reporting in Nigeria among industrial sectors, there should be harmonization of the various conflicting provisions regarding timeliness as currently contained in the various enactments.

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IMPACT OF ORGANIZATIONAL CULTURE ON PERFORMANCE MANAGEMENT PRACTICES IN PAKISTAN

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Abstract

Purpose of the study: Performance management is a process of delivering sustained success to organizations by improving capabilities of individuals and teams. Organizational culture as a significant contextual factor in performance management is scarcely studied. The aim of this study is to expand the base of knowledge and empirically test the relationship between components of organizational culture and performance management practices. **Research Methodology:** The study adopted exploratory research to explore the impact. Primary data was collected through questionnaires from 60 employees in COMSATS Institute of Information Technology. The sample consists of both male and female faculty members. Regression and Correlation analysis was used for statistical analysis. **Findings:** Statistical results show that involvement is highly correlated with consistency and adaptability. Similarly, other dimensions of organizational culture have significantly positive relationship with the performance management practices. **Implications:** This research selected sample from few cities of Pakistan. Future studies could select other cities and compare results with city of selected sample. This research used random sampling procedure, which is the main limitation of this study. Future studies could use stratified random sampling procedure with more sample size. **Practical implications:** It is hoped that the findings of this study will assist the human resource managers, practitioners and strategy makers to better understand organizational performance practices. **Value Added:** The added value of this paper is to link theory and practice, and explore the organizational culture dimension impact on performance management practices. Few studies have conducted over the years under this perspective in the Pakistan. **Key words:** Performance Management, Organizational Culture, Involvement, consistency, adaptability.

Recent literature proved that management of human resource in company has become an increasingly important for firm performance and business vision achievement. Employees are considered as valuable assets to an organization, which require effective management of these employees in firms. A lot of research in organizational theory has focused on developed countries; 95 percent and whereas only 5 percent of the studies testing organizational theories are found to be done in developing countries (Farashahi et al., 2005) inspite of the highly dynamic environment. A number of scholars have questioned the applicability of western management practices in developing countries and since long time it has also been recognized that culture is a main source of difference in performance management practices (Daniels et al., 2004; Piercy et al., 2004). Many researchers (e.g., Denison, Haaland, & Goelzer in Yilmaz, 2008) have called to investigate the phenomenon of organizational culture in different cultural context particularly in non-western nations. Therefore the first purpose of this paper is to find out whether management models of organizational culture and performance management are applicable in the context of Pakistan, a developing country.

Although, many researchers had examined the link between organizational culture and performance (Ogbonna & Harris, 2000; Rousseau, 1990; Kotter & Heskett, 1992; Marcoulides & Heck, 1993). Not much research has been done on organizational culture as a contextual factor of performance management (Magee, 2002). Therefore the second purpose of this paper is to determine the relationship between components of organizational culture and performance management practices, a pervasive human resource development and management practice. This study is indented to fill these gaps.

Performance management practices as fundamental human resource management practice support the view that employees and managers benefit from the understanding of organizational culture as a contextual factor. For the present empirical analysis Denison theory of organizational culture is employed which focuses on four cultural traits involvement, consistency, adaptability, and mission as key determinants of business performance.

Literature Review

Organizational Culture

Having established that organizational culture comprises a range of complex social phenomena, it is not

surprising that scholars have identified corporate culture as a multi-layered construct which can be divided into layers according to these phenomena's observability and accessibility. Organizational culture has been defined as patterns of shared values and beliefs over time which produces behavioral norms that are adopted in solving problems (Owens 1987; Schein, 1990). The organization's internal environment is represented by its culture and is construed by the assumptions and beliefs of the managers and employees (Aycan et al., 1999). Organizational Culture manifested in beliefs and assumptions, values, attitudes and behaviors of its members is a valuable source of firm's competitive advantage (Hall, 1993; Peteraf, 1993) since it shapes organizational procedures, unifies organizational capabilities into a cohesive whole, provides solutions to the problems faced by the organization, and, thereby, hindering or facilitating the organization's achievement of its goals (Yilmaz, 2008).

Performance Management

"Performance management is a strategic and integrated approach to delivering sustained success to organizations by improving the performance of the people who work in them and by developing the capabilities of teams and individual contributors" (Armstrong and Baron, 1998). It supports the rationale that people and not capital provide organizations with a competitive advantage (Reynolds & Ablett, 1998). The purpose of performance management is to transform the raw potential of human resource into performance by removing intermediate barriers as well as motivating and rejuvenating the human resource (Kandula, 2006). Competitive capacity of organization can be increased by building strong people and effectively managing and developing people (Cabrera & Banache, 1999) which is in essence performance management.

The Relationship Between Organizational Culture and Performance Management

According to Kandula (2006) the key to good performance is a strong culture. He further maintains that due to difference in organizational culture, same strategies do not yield same results for two organizations in the same industry and in the same location. A positive and strong culture can make an average individual perform and achieve brilliantly whereas a negative and weak culture may demotivate an outstanding employee to underperform and end up with no achievement. Therefore organizational

culture has an active and direct role in performance management. Murphy and Cleveland (1995) believe that research on culture will contribute to the understanding of performance management. Magee (2002) contends that without considering the impact of organizational culture, organizational practices such as performance management could be counterproductive because the two are interdependent and change in one will impact the other.

Denison's Framework of Organizational Culture

Yilmaz (2008) states that:

Following Schien (1984) at the core of Denison's model are the underlying beliefs and assumptions that represent the deepest levels of organizational culture. These fundamental assumptions provide the foundation from which (1) more surface-level cultural components such as values and observable artifacts – symbols, heroes, rituals, etc. – are derived, and (2) behavior and action spring (Denison, 2000). (p. 292)

In Denison's model comparisons of organizations based on relatively more ''surface-level'' values and their manifest practices are made. Such values are deemed both more accessible than the assumptions and more reliable than the artifacts (Denison, 2000 in Yilmaz, 2008). Denison's organizational culture model is based on four cultural traits involvement, consistency, adaptability, and mission that have been shown in the literature to have an influence on organizational performance (Denison, 1990; Denison & Mishra, 1995)

The four traits of organizational culture in Denison's framework are as follows:

Involvement: Effective organizations empower their people, build their organizations around teams, and develop human capability at all levels (Becker, 1964; Lawler, 1996; Likert, 1961). Executives, managers, and employees are committed to their work and feel that they own a piece of the organization. People at all levels feel that they have at least some input into decisions that will affect their work and that their work is directly connected to the goals of the organization (Katzenberg, 1993; Spreitzer, 1995).

Consistency: Organizations also tend to be effective because they have "strong" cultures that are highly consistent, well coordinated, and well integrated (Davenport, 1993; Saffold, 1988). Behavior is rooted in a set of core values, and leaders and followers are skilled at reaching agreement even when there are diverse points of view (Block, 1991). This type of consistency is a powerful

source of stability and internal integration that results from a common mindset and a high degree of conformity (Senge, 1990).

Adaptability: Ironically, organizations that are well integrated are often the most difficult ones to change (Kanter, 1983). Internal integration and external adaptation can often be at odds. Adaptable organizations are driven by their customers, take risks and learn from their mistakes, and have capability and experience at creating change (Nadler, 1998; Senge, 1990). They are continuously changing the system so that they are improving the organizations' collective abilities to provide value for their customers (Stalk, 1988).

Mission: Successful organizations have a clear sense of purpose and direction that defines organizational goals and strategic objectives and expresses a vision of how the organization will look in the future (Mintzberg, 1987; 1994; Ohmae, 1982; Hamel & Prahalad, 1994). When an organization's underlying mission changes, changes also occur in other aspects of the organization's culture.

Conceptual Model and Hypotheses

The research is mainly aimed to investigate the relationship between organizational culture and the practices of performance management. Denison's model proposes that organizations with a higher combined measure of the four culture traits show higher levels of performance which itself is the result of performance management. Therefore the first hypothesis is

H1: Organizational Culture has a significantly positive relationship with performance management practices.

Denison's theory states that each of the four major cultural traits promotes superior firm performance. Since performance management also results in superior performance, therefore we posit that

H2: Cultural traits of involvement, consistency, adaptability, and mission in organizations exert a significantly positive influence on performance management practices

Figure-1. A conceptual model of organization culture and performance management practices.
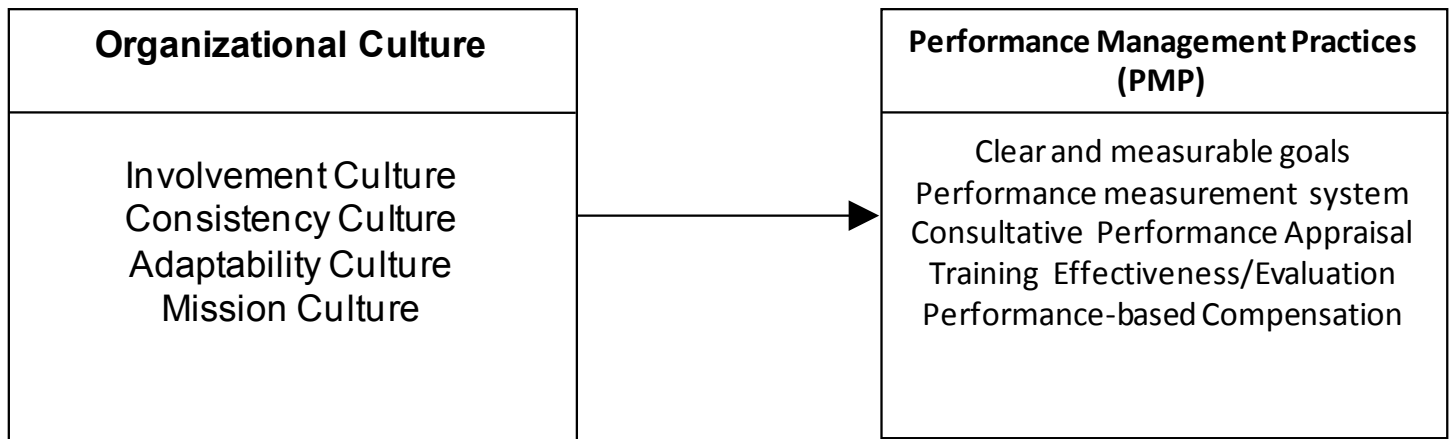
Research Methodology

The study consists of exploratory research designed to determine if organizational culture is associated with performance management. Pilot testing of the study was carried out by collecting primary data with the help of questionnaire distributed to 60 employees in COMSATS Institute of Information Technology which included a mix of faculty members, staff members, section heads, and heads of departments. 42 usable responses were received back.

4.1 Measures

For the purpose of measuring organizational culture Denison (2000) Organizational Culture Survey instrument which uses 60 items on a five point Likert scale with anchors strongly disagree (=1) to strongly agree (=5) was used. This framework focuses on cultural traits of involvement, consistency, adaptability, and mission.

Performance Management practices include specifying which goals to achieve, allocating decision rights, and measuring and evaluating performance. An aggregate

measure of PM practices is developed which uses a 5-point Likert scale with anchors strongly disagree (=1) to strongly agree (=5) by combining the following components.

a. Clear and measurable goals based on scale CLRMSG by Verbeeten, (2008). Goal setting theory asserts that people with specific and challenging goals perform better than those with vague goals, such as "do your best", specific easy goals or no goals at all. Thus, goal setting theory assumes that there is a direct relation between the definition of specific and measurable goals and performance

b. The performance measurement system instrument (labelled BROADPMS) is based upon the instrument by Cavalluzzo and Ittner (2004) captures the extent to which different types of results-oriented performance measures have been developed for the activities of the organization apart from financial measures. Other activities included in performance management practices are adapted from Khatri (2000)

c. Consultative Performance Appraisal
d. Training Effectiveness/Evaluation
e. Performance-based Compensation

Analysis of the Data

The Pearson correlation was used to reflect the degree of linear relationship between two variables and determines the strength of the linear relationship between the variables; whilst, One-Way ANOVA was employed to determine the significance of the relationship. Based on the confirmation of directionality shown in Table 1, sufficient evidence exists to accept hypothesis H1 that organizational culture is positively and strongly associated with performance management practices at a confidence level of 0.99. Table 2 also confirms that each of the four organizational cultural traits of involvement, consistency adaptability and mission are positively and strongly associated with performance management practices at a confidence level of 0.99. Based on this there is sufficient evidence to accept hypothesis H2.

Table 1: Correlation Analysis Organizational Culture to Performance Management Practices

		Organizational Culture	Performance Management Practices (PMP)
Organizational Culture	Pearson Correlation	1	.839**
	Sig. (2-tailed)		.000
	N	42	42
Performance Management Practices (PMP)	Pearson Correlation	.839**	1
	Sig. (2-tailed)	.000	
	1	42	42

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

Table-2 describes the correlation analysis of organizational culture traits to performance management practices. All the variables including involvement, consistency, adaptability and mission has significantly positive impact on Performance Management Practices (PMP). The value of involvement for PMP is 0.736

significant at r= 0.01%. The value for consistency is 0.837 (r= 0.01%) which shows the high significance of relations. While values for adaptability and mission are 0.767 and 0.815 both with r=0.01%. As all the values of organizational culture have significant positive impact of PMP so hypothesis H2 is acceptable that organizational culture has positive impact on PM Practices.

Table 2: Correlation Analysis Organizational Culture Traits to Performance Management Practices(PMP)

		Involvement	Consistency	Adaptability	Mission	PMP
Involvement	Pearson Correlation	1	.812**	.910**	.773**	.736**
	Sig. (2-tailed)		.000	.000	.000	.000
Consistency	Pearson Correlation	.812**	1	.829**	.841**	.837**

		Involvement	Consistency	Adaptability	Mission	PMP
	Sig. (2-tailed)	.000		.000	.000	.000
Adaptability	Pearson Correlation	.910**	.829**	1	.861**	.767**
	Sig. (2-tailed)	.000	.000		.000	.000
Mission	Pearson Correlation	.773**	.841**	.861**	1	.815**
	Sig. (2-tailed)	.000	.000	.000		.000
PMP	Pearson Correlation	.736**	.837**	.767**	.815**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
N		42	42	42	42	42

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

Table 3 shows that the value of R square is .744 which is the explained variance in the dependent variable performance management practices by organizational culture traits. As value of R= .83 which show the model fit and quite acceptable value for acceptance of model.

Table: 3 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.863a	.744	.695	8.80383

a. Predictors: (Constant), Mission, Involvement, Consistency, Adaptability

Table 4 shows that the F statistic is significant at .000 which shows the fitness of the model. Therefore organizational culture is a strong predictor of performance management practices.

Table: 4 ANOVAb

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4729.247	4	1182.312	15.254	.000a
	Residual	1627.657	21	77.507		
	Total	6356.904	42			

a. Predictors: (Constant), Mission, Involvement, Consistency, Adaptability
*b. Dependent Variable: Performance Management Practice (PMP)*

Conclusion

The research is mainly aimed to investigate the relationship between organizational culture and the practices of performance management. Results show that adaptability and mission has significant positive values in correlation for PMP. All the variables must be positive to get better results from PM Practices. Traditionally organizational culture and design of human resource management practices such as performance management have been studied independently for organizational success. The results of this study indicate that they are strongly associated with each other and should be complimentary (Magee, 2002). Moreover the western management models were also validated in the context of a developing country.

Overall, there is a strong view in the literature that organizational culture lead to increased organizational performance. However, studies on this relationship often differ as to the extent a practice is likely to be positively or negatively related to performance. Human resource management practices has been argued to affect organizational culture, and in turn lead to firm performance we need to be wary of arguing that current evidence proves this relationship. There could, and probably are, a number of other organizational elements that provide a link between HRM and firm performance. More studies regarding the

organizational culture and performance link need to be conducted before we can deduce this causality relationship. In saying this, organizational culture has been shown to be an important aspect of a firm, as it can, and does affect employee's behaviours, motivation and values.

Organizational performance management system create career paths for employees as well as groupings of people who remain in the firm for a long enough time for a company culture to form. This outlook suggests that firms can implement such management practices that foster job security and internal career development in order to keep turnover low, and maintain those social phenomena that comprise organizational culture (values, beliefs, norms, assumptions) within the organization, and therefore forming a strong organizational culture.

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SERVICE QUALITY, CORPORATE IMAGE AND CUSTOMER'S SATISFACTION TOWARDS CUSTOMERS PERCEPTION: AN EXPLORATORY STUDY ON TELECOM CUSTOMERS IN BANGLADESH

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Abstract

The purpose of this paper is to find out the determinants that are significantly influencing telecom customer's perception in Bangladesh. The study surveyed 450 telecom customers in Bangladesh from Dhaka city to determine the key influential factors that significantly influence on their perception. The data analyses were conducted by exploratory factor analysis, confirmatory factor analysis and structural equation modeling to test the hypothesis. The results of the statistical analysis reflected that most of the telecom customers are highly concerned about service quality followed by corporate image. Few studies have explored over the years under this market regarding this research issue. Moreover, this is a relatively new issue that remains largely undiscovered by researchers under underdeveloped country's telecom operator's perspective. It is hoped that the findings may assist the mobile phone operators in production of their services and promotion of their services. **Key words:** Consumer perception, service quality, brand image, customer's satisfaction, Bangladesh.

Due to privatization and liberalization of policy telecommunication sector is experiencing phenomenal global change all over the world (Beard & Hartmann, 1999). In Bangladesh due to increase in the mobility and the emerging complex business environment people are moving from one place to another. Therefore, they want to talk with the connected people for taking the right decision at the right time during their movement. So in a country like Bangladesh where the land line is very hard to come by most of the consumers now a day's depend on cell phone to communicate with each other. Mobile or Cell phone is such a vehicle that made the communication easier even for the rural people as well. That is why the penetration rate of telephone in Bangladesh rose up to 540 percent between 1985 and 2000 (Lee, 2001). Bangladesh enters the mobile world through the City Cell Company in 1993. Later Grameen Phone, Aktel, Banglalink, Tele Talk and Warid Telecom got license from the government. Because of the stiff competition companies are trying to capture the maximum share of the market by providing various services to satisfy the customer's needs, wants and demands. As competition has escalated among the operators. So it is necessary for them to learn about the consumer's perception about the service quality, brand image and customers satisfaction.

Furthermore, there exists a significant research gap linking service quality, brand image and customers satisfaction towards mobile phone operators customers perception in Bangladesh. Particularly, empirical research is scarce enhancing the new research in this area. The present study aims to gather primary data from the users of telecom consumers from multi age respondents which will present the findings about the degree of influence of service quality, brand image and customers satisfaction towards user's perception on telecom operators in Bangladesh. This paper presents a conceptual and exploratory analysis of the relevant variables which will direct for further empirical studies.

Literature Review

In recent times Mobile telecom operators play an important role which enhance social interactions between and among individuals, groups, organizations, and the governments alike and which ultimately create a strong network of global environment. That is why Deutsch (1953) states this trend as "a web of nations". Today's development of communication technology ignores the global border and makes the world as "global village" (McLuhan, 1964).

Services Quality

Customer's perceived quality construct has received considerable attention in the marketing literature (Holbrook & Corfman 1985; Jacobson & Aaker 1987; Olshavsky 1985). Customer perceptions of the quality of a service are traditionally measured immediately after the person has consumed the service. Plamer and O'Neill (2003) mentioned about the perception of service quality at the time of the next purchase decision which influence consumers repeat buying behavior attitude. Crosby et al., (2003) noted that an understanding of quality is not necessarily something that is perceived in the mind of the consumer upon the first impression. Phusavat and Kanchana (2008) described quality represented the most important competitive priority. Quality was given the highest weight of 36.4 percent, while service provision, customer-focus, and know-how were at 20.4, 12.9 and 12.5 percent, respectively. The remaining weights were 9.8 percent for costs, and 8.0 percent for flexibility. In spite of that, Omotayo and Joachim (2008) find the relationship between customers' services on customer retention in telecommunication industry in Nigeria. They reached that if retention is not managed, customer's loyalty may be lost. The hypotheses of their research were supported indicating strong relationship between customer service, satisfaction and retention in the communication industry in Nigeria. Besides that, in hypercompetitive environments like the wireless industry, keeping existing customers is one of the most effective ways to drive profitability, as it is more costly to attain a new customer than to retain an existing one (Mobile,2005). Anderson and Olsen (2008) concluded that customer service is an important driver of customer equity and as such should be a high priority when attracting and keeping the right profitable customers. So this study creates the following hypothesis for further examination.

H1: Service quality has a significant influence on consumer perception in selecting a mobile telecom operator.

Consumer Satisfaction

Satisfaction can be defined as the extent of the emotional reaction from a service experience (Oliver, 1980). Buchanan (1985) said "the positive feelings of contentment results from the satisfaction of felt or unfelt need of the individual". It can also be defined as an evaluative summary of (direct) consumption experience, based on the discrepancy between prior expectation and the actual performance perceived after consumption (Yi,1990).

Lin and Chen (2006) explored that product knowledge and product involvement all has a significantly positive effect on consumer's purchase decision. Meanwhile product evaluations based on direct experience are strong predictors of behavior (Fazio & Zanna, 1978, 1981). Satisfaction is based on direct past experience; it is likely to be accessible and to affect behavioral intentions independent of other considerations. However, little empirical evidence had shown that customer satisfaction actually translates into loyalty (Jones & Sasser 1995). Oliver (1997) argued that even a loyal consumer is vulnerable to situational factors (e.g., competitors' coupons or price cuts) and so satisfaction is not likely to be the sole (reliable) predictor loyalty (Reichheld, 1996). The following hypothesis is going to be tested for further analysis:

H2: Customers Satisfaction plays a significant influence on customer's perception in selecting mobile telecommunication service provider.

Corporate Image

Nguyen and Leblanc (1998; 2001) claimed that corporate image is related to the physical and behavioral attributes of the firm, such as business name, architecture, variety of products/services, and to the impression of quality communicated by each person interacting with the firm's clients. A seller's reputation effects the perceptions of the quality of the products sold by that seller (Cabral, 2000) confirmed this hypothesis in his study of product stretching. Haque et al. (2006) depicted consumer familiarity and confidence significantly depend on brand of the products and a company's sales history. In general, familiarity is created when there are long sales history, strong brand images of a company and previous satisfaction of using the product (Coltman et al., 2000; Wen –Yeh et al., 2004). Confidence was also derived from consumers' attitudes that directly influence their purchasing intentions (Donnavieve & Sivakumar, 2002). According to Aydin and Zer (2005) corporate image, perceived service quality, trust and customer switching costs are the major antecedents of customer loyalty, and loyal customers may buy more, accept higher prices and have a positive word-of-mouth effect. Consequently, corporate image as an attitude must affect behavioral intentions such as customer loyalty (Johnson et al., 2001). Nguyen and Leblanc (2001) demonstrated that corporate image relates positively with customer loyalty in three sectors (telecommunication, retailing and education). So this research can draw the following hypothesis:

H3: Corporate image plays a significant influence on customer's perception in selecting mobile telecommunication service provider.

Conceptual Framework

Above all researchers in this research found that there is very limited literature focusing on consumer's perception in the choice of a mobile phone operator where service quality, corporate image and customers satisfaction play a significant influence. Based on the literature review; this study proposes a conceptual framework of studying dynamics of consumers perception and their behavior towards selection of an operator. This framework emphasizes on the following independent variables like service quality, corporate image and customers satisfaction towards customers perception of selection an operator's services. The schematic diagram is presented below:

Figure 1: Conceptual Framework of The Proposed Study
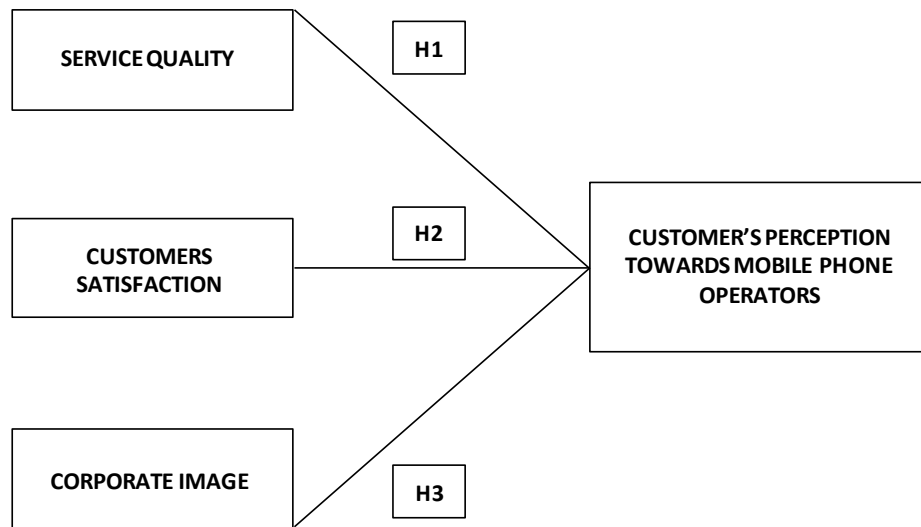
Methodology

Data was collected through distributing structured questions by following convenient sampling procedure to the consumers of telecom operators in various part of the Dhaka city the capital of Bangladesh. The capital was selected because significant number of consumers of telecom operators is available in Dhaka compared with other city of Bangladesh. This study used 450 respondents to complete the research objective. Out of 450 samples around 60% of respondents were from Grameen phone, 35% were from Banglalink and 5% of the respondents were from others operators. Questionnaires were distributed to the respondents according to the market share of the operators in the particular market for minimizing the biasness. A self-administered questionnaire was developed to identify the consumer perceptions towards mobile phone operators. Section one to three designed to measure the participant's perceptions of the operator's services in terms of service quality, corporate image and customer's satisfaction. The responses of this measurement were scored using a 7- point rating scale. The measurement items of those variables were both drawn from existing theories and self-created questions based on the literature and the discussions with the marketing professors. The data analysis of this study was organized into three stages. The first stage of the data analysis conducted an exploratory factor analysis (EFA) to identify the factor structure. The second part of the data analysis employed a confirmatory factor analysis (CFA) to confirm the factor. In this study, the goodness of fit testing was conducted by using several criteria, including chi-square test, root mean square error of approximation (RMSEA), goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), normed fit index (NFI), and comparative fit index (CFI) (Hair, et al., 2006). SEM (Structural Equation Modeling) was used to test hypothesis 1 to hypothesis 3. A total of 500-instruments were distributed among the potential respondents for this study, of which 450 questionnaires were received and proved to valid for further studies. This represents a success rate of 85%, which is considered to be extremely good in view of time, cost, certainty and geographical constraints.

Results and Discussion

Reliability Coefficient of All the Items in the Instruments

This research were used Cronbach alpha to measure the reliability for a set of two or more constructs where alpha coefficient values range between 0 and 1 with higher values indicating higher reliability among the indicators (Hair et al., 2006). In accordance with the Cronbach alpha test, the total scale of reliability for this study varies from .80, indicating an overall higher reliability factors. From table 1 it is showed that the reliability of this study is substantial in every perspective.

Table 1: Reliability Analysis for all Variables

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	No of Items
.802	.803	20

Factor Analysis

The survey results obtained from 450 respondents have been explained in this section through the principal component analysis (PCA). It was carried out to explore the underlying factors associated with 15 items. Result for the Bartlett's Test of Sphericity and the KMO revealed from this study were highly significant. So this research concluded that this variable was suitable for the factor analysis (Table 2).

Table 2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.832
Bartlett's Test of Sphericity	Approx. Chi-Square	964.586
	Df	92
	Sig.	.000

For this study, the general criteria were accepted items with loading of 0.60 or greater. The result showed in explained total variance explained by the two factors was 43.060%. The values of the following Table 3 indicated the affiliation of the items to a factor. The higher loading (factor) indicates the stronger affiliation of an item to a specific factor. The findings of this study indicate that each of the three dimensions (service quality, customer's satisfaction and corporate image) was homogeneously loaded to the different factors.

Table 3: Factor Loading Matrices Following Rotation of four-factor Solutions

Items	Service Quality (SQ)	Customer's Satisfaction (CS)	Corporate Image (CI)
Genuine interest in solving customers' (SQ1)	.65		
Performs service right the first time (SQ2)	.64		
Error-free service (SQ3)	.63		
Prompt service (SQ4)	.62		
Trust with the operator (CS1)		.61	
Operator's customer representative have tendency of willingness to help customers (CS2)		.62	
Trust customer services staffs of my operators (CS3)		.66	
Experience with my current operator is very important (CS4)		.69	
Involvement by business with community's (CI1)			.61
Social responsibility is needed to balance company's power (CI2)			.62
Involvement in socially responsible activities (CI3)			.63
Consumers and general public will bear the costs of business social involvement (CI4)			.66

Notes: Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 5 iterations.

Reliability Test of Each Item under Each Factor after Factor Analysis

According to Hair et. al., (2006) reliability measures shows greater consistency than less reliable measures (Table 4). The reliability coefficients for the four factors: service quality, customers satisfaction and corporate image were 0.81, 0.82 and 0.78 respectively. As Table shows, all alpha coefficients for the data exceed the minimum standard for reliability of 0.70 recommended by Nunnally (1978). Thus, the results indicate that these multiple measures are highly reliable for measuring each construct.

Table 4: The Reliability Coefficients for Derived Factors

Factor	Number of Cases	Number of Items	Cronbach's Alpha
Consumer's Perception (CP)	450	4	0.81
Age	450	4	0.82
Gender	450	4	0.78

Confirmatory Factor Analysis

The second phase of data analysis consisted with confirmatory factor analysis. To this end the structural equation method (SEM) was applied, using maximum likelihood estimation method to test the hypothesis of the study (Bentler, 1995). Although this research has employed EFA for verifying grouping and loading pattern of measuring scale items, it has further attempted to screen EFA examination by conducting CFA among all the exogenous variables (service quality, customer's satisfaction and corporate image) with measuring items retained by EFA.

Service Quality

From the result of EFA as shown in Table 3, have retained 4 measuring items for consumer's perception towards choosing a restaurant. This study have retained all these items after conducting CFA, as all those indicators were loaded with loading factor more than 0.60. For service quality, the modification indices for the covariance between the measurement errors of SQ2 ("Performs service right the first time") and SQ4 ("Prompt service") was 13.834. The correlation of these errors was logically possible; therefore the model was revised to incorporate this path (Figure 4.3). After adding this parameter, the measurement model fit indices of price showed an adequate fit: $\chi^2/\text{d.f.} = 1.78$ ($\chi^2=23.226$, d.f=13); GFI=.98, AGFI=.97, CFI=.98, NFI= .96, TLI= .97 and RMSEA= .040.

Customer's Satisfaction and Corporate image

From EFA as shown in table 3, have retained 4 measuring items for age, gender and income variable. This study have retained all these items after conducting CFA, as all those indicators were loaded with loading factor more than 0.60. The measurement model fit indices of customer's satisfaction and corporate image showed an adequate fit: $\chi^2/\text{d.f.} = 1.222$ ($\chi^2=13.452$, d.f=11); GFI= .97, AGFI= .96, CFI= .96, NFI= .95, TLI= .94 and RMSEA= .060; $\chi^2/\text{d.f.} = 1.20$ ($\chi^2=16.852$, d.f=14); GF= .962, AGFI= .95, CFI= .95, NFI= .93, TLI= .93 and RMSEA= .050.

Figure 2: Service quality, Corporate and customers satisfaction towards customers perception default model (note: cp= consumer's perception; SQ= service quality, CS= customer's satisfaction, CI= corporate image)
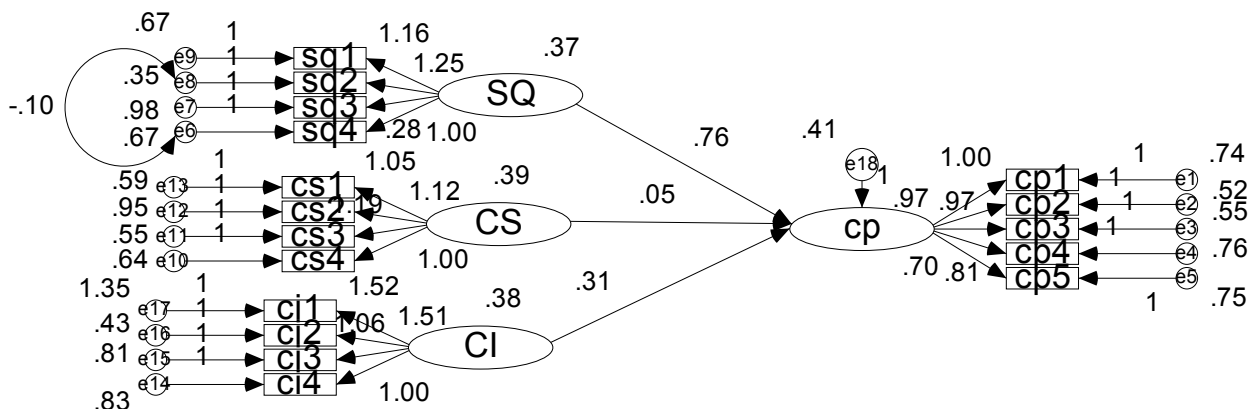
Statistical Significance of Parameter Estimates

In this stage this of data analysis this research utilized critical ratio (C.R) value, which represents the parameter of an estimate divided by its standard error. Based on a probability level 0.05 the test statistic needs to be $> \pm 1.96$ before the hypothesis (that estimates equals 0.0) can be rejected. On the other hand, it is also important to note that nonsignificant parameters can be indicative of a sample size that is too small (Byrne, 2001).

Hypotheses Testing

The structural equation model was examined to test the relationship among the constructs. After adjustment of the model by observing the modification indices value goodness-of-fit indicates for this model were chi-square/df = (159.769 /61) = 2.61, GFI = 0.92, AGFI = 0.91, CFI =

0.89, NFI = 0.82, RMSEA= 0.06. Figure 2 depicts the full model. After observing the statistical test it is been clear that all the paths are not significant at $p < 0.05$. (H1) Service quality has a significant influence on consumer perception in selecting a mobile telecom operator. From the statistical result the null hypotheses H1 is accepted at 0.5 level of significance $p > 0.000$. Regarding the H2: customer's Satisfaction plays a significant influence on customer's perception in selecting mobile telecommunication service provider. This null hypothesis is not accepted at $p < 0.000$. On the other hand H3: corporate image plays a significant influence on customer's perception in selecting mobile telecommunication service provider this null hypothesis is accepted at $p < 0.000$. Among all the significant variables, service quality has the highest influence on consumer's perception of choosing a particular operator's services followed by corporate image. On the other hand consumer's satisfaction is not fully influenced on their perception to choose a particular operator's services.

Table 5: Standard Estimation of the Main Model

Standardized regression weight			Estimate	S.E.	C.R.	P value
H1	Service Quality (SQ)	← Consumers' Perception (CP)	.762	.125	6.076	***
H2	Customer's Satisfaction (CS)	← Consumers' Perception (CP)	.052	.074	.704	.481
H3	Corporate Image (CI)	← Consumers' Perception (CP)	.313	.079	3.973	***

Conclusion and Implementation

This study has provided empirical evidence for the development of customer's perception towards the mobile phone operators involving corporate image, customer's satisfaction, and service quality. In this study, respondents were directly asked to provide their perceptions or evaluations of the comparisons, using a seven point scale. The results indicated that the adequate measurement model was a good fit with the data. This study was undertaken to examine and understand the consumer's perception in the choice of selecting a mobile telecommunication service providers in Bangladesh. As a general notion, consumer's perception is widely varied with the service quality, corporate image and customer's satisfaction. From the current research it is being revealed that in Bangladesh most of the consumer's are very concern about the service

delivery and corporate image on the other hand the satisfaction is not very important concern for them. The competition among the mobile phone service providers in Bangladesh is more intense now than ever before. They compete not only for networking quality by a large amount of investment in network quality, network extension and upgrading, but also for the acquisition of new customers and retention of old customers by direct and indirect price reduction. Network quality is one of the important factors of overall service quality. According to this study the mobile phone operators in Bangladesh must put their attention on service quality, corporate image to influence the current and potential customers.

Above all, an understanding of direct effect by the key factors like (corporate image, customers' satisfaction, and service quality) affecting the customers perception in mobile phone operators (service providers) will put the practitioner

in a better position to design appropriate strategies to deal with marketing practices that will enhance the benefit of the operators.

Limitation of the Study and Direction to Future Research

This research still predict that further research efforts are being needed to examine these factors in Bangladesh with additional samples before generalization can be made. In this research customers satisfaction is not proof very significant. Further research must consider customers satisfaction as a mediating role in between service quality and corporate image.

Further studies could examine a customers' perception towards mobile services and their influencing factors in the choice of service providers for a particular mobile phone operator's using a larger sample covering the entire province in Bangladesh with prepaid and postpaid customers. The results would be useful for cellular phone operators and differentiation. In addition, further research is needed to measure the relationship of overall satisfaction and behavioral intention to the consumers' perceptions of the service quality of a particular operator. The results of such studies could identify the determinant service attributes to help ensure consumers satisfaction and purchasing behaviors in different operators.

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BUSINESS INTELLIGENCE: AN INTEGRATED APPROACH

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Abstract

Business intelligence systems combine operational and historical data with analytical tools to present valuable and competitive information to business planners and decision makers.   The objective of Business intelligence (BI) is to improve the timeliness and quality of information, and enable managers to be able to better understand the position of their firm as in comparison to competitors. Business intelligence applications and technologies can help companies to analyze changing trends in market share; changes in customer behavior and spending patterns; customers' preferences; company capabilities; and market conditions. Business intelligence can be used to help analysts and managers determine which adjustments are most likely to respond to changing trends. The emergence of the data warehouse as a repository, advances in data cleansing, increased capabilities of hardware and software, and the emergence of the web architecture all combine to create a richer business intelligence environment than was available previously. In this paper, an attempt has been made to present a framework for building a BI system.

While the business world is rapidly changing and the business processes are becoming more and more complex making it more difficult for managers to have comprehensive understanding of business environment. The factors of globalization, deregulation, mergers and acquisitions, competition and technological innovation, have forced companies to re-think their business strategies and many large companies have resorted to Business Intelligence (BI) techniques to help them understand and control business processes to gain competitive advantage. BI is primarily used to improve the timeliness and quality of information, and enable managers better understand the position of their firm as in comparison to competitors. BI applications and technologies help companies to analyze changing trends in market share; changes in customer behavior and spending patterns; customers' preferences; company capabilities; and market conditions. It is used to help analysts and managers determine which adjustments are most likely to respond to changing trends. It has emerged as a concept for analyzing collected data with the purpose to help decision making units get a better comprehensive knowledge of an organization's operations, and thereby make better business decisions.

BI is an area of Decision Support System (DSS) that which is an information system that can be used to support complex decision making, and solving complex, semi-structured, or ill-structured problems (Azevedo & Santos, 2009; Nematiet al., 2002; Shim, et al., 2002). The first reference to BI was made by Lunh (1958), which has replaced other terms such as Executive Information Systems and Management Information Systems (Negash, 2004; Turban et al., 2008; Thomsen, 2003).

Being rooted in the DSS discipline, BI has suffered a considerable evolution over the last years and is, nowadays, an area of DSS that attracts a great deal of interest from both the industry and researchers (Arnott & Pervan, 2008; Clark et al., 2007; Hannula & Pirttimaki, 2003; Hoffman, 2009; Negash, 2004; Richardson et al., 2008; Richardson et al., 2009). It can be presented as an architecture, tool, technology or system that gathers and stores data, analyzes it using analytical tools, facilites reporting, querying and delivers information and/or knowledge that ultimately allows organizations to improve decision making (Clark et al., 2007; Kudyba & Hoptroff, 2001; Michalewicz et al., 2007; Moss & Shaku, 2003; Negash, 2004; Raisinghani, 2004; Thierauf, 2001; Turban, et al., 2008).

Golfarelli at al., (2004) argue that BI is the process that transforms data into information and then into knowledge.

Although BI is a type of DSS, but it often has a broader meaning. It is the process of gathering high-quality and meaningful information about the subject matter being researched that will help the individual(s) to analyze the information, draw conclusions or make assumptions (Jonathan, 2000).

Stackowiak et al. (2007) opine that BI is the process of taking large amounts of data, analyzing that data, and presenting a high-level set of reports that condense the essence of that data into the basis of business actions, enabling management to make fundamental daily business decisions. Cui et al. (2006) argue that BI is the way and method of improving business performance by providing powerful assistance to executive decision maker which enables them to have actionable information at hand. BI tools are viewed as technology that enhances the efficiency of business operation by providing an increased value to the enterprise information and hence the way this information is utilized. Zeng et al. (2007) have put forth that BI is "The process of collection, treatment and diffusion of information that has an objective, the reduction of uncertainty in the making of all strategic decisions." While (Wu et al. 2007) argues that BI is a "business management term used to describe applications and technologies which are used to gather, provide access to analyzed data and information about an enterprise, in order to help them make better informed business decisions." Van Drunen, (1999) has considered BI as different as its predecessor, "decision support," in that it is a strategic tool intended to help with planning and performance measurement, rather than with Purdy operational decisions. Likewise Cui et al. (2006) argue that BI tools have evolved from being an Executive Information Systems (EIS) and Decision Support System (DSS) to provide much more flair in information delivery and ability to support techniques such as query, reporting, ad hoc analysis and multidimensional analysis which are also known as Online Analytical Processing (OLAP). This variety in capability attracted organizations to start investing in building these types of intelligence systems. However, organizations should have clear BI strategy as a part of IT strategy. While BI is the ability of an organization to understand and use information to its gainful operation (Osterfelt, 2000), the Enterprise BI is a way that brings synergies to business processes and new efficiencies across business areas (Liautaud & Hammond, 2000). BI offers to enterprises "one version of truth", providing consistent and harmonized data to every department in an organization (Bochner & Vaughan 2004). Arents, (2003) argues that there are three important goals that need to be accomplished in order to achieve data consistency across different applications in a complex organization viz:

- Timeliness: the data within system should be synchronized with all other applications;
- Accuracy: the data should encompasses every data from any other application;
- Acceptance: the users convinced of timeliness and accuracy of data, should be able to actively use the system as support for decision making.

The rapidly changing business factors such as globalization, deregulation, mergers and acquisitions and technological innovation, have forced companies to re-think their business strategy. In this competitive environment, BI plays an important role in supporting of the decision making process to augment competitiveness, marking an efficient link between business strategies and IT. BI technology has been continuously expanding and improving to answer more and more complex business. The most widely applied BI enabling technologies, that has emerged include data warehousing (DW), on-line analytical processing (OLAP), and data mining (DM).

BI technology aims to help people make "better" business decisions by making accurate, current, and relevant information available to them when they need it. Competitive organizations accumulate BI in order to assess environment to gain sustainable competitive advantage, and may regard such intelligence as a valuable core competence in some instances.

BI Framework

Although BI is adapted by organizations as per their requirements, history, environment etc to make informed, valuable customer oriented decisions. The main approaches are:

- The traditional approach to BI is concerned with, data aggregation, business analytics and data visualization (Kudyba & Hoptroff, 2001; Raisinghani, 2004; Turban et al., 2008). According to this approach, BI explores several technological tools, producing reports and forecasts, in order to improve the efficiency of the decision making. Such tools include Data Warehouse (DW), Extract-Transform and Load (ETL), On-Line Analytical Processing (OLAP), Data Mining (DM), Text Mining, Web Mining, Data Visualization, Geographic Information Systems (GIS), and Web Portals.

- On the next level there is a concern with the integration of business processes on BI (Eckerson, 2009; Golfarelli et al., 2004; Turban et al., 2008; Wormus, 2008; Zeller, 2007). According to this approach, "BI is a mechanism to bridge the gap between the business process management to the business strategy" (Zeller, 2008). In addition to all the tools in traditional BI, tools such as Business Performance Management (BPM), Business Activity Monitoring (BAM), Service-Oriented Architecture (SOA), Automatic Decision Systems (ADS), and dashboards, are included.

- Adaptive BI is concerned with self-learning adaptive systems, that can recommend the best actions, and that can learn with previous decisions, in order to improve continuously (Michalewicz et al., 2007). Artificial Intelligence is incorporated on BI systems in this manner.

However, the general framework for understanding and guidance of practitioners, academicians and researchers is presented here.

The concept of BI can be decomposed into three parts: (i) Data Capture/Acquisition, (ii) Data Storage and (iii) Data Access & Analysis. Data is collected from internal as well external sources. Internal sources of data are organizations operational database and data warehouse. External data sources include the data from customers, suppliers, government agencies, competitors, internet etc. The collected heterogeneous data is stored in a data warehouse after Extract, Transform and Load (ETL) processes. Finally the data stored in the data warehouse is analyzed for decision making. An attempt has been made in Fig.1 to present a framework of BI, which depicts different components of BI. These components include:

Fig. 1: Framework of Business   Intelligence
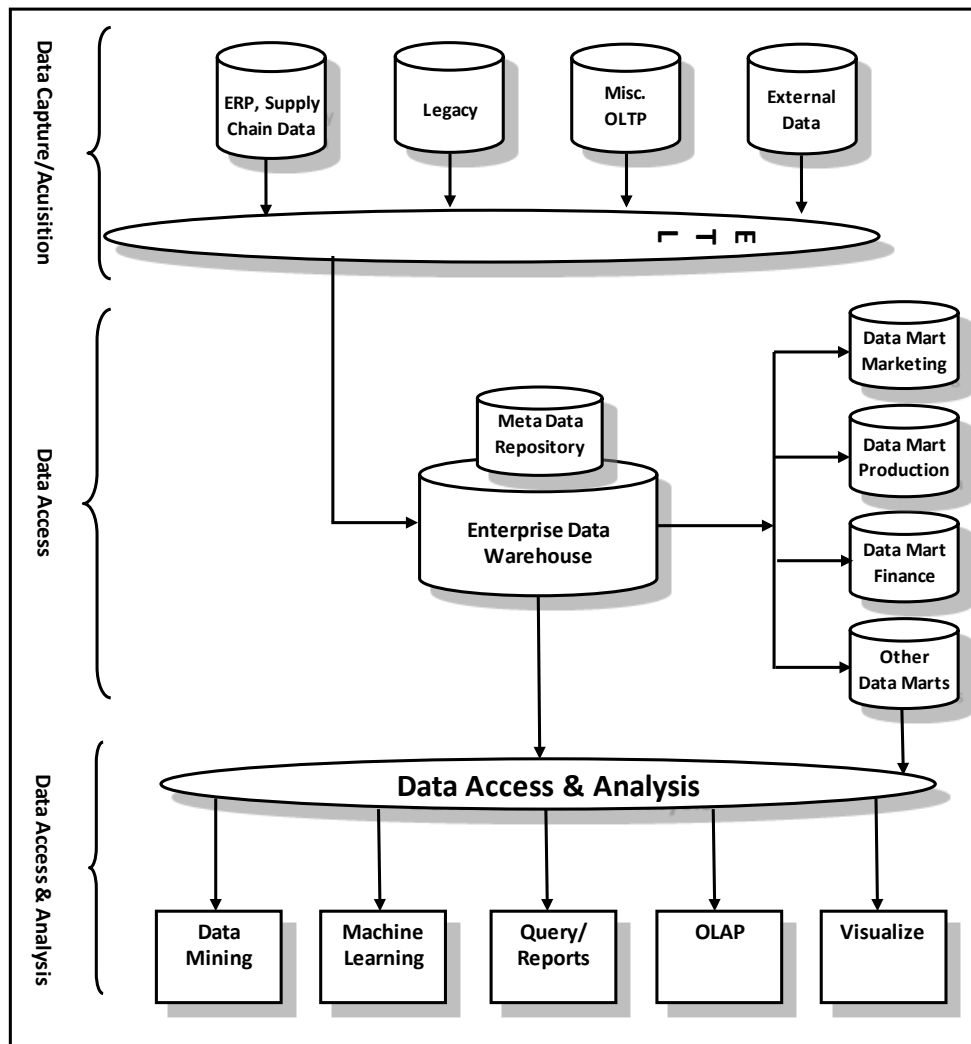
(i) Data Capture/ Acquisition

The acquisition component is the back end of the data warehousing system and consists of systems that have interface with the operational systems to load data into the data warehouse. Data is first entered or processed by a daily business process that is based on Online Transaction Processing(OLTP) environment and stored in operational database, which may consist of databases such as Oracle, DB2, Informix, SQL Server, SAP R/3, etc. Before data is loaded from operational database and external sources into the data warehouse, it needs to be processed through following stages:

- *Extraction & Cleanse:* During data extraction data is acquired from multiple sources including the operational systems. The selected data is consolidated and filtered out from various forms of pollution. Data cleansing validates and cleans up the extracted data to correct inconsistent, missing, or invalid values. This step applies triggers, error reports and corrective processes.
- *Transform.* Data transformation integrates data into standard formats and applies business rules that map data to the warehouse schema. Aggregates (e.g., summary table data) and imputed characteristics are generated.
- *Load.* Data loading loads the cleansed data into the data warehouse.

(ii) Data Storage

After ETL data is stored in data warehouse or data marts for future analysis.

Data Warehousing: Data warehouse is a copy of transaction data specifically structured for query and analysis and is informational, analysis and decision support oriented, not operational or transaction processing oriented (Kimball, 1996). Corey & Abbey, (1997) views data warehouse as a collection of corporate information derived directly from operational systems and some external data sources. Its specific purpose is to support business decisions, not business operations. Inmon who coined the term "data warehouse" in 1990, argues that a data warehouse is a subject oriented, integrated, time-variant, non-volatile collection of data that is used primarily in organizational decision making (Inmon,1996).

Data warehouses, targeted for decision support, are maintained separately from the operational databases. The architecture of data warehouse can take a variety of forms in practice. But before designing a data warehouse, the requirements and resources of the organization should be taken into consideration. However, some of the options of architecture from which organizations may choose under different circumstances may include: Data Mart; Central Data Warehouse; Distributed Data Warehouse; Virtual Data Warehouse.

Data Marts: Data marts or localized data warehouses are small sized data warehouses, typically created by individual departments or divisions to facilitate their own decision support activities. For example, a data mart can be created for specific products or functions, like customer management, marketing, finance etc.

One of the purposes to build a data mart is to get prototype as soon as possible without waiting for a larger corporate data warehouse, because it's small and easy to develop. But after having several data marts, organizations face operational difficulties in using them in an overall corporate data warehouse strategy, because individual data marts are not consistent with each other.

Metadata: To understand and locate data in the data warehouse users need information about the data warehousing system and its content. This information known as metadata, data about data, includes format, encoding/decoding algorithms, domain constraints, and definitions of the data. It also includes business definitions, data quality alerts, organizational changes, business rules and assumptions, as well as other items of business interest. Metadata help the business user to understand what is available, how to access it, what it means, which data to use, when to use them, etc. Metadata browsers provide an easy to understand view of the data warehouse.

(iii) Data Access and Analysis

The access component of the BI is referred to as the front end. It consists of access tools and techniques that provide a business user with direct, interactive, or batch access to data, while hiding the technical complexity of data retrieval. The interface provides an intuitive, business-like presentation of information, friendly enough for use by a no technical person. This is accomplished by use of BI tools, a suite of software tools that presents a graphical user interface (GUI) with rich reporting and business analysis features. A variety of tools are typically used in an integrated fashion to serve the needs of different groups of users viz:

- Query and reporting tools in packaged software;
- Sophisticated data analysis tools (OLAP/ROLAP);
- Data mining or Knowledge discovery tools;
- Machine Learning tools
- Visualization tools

OLAP: The best known knowledge discovery techniques are Online Analytical Processing (OLAP) and data mining (DM) techniques (Turban et al., 1999). OLAP provide users with the means to explore and analyse large amounts of data, involving complex computations, their relationships, and visually present results in different perspectives. OLAP tools are a combination of analytical processing procedures and graphical user interface. The key features of an OLAP application are: multidimensional views of data, calculation intensive capabilities and time intelligence (Forsman, 1997).

A multidimensional view of data that is usually used in OLAP applications provides quick and flexible access to data and information. Typical applications performed on multidimensional data views are: roll-up (data is summarized with increasing generalization), drill-down (increasing levels of detail are revealed), slice and dice (performing projection operations on the dimensions), and pivoting (cross tabulation is performed) (Jarke et al, 2000). Complex analyses are possible, such as time series (sequence of events) and model charting, forecasting, modelling, statistical, and "what-if" analysis. Analytical processing procedures represent methods of detecting different forms of information needed in the decision process.

Data Mining: It refers to using a variety of techniques to identify nuggets of information or decision-making knowledge in bodies of data, and extracting these in such a way that they can be put to use in the areas such as decision support, prediction, forecasting and estimation. The data is often voluminous, but as it stands of low value as no direct use can be made of it; it is the hidden information in the data that is useful. Data mining, as it is also known, is the nontrivial extraction of implicit, previously unknown, and potentially useful information from data. This encompasses a number of different technical approaches, such as clustering, data summarization, learning classification rules, finding dependency networks, analysing changes, and detecting anomalies. (William et. at ,1994). Data mining is the search for relationships and global patterns that exist in large databases but are hidden among the vast amount of data, such as a relationship between patient data and their medical diagnosis (Holsheimer & Siebes,1994)).

Data mining is concerned basically with the analysis of data and the use of software techniques for finding patterns and regularities in sets of data. It is responsible for finding the patterns by identifying the underlying rules and features in the data. The idea is that it is possible to strike gold in unexpected places as the data mining software extracts patterns not previously discernable or so obvious that no one has noticed them before. Historically the finding of useful patterns in data has been referred to as knowledge extraction, information discovery, information harvesting, data archaeology, and data pattern processing in addition to data mining. As the evolution of data mining has matured, it is widely accepted to be a single phase in a larger life cycle known as Knowledge Discovery in Databases (KDD). The term KDD refers to the broad process of finding knowledge in data stores. The field of KDD is particularly focused on the activities leading up to the actual data analysis and including the evaluation and deployment of results (Collier et. al 1998).

BI solutions are expected to play a significant part in swift response to market demands and in the formulation of the strategy of many of business organizations, with those organizations that will not adapt to take market challenges seriously shall face threat of survival. With easy access to large amounts of complex data from disperse sources, business organizations are able to manage costs and performance, and acquire and increase the profitability.

Machine Learning (ML): ML is part of an emerging Artificial Intelligence (AI) technology that over the past few years has been employed by an increasing number of disciplines to automate complex decision making and problem solving tasks. ML is a family of methods that attempt to allow machines to acquire knowledge for problem solving by showing them historical cases. Among the various methods available, Artificial Neural Network (ANN) is the most popular which has been inspired by the biological neural networks of the human brain and started as an attempt to model the learning capabilities of humans. Other techniques include inductive learning, case-based reasoning, genetic algorithms, NLP etc.

Conclusion: In today's highly competitive world, the quality and timeliness of business information for an organization is not just a choice between profit and loss; it may be a question of survival or bankruptcy. No business organization can deny the benefit of BI. Recent industry analyst reports show that in the coming years millions of people will use BI visual tools and analytics everyday

(Buam, 2006). Today's organizations are deriving more value from BI by extending actionable information to many types of employees, maximizing the use of existing data assets. BI is spreading its wings to cover small, medium and large companies, more and more analytical tools are penetrating the market to do any kind of analysis and help to make informed decision making. The rapidly changing business environment will increase the need for BI. In this paper an attempt has been made to educate the practitioners and academics about the formidable development and application of BI.

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BEYOND PORTFOLIO THEORY, EVIDENCE FROM TEHRAN STOCK EXCHANGE

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Abstract

Many theories of portfolio management have been yet presented. In this research, we survey the efficiency and effectiveness of two well-known theories, the modern theory of portfolio and the postmodern theory of portfolio, by making use of popular indexes of Sharpe and sterling. We evaluate the performance of investment companies, with active portfolio management, accepted in Tehran stock Exchange during 2006 to 2010. Sharpe and sterling indexes are employed as the means of evaluation to evaluate the performance of investment companies in comparison to each other and to the market. To do research, we have used Kruskal Wallis tests, regression analysis and LSD post-test. The previous researches and evidence emerge other factors, affecting on the performance of corporations but not evaluate by these two criteria. In another word, maybe it is time to revise modern and postmodern theories of portfolios.

Key words: Modern Portfolio Theory, Post Modern Portfolio Theory, Sharpe Ratio, Sterling Ratio.

After any disaster, one of the most intelligent and logical things one may ask is, "How could the disaster have been prevented?" For many investors who suffered the financial disaster of substantial stock market losses, the answer lies in Modern Portfolio Theory. Modern Portfolio Theory (MPT) is also called "portfolio theory" or "portfolio management theory." MPT is a sophisticated investment approach first developed by Professor Harry Markowitz of the University of Chicago, in 1952. Thirty-eight years later, in 1990, he shared a Nobel Prize with Merton Miller and William Sharpee for what has become the frame upon which institutions and savvy investors construct their investment portfolios.[4]

The perfect investment, as everyone knows, is positively skewed, leptokurtic, and has low semi-variance. But these moments about the mean of an investment's return probability distribution are at least partially incompatible since investment returns are non-Gaussian, and variance/semi-variance obviously loses its utility in non-mesokurtic (that is, non-Gaussian) skewed distributions. Which is exactly the point? Just in case you're not sure what that first paragraph means, here is a rough translation: people like to make money, not lose it. Making above-average amounts of money frequently is better than a tiny chance at winning the lottery. And when an investment performs poorly, it's best if it doesn't perform too poorly or

too often. The problem is that while we have an elegant mathematical model for describing the perfect investment—called modern portfolio theory (MPT)—that model is wrong. Not wrong in the sense that the overall theory is no good, just wrong in the specific sense that it produces inefficient portfolios. And we've known it for decades. The primary reason MPT produces inefficient portfolios (even though the whole point is supposedly the building of efficient portfolios) is simple: standard deviation is not risk. Risk is something else, and we need a better mathematical framework to describe it. The primary purpose of this paper is to describe that framework and suggest a use for it—the building of better portfolios through downside risk optimization (DRO). We define DRO as optimization of portfolio risk versus return using downside risk as the definition of risk instead of standard deviation. The secondary purpose of the paper is to give definition to the concept of post-modern portfolio theory (PMPT) and how we as financial planners can apply it on our clients' behalf.[18]

Question Expression

This study aim at surveying the efficiency of modern and post modern portfolio theory in Tehran stock Exchange. The models of performance evaluation at investment corporations that have been developed from mid-1960 up to now have been employed in many researches in these models. Risk and return have been always viewed as a basis of financial decision making. Maximum return with minimum risk is always introduced as an agreeable criterion for investment. In this study, risks have been considered from two perspectives as below:

1. Risks as any possible fluctuation in economic performance in the future.
2. Risks as the negative potential fluctuations in the future economic efficiency.

Modern theory of portfolio, that is formed based on the relation between risk and return, view the risk equal to the first vision and define it as a deviation from the mean return. In other words, swing up and down are viewed equal to each other and variance and standard deviation are considered as a numerical index to measure risk. However, the normality of return distribution is a default for using of variance and standard deviation. Modern theory of portfolio, introduce the Sharpe index as an appropriate index for evaluation of portfolio performance. Sharpe index measures excess return of portfolio per any unit. In front of modern theory of portfolio, the postmodern theory of portfolio is raised, unlike the previous theory; the new one does not emphasis on the normality of possible distribution of return.

By the new theory, the concept of risk varies and risk is defined as a deviation from the target. Thus, high volatility and low volatility (positive and negative) are different value. Accordingly, the numerical index of semi variance and semi standard deviation are considered appropriate criteria for measuring risk. Down side risk is defined as an index for measuring risk and negative possible fluctuation of economic return in the future and is calculated by two ways of semi variance less than the target rate and semi variance less than the average rate. If the distribution of asset return is normal, semi variance criteria catch a number that is exactly equal to half a variance. This is the reason it is called semi variance. Apart from the risk away principal, the investments have been always endeavoring to optimize the relationship between the rate of return and risk, resulting from investment activities. Henri Markowitz provided the method of mean-variance at a frame of portfolio theory. This theory would be the basis of the following theory. In conclusion, by making use of this model risk, for the first time, was converted to a quantity criterion. Of course, our goal in this study is more focused on the study of modern theory in the framework of adverse risk criteria. One of the fundamental principles employed in the portfolio theory, is William Boor theory of investment valuation. He declares that the real value of a share is taken from its present value of future earnings. William's theory can be interpreted such as stock valuation. The same as expected return, it is taken from discounted of stock future return and discount rate is also followed by the function of probability distribution. Therefore, probability distribution function of return rate plays an important role on determining expected risk and return. This subject has a decisive role on the process of selection and weighing of stocks at the portfolio theory. In the context of the security basket, the modern theory of portfolio was searching to find how investors optimize their rate of expected return at the different level of risk acceptance. In this theory, a collection of investment opportunities in different stocks and different level of risk acceptance can be optimized. As each case on the efficient frontier has the efficacy that realizes the most expected rate of return for acceptance of determined level of risk.

Recent Portfolio Management Background

The background portfolio performance evaluation subject is vast, it cannot exactly be explained completely; therefore it is attempted to cover the subject as per the demand. The academic history about the measurement of managed fund performance stretches back over 40 years.

1. Martin Lettau and Harald Uhlig (2002) [8] used a log-normal framework to examine the effect of preferences on the market price for risk, that is, the Sharpee ratio. In their framework, the Sharpee ratio can be calculated directly from the elasticity of the stochastic discount factor with respect to consumption innovations as well as the volatility of consumption innovations. This can be understood as an analytical shortcut to the calculation of the Hansen–Jagannathan volatility bounds, and therefore provides a convenient tool for theorists searching for models capable of explaining asset-pricing facts. To illustrate the usefulness of our approach, they examined several popular preference specifications, such as CRRA, various types of habit formation, and the recursive preferences of Epstein–Zin–Weil. Furthermore, they show how the models with idiosyncratic consumption shocks can be studied.

2. A major problem associated with risk management is that it is very hard to identify the main resource of risk

taken, especially in a large and complex portfolio. This is due to the fact that the risk of individual securities in the portfolio, measured by most of the widely used risk measures such as standard deviation and value-at-risk, don't sum up to the total risk of the portfolio. Although the risk measure of beta in the Capital Asset Pricing Model seems to survive this major deficiency, it suffers too much from other pitfalls to become a satisfactory solution. Risk attribution is a methodology to decompose the total risk of a portfolio into smaller terms. It can be applied to any positive homogeneous risk measures, even free of models. The problem is solved in a way that the smaller decomposed units of the total risk are interpreted as the risk contribution of the corresponding subsets of the portfolio. Zhang and Rachev (2004) [23] presented an overview of the methodology of risk attribution, different risk measures and their properties.

3. Russ Wermers in 2006 [20] in a survey used portfolio holdings to evaluate the performance of an asset manager. These approaches mitigate the benchmark-choice problem of Roll (1978), as well as providing a much more precise attribution of the sources of manager returns. Although originally developed with U.S. data, recent papers have applied these approaches to European, Asian and Australian equity managers. All surveyed approaches can be integrated into the Brinson, Hood, and Bee bower (1986) attribution method, if they allow the composition of the benchmark portfolio to evolve through time according to the observed portfolio holdings of an asset manager.

4. Reza Tehrani, Reza Raei and Arash Faizabad (2007) [19] examines the risk-adjusted returns using Sharpee's Index, Treynor's Index, and Jensen's Alpha to evaluate the performance of the investment companies active in Tehran Stock Exchange (TSE) during the years 2001 to 2005. The benchmark used for comparison is the Total Index of Tehran Stock Exchange. This paper lists the top ten investment companies according to each of the three traditional measures. The results show that there is no significant difference between the rankings of the three traditional ratios. Furthermore, there is a positive correlation between portfolio diversification and risk factor. The relation between risk and return is significantly positive as well. Meanwhile, the managers of the top five investment companies ranked by the Jensen's Alpha do not have superior performance relative to the market.

5. Zakamouline and Koekebakker (2008) [21] in a paper presents a theoretically sound portfolio performance measure that takes into account higher moments of distribution. This measure is motivated by a study of the

investor's preferences to higher moments of distribution within Expected Utility Theory and an approximation analysis of the optimal capital allocation problem. They show that this performance measure justifies the notion of the Generalized Sharpee Ratio (GSR) introduced by Hodges (1998). They present two methods of practical estimation of the GSR: nonparametric and parametric. For the implementation of the parametric method we derive a closed-form solution for the GSR where the higher moments are calibrated to the normal inverse Gaussian distribution. We illustrate how the GSR can mitigate the shortcomings of the Sharpee ratio in resolution of Sharpee ratio paradoxes and reveal the real performance of portfolios with manipulated Sharpee ratios. We also demonstrate the use of this measure in the performance evaluation of hedge funds.

6. Sara Machado Ferreira Pimentel(2009) [9] in her M.A thesis said, More than four decades have passed and the Sharpee Ratio (SR) continues to be one of the most popular portfolio risk adjusted performance measures. She comments on Lo's (2002) results for the time aggregation of SR considering a different approach to deal with the conditional heteroskedasticity of returns. Based on a theorem proposed by Diebold (1986, 1988) we verify, for the series of financial returns with no serial correlation, that the most common method for time aggregation, the product of the higher-frequency SR by the square root of the number of periods contained in the lower-frequency holding period, can still be used in the presence of heteroskedasticity, when higher-frequency returns have been generated by a GARCH process and aggregated returns converge to the normal distribution. In an empirical application based on 65 investment funds, the convergence to normality is illustrated, showing that in 70% of the cases the convergence is held at least when daily returns are aggregated into annual frequency. Moreover, she show that serial correlation tends to disappear when the number of periods in the aggregation process tends to infinity and the most common method of SR time aggregation should not be disregarded as a valid method. The results are in accordance with Lo (2002) who roughly states that when serial correlation is not significant, the time aggregation of SR should be performed with the most common method of time aggregation.

7. Maran Marimuthu (2010) [10] examined the effects of crisis and post-crisis periods on the performance of Bumiputera-controlled companies in Malaysia. A sample of 33 Bumiputera-controlled companies listed on Bursa Malaysia is considered over the period 1996 to 2005. ROE is used as a performance measure and Wilcoxon Signed

Ranks Test is used to justify our argument. Results indicate that Bumiputera-controlled companies suffered in both short run and long run due to the financial crisis.

8. Chung-Chain Lai in an article (2010) [6] said Building a multifactor excess return model to select portfolio stocks has become a widely used tool for portfolio management. The decision to include return factors in such a model varies widely from practitioner to practitioner. Factor weightings in most models are commonly determined by linear regression. The linear regression approach ranks stocks by expected future returns and then selects a portfolio from among the highest ranked stocks. The regression model related to portfolio construction produces a model that is a "best" historic fit to the returns of every stock. No measure of portfolio return or risk can be considered in determining the regression coefficients. In addition to portfolio risk, restrictions on factor weights, portfolio structure, transaction costs, or turnover cannot be easily incorporated in determining the regression model. This thesis considers the portfolio construction model as a global optimization problem, rather than a curve fitting problem. No assumptions about convexity of optimization function $F(\theta)$ are made and, therefore, it may have several local maxima. To control risk throughout a portfolio construction process, this work considers the model's objective function to maximize return divided by risk - the Sharpee ratio. The model is constructed using a ten-year "moving window" of stock market information and then tested on the next year. He then examines the performance of a simulated annealing search and arbitrage pricing theorem to solve this global optimization problem.

Conceptual Framework

Portfolio management is one of the most common theories in finance and in this survey we used of two perspective of portfolio including:

1. Modern Portfolio Theory (MPT): is also called "portfolio theory" or "portfolio management theory." MPT is a sophisticated investment approach first developed by Professor Harry Markowitz of the University of Chicago, in 1952. Thirty-eight years later, in 1990, he shared a Nobel Prize with Merton Miller and William Sharpee for what has become the frame upon which institutions and savvy investors construct their investment portfolios!

Modern Portfolio Theory allows investors to estimate both the expected risks and returns, as measured statistically, for their investment portfolios. In his article "Portfolio Selection" (in the Journal of Finance, in March 1952);

Markowitz described how to combine assets into efficiently diversified portfolios. He demonstrated that investors failed to account correctly for the high correlation among security returns. It was his position that a portfolio's risk could be reduced and the expected rate of return increased, when assets with dissimilar price movements were combined. Holding securities that tend to move in concert with each other does not lower your risk. Diversification, he concluded "reduces risk only when assets are combined whose prices move inversely, or at different times, in relation to each other."

Dr. Markowitz was among the first to quantify risk and demonstrate quantitatively why and how portfolio diversification can work to reduce risk, and increase returns for investors. That's why he probably received the Nobel Prize!

Diversification reduces volatility more efficiently than most people understand: The volatility of a diversified portfolio is less than the average of the volatilities of its component parts. While the technical underpinnings of MPT are complex, and drawn from financial economics, probability and statistical theory, its conclusion is simple and easy to understand: A diversified portfolio, of uncorrelated asset classes, can provide the highest returns with the least amount of volatility. [3]

2. Post Modern Portfolio Theory (PMPT): [5] is an extension of the traditional modern portfolio theory ("MPT", which is an application of mean-variance analysis or "MVA"). Both theories propose how rational investors should use diversification to optimize their portfolios, and how a risky asset should be priced. Recent advances in portfolio and financial theory, coupled with today's increased electronic computing power, have overcome these limitations. The resulting expanded risk/return paradigm is known as Post-Modern Portfolio Theory, or PMPT. Thus, MPT becomes nothing more than a special (symmetrical) case of PMPT. In 1987[7] The Pension Research Institute at San Francisco State University developed the practical mathematical algorithms of PMPT that are in use today. These methods provide a framework that recognizes investors' preferences for upside over downside volatility. At the same time, a more robust model for the pattern of investment returns, the three-parameter lognormal distribution, was introduced. Downside risk (DR) is measured by target semi-deviation (the square root of target semi variance) and is termed downside deviation. It is expressed in percentages and therefore allows for rankings in the same way as standard deviation. An intuitive way to view downside risk is the annualized

standard deviation of returns below the target. Another is the square root of the probability-weighted squared below-target returns. The squaring of the below-target returns has the effect of penalizing failures at an exponential rate. This is consistent with observations made on the behavior of individual decision-making under:

$$d = \sqrt{\int_{-\infty}^{t} (t-1)^2 f(r) dr}$$

Where

d = downside deviation (commonly known in the financial community as 'downside risk'). Note: By extension, d² = downside variance.

t = the annual target return, originally termed the minimum acceptable return, or MAR.

r = the random variable representing the return for the distribution of annual returns f(r),

f(r) = the three-parameter lognormal distribution

For the reasons provided below, this continuous formula is preferred over a simpler discrete version that determines the standard deviation of below-target periodic returns taken from the return series.

1. The continuous form permits all subsequent calculations to be made using annual returns which is the natural way for investors to specify their investment goals. The discrete form requires monthly returns for there to be sufficient data points to make a meaningful calculation, which in turn requires converting the annual target into a monthly target. This significantly affects the amount of risk that is identified. For example, a goal of earning 1% in every month of one year results in a greater risk than the seemingly equivalent goal of earning 12% in one year.

2. A second reason for strongly preferring the continuous form to the discrete form has been proposed by Sortino & Forsey (1996) [17]: "Before we make an investment, we don't know what the outcome will be...

After the investment is made, and we want to measure its performance, all we know is what the outcome was, not what it could have been. To cope with this uncertainty, we assume that a reasonable estimate of the range of possible returns, as well as the probabilities associated with estimation of those returns.

In statistical terms, the shape of [this] uncertainty is called a probability distribution. In other words, looking at just the discrete monthly or annual values does not tell the whole story."

Using the observed points to create a distribution is a staple of conventional performance measurement. For example, monthly returns are used to calculate a fund's mean and standard deviation. Using these values and the properties of the normal distribution, we can make statements such as the likelihood of losing money (even though no negative returns may actually have been observed), or the range within which two-thirds of all returns lies (even though the specific returns identifying this range have not necessarily occurred). Our ability to make these statements comes from the process of assuming the continuous form of the normal distribution and certain of its well-known properties.

In PMPT an analogous process is followed:
1. Observe the monthly returns,
2. Fit a distribution that permits asymmetry to the observations,
3. Annualize the monthly returns, making sure the shape characteristics of the distribution are retained,
4. Apply integral calculus to the resultant distribution to calculate the appropriate statistics.

Research Hypotheses

In order to do any research we should have some hypotheses and in this paper we considered three hypotheses such as:

Hypothesis 1: There is a significant relation between result of performance evaluation in investment companies by Sharpe and sterling ratios.

Hypothesis 2: There is a significant difference between calculated Return of investment companies by two ratios and return of Market.

Hypothesis 3: There is a significant difference between the rankings by two ratios.

Sub hypothesis 1: there is a significant correlation between the rank obtained by the investment companies based on the first criterion and second criterion.

Methodology

Research method is according to survey method and a correlation type which its main goal is to define the relationship among some quantitative variables. We also gather relevant information regarding stocks, such as split, stock and suspended stock. Only actively traded stocks are selected in the observation, so that we can minimize thin trading effect or non-synchronous trading effect, which may result in autocorrelation on stock returns. For testing the hypothesis, we use relevant statistic test including

regression analyses, t-test, Kruskal-Wallis. Methods to gather data to determine appropriate data and how to collect data and population data and considered as the first step to doing research and hypothesis testing are discussed. The data of different research methods have been collected. Reports published by Tehran Stock Exchange and the financial statements published by companies with stock applications and official sites for gathering information and feeling are used. The main source of research is by specialized software and Denasahm Software (professional software about all information of Tehran Stocks Exchange). General survey method used is descriptive and applied. For this study, two series of data are needed. The first part about companies, investment return period is monthly and yearly gathering of information and data required by this research database is the Tehran Stock Exchange. The second part, about the monthly market index and annually through the stock exchange will be extracted. Admission to the Stock Exchange as the spatial range is considered because the information about composition and volume of portfolio investment and financial statement items for this group of companies due to the general obligation to publish them and financial reports, is available within 2005 when this study beginning is the end of 2010 and to be more precise during the five years.

Research Variables

Independent variables related to Companies: Alpha criteria in this study, variability reduction and efficiency compound annual returns are considered as independent variables. Each of the 90 observed variables for which the company years.

Dependent variables related to Companies: In this study, criteria and Sortino and Sterling Sharpee are considered as independent variables. Each of the 90 observed variables for which the company years.

Independent and Dependent variables related to market:

This study compared the criteria Sortino, Sterling, Sharpe, Alpha, variability reduction and efficiency compound annual returns of the market and the variables studied companies is compared. Each of the five observed variables is annual.

Models

1. Most performance measures are computed using historic data but justified on the basis of predicted relationships. Practical implementations use ex post results while theoretical discussions focus on extant values. Implicitly or explicitly, it is assumed that historic results have at least some predictive ability. For some applications, it suffices for future values of a measure to be related monotonically to past values -- that is, if fund X had a higher historic measure than fund Y, it is assumed that it will have a higher future measure. For other applications the relationship must be proportional - that is, it is assumed that the future measure will equal some constant (typically less than 1.0) times the historic measure. To avoid ambiguity, we define here both ex ante and ex post versions of the Sharpee Ratio, beginning with the former. With the exception of this section, however, we focus on the use of the ratio for making decisions, and hence are concerned with the ex-ante version. The important issues associated with the relationships (if any) between historic Sharpee Ratios and unbiased forecasts of the ratio are left for other expositions. Throughout, we build on Markowitz' mean-variance paradigm, which assumes that the mean and standard deviation of the distribution of one-period return are sufficient statistics for evaluating the prospects of an investment portfolio. Clearly, comparisons based on the first two moments of a distribution do not take into account possible differences among portfolios in other moments or in distributions of outcomes across states of nature that may be associated with different levels of investor utility. When such considerations are especially important, return mean and variance may not suffice, requiring the use of additional or substitute measures. Such situations are, however, beyond the scope of this article. Our goal is simply to examine the situations in which two measures (mean and variance) can usefully be summarized with one (the Sharpee Ratio).

1.1. The Ex Ante Sharpee Ratio: Let Rf represent the return on fund F in the forthcoming period and RB the return on a benchmark portfolio or security. In the equations, the tildes over the variables indicate that the exact values may not be known in advance. Define d, the differential return, as:

$$\tilde{d} \equiv \tilde{R}_F - \tilde{R}_B \tag{1}$$

Let d-bar be the expected value of d and sigmad be the predicted standard deviation of d. The ex-ante Sharpee Ratio (S) is:

$$S \equiv \frac{\overline{d}}{\sigma_d} \qquad (2)$$

In this version, the ratio indicates the expected differential return per unit of risk associated with the differential return.

1.2. The Ex Post Sharpee Ratio: Let RFt be the return on the fund in period t, RBt the return on the benchmark portfolio or security in period t, and Dt the differential return in period t:

$$D_t \equiv R_{Ft} - R_{Bt} \qquad (3)$$

Let D-bar be the average value of Dt over the historic period from t=1 through T:

$$\overline{D} \equiv \frac{1}{T}\sum_{t=1}^{T} D_t \qquad (4)$$

And sigma D be the standard deviation over the period 1:

$$\sigma_D = \sqrt{\frac{\sum_{t=1}^{T}(D_t - \overline{D})^2}{T-1}} \qquad (5)$$

The ex-post, or historic Sharpee Ratio (Sh) is:

$$S_h \equiv \frac{\overline{D}}{\sigma_D} \qquad (6)$$

In this version, the ratio indicates the historic average differential return per unit of historic variability of the differential return.[16] The main idea in most of the classical measures of investment performance is quite simple. The measures essentially compare the return of a managed portfolio over some evaluation period to the return of a benchmark portfolio. The benchmark portfolio should represent a feasible investment alternative to the managed portfolio being evaluated. If the objective is to evaluate the investment ability of the portfolio manager or Management Company, as has typically been the case, the benchmark should represent an investment alternative that is equivalent, in all return-relevant aspects, to the managed

portfolio being evaluated, except that it should not reflect the investment ability of the manager. Let us call such a portfolio an "Otherwise Equivalent" (OE) benchmark portfolio. An OE benchmark portfolio requires that all of the portfolio characteristics that imply differences in expected returns are the same for the fund being evaluated and for the benchmark. The problem in practice is to operationalize this idea. Most of the available measures of portfolio performance may be understood in terms of their definitions of the OE benchmark.[1]Any discussion on risk-adjusted performance measures must start with the grandfather of all risk measures the Sharpee Ratio [12] or Reward to Variability which divides the excess return of a portfolio above the risk free rate by its standard deviation or variability:

$$\textbf{\textit{Sharppe Ratio}} = \frac{r_p - r_f}{\sigma_p}$$

Where:

r_p = portfolio return normally annualized
r_f = risk free rate (annualized if portfolio return is annualized)
σ_p = portfolio risk (variability, standard deviation of return) again annualized if portfolio return is annualized

Ideally if investors are risk averse they should be looking for high return and low variability of return, in other words in the top left-hand quadrant of the graph. The Sharpee ratio simply measures the gradient of the line from the risk free rate (the natural starting point for any investor) to the combined return and risk of each portfolio, the steeper the gradient, the higher the Sharpee ratio the better the combined performance of risk and return.

2. The Sterling ratio replaces the maximum drawdown in the Calmar ratio with the average drawdown. There are multiple variations of the Sterling ratio in common usage, perhaps reflecting its use across a range of differing asset categories and outside the field of finance. The original definition attributed to Deane Sterling Jones appears to be:

$$\textbf{\textit{Original Sterling Ratio}} = \frac{r_p}{\overline{D}_{Lar} + 10\%}$$

The denominator is defined as the average largest drawdown plus 10%. The addition of 10% is arbitrary

compensating for the fact that the average largest drawdown is inevitably smaller than the maximum drawdown. Typically only a fixed number of the largest drawdowns are averaged. With apologies to Deane Sterling Jones I suggest the definition is standardized to exclude the 10% but in Sharpee form as follows:

$$Sterling\ Ratio = \frac{r_p - r_f}{\left| \sum_{j=1}^{j=d} \frac{D_j}{d} \right|}$$

The number of observations d fixed to the investor's preference.

Perhaps the most common variation of the Sterling ratio uses the average annual maximum drawdown in the denominator over three years. A combination of both Sterling and Calmar concepts, to avoid confusion and to encourage consistent use across the industry I suggest the following standardized definition:

$$Sterling - Calmar\ Ratio = \frac{r_p - r_f}{\overline{D}_{max}}$$

Given the variety of Sterling ratio definitions great care should be taken to ensure the same definition is used over the same time period using the same frequency of data when ranking portfolio performance. These measures can be categorized as based on normal measures of risk, regression, higher or lower partial moments, drawdown or value at risk (VaR) as Table 4. [2]

Hypothesis Testing

The first hypothesis: There is a meaningful relation between result of performance evaluation in investment companies by Sharpe and sterling ratios.

Hypothesis 1a: The evaluated Performance of investment companies by using two ratios is equal to each other.

$$Mean_{sha} = Mean_{ste}$$

Hypothesis 1b: The evaluated Performance of investment companies by using two ratios is not equal to each other.

$$Mean_{sha} \neq Mean_{ste}$$

Based on data collected from the sample group and one-way ANOVA test, Calculated F statistics is larger than the critical table of statistics and in other words, the calculated error is smaller than 0.05. Consequently zero hypotheses are rejected at 95 percent confidence and the research hypothesis is accepted as a safe assumption. Because one way ANOVA repeated measures is a general test and it doesn't show result of detailed test, so to compare the differences between the means of two complementary L.E.D tests is used. The results show that calculated significant levels comparing the Sterling ,Sharpee and Sortino ratios are smaller than 0.05 and they have different negative values.

Thus mean of companies in the Sharpe ratio is significantly smaller than mean for Sterling and Sortino ratios. But calculated significant levels for comparison Sterling and Sortino ratio are greater than 0.05 and they have different negative values. Therefore although mean of companies by using Sortino ratio is smaller than Sterling ratio but it is not meaning full from statistic perspective. To conclude we can say there is a meaning full different between result of performance evaluation by using Sterling, Sortino and Sharpe in investment companies. The tables 5 and 6 showed the result of tests.

The second hypothesis: There is a meaningful difference between calculated Return of investment companies by two ratios and return of Market.

Hypothesis 2a: the mean of calculated return of companies by two ratios is not higher than market.

Hypothesis 2b: the mean of calculated return of companies by two ratios is higher than market.

$$\begin{cases} H0 : Mean = .19 \\ H1 : Mean \neq .19 \end{cases}$$
$$t = -4.898, \quad df = 89, \quad p = .000$$

$$\begin{cases} H0 : Mean = .33 \\ H1 : Mean \neq .33 \end{cases}$$
$$t = .628, \quad df = 89, \quad p = .532$$

1. The result of comparison mean of market performance with Investment Companies by using Sharpe ratio: Based on data collected from the sample group with 89 degrees of freedom and t statistics equal -4.898, that

this amount is smaller than the critical value -1.96.In other words, according to the degree of freedom and the values observed, calculated significant levels of test is less than 0.01. Considering the negative t statistic, with confidence at 99 percent, zero hypotheses is rejected and the opposite hypothesis regarding the existence of significant differences between the average yield ratio companies and the market ratio as the correct hypothesis is accepted. Therefore we cannot accept that: "There is a meaningful difference between calculated Return of investment companies by Sharpe ratio and return of Market."

2. The result of comparison mean of market performance with Investment Companies by using Sterling ratio: Based on data collected from the sample group with 89 degrees of freedom and t statistics equal 0.628, that this amount is smaller than the critical value 1.96. In other words, according to the degree of freedom and the values observed, calculated significant levels of test are less than 0.05. Considering the positive t statistic, with confidence at 99 percent, zero hypotheses is rejected and the opposite hypothesis regarding the existence of significant differences between the average yield ratio companies and the market ratio as the correct hypothesis is accepted. Therefore we cannot accept that: "There is a meaningful difference between calculated Return of investment companies by Sterling ratios and return of Market."Test results are shown in Table 7.

The third hypothesis: There is a meaningful difference between the rankings by two ratios.

Hypothesis 3a: The mean of ranking companies by two ratios is equal to each other.

Hypothesis 3b: The mean of ranking companies by two ratios is not equal to each other.

1. The comparison of the average eighteen investment companies by using Sharpe ratio: Based on data collected from the sample groups and the nonparametric Kruskal-Wallis test, calculated Chi square statistics with value 15.537 is less than statistics table critical with value 27.587 and In other words, the calculated significance level is greater than 0.05. Thus applying the Sharpee ratio in performance evaluation of investment companies lead to similar ranking results in companies. Test results are displayed in Table 8.

2. The comparison of the average eighteen investment companies by using Sterling ratio: Based on data collected from the sample groups and the nonparametric Kruskal-Wallis test, calculated Chi square statistics with value 18.448 is less than statistics table critical

with value 27.587 and In other words, the calculated significance level is greater than 0.05. Thus, applying the Sterling ratio in performance evaluation of investment companies lead to similar ranking results in companies. Test results are displayed in Table 8.

To profound study, we has been compared the average rating performance ratios for each of the companies' separately by using Friedman rank test. Eighteen test results have shown that three factors mean rank in seventeen cases and no significant difference in only one significant difference between the average ratio ratings has been studied. Test results are displayed in Table 9.

Secondary Hypotheses: There is a meaningful correlation between the ranks of investment corporations obtained by the first criterion and the second criterion.

Due to nature of research and their scale of measurement, the following zero and opposition hypothesis are designed to test the first sub-hypothesis.

Zero hypotheses: There is no relationship between the rank obtained by Sharpe index and sterling.

Opposition hypothesis: there is a relationship between the rank obtained by Sharpe index and sterling.

This hypothesis has been tested by the spearman correlation coefficient. Considering the intensity of relationship (0/950) and bilateral calculated level of meaning for two variables is less than 0/05, the zero hypothesis is rejected at 95 percent confidence. Due to the positive estimated coefficient, the opposite hypothesis is accepted. Thus, we can accept that there is a significant correlation between the rank of Investment Corporation obtained by the first criterion and second criterion. The results have been displayed in the table 10.

Side-finding of Research:

Considering the effect of Alfa index on the Sharpe index, we employed the analysis of combined regression to consider the effect of Alfa index on the Sharpe index. The calculated t for the slope of the model is less than critical statistic (I/91).It means that the level of significance is greater than0/05. In conclusion, the zero hypotheses, indicative of does not the existence of significant relationship between two variables, have not been rejected. So, the research hypothesis has not been accepted at 95 percent of confidence. However, the existence of relation at 90 percent of confidence has been accepted. Durbin and Watson statistic with the amount of 1/726 shows that the model has not self-correlation. Diagnostic coefficient of the model expresses that about 0/324 of Sharpe index changes in the investment corporation is explainable with α index. The details of results related to regression analysis

of coefficient test between two variables have been shown in table 11.

We employed the analysis of combined regression to consider the impact of annually combined return on sterling index. Calculated t for the slope of the model is 2/324 and greater than crisis point. In another word, the level of significance is lower than 0/05. In conclusion, the zero hypotheses (It doesn't exist a significant relationship between two variables in 95 percent of confidence) are rejected and opposition hypothesis is accepted. So, the research hypothesis has been directly accepted in 95 percent of confidence. Durbin Watson static with the amount of 1/35 express that the model has some self-correlation. Diagnostic coefficient of the model says that about 0/141 of sterling index changes in the investment corporation is explainable with the index of annually combined return. Details of results have been shown in table 12.

Conclusion

In order to performance evaluation, at first, first, the researcher explains two kinds of portfolio theories, modern and postmodern theory of portfolio, with their all details and then introduces Sharpe as an index in the modern theory of portfolio and sterling in the postmodern theory of portfolio. These two criteria (Sharpe and sterling) achieve different results. Sharpe as one of the performance assess mint index make no difference between adverse and in adverse risk (modern theory of portfolio1952). Sterling as another index of performance evaluation put many attentions to the difference exist between adverse and in adverse risk. Practically, both of these two theories showed their own differences and specifications at the statistical sample. As the Sharpe criterion act weaker than sterling criterion, it can be concluded that the performance of investment corporations is explained better when we employ the criteria of postmodern theories of portfolio to evaluate the performance. It is necessary to appropriately compose the factors in the basis portfolio that would be assessed (Ras and Remerz, 2006).

The result of investment corporations ranking based on sterling criteria perform better than that of Sharpe criteria. This subject make hesitate to the deviation efficiency of historical return in comparison with criteria based on unusual distribution of return and considering the lowest fluctuation of return. Previous researches based on criteria of regression analyses and normal distribution achieved the same results in Tehran Stock Exchange for grading investment corporations (Tehrani, 2007). As we use Sharpe index, we observe the better performance of investment corporations compared with market but different results when employ Sterling index. To support the above sentence, it can be mentioned that there are probably other factors affecting on performance evaluation, which doesn't consider by Sharpe criteria. Lito and Holing (2002) Proposed accidental discount factor to explain Sharpe model. So, Zaka and Kepker (2008) suggest the parametric and nonparametric approach to employ Sharpe index variable methodologies of risk evaluation is emphasized by Jang and Richo (2004). Furthermore, short and long term effects of international crisis can be introduced as factor cause investment corporations have weaker performance in comparison with market (Marcho2010). To achieve efficiency, Mao (2009) suggests peculiar strategies to control the level of systematic risk. Finally, observantly to model and postmodern theories of portfolio, we can conclude that making use of a multi-factors model like Arbitrage would be ministrant (Chang Chan, 2010). Maybe it's time to revise some principal theory of portfolio and to introduce a dominant model.

Restrictions of Research

1. We didn't consider changes in macroeconomic conditions, political and social changes over the years of studied.
2. Due to limited statistical community to investment companies listed in Tehran Stock Exchange, distributions of results to other economic units should be done with caution.

Suggestions for Future Research

1. It be suggested that test Portfolio Management in Investment Companies by Reward to VaR, Conditional Sharpee, Modified Sharpee Ratios and the results be interpreted.
2. It also be suggested that test Portfolio Management in Investment Companies by other ratios such as Omega, Upside Potential, Omega-Sharpee & Prospect ratios and the results be interpreted.

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Tables

Table 1: Descriptive indices of independent variables in the research study

Variable	N	Mean	Std.Dev	Variance	Skewness	Kurtosis	Skewness.Dev	Kurtosis.Dev
Sample Standard Deviation	90	8.76	4.69	21.96	0.62	0.32	2.42	0.63
Mixed Annual Return	90	0.26	3.52	12.38	0.20	0.93	0.79	1.85

Table 2: Descriptive parameters dependent variables in the research study

Variable	N	Mean	Std.Dev	Variance	Skewness	Kurtosis	Skewness.Dev	Kurtosis.Dev
Sharpe Ratio	90	-0.01	0.39	0.15	-0.06	0.43	-0.23	0.86
Sterling Ratio	90	0.46	2.01	4.04	7.42	60.99	29.20	121.27

Table 3: Descriptive indicators and related variables related to market

Variable	N	Mean	Std.Dev	Variance	Skewness	Kurtosis	Skewness.Dev	Kurtosis.Dev
Sharpe Ratio	5	0.19	0.44	0.19	0.60	0.73	0.66	0.37
Sterling Ratio	5	0.33	0.62	0.38	2.06	4.38	2.26	2.19
Sample Standard Deviation	5	0.16	0.07	0.00	0.99	0.82	1.08	0.41
Mixed Annual Return	5	0.03	0.08	0.01	1.35	2.21	1.48	1.11

Table 4: Types of Ratios

Combined Return and Risk Ratio	Type
Sharpee & Information, Modified Information	Normal
Appraisal & Treynor	Regression
Sortino, Omega, Upside Potential, Omega-Sharpee & Prospect	Higher or lower partial moments
Calmar, Sterling, Burke, Sterling-Calmar, Pain & Martin	Drawdown
Reward to VaR, Conditional Sharpee, Modified Sharpee	Value at Risk

Table 5: Types of Ratios

Test	D f	Mean Square	F Stat	Std. Dev.
Sphericity Test	2	11.409	4.673	0.011

Table 6: Result of Mean pair group with using L.S.D Test

Ratio(I)	Ratio(J)	Mean Difference(I-J)	Standard Error	Std. Dev.
Sharpe	Sterling	-0.473	0.196	0.018
Sterling	Sharpe	0.473	0.196	0.018

Table 7: Result of Mean Ratios of companies Compared with Market ratios

Tested Ratio	Mean Ratio	Market Mean	T Stat	D.F	Std. Dev.	Mean Deference	Result
Sharpe	-0.0105	0.19	-4.898	89	0.001	-0.20050	Significant difference
Sterling	0.4630	0.33	0.628	89	0.532	0.13295	Difference is not clearly

Table 8: The Result Comparing of Mean Ranking Ratios separately Companies

Company	Sharpee	Sterling	Principal market Stocks	OTC Stocks
Iran Behshahr Industries Group	53.30	50.40	21	0
National Investment Company of Iran	36.80	39.40	35	12
Buali Investment Co	35.40	34.40	284	43
Bahman Investment Co	59.80	63.00	50	0
Insurance Industry Investment Co	18.80	18.70	69	43
Sepah Investment Co	51.40	62.60	30	3
Industrial Development of Iran Investment Co	50.20	48.80	34	33
The Civil Pension Fund Investment Co	50.40	54.40	74	29
TookaFoolad Investment Co	50.40	48.80	22	1
Iran Constraction Investment Co	45.60	45.60	68	15
Mines & Metals Development Investment Co	57.60	53.40	34	1
Alborz Investment Co	60.80	59.20	68	11
Tose-e Melli Group Investment Co	35.40	33.20	28	4
Petrochemical Industries Investment Co	32.60	29.10	17	38
Toosgostar Investment Co	53.60	51.40	22	5
Rena Investment Co	49.50	50.20	15	5
Isfahan Samangostar Investment Co	34.40	31.80	32	1
Housing Investment Co	43.00	44.60	21	0

Table 9: The Result Comparing of Mean Ranking Ratios separately Companies

Company	Descriptive indicators		Result of Friedman rank test			
	Sharpe	Sterling	N	K Squire	D F	Std. Dev.
Iran Behshahr Industries Group	1.60	2.00	5	1.600	2	0.449
National Investment Company of Iran	1.60	2.40	5	1.600	2	0.449
Buali Investment Co	1.20	2.60	5	5.200	2	0.074
Bahman Investment Co	1.40	2.40	5	2.800	2	0.247
Insurance Industry Investment Co	1.60	3.00	5	7.600	2	0.022
Sepah Investment Co	1.40	2.60	5	3.600	2	0.165
Industrial Development of Iran Investment Co	1.60	2.40	5	1.600	2	0.449
The Civil Pension Fund Investment Co	1.40	2.00	5	3.600	2	0.165
TookaFoolad Investment Co	1.60	2.80	5	4.800	2	0.091
Iran Constraction Investment Co	1.60	2.60	5	2.800	2	0.247
Mines & Metals Development Investment Co	1.60	2.20	5	1.200	2	0.549
Alborz Investment Co	1.40	1.80	5	5.200	2	0.074
Tose-e Melli Group Investment Co	2.00	2.60	5	3.600	2	0.165
Petrochemical Industries Investment Co	2.00	2.60	5	3.600	2	0.165
Toosgostar Investment Co	2.00	1.40	5	3.600	2	0.165
Rena Investment Co	2.00	1.80	5	0.400	2	0.819
Isfahan Samangostar Investment Co	1.80	2.60	5	2.800	2	0.247
Housing Investment Co	1.80	2.40	5	1.200	2	0.549

Table 10: Test results related to the relationship between Sharpe and sterling index.

Variable	Sterling	
	Spearman coefficient test indicators	
Sharpe	*rs*	*p*
	0.950	0.000

Table 11: The results of combined regression analysis between α and Sharpe index.

Combined regression			
Dependent variable: Sharpe index			
Variable	Coefficient	Standard error	T statistic	Significance Level
Alfa	0.014768	0.0591	1.913757	0.007717
Constant coefficient	-0.139902	0.0690	-1.842257	0.075940
Detection coefficient	0.324305	Mean dependent variable		-0.010556
Improved detection coefficient	0.284085	SD dependent variable		0.388218
Standard deviation of regression	0.328478	Total square deviations unexplained		9.063411
F state	8.063302	D-W statistic		1.726275
Significance Level	0.000003			

Table 12: Results of combined regression analysis between the index of annual combined return and sterling ratio.

Combined regression			
Dependent variable: Sortino index			
Variable	Coefficient	Standard error	T statistic	Significance Level
Alfa	0.167963	0.072272	2.324046	0.0225
Constant coefficient	0.419032	0.202834	2.065885	0.0419
Detection coefficient	0.324305	Mean dependent variable		0.462889
Improved detection coefficient	0.090781	SD dependent variable		2.009279
Standard deviation of regression	1.915907	Total square deviations unexplained		308.3388
F state	2.777236	D-W statistic		1.346861
Significance Level	0.022677			

Table 13: Hypothesis, Contexts of Hypothesis, Hypothesis Test & Results

Hypothesis Number	Contexts of Hypothesis	Hypothesis Test		Results
		Hypothesis 0	**Hypothesis 1**	
Hypothesis 1	Comparing Performance Ratios	There is No Difference	There is Difference	Research Hypothesis is Proved
Hypothesis 2	Comparing Performance Ratio With Market	There is No Difference	There is Difference	Research Hypothesis is Proved
Hypothesis 3	Comparing Performance Rating of Companies	There is No Difference	There is Difference	Research Hypothesis is Proved

THE EFFECT OF OFF-BALANCE SHEET FINANCING ON PROFITABILITY AND LEVERAGE RATIOS

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Abstract

In this paper, the effect of off-balance sheet financing on profitability and leverage ratios have been studied. In fact, this study tries to answer to this question that "what effects can off-balance sheet financing (operating lease) has on profitability and leverage ratios in TSE?" off-balance sheet financing means investing or increasing firm's capital (increase operating activities) according to law and generally accepted accounting principles (GAAP) that all or part of that financing is not reported on balance sheet; profitability and leverage ratios evaluate firm's efficiency and ability to use of resources by sales revenue and investment. In this study deductive-inductive method is used, so hypotheses are stated in deductive method and conclusions are made using inductive method. So that, Firm's profitability and leverage ratios before and after off-balance sheet financing, and firms with and without off-balance sheet financing are compared. Results indicate that, from 2003-2010; off-balance sheet financing hadn't increased profitability and leverage ratios. **Key words:** Off-Balance sheet Financing, Profitability and Leverage Ratios.

One of the most important financial decisions in every company is the decision-making about financing that plays a great role in conducting profit-making projects and firm's growth. Firm's ability in determination of whether use internal or external financial resources for providing capital in order to invest, providing a suitable financial program and financial structure are major factors of firms growth. When the firms have financial needs can provide this money from borrowing or selling a proportion of ownership. Every firm in the decision-making for applying new financial resources should determine cost of different financial resources and also effects of these resources on return and operating risk. Inappropriate economical decisions and not using of financial instruments to finance the financial needs drive in various problems for financial structure in firms listed in stock exchange which finally leads firms to a reduction in the profitability power. However, in order to keep public participant in investment, it is necessary that financing methods of firms to be investigated to determine whether firms are successful in a reasonable return from investment and related costs or not? off-balance sheet financing is one of the financing methods which achieving to it, in some extent, is difficult and nowadays is one of the most common ways of financing. This way of financing, evolves firm's capital structure and consequently changes risk curve. This means that liquidity and interest rate risk are affected (Leigh & Olveren, 2000).

Leases are one of the most common ways that is used for off-balance sheet financing. And for this reasons, various standards have been set about leasing. Accounting Principles Board (APB) has set five standards, Committee of Accounting Procedures (CAP) one standard, Financial Accounting Standard Board (FASB) ten standards in this regard. Special attention concerning leases accounting is from its increasingly application the world of economy and need for explaining related complex transactions. Since there is not given standard in this regard in Iran, it is expected that policy-makers of standards setting make a decision about domestic standard setting (Dastgir & Soleimanian, 2002). Also, since the final purpose of all investors is to make profit and wealth, knowing how and amount of firm's profitability regarding to their capital

structure can be used as a one of measures to evaluate firms for the investment. Taking mentioned issues into account, present paper is looking for finding a significant relationship between off-balance sheet financing through operating leases and profitability and leverage so by collecting real data and finding a significant relationships among these factors, financial managers, investors and creditors can use from these findings.

Litrature Review

Off-balance-sheet financing is financing from sources other than debt or equity offerings, such as joint ventures, R&D partnerships, and operating leases. Usually used by companies in order to keep their debt to equity ratio low. The most common form is operating leases. With operating leases, the institution who owns the asset and leases it out keeps the asset on their balance sheet. The company who leases the asset only records the expense for the use of the asset on their balance sheet.

Edman (2011) states that goals, premises, and outcomes of off balance sheet financing all have severe pros and cons, but they seem to be subjective to each managers own motives. Managers want to take on debt while reporting none or only some of it as liabilities on their balance sheets. The decision to keep debt on or off the balance sheet comes down to financial leverage. Operating and capital leases are directly related to whether a company wishes to obtain greater or lesser financial or operating leverage. With operating leases, debt does not appear, thus reducing financial leverage with an increase in operating leverage. With a capital lease, the debt is recorded, expenses are financial, and financial leverage is hindered (Torre and Hamilton, 2009). Often, management's goal with off balance sheet financing is to provide a better looking balance sheet with lower reported debt to equity ratio, which usually results in driving their stock price higher. Off balance sheet financing has created its own little business proverb very similar because the very same pros in off balance sheet financing are seen as complete disadvantages to someone within the same profession who holds just a little different perspective. Off balance sheet financing lovers want higher stock prices even if it means keeping shareholders in the dark. Their side's rebuttal claims they are within GAAP standards, but a more ethical approach shows that there are other available choices that don't mislead. Often times, management's wild goose chase to hide debt doesn't pan out because spend far more than they can gain by deception while at the same time destroying their credibility (Miller & Bahnson, 2010).

Leigh & Olveren (2000) by taking four factors of expense advantage, management authority, risk transferring, and transactions cost and information asymmetry into consideration, investigated the influence of off-balance sheet financing on the value creation in firms and found that off-balance sheet financing through making changes in mentioned factors causes the value creation. This is it because this way of financing doesn't bring problems that other ways of financing does, such as capital increasing, cost of capital, economy, risk transferring and so on. Lim and et al. (2003) studied the market evaluation of operating leases and document three central findings. First, operating leases are significantly less important than balance sheet debt for firm debt ratings. Second, operating leases have the same impact as balance sheet debt on the yields of new bond issues. Combined, these findings indicate that while moving debt off-balance sheet may be useful in maintaining higher debt ratings, it does not fool the market, because bond yields reflect off-balance sheet obligations, despite their limited disclosure, in the same manner as balance sheet debt. Mills and Newberry (2005) examined the extent to which firms use off-balance sheet financing and the factors associated with the use of off-balance sheet financing and asserted that it is common to structure off-balance sheet financing arrangements so that the firm receives the benefits of the interest deduction for tax purposes while avoiding reporting the obligation and the interest expense on its financial statements. In other words, firms with off balance sheet financing are likely to have tax interest expense that exceeds financial reporting interest expense.

Weili (2006) in a research titled "off-balance sheet activities, earnings persistence and stock prices; evidence from operating leases" observed that increasing in operating leases lead to a decrease in future revenues. Also, they found that investors are expecting a negative relationship between off-balance sheet operating leases activities and future revenues. Zhang (2007) empirically studied consequences of equity method investment as a one of off-balance sheet financing ways and founds that firms with high level of agency costs and information asymmetry have high risk-taking attitude and more likely adopt equity method investment as an off-balance Sheet financing. They suggested that this way of financing improves firms operating activity and value.

Hypotheses

For purpose of this study, our main question is "Is there a significant relationship among off-balance sheet financing through operating leases and profitability and leverage ratios in firms listed in TSE?"

According to this question, our hypotheses develop as followings:

H_1: There is a difference among the mean of profitability ratios before and after off-balance sheet financing.

H_{1-1}: There is a difference between mean of earnings before interest and tax (EBIT) to equity ratio before and after off-balance sheet financing.

H_{2-1}: There is a difference between mean of net income to equity ratio before and after off-balance sheet financing.

H_{3-1}: There is a difference between mean of net income to total assets before and after off-balance sheet financing.

H_2: There is a difference between mean profitability ratios in firms with and without off-balance sheet financing.

H_{1-2}: There is a difference between mean of EBIT to equity ratio in firms with and without off-balance sheet financing.

H_{2-2}: There is a difference between mean of net income to equity ratio in firms with and without off-balance sheet financing.

H_{3-2}: There is a difference between mean of net income to total assets ratio in firms with and without off-balance sheet financing.

H_3: There is a difference among mean of leverage ratios before and after

off-balance sheet financing.

H_{1-3}: There is a difference between mean of debts to total assets ratios before and after off-balance sheet financing.

H_{2-3}: There is a difference between mean of debts to equity ratios before and after off-balance sheet financing.

H_{3-3}: There is a difference between mean of interest coverage ratios before and after off-balance sheet financing.

H_4: There is a difference between mean of leverage ratios in firms with and without off-balance sheet financing.

H_{1-4}: There is a difference between mean of debts to total assets ratios in firms with and without off-balance sheet financing.

H_{2-4}: There is a difference between mean of debts to equity ratios in firms with and without off-balance sheet financing.

H_{3-4}: There is a difference between mean of interest coverage ratios in firms with and without off-balance sheet financing.

Methodology

In this study, research methodology is the causal-comparative method. In this method documental and archival study is applied to discovery variables, effective factors and hypotheses. Also, using stock exchange database and statistical techniques the relationships among off-balance sheet financing, profitability and leverage ratios in firms listed in TSE are investigated and extended to all sample. Based on goal, present research is an applied research which uses real data and statistical techniques to reject or accept hypotheses.

Research Variables

Research independent variable is off-balance sheet financing which is selected by using leases expense that disclosed in financial statements notes of firms listed in TSE. Our dependent variables are followings:
1. Return on Investment (ROI) (EBIT to total asset ratio)
2. Return on Equity (ROE) (net income to equity ratio)
3. Return on Assets (ROA) (net income to total assets)
4. Debt to total assets ratio
5. Debt to equity ratio
6. Interest coverage ratios (net income to interest expense).

To calculate these ratios, the financial information including EBIT, net income, equity and total assets was derived from the sample financial statement. Also, to test our hypotheses we used TSE database and Tadbirpardaz software.

Analysis

H_1: There is a difference between mean of profitability ratios before and after off-balance sheet financing.

Table1. Descriptive Statistics of Profitability Ratios before and after OBS

	Group	No.	Mean	Std. Deviation
Profitability Ratios	with out OBS	48	1.113	0.642
	with OBS	80	0.915	0.754

Table2. T-Statistic Test for Profitability Ratios

Levene's Test for Equality of Variances			T-Test for Equality of Means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Equal variances assumed	0.345	0558	1.519	126	0.131	0.198	0.130
Equal variances not assumed			1.582	111.56	0.116	0.198	0.125

To compare amount of profitability ratios in firms listed in TSE before and after off-balance sheet financing, T-statistic of independent groups is used. Taking the amount of T-statistic (0.131) into account, there isn't significant difference regarding to the amount of profitability ratios in firms listed in TSE before and after off-balance sheet financing. In other words, as we can see in above table, there isn't considerable different between mean of profitability ratios in firms having off-balance sheet financing (0.915) and profitability ratios means in firms not having off-balance sheet financing (1.1). In theory, it is expected that profitability ratios increases because of not reporting capital leases and related debt in balance sheet, a decrease in amount of operating assets and optimal usage of holding assets and also deductible expense from tax. However, rejecting this hypothesis doesn't show it is improper. Rejecting this hypothesis may stem from inappropriate usage of this financing instrument in firms listed in TSE and constraints such as inflation, not using off-balance sheet financing at all the time, methods of sampling and so on that governed on this research.

H_{1-1}: There is a difference between mean of earnings before interest and tax (EBIT) to equity ratio before and after off-balance sheet financing.

Table3. Descriptive Statistics of EBIT to Equity Ratios before and after OBS

	Group	No.	Mean	Std. Deviation
EBIT to Equity Ratio	with out OBS	48	0.22	0.1
	with OBS	80	0.21	0.1

Table4. T-Statistic Test for EBIT to Equity Ratios

Levene's Test for Equality of Variances			T-Test for Equality of Means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Equal variances assumed	1.685	0.197	0.393	126	0.695	0.011	0.029
Equal variances not assumed			0455	123.96	0.650	0.011	0.025

Result of Table. 3 show that mean of EBIT to equity in firms after OBS financing (0.21) with its mean before off-balance sheet financing (0.22) isn't very significant. Also, results of T-statistic test (0.695) show that our hypothesis is rejected. Therefore, we can conclude that mean of EBIT to equity in firms before and after OBS is equal.

H_{2-1}: There is a difference between mean of net income to equity ratio before and after off-balance sheet financing.

Table 5. Descriptive Statistics of Net Income to Equity Ratio before and after OBS

	Group	No.	Mean	Std. Deviation
Net income to equity ratio	with out OBS	48	0.7	0.48
	with OBS	80	0.55	0.66

Table 6. T-Statistic Test for Net Income to Equity Ratio

Levene's Test for Equality of Variances			T-Test for Equality of Means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Equal variances assumed	0.271	0.603	1.473	126	0.143	0.16	0.110
Equal variances not assumed			1.59	121.38	0.114	0.162	0.10

Taking results of T-statistic (0.143) into account, our hypothesis is rejected and indicates that there isn't significant relation between amounts of net income to equity ratio before and after off-balance sheet financing.

H_{1-3}: There is a difference between mean of net income to total assets before and after off-balance sheet financing.

Table 7. Descriptive Statistics of Net Income to Total Assets before and after OBS

	Group	No.	Mean	Std. Deviation
Net Income to Total Assets	with out OBS	48	0.17	0.09
	with OBS	80	0.14	0.12

Table 8. T-Statistic Test for Net Income to Total Assets

Levene's Test for Equality of Variances			T-Test for Equality of Means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Equal variances assumed	0.142	0.706	1.191	126	0.236	0.024	0.020
Equal variances not assumed			1.275	119.15	0.205	0.024	0.018

Considering results of t-statistic (0.236), there isn't significant difference regarding net income to total assets ratio before and after off-balance sheet financing. In other words, the amount of net income to total assets in firms having off-balance sheet financing (0.14) isn't very different from firms not having off-balance sheet financing (0.17).

H_2: There is a difference between mean of profitability ratios in firms with and without off-balance sheet financing.

Table 9. Descriptive Statistics of Profitability Ratios in Firms with and without OBS

	Group	No.	Mean	Std. Deviation
Profitability Ratios	with out OBS	144	0.74	1.19
	with OBS	168	0.85	0.81

Table 10. T-Statistic Test for Profitability Ratios

Levene's Test for Equality of Variances			T-Test for Equality of Means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Equal variances assumed	2.114	0.147	-0.985	310	0.326	-0.112	0.114
Equal variances not assumed			-0.975	245.42	0.339	-0.112	0.117

Statistical tests show that there isn't significant difference among profitability ratios in firms having off-balance sheet financing and firms not having   off-balance sheet and considering results of t-statistic (0.326) this hypothesis is rejected. Therefore, we conclude that mean of profitability ratios in firms having off-balance sheet financing and firms not having off-balance sheet is almost equal.

H_{2-1}: There is a difference between mean of EBIT to equity ratio in firms with and without off-balance sheet financing.

Table 11. Descriptive Statistics of EBIT to Equity Ratio in Firms with and without OBS

	Group	No.	Mean	Std. Deviation
EBIT to Equity Ratio	with out OBS	144	0.18	0.18
	with OBS	168	0.20	0.16

Table 12. T-Statistic Test for EBIT to Equity Ratio

Levene's Test for Equality of Variances			T-Test for Equality of Means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Equal variances assumed	2.174	0.141	-0.985	310	0.339	-0.055	0.088
Equal variances not assumed			-0.949	39.287	0.344	-0.018	0.019

The results of t-statistic (0.339) indicate that our hypothesis is rejected. Therefore, we can say the amounts of EBIT to equity ratio in firms having off-balance sheet financing and firms not having off-balance sheet is almost equal.

H_{2-2}: There is a difference between mean of net income to equity ratio in firms with and without off-balance sheet financing.

Table 13. Descriptive Statistics of Net Income to Equity Ratio in Firms with and without OBS

	Group	No.	Mean	Std. Deviation
Net income to Equity Ratio	with out OBS	144	0.43	0.96
	with OBS	168	0.48	0.55

Table 14. T-Statistic Test for Net Income to Equity Ratio

Levene's Test for Equality of Variances			T-Test for Equality of Means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Equal variances assumed	3.572	0.060	-0.633	310	0.527	-0.055	0.088
Equal variances not assumed			-0.609	220.63	0.543	-0.055	0.091

The findings of t-statistic (0.527) show that our hypothesis is not accepted and there isn't significant difference between mean of net income to equity ratio in firms with and without off-balance sheet financing.

H_{2-3}: There is a difference between mean of EBIT to total assets ratio in firms having off-balance sheet financing to firms not having off-balance sheet.

Table 15. Descriptive Statistics of EBIT to Total Assets Ratio in firms with and without OBS

	Group	No.	Mean	Std. Deviation
EBIT to Total Assets	with out OBS	144	0.12	0.16
	with OBS	168	0.16	0.15

Table 16. T-Statistic Test for EBIT to Total Assets Ratio

Levene's Test for Equality of Variances			T-Test for Equality of Means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Equal variances assumed	0.078	0.780	-2.130	310	0.034	-0.038	0.017
Equal variances not assumed			-2.124	299.04	0.034	-0.038	0.017

The results of T-statistic (0.034) show that this hypothesis is accepted and there is significant difference between mean of EBIT to total assets ratio in firms with and without off-balance sheet financing.

H₃: There is a difference between mean of leverage ratios before and after off-balance sheet financing.

Table 17. Descriptive Statistics of Leverage Ratios before and after OBS

	Group	No.	Mean	Std. Deviation
Leverage Ratios	with out OBS	48	24.08	24.73
	with OBS	80	17.53	22.88

Table 18. T-Statistic Test for Leverage Ratios

Levene's Test for Equality of Variances			T-Test for Equality of Means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Equal variances assumed	1.222	0.271	1.521	126	0.131	6.55	4.30
Equal variances not assumed			1.491	93.07	0.139	6.55	4.39

Considering results of t-statistic (0.131), there isn't significant difference regarding mean of leverage ratios before and after off-balance sheet financing. However, rejecting this hypothesis doesn't mean that it is improper. Rejecting this hypothesis may stem from inappropriate usage of this financing instrument and constraints such as

inflation, not using off-balance sheet financing at all the time, methods of sampling and so on that governed on this research.

H₃₋₁: There is a difference between mean of debts to total assets ratios before and after off-balance sheet financing.

Table 19. Descriptive Statistics of Debts to Total Assets Ratios before and after OBS

	Group	No.	Mean	Std. Deviation
Debts to Total Assets Ratios	with out OBS	48	0.702	0.15
	with OBS	80	0.67	0.15

Table 20. T-Statistic Test for Debts to Total Assets Ratios

Levene's Test for Equality of Variances			T-Test for Equality of Means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Equal variances assumed	0.01	0.921	0.860	126	0.39	0.024	0.027
Equal variances not assumed			0.866	101.27	0.38	0.024	0.027

Statistical analysis shows that mean of debt to total assets in firms after off-balance sheet financing (0.67) with its mean before off-balance sheet financing (0.7) isn't very significant. Results of T-statistic (0.39) show that our hypothesis is rejected. Therefore, we can conclude that mean of debt to total assets in firms before and after off-balance sheet financing is almost equal.

H_{3-2}: There is a difference between mean of debts to equity ratios before and after off-balance sheet financing.

Table 21. Descriptive Statistics of Debts to Equity Ratios before and after OBS

	Group	No.	Mean	Std. Deviation
Debts to Equity Ratios	with out OBS	48	0.69	0.78
	with OBS	80	0.63	0.99

Table 22. T-Statistic Test for Debts to Equity Ratios

Levene's Test for Equality of Variances			T-Test for Equality of Means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Equal variances assumed	0.186	0.667	0.370	126	0.71	0.062	1.68
Equal variances not assumed			0.392	116.71	0.69	0.062	1.59

The results of t-statistic (0.71) show that this hypothesis is rejected and there isn't significant difference between mean of debts to equity ratios before and after off-balance sheet financing.

H_{3-3}: There is a difference between mean of interest coverage ratios in TSE before and after off-balance sheet financing.

Table 23. Descriptive Statistics of Interest Coverage Ratios before and after OBS

	Group	No.	Mean	Std. Deviation
Interest Coverage Ratios	with out OBS	48	22.69	24.80
	with OBS	80	16.22	23.05

Table 24. T-Statistic Test for Interest Coverage Ratios

Levene's Test for Equality of Variances			T-Test for Equality of Means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Equal variances assumed	1.12	0.290	1.49	126	0.13	6.46	4.33
Equal variances not assumed			1.46	93.42	0.14	6.46	4.41

The findings of t-statistic (0.13) indicate that this hypothesis is rejected. Therefore, it can be concluded that mean of interest coverage ratios in TSE before and after off-balance sheet financing is almost equal.

H_4: There is a difference between mean of leverage ratios in firms with and without off-balance sheet financing.

Table 25. Descriptive Statistics of Leverage Ratios in Firms with and without OBS

	Group	No.	Mean	Std. Deviation
Leverage Ratios	with out OBS	142	137.45	1086.2
	with OBS	166	56.21	110.95

Table 26. T-Statistic Test for Leverage Ratios

Levene's Test for Equality of Variances			T-Test for Equality of Means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Equal variances assumed	4.172	0.042	0.958	306	0.339	81.2	84.8
Equal variances not assumed			0.887	143.5	0.376	81.2	91.5

Considering the results of t-statistic (0.33), there isn't significant difference regarding mean of leverage ratios in firms with and without off-balance sheet financing.

H_{4-1}: There is a difference between mean of debts to total assets ratio in firms with and without off-balance sheet financing.

Table 27. Descriptive Statistics of Debts to Total Assets Ratio in Firms with and without OBS

	Group	No.	Mean	Std. Deviation
Debts to Total Assets Ratio	with out OBS	144	0.72	0.19
	with OBS	168	0.61	0.17

Table 28. T-Statistic Test for Debts to Total Assets Ratio

Levene's Test for Equality of Variances			T-Test for Equality of Means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Equal variances assumed	0.053	0.818	5.51	310	0.000	0.11	0.02
Equal variances not assumed			5.47	292.06	0.000	0.11	0.02

Taking results of t-statistic (0.000) into consideration our hypothesis is accepted and there is significant difference between mean of debts to total assets ratio in firms with and without off-balance sheet financing.

H_{4-2}: There is a difference between mean of debts to equity ratios in firms with and without off-balance sheet financing.

Table 29. Descriptive Statistics of Debts to Equity Ratios in Firms with and without OBS

	Group	No.	Mean	Std. Deviation
Debts to Equity Ratio	with out OBS	144	0.57	1.52
	with OBS	168	0.26	0.72

Table 30. T-Statistic Test for Debts to Equity Ratios

Levene's Test for Equality of Variances			T-Test for Equality of Means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Equal variances assumed	13.30	0.000	2.36	310	0.01	0.312	0.132
Equal variances not assumed			2.250	197.89	0.02	0.312	0.138

According to t-statistic (0.01) our hypothesis is accepted and there is significant difference between mean of debts to equity ratios in firms with and without off-balance sheet financing. In the other words as we can see in the table 30, the amount of debts to equity ratios in firms with and without off-balance sheet financing aren't equal.

H_{4-3}: There is a difference among mean of interest coverage ratios in firms with and without off-balance sheet financing.

Table 31. Descriptive Statistics of Interest Coverage Ratios in Firms with and without OBS

	Group	No.	Mean	Std. Deviation
Interest Coverage Ratios	with out OBS	142	136.21	1086.3
	with OBS	166	55.32	110.96

Table 32. T-Statistic Test for Interest Coverage Ratios

Levene's Test for Equality of Variances			T-Test for Equality of Means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Equal variances assumed	13.30	0.000	2.36	310	0.01	0.312	0.132
Equal variances not assumed			2.250	197.89	0.02	0.312	0.138

The results of t-statistic (0.34) show that this hypothesis is rejected and there isn't significant difference among mean of interest coverage ratios before and after off-balance sheet financing.

Table 33. Summary of Hypotheses Tests

Research Hypotheses	Significant level	Results
Mean of profitability ratios in TSE before and after off-balance sheet financing	0.131	H_0 accepted
Mean of earnings before interest and tax (EBIT) to equity ratio before and after off-balance sheet financing	0.695	H_0 accepted
Mean of net income to equity ratio before and after off-balance sheet financing	0.413	H_0 accepted
Mean of net income to total assets before and after off-balance sheet financing	0.236	H_0 accepted
Mean of profitability ratios in firms with and without off-balance sheet financing	0.326	H_0 accepted

Research Hypotheses	Significant level	Results
Mean of (EBIT) to equity ratio in firms with and without off-balance sheet financing	0.339	H_0 accepted
Mean of net income to equity ratio in firms with and without off-balance sheet financing	0.527	H_0 accepted
Mean of (EBIT) to total assets ratio in firms with and without off-balance sheet financing	0.034	H_0 rejected
Mean of leverage ratios in TSE before and after off-balance sheet financing	0.131	H_0 accepted
Mean of debts to total assets ratios in TSE before and after off-balance sheet financing	0.39	H_0 accepted
Mean of debts to equity ratios in TSE before and after off-balance sheet financing	0.71	H_0 accepted
Mean of interest coverage ratios in TSE before and after off-balance sheet financing	0.13	H_0 accepted
Mean of leverage ratios in firms with and without off-balance sheet financing	0.339	H_0 accepted
Mean of debts to total assets ratios in firms with and without off-balance sheet financing	0.000	H_0 rejected
Mean of debts to equity ratios in firms with and without off-balance sheet financing	0.01	H_0 rejected
Mean of interest coverage ratios in firms with and without off-balance sheet financing	0.34	H_0 accepted

Suggestions

In theory, it is expected that because of not reporting capital leases and related debt in balance sheet, a decrease in amount of operating assets and optimal usage of holding assets and also deductible expense from tax, profitability ratios increases. However, rejecting this theory doesn't show it is improper. Rejecting this theory may stem from inappropriate usage of this financing instrument in firms listed in TSE and constraints such as inflation, not using off-balance sheet financing at all the time, methods of sampling and so on that governed on this research. Therefore it is suggested that reasons of not optimally using of these off-balance sheet financings in firms listed in TSE to be studied. Taking the results of the study into consideration which indicates off balance sheet financing doesn't increase profitability ratios, financial managers shouldn't use this way of financing to provide their necessary resources. Also, stockholders and investors can't estimate level of investment risk and forecast profitability in the firms using this method of financing. We recommend that existing and potential investors in TSE consider effective accounting variables on profitability and performance and also in buying or stock firms' stock notice to cash flow variations from financing activities as a base for profitability and performance measurement.

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PREDICTION OF CHURN BEHAVIOR OF BANK CUSTOMERS USING DATA MINING TOOLS

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Abstract

The customer churn is a common measure of lost customers. By minimizing customer churn a company can maximize its profits. Companies have recognized that existing customers are most valuable assets. Customer retention is critical for a good marketing and a customer relationship management strategy. The prevention of customer churn through customer retention is a core issue of Customer Relationship Management (CRM). The paper presents churn prediction based on data mining tools in banking. In this paper, a study on modeling purchasing behavior of bank customers in Indian scenario has been attempted. A detailed scheme is worked out to convert raw customer data into meaningful and useful data that suits modeling buying behavior and in turn to convert this meaningful data into knowledge for which predictive data mining techniques are adopted. In this analysis, we have experimented with 2 classification techniques namely CART, and C 5.0. The prediction success rate of Churn class by CART is quite high but C 5.0 had shown poor results in predicting churn customers. However, the prediction success rate of Active class by C 5.0 is more effective than the other technique. But for reaping significant benefits, the models have predicted the churn behavior. **Key words:** Customer Churn, Dataset, Modeling, Prediction and Active Class.

Data mining is evolving into a strategically important dimension for many business organizations including banking sector. It is a method of analyzing the data from different viewpoints and summarizing it into valuable information. Data mining assists the banks to look for hidden pattern in a group and discover unknown relationship in the data (Fathimathabasum). Data mining can contribute to solving business problems in banking and finance by finding patterns, causalities, and correlations in business information and market prices that are not immediately apparent to managers because the volume data is too large or is generated too quickly to screen by experts (Rajanish Dass). Data mining techniques help companies' particularly banking, telecommunication, insurance and retailing to build accurate customer profile based on customer behavior. Thus it is becoming a necessity in this competitive environment to analyze the data from data

warehouse containing hundreds of gigabytes or terabytes of data (Hanjiewei, Michelin Kamber).

Data mining tools predict patterns, future trends and behaviors, allowing businesses to effect proactive, knowledge-driven decisions. The automated, prospective analyses offered by data mining move beyond the analysis of past events provided by retrospective tools typical of decision support systems.

The importance of collecting and analyzing data reflects any business activity to achieve competitive advantage is widely recognized in today's age of information(Berry, M.J.A, 2000). Modeling and investigated system and discovering relations that connect variables in a database is the objective of data mining (Berson, A., et.al., 1999). Data mining uses different models for the creation of information about data which is known as discovery model. Data mining uses methodologies that can sift through the data in search

of frequently occurring patterns, can detect trends, produce generalizations about the data, etc. These tools can discover these types of information with very little (or no) guidance from the user (Weiss,S.M., 1997). The main tasks such as Prediction, Classification, Detection of relations, Explicit modeling, Clustering, and Deviation Detection. Moreover, since the data mining process is systematic, it offers firms the ability to discover hidden patterns in their data-patterns that can help them understand customer behavior and market trends.

An Illustrative Data Mining Application in Banking: Churn Modeling

For forecasting the future churn, a very vigorous model should be in hand and an active model can only be built if we have a vigorous dataset in hand. Hence, data preparation is a vital step in churn prediction and it takes almost 60-70 percent of total time. In this part we will make clear the kind of data required for active system, commonly customer data available in the real life, guideline to obtain useful attributes from the obtainable data. Constructing a model for churn prediction means that we are trying to model the customer's behavior churning out. For this to be successful, the customer transaction activities should be analyzed in a specific period of time. Hence, taking a data would never be enough for the requirement. On the other hand, considering the transaction activities in a fixed time period would also not satisfy the requirement. The reason can be explained by an example. Say, for example, a model is built using data of

1000 customers of which 700 are active and 300 are known to be churned out and their 3 months activities are analyzed (say, Feb 2006 to April 2006). Here the time period is fixed and the activities done in this time period of all the 1000 customers are only analyzed. Now, out of 300 churn customers, say 50 per cent of them have churned away in February. This means, the model will not be fully trained with the behavior of churn customers before churning as only one month's activity is analyzed. This problem occurred because of fixing the timeline before hand as shown in figure 1. In this paper, we consider a dynamic time period, which differs for each customer. This concept would be better explained by continuing the above example. If a customer has churned away in Feb. 2006, from that point of rime, the past 3 months activity is considered i.e., transaction activities done in Dec 2005, Jan 2006, and Feb 2006 are considered. And if another customer churns away in march, transaction activity of Jan 2006 and Feb, March 2006 should e considered. This can be seen in figure 2.

This way, we adapt an active time line for every customer and hence refrain from the difficulty of not training the model accurately. This abstract idea applies to the information that constituting an account of churn that has occurred. For diligent (active) records, we can take in to account (or examine) the behavior in any 3 months portion of time. In our detailed examination we consider the behavior of most recent 3 months before last transaction date of the active customers. The total count of months of data to be considered for churn analysis is a business problem. Usually, considering the transaction activities of 3 months would (be adequate) satisfy the requirement.

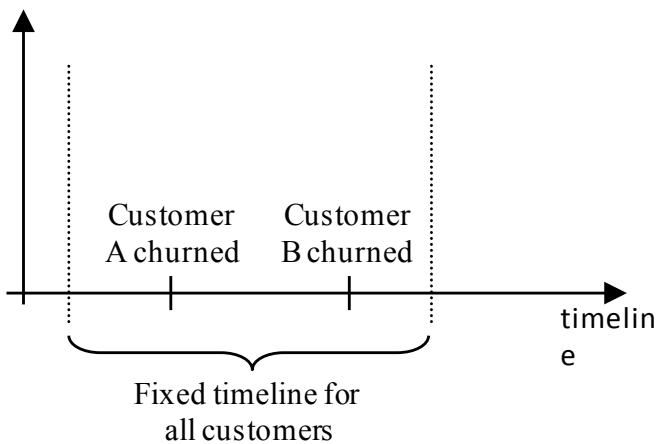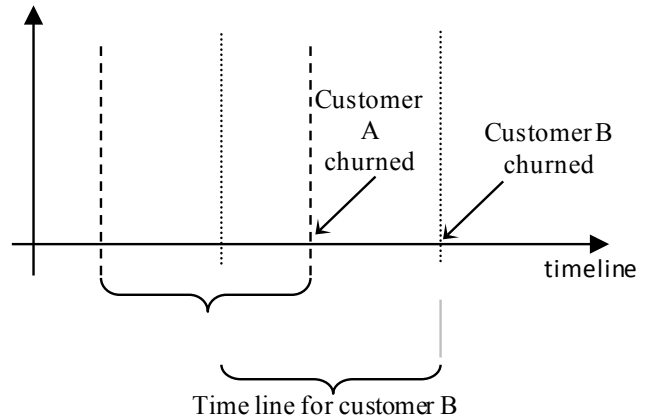Fig 1: defined timeline for all customers

Fig 2: Dynamic time period

Next, in this part, we make clear about the actual data we used and data filtering steps to prepare an efficient dataset. We acquired the customer data from a Nationalized Indian Bank. The particulars of the data acquired are shown in Table 1.

Table 1. Details Of Customer Data

Table Name	Attributes	No. of Records
Customer	Custno, Name1, Name2, Address, Status, DoB (Date of Birth), Edn	40,870
General Ledger	Custno, AcNo, Descr, DOP (Date of a/c opening)	1,08,019
Dormant	Acno, Descr, Dormant	17,992
Master	Acno, Balance, Dormant flag.	31,012
Txn	Acno, Trntype, Date, Amount	31,39,010
Ttype	Ttype#, Typecode, Descr	93

Source: Bank Records

The customer table has customer details like customer number, name, address, date of birth and status. Completely there are 40,870 customers. The general ledger table holds the account numbers, account types, date of opening and description of accounts. Here, we have 1, 08,019 accounts for the above defined informed as dormant since a while. The master table holds all the account numbers and their latest balances. The Txn table holds the last 5 years transactional details of all accounts. Finally Ttype table has description for different transaction types. Completely there are 93 transaction types outlined.

The final dataset prepared on the basis of the available data shown in table 1, which contains the attributes such as: customer number, Duration (Dur), number of Credit transactions in 3 months (CRTxnx), number of Debit transactions in 3 months (DRTxns), Average credit amount in 3 months (AvgCrAmt), Average debit amount in 3 months (AvgDrAmt), total number of other accounts (NumOtherAccs), percentage of accounts closed in 3 months (PercClosedRecently), status (status).

The Duration attribute consists of the number of months the customer has transacted with the bank. When we say 3 months is an attribute, we refer to the concept of dynamic timeline explained previously. The final dataset consists of 1,484 records. Out of which 1,163 are active customers and 311 are churn customers. Extracting this dataset from the raw data available is not an easy job. Further in this section, we share our experiences in working with the above data and subsequently extracting the data for required set of attributes.

There are many discrepancies in data. In these discrepancies, the most important and crucial one is status attribute in customer able, which is explained here. The status attribute describes whether a particular customer is active or inactive or churned out. So, status attribute develops the class variable in dataset. A customer may have more than one account with the bank. Then, the difficulty here was if one of accounts of customer's is unopened, then that condition is set as churned out. But, customer is still with the bank as his/her other accounts are still active. Therefore, it was realized that, it was very difficult to prepare training dataset basing on status attribute. However, the status of each & every account is very much required to develop the class variable of the dataset. The Descr attribute in general ledger table served to verdict the status of each account. The Descr attribute consists of the description of the account type and moreover that whether it is inactive or still active. Hence by using Descr attribute in the general ledger, the status attribute of the dataset is developed. Another problem with the data was some of the attributes has missing values. Fields like DOB, DOP were partially developed. By this reason, demographic attributes such as age, gender could not be considered in the final dataset.

The data consists of different types of accounts like savings account, current account, cash credit account, loan account etc. In our analysis, the behavior of savings account customers is analyzed. There are 22,155 savings accounts out of 1, 08,019 total accounts. In these 22, 155 accounts, 6, 633 accounts are found to be inactive from dormant table. But here we are not concentrating on modeling the behavior of dormant customers so these accounts are ignored from our target customer base. There are some accounts whose duration is not so much i.e., number of months transacted with the bank was very less. These accounts gave a notion that these accounts are opened for a particular purpose and closed as soon as that purpose completed. Considering these accounts behavior may provide a poor dataset and consequently despicable predicting model. So we are ignoring the records whose duration is less than 6 months. There are some set of accounts whose duration is more than 6 months but transaction activities not much went in these accounts (but have very less transaction activities). This gave a view that these customers have just opened the savings accounts and rarely done transactions through them. Such type of data also effect in poor modeling. Hence the records whose number of transactions is less than 50 are also ignored from target customer base. After operating all these filtering steps, target customer base reduced to 1, 484

accounts. Out of 1,484 accounts 1,163 are active records and 311 are churn (inactive) records.

By originating the right sort of data from the obtainable raw data, 1,484 customers transactional behavior is analyzed. As expressed before, In order to model the behavior of both active and churn customers, we have to practice (built) the model with their most recent behavior. The most recent behavior of accounts can be obtained from the Txn table which has the transactional details of all the accounts. Txn table holds Trntype field, says the kind of the transaction involved such as credit voucher, deposit, inward cheque clearing, etc., Trntype field can take the values of credit voucher, cash deposit, inward cheque clearing etc. There are 93 different transaction types and each can be recognized as either a credit transaction or a debit transaction. After separating the credit and debit transactions done by the customers, have to calculate the number of credit transactions (CRTxn) and number of debit transactions (DBTxn) for all the 1,484 customers. The average amount of money transacted by the customers in the defined timeline may also provide support in training the model in a better manner. For this reason, two more attributes, say, the average amount included in credit transactions (AvgCRTxn) and the average amount included in debit transactions (AvgDBTxn) were intended for 1,484 customers. As we said earlier, we have taken in to account only the transaction behavior of savings accounts of the customers. As these customers have other accounts with the bank, the number of other accounts and percentage of closed accounts in the defined time line may also helps to train the model better. So two more attributes, say, number of other accounts (NumOtherAcc), percentage of other closed accounts in defined timeline of 3 months (PercClosedRecently) were intended for all the 1,484 customers.

Constructing Data Mining Models and Trailing Outcomes

In the previous part, we have made clear about the data filtering and preparing steps in brief. After having dataset in hand, the immediate step is to prepare a predictive model by using this dataset. Usually, Data mining methods are used to prepare data models and these models consequently help for future predictions (M Purna Chandar, Arijit Laha). As predicting churn is exclusively a classification problem, supervised data mining techniques are used to take away this problem. Here we used two classification tree algorithms, say, CART, C5:0 for preparing the two classification trees.

Classification Tree Model Using CART

Classification tree is built adopting Classification and Regression Tree (CART) model on the training dataset with the following specifications: Optimal tree cannot be discovered since CART does not use stopping rule. Thus firstly the tree is over grown and then pruned back to ensure that significant patterns are not overlooked by stopping too soon. The advantage with CART is that it performs binary splitting to make the data more sparing and to detect more patterns before too few data are left for learning. The study used Gini concentration coefficient to abridge power curves of prediction. The explanatory variables are Customer Duration, CRTxn, DRTxn, AvgCrAmt, AvgDrAmt, PerClosedRecently and target variable is Status. CART gives rules for the target variable as a function of other fields in the dataset that are previously identified as explanatory variables. 80 per cent of the dataset i.e., 1,187 samples consisting 926 active customer records and 261 churned customer records, are considered in training dataset. The remaining 20 per cent of the dataset i.e., 296 samples consisting 241 active customer records and 57 churned customer records, are considered in testing dataset. The confusion matrix and prediction success rate of training dataset and testing dataset are shown in Table 2 and Table 3 respectively.

Table 2. Confusion Matrix And Prediction Success Rate For Training Data

True Class	Total # samples	Predicted Active	Predicted Churn	Success per cent
Active	926	797	129	85.79
Churn	261	13	248	95.01

TABLE 3. CONFUSION MATRIX AND PREDICTION SUCCESS RATE FOR TEST DATASET

True Class	Total # samples	Predicted Active	Predicted Churn	Success per cent
Active	241	208	33	86.30
Churn	57	5	52	91.22

The retention rate of active customers is comparatively less because, although some of the customers status is marked as active, they have exhibited churn characteristics. It is this segment of customers on which bank has to focus upon and apply churn prevention strategies. There are 17 leaf nodes in the tree model generated using CART and

hence 17 decision rules can be drawn from it. Table 4 depicts the 17 decision rules.

Table 4. Decision Rules Generated By Cart

Rule #	Rule	Predicted Class	# Cases
1	AvgCrAmt > 1655.5 and Duration <= 23.5 and AvgDrAmt <= 1300.5 Active	Churn	93
2	AvgDrAmt <= 608 and AvgCrAmt > 37.5 and AvgCrAmt <= 1655.5 and Duration > 18	Active	61
3	AvgCrAmt <= 1655.5 and AvgDrAmt > 608	Churn	102
4	AvgCrAmt > 1655.5 and Duration <= 23.5 and AvgDrAmt <= 1300.5	Active	20
5	AvgCrAmt > 1655.5 and Duration <= 23.5 and AvgDrAmt > 1300.5 and PercClosedRecently > 0.0416667	Churn	26
6	AvgCrAmt > 1655.5 and Duration > 23.5 and Duration <= 27.5	Active	615
7	Duration > 27.5 and Duration <= 68.5 and AvgDrAmt <= 3421.5 and AvgCrAmt > 1655.5 and AvgCrAmt <= 3674	Churn	16
8	Duration > 27.5 and Duration <= 68.5 and AvgDrAmt <= 3421.5 and AvgCrAmt > 3674	Active	18
9	AvgCrAmt > 1655.5 and Duration > 27.5 and Duration <= 68.5 and AvgDrAmt > 3421.5	Churn	38
10	AvgCrAmt > 1655.5 and Duration > 68.5	Active	43
11	AvgDrAmt > 1300.5 and PercClosedRecently<= 0.04 and AvgCrAmt > 1655.5 and AvgCrAmt <= 17894.5 and Duration <= 17.5	Churn	70
12	PercClosedRecently <= 0.04 and Duration > 17.5 and Duration <= 23.5 and AvgDrAmt > 1300.5 and AvgDrAmt <= 7449 and AvgCrAmt > 3527 and AvgCrAmt <= 17894.5	Active	32
13	PercClosedRecently <= 0.04 and Duration > 17.5 and Duration <= 23.5 and AvgDrAmt > 1300.5 and AvgDrAmt <= 7449 and AvgCrAmt > 1655.5 and AvgCrAmt <= 3527	Churn	10
14	AvgDrAmt <= 608 and AvgCrAmt > 37.5 and AvgCrAmt <= 1655.5 and Duration <= 18	Churn	4
15	PercClosedRecently <= 0.04 and AvgCrAmt > 1655.5 and AvgCrAmt <= 17894.5 and Duration > 17.5 and Duration <= 23.5 and AvgDrAmt > 7449	Churn	10
16	Duration <= 23.5 and PercClosedRecently <= 0.04 and AvgCrAmt > 17894.5 and AvgDrAmt > 1300.5 and AvgDrAmt <= 14238.5	Active	10
17	Duration <= 23.5 and PercClosedRecently <= 0.04 and AvgCrAmt > 17894.5 and AvgDrAmt > 14238.5	Churn	10

Among the 17 rules generated by CART, 12 rules have adequate number of cases and these rules can be adopted by the manager for predicting future churn customers.

Classification Tree Model Using C5.0

Another classification algorithm that produces decision trees with variable branches per node is C 5.0. Status is taken as target variable and Customer Duration, CRTxns, DRTxns, AvgCrAmt, AvgDrAmt, PercClosedRecently are used as explanatory variables. 80 per cent of the dataset i.e., 1,187 samples consisting 926 active customer records and 261 churned customer records, are taken in training dataset. The remaining 20 per cent of the dataset i.e., 296 samples consisting 241 active customer records and 57 churned customer records, are taken in testing dataset. The confusion matrix and prediction success rate of training dataset and testing dataset are shown in Table 5 and Table 6 respectively.

Table 5. Confusion Matrix And Prediction Success Rate For Training Data

True Class	Total # samples	Predicted Active	Predicted Churn	Success per cent
Active	926	881	45	95.14
Churn	261	60	181	69.3

Table 6. Confusion Matrix And Prediction Success Rate For Test Data

True Class	Total # samples	Predicted Active	Predicted Churn	Success per cent
Active	241	232	9	96.26
Churn	57	18	39	68.4

Discussions of Results

In this analysis, we have experimented with 2 classification techniques namely CART and C 5.0 on 1,484 samples of bank customers in which 1,163 were active customers and 311 were churn customers. We used CART and C5.0 to trace out significant customer characteristics to predict churn. While CART yielded 95.01 per cent classification rate on training data and 91.22 per cent on test data, C5.0 yielded 69.3 per cent classification rate on training data and 68.9 per cent on test data. The prediction success rate of Churn class by CART is quite high but C 5.0 exposed poor results in predicting churn customers. However, the prediction success rate of Active class by C 5.0 is more than the other technique. In order to have significant benefits, the model should be able to predict the churn behavior better. Thus, a model with higher prediction success rate of Churn class (i.e., CART) has to be chosen for reaping higher benefits. In all the decision tree models, all the explanatory attributes were found to be influencing the target variable, i.e., status of the customer.

Conclusion

In recent years, data mining has gained widespread attention and increasing popularity in the commercial world. Transforming raw customer data into information is the goal of data mining projects. But failure to turn this useful information into customer satisfaction and increased profits is the key to why many such projects often fall short of expectations (Smith A., 2006). Thus, it is essential that the customers, indicated by the churn model, to become churn should be focused. If the churn prevention program is effective, the bank can look forward to reaping significant benefits from its efforts. A company that can retain 5 per cent of its current customers can raise its profits by 25 per cent. In this paper, we have given a detailed guideline of converting raw customer data of a bank into useful data and then convert this data info useful information using data mining techniques. We have explained the concept of dynamic timeline that should be considered while converting raw data into useful data. We have extracted the data for chosen attributes from raw customer data for a chosen set of 1,484 customers. In these 1,484 samples, 1,163 customers have the status of active and 311 customers have the status of churn. We used CART and C5.0 to recognize significant customer characteristics to predict churn. While CART yielded 95.01 per cent classification rate on training data and 91.22 per cent on test data, C5.0 yielded 69.3 per cent classification rate on training data and 68.4per cent on test data.

The study predicts the future churn of banking customers that can be checked, by formulating intervention strategies based on churn prediction to reduce the lost revenue by increasing customer retention. It is expected that, with a better understanding of these characteristics, bank managers can develop a customized approach to customer retention activities within the context of their Customer Relationship Management efforts.

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THE TOP FACTORS THAT AFFECT THE COMMERCIAL SUCCESS OF HIGH-GROWTH COMPANIES

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Abstract

The National Venture Capital Association (U.S) recently released figures showing that $6.2Bn, £3.9Bn, (35%) of all Venture Capital goes to early stage businesses, however, only £151M (50%) of U.K Venture Capital goes to companies at the same stage. With most high-growth companies failing if they don't raise financing, obtaining a portion for this venture capital is important. Here we study the priorities companies should focus on as they grow, to improve the chances of commercial success and raising venture capital, are reported here.Quantitative results show there are four priorities that consistently get ranked as the most influential. Combined these priorities are ranked most important 66% of the time in early stage companies and 70% in growth stage. The four priorities are: Market, ensuring the market is of great size ($1Bn and above) and growing, enabling the company to have enough room to pivot within the same market and still secure a large section of it. Technical Personnel, do they have appropriate technical background. Management, do they have prevalent experience in the market. Technical Enablers consisting of timescale to market, parallel technologies that had to be taken into consideration and differentiation in marketplace. During the report the author discovered there are four priorities that can help maximize commercial success: Application & Market, Management, Technical Personnel and Technical Enablers. In addition the author made further observations that can have an effect on the commercial success of a company including community and quantity of local investment funds.

Executive Summary

The National Venture Capital Association (U.S) recently released figures showing that $6.2Bn, £3.9Bn, (35%) of all Venture Capital goes to early stage businesses, however, only $240M, £151M, (50%) of U.K Venture Capital goes to companies at the same stage. While there is a wide difference in the figures of investment, the U.K does have many public bodies that cover some of this disparity. While many of these agencies examine companies for investment, their focus is generally on the technical aspects rather than the commercial ability of the company. While technical aspects are obviously a worthwhile assessment it can affect companies when they reach their growth stage and attempt to obtain private investment if they are not prepared for commercial assessment.

This report combats the switch in assessment criteria by examining the difference in companies between the early and growth stages by identifying ten evaluation criteria, utilised by public and private funds, and then ranking the importance of the criteria in relation to the success of early and growth stage companies. In order to obtain the data points for such an evaluation the author travelled to Silicon Valley in order to interview highly successful companies and private investment funds. Interviewees included Marc Tarpenning, Co-Founder of Tesla Motors, and Timothy Draper, Founder and Managing Director at Draper Fisher Jurvetson. In total, the companies interviewed had raised over $930M from private funds (mostly based in Silicon Valley) and the private funds had over $12.5Bn under management.

The ten dimensions investigated include: Standards & Regulation; Technical Enablers: Competition; Market; Technical Personnel; Financial Enablers; Monetization; Knowledge Creation; Management and Business Model. Overall there were three dimensions that consistently got rated above the others. These were Market, Technical Personnel and Management, showing it is truly the Market and Team (Technical Personnel and Management) that make the difference when identifying a potentially successful company. Within these top three categories it became clear there was a difference in weighting between early and growth stage companies. Technical Personnel and Market were rated far higher in early stage companies while Management and Market were the top two for the growth stage.

These top three categories show where the focus should be when evaluating companies. Evaluation criteria for these points may include: Market, ensuring the market is of great size (£600M, $1Bn, and above) and growing, enabling the company to have enough room to pivot within the same market and still secure a large section of it. For early stage companies, Technical Personnel, what is their technical background and qualifications. Essentially do they have the skill set to build a top tier product. For growth stage companies, Management, do they have relevant experience in the market? Prior to investment the Management should be involved in real-time debates with the investment team about the plan of action and market forces. Assuming suitably in-depth knowledge of the market and product by the investors this should prove the capability of the Management.

During the authors tenure in Silicon Valley further learning points were noted. Firstly, previous failure does not seem to have an over-bearing effect on the future potential to obtain funding. Secondly, there is a distinct community, enabling personal introductions to entrepreneurs and investors, which allows funding rounds to happen at a quicker pace. Thirdly, the sheer quantity of investors in Silicon Valley enables higher valuations since entrepreneurs have the opportunity to gain term sheets of multiple investors in a short period of time, essentially starting a bidding war.

Introduction

The Harvard academics, Gompers and Lerner, stated "ninety percent of new entrepreneurial ventures that don't attract venture capital within the first three years will fail". Here we address the issues relating to the priorities high-growth companies should focus on in order to maximize the potential of raising future rounds of funding and eventually aiming for commercial success with a strong exit to either the public market or acquisition. We attempt a quantitative analysis, with over 25 top Silicon Valley companies and Venture Capitalists having rated 10 dimensions in order of importance to commercial success.

The importance of growing and obtaining funding is highlighted by the figure recently released by the National Venture Capital Association (U.S) showing that $6.2Bn, £3.9Bn, (35%) of all Venture funding in the U.S goes to early stage businesses, while in the U.K it is only £151M (50%). With such a strong Science and Technology, base

the U.K needs to maximise its knowledge in relation to successful commercial exploitation.

We will discuss the issue as follows. Section 2 shall discuss work previously carried out in this area and how it was applicable to this research. Section 3 explains the methodology and data collection techniques. The data gathered is analyzed in section 4 while section 5 details the findings.

Theoretical Development

Prior Work

The formation of different phases in company growth is already well documented with the three main phases being Emerging, Growth and Maturity. These phases can be applied to different forms, from product development to industry growth (Abernathy and Utterback 1978, Utterback 1994). However, the growth phase is regarded as the most prominent and important (Mayer, Young & Ausubel 1999). Due to the focus on the later stages of Growth and Maturity (Phaal, O'Sullivan, et al. 2009) it has left the Early Stage largely void of research.

While the Early Stages have been left behind the later stages in knowledge acquisition, Suarez highlights it is the transition between the phases that is the key factor (Suarez 2003). This point was later emphasized by Phaal and O'Sullivan (Phaal, O'Sullivan, et al. 2009).

Aureswald and Barnscomb's 2003 paper 'Valleys of Death and Darwinian Seas' introduces the opinion that most Venture Capitalists invest at an early stage (Aureswald and Barnscomb, 2003). It is essential that new entrepreneurial ventures that need to raise finances do so, since 90% of the ventures that don't raise a finance round fail within three 3 years (Gompers & Lerner, 1999). This point is emphasized by Murphy and Edwards who have the opinion that without new capital most of the nations {UK} most promising entrepreneurs will fail.

However, obtaining this essential capital is no easy task and entrepreneurs should expect to be extensively scrutinized (Gompers & Lerner, 1999), showing that entrepreneurs who are raising need to be fully prepared for the mindset of the private investors. Many entrepreneurs find it hard to prepare for this commercial mindset of private investors since most have been introduced to the world of financing by public funding bodies that have a technological mindset (Murphy and Edwards 2003).

Murphy and Edwards also attempted to give some solutions on how to prepare a company for private venture funding: Management, Market, Technology, Liquidity and Company Structure. However, this is based mainly on the perspective of the renewable energy industry.

Investigation

While research has been carried out in the later stages of company growth, very little has been done in terms of the early stages. This paper shall investigate the top priorities companies should focus on during this early phase in order to maximize the opportunity for commercial success. The importance of the transitions between the phases is also taken into consideration by investigating the top priorities in the growth stage, which can then be compared and contrasted against the early stage in order to create a guide for companies going through this transition.

To quantify the results and further expand the initial research carried out by Murphy and Edwards the paper will investigate whether there are a number of priorities that high-growth companies should focus on in order to enhance their ability to become a commercial success.

Methodology

Data Source

Our data was collected from twenty eight high-growth companies and venture capital firms based in Silicon Valley. They were selected due to their industry focus (web and cleantech) along with the amount of funding they had raised. In total the companies interviewed had raised over $930M (£600M) and the Venture Firms had over $12.5Bn (£7.8Bn under management). The full list of interviewees can be seen in Appendix A. The following nine steps were used in the interviews for the collection of all data:

1. Contacting potential interviewees with request for participating in the case study.
2. Sending interview guidelines to the interviewee.
3. Collecting external and internal data about the case as part of the interview preparation.
4. Conducting the interview, recording the conversation (if permitted) and taking notes in the interview notes template.
5. Asking for secondary internal material (where applicable) and for further internal and external contacts.

6. Analysing the audio files and digitising interview notes in the template.
7. Filling out contact summary form.
8. Conducting further case interviews (repeating 1 through 7 for each interview partner).
9. Conducting interviews to collect external data (where applicable).

The interviews were carried out to collect data about companies and investors that had experience of both early stage and growth stage companies. Early stage companies are defined as companies that have been around for less than two years and have raised less than $1M in funding. Growth companies are defined by being established for more that two years but less than ten, and have raised in excess of $2M.

Analytical Approach

A positivist research philosophy was taken emphasizing a semi-structured methodology to enable replication (Gill & Johnson, 1997) with quantifiable examination to allow statistical analysis to be carried out (Saunders et al, 2003).

It is understood that the personal characteristics of the interviews can skew the associated results, therefore precautions were taken to dilute such implications. Interviews were conducted with specific personnel whose position is constant over all companies. When possible they were carried out with the CEO or founder, otherwise another Executive position, enabling consistency over the answers and enhancing the statistical significance of the overall findings. This included interviewing as many stakeholders as possible in the time available in a diverse business range (from web applications to cleantech), who have broad experience (recent startups to successful businesses). Care was also taken to enable the full spectrum of success to be investigated; with interviews being carried out with company founders that have failed along with interviewees who have succeeded. In order to fully understand the success criteria interviews with private funds that have backed many of the startups/ established businesses were also carried out.

This spectrum of interviewees enabled enough data to be gathered in order to allow statistical analysis. However, due to the time scale of this project, the Life Sciences industry was not included in this line of interviews. This is due to the particularly long timescale to market (5 to 10 years) and distinct regulatory hurdles in comparison to the other industries. Where as Web, IT and Cleantech all

have overlapping issues with reference to timescale and regulatory issues.

The interviews were semi-structured, allowing the interviewee to discuss areas of knowledge in more detail. Semi-structured interviews are based on predetermined questions while being kept flexible in their order and emphasis (Robson, 2002). The data collected was compiled into a graphical format to enable quantification of the results.

Dimensions of Investigation

The ten dimensions listed below were the focal point of the investigation. These dimensions are an expansion of Murphy and Edwards research (Murphy & Edwards 2003) combined with prior research carried out by the authors that investigated the evaluation criteria of major European public funding bodies for high growth companies.

Each interviewee was asked to answer questions in five areas regarding the dimensions. Firstly they ranked the dimensions in respect to their importance to building a successful company (in relation to the stage, either early or growth, that they had most knowledge of), 10 being the most important, 1 the least - data point one.

Secondly, the interviewees were asked to split a total of 100 points between the dimensions in anyway they saw fit - data point two. The larger amount of points related to the more important dimension.

Thirdly, the interviewees were asked to comment on why they had ranked the top three dimensions so highly - data point three.

In addition to obtaining the interviewees comments on the factors that create successful companies they were also asked, when applicable, to comment on what factors were the major influences in unsuccessful companies. For this, data points one and two were repeated, exchanging questions on success with failure. The outcome of these two final sections were used to compare and contrast against the outcome of the questioning around success.

The dimensions discussed and associated questions were:

1. Standards & Regulation: If there were any the company had to deal with? At what stage they were addressed?
2. Technical Enablers: Timescale to market, parallel technologies that had to be taken into consideration and differentiation in marketplace?
3. Competition: How the competition's potential future offerings are taken into account? If entering a mature market and how the company convinced customers to choose their offering over established competition?
4. Market: What is the size of the market and is it growing, declining or stable?
5. Technical Personnel: How it was identified someone with this expertise was required? At the very start was it wise to define between management and technical personnel? Was it preferred they had large company, startup or both types of previous experience?
6. Financial Enablers: Why were specific investors chosen (expertise or available capital)? If technology development/ market entry did not go as well as expected what contingency plans were in place? When approaching funding rounds are 'contingency funds' also included in the proposal. How important is it who the investors are?
7. Monetization: How and when will the product create revenue?
8. Knowledge Creation: How important was training? Did/ does the company push potential spin outs from the firm that may not focus on the company's core competence but could be a future partner?
9. Management: With current and previous management, how were they chosen? How did the management team intend to evolve as the company grows and how was that planned? When planning new management, at any stage of growth how did the company identify the skills it requires?
10. Business Model. How does the company plan to execute its plan? What time scales are involved and are there any specific allegiances that are essential? Who are the customers, how are they approached (direct, distribution) why was this method chosen? Evolution: how has this business model evolved as the company grows/ approaches market/ gets new investors/ management?

Analysis

Once the data was collected from the interviewees it was compiled into a database to enable analysis. This analysis consisted of three parts, the first (data point one) being sorting the interviewees rankings from one to ten for the separate dimensions into a logical format. This consisted of combining all the scores and then averaging them to obtain

a final ranking for each dimension, where the higher the number the greater the importance of the dimension to a companies chance of success.

In order to analyze the difference between the dimensions further a second level of analysis (data point two) was carried out. This consisted of summing the total amount of points awarded to each dimension and then dividing it by the total number of points available to obtain a percentage. Interviewees were asked to split a total of 100 points between the dimensions as they see fit. The dimension with the highest score relates to the most influential in regards to a company's chance of success. The reason for this second level of detail was to obtain an understanding of the importance of each dimension beyond

rankings. For example, two dimensions may have received a similar average rankings on data point one but there was no way to tell if there was a vast difference in importance between dimensions ranked second and third.

The final section of analysis (data point three) was combining the interviewees comments on why they ranked the top three so highly. This enables questions to be built around the reasons for high ranking. Each of these three sections was repeated for Early and Growth stage companies.

Data point one can be seen below in table one. There are a number dimensions that consistently get ranked higher than others.

Table 1. The Average Ranking of the Dimensions for the Early and Growth Stages. Higher Numbers Relate to a Greater Importance of the Dimension.

Dimensions	Early Stage %	Growth Stage %
Standards & Regulation	1.25	0.7
Technical Enablers	6	6
Technical Personnel	6.2	6.2
Management	6	7.5
Market	7	7.5
Competition	3.75	3.2
Business Model	4.5	5.2
Monetization	4.4	5
Financial Enablers	4.6	2.8
Knowledge Creation	1	1

In order for the data to be visualized it is put in a graphical format, figure four.
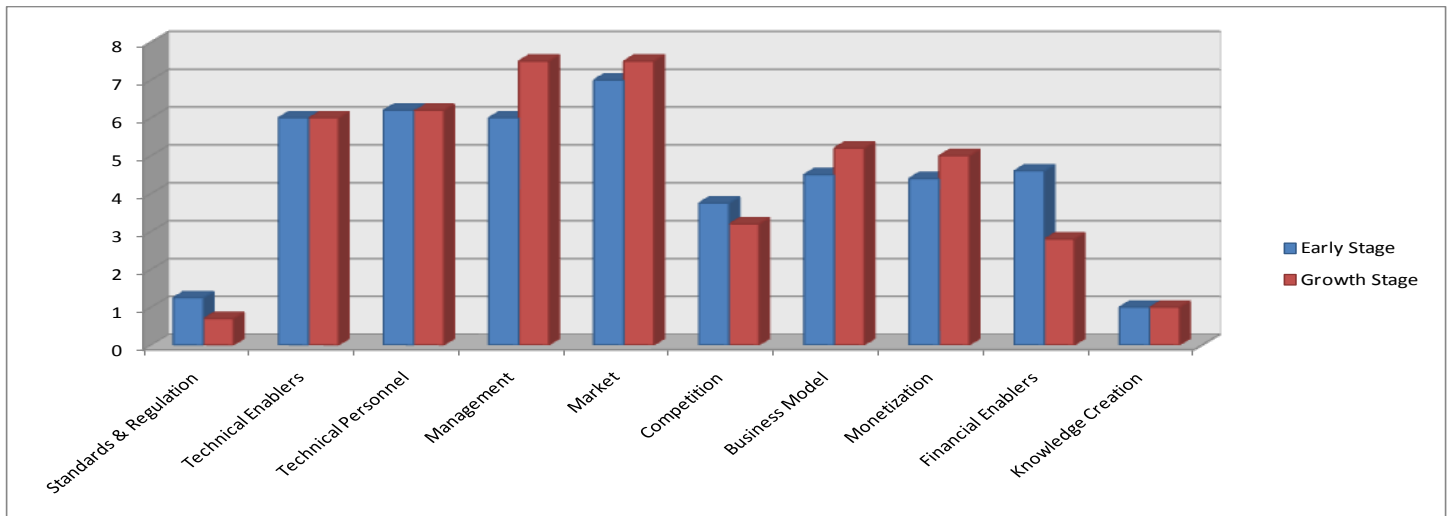
Table 2. Showing the percentage of votes each dimension received int eh Early and Growth Stages.

Dimensions	Early Stage %	Growth Stage %
Standards & Regulation	1.5	0.7
Technical Enablers	14.1	13
Technical Personnel	17.8	14.2
Management	14.3	24.5
Market	20	17.9
Competition	7	3.2
Business Model	8	9
Monetization	9.8	12
Financial Enablers	5	2.9
Knowledge Creation	2.5	2.6

Again, in order to visualize the data the figures have been put into a graphical format, figure five.

Figure 5. Showing the percentage of the votes each dimension received.
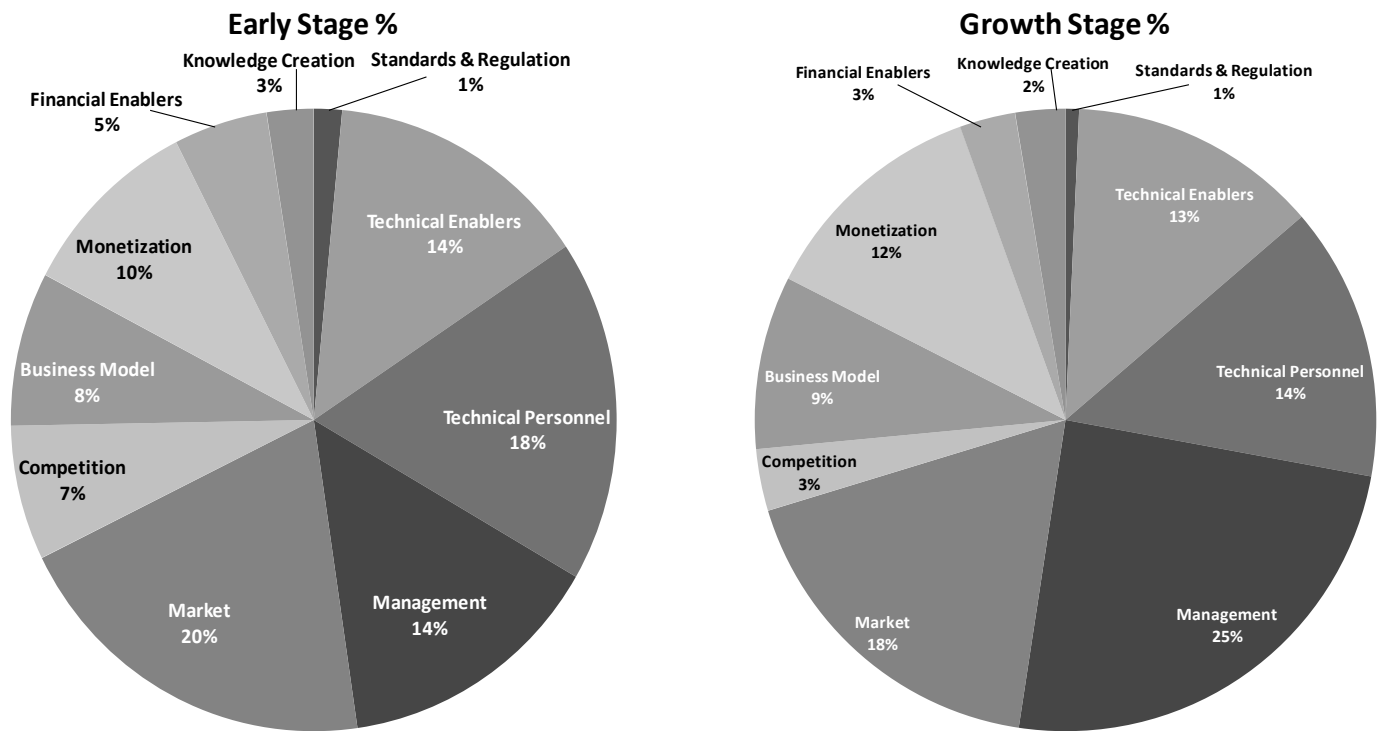
From the analysis of data point two it can be seen that Market and Technical personnel are the two highest ranked with an average of 20% and 18% of the points for the Early Stage and Management and Technical Enablers in third and fourth with 14%. This however is not mirrored for the Growth Stage where Management receives 25%, Market is in second place with 18% and Technical personnel in third with 14%. This shows that the Market and Team (consisting of Management and Technical Personnel) are the key factors.

The market has to be large and growing (well past $1Bn) in order to give the company enough room to pivot and still be able to capture a significant slice of the market. The team are key since they are the constant in the entire innovation process. Other factors can change but the team is generally constant. They must be able to adapt, make a good product

great, or pivot from a shrinking to an expanding market. The reason that Technical personnel gains a slight advantage in the Early stage is due to the fact that this stage is generally focused on getting a first product to market. Management gains a larger weighting in the growth stage since at this stage the product has already reached the market and extra factors must be taken into consideration.

Although still ranked highly, with 14% in the Early Stage and 13% in the Growth stage, it is note worthy that Technical Enablers is not consistently ranked in the top two. This is due to a mindset that involves trusting that if the company includes a top tier team, then it will already be in a large, expanding, market and hence will have an improved chance of building a top tier product.

A further notable point is the fact that Business Model and Monetization, only reach 8% and 10% in the Early Stage and 10% and 13% in the Growth stage respectively. Again, interviewees stated if an investment is made in an excellent team in a large and expanding market the true business model can be altered quickly and efficiently at a later date. In addition, the company doesn't have to start monetizing straight away in order to get market traction. This is particularly prevalent in web-based companies.

The remaining dimensions: Standards & Regulation; Knowledge Creation; Financial Enablers and Competition all consistently scored poorly. Although these aspects, with the exception of knowledge creation, were generally stated as being to a certain extent important the other dimensions have far more of an impact on a company than these.

In order to further examine why dimensions such as Application and Market, Technical Personnel and Management were ranked so highly the interviewees were asked to provide a short explanation as to why they voted their top three so highly. A selection of these descriptions is provided below.

Application & Market
- "Doesn't matter unless it is something the world cares about". CEO of leading cleantech company

- "Market has to be huge". CEO of product tracking company.
- "Need to have this to prove business". Partner at leading Venture Capital Firm.
- "Needs to be massive so the company has room to pivot". Partner at leading Venture Capital Firm.

Technical Personnel
- "People are the bottleneck. You need the right people to make the required innovative tech". CEO of leading Early Stage web development company.
- "People are greatest indicator of success". CEO of leading growth stage mobile payments company.
- "…are critical to evolving product". CEO of leading product tracking company.
- "Competitors can't copy the team". CEO of leading web development company.
- "The right team can build anything". CEO of leading online payments network.

Management
- "At point of growth you need management to keep company focused". CEO of mobile payments company.
- "Especially in growth where organization skills are required". CEO of leading product tracking company.
- "Highly vested, unlikely to change in near future". Partner in leading Venture Capital firm.
- "Great management can make an average product work". Partner in leading Venture Capital firm.
- "Smart team can change all other factors if needs be" Partner at leading Venture Capital firm.

Failure

In order to compare and contrast, interviewees were asked about the factors that contribute to an unsuccessful company. Like the analysis of data point one, interviewees were asked to rank the dimensions. The results can be seen in table three, this time in reference to which dimensions had the biggest impact on failure.

Table 3. Showing the rankings of the dimensions in relation to the impact they have on unsuccessful companies. The higher the number the larger the impact.

Dimensions	Early Stage %	Growth Stage %
Standards & Regulation	0.7	0.4
Technical Enablers	4.7	7.4
Technical Personnel	7	5.2
Management	8	8

Dimensions	Early Stage %	Growth Stage %
Market	7	6
Competition	3.4	4.6
Business Model	4.7	5.2
Monetization	4.7	4.4
Financial Enablers	4	3.2
Knowledge Creation	0.4	0.4

In order to visualise the data, it was incorporated into a graphical format, figure 6.
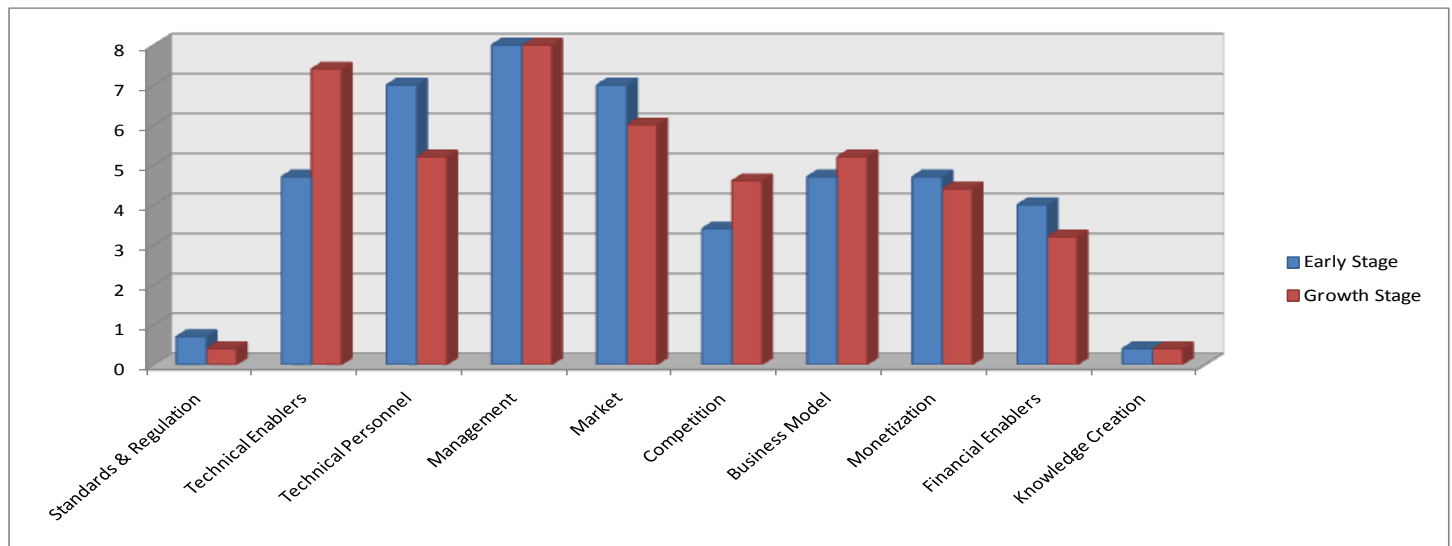
As can be seen from figure six and table three the data mirrors the findings from the rankings for successful companies. One exception that can be seen is that Technical Enablers had a higher impact on failure in growth companies. This shows that if the company truly hasn't built a top tier product by the time they approach the growth stage there is a serious issue.

The fact that the other dimensions, Technical Personnel, Management and Application and Market, mirror the successful influences so closely emphasizes the importance of these areas.

However, one more level of data can be viewed, detailing how the points were allocated to unsuccessful companies, table four.

Table 4. Showing the rankings of each dimension in relation to the impact they have on unsuccessful companies.

Dimensions	Early Stage %	Growth Stage %
Standards & Regulation	1.6	0.8
Technical Enablers	13.5	22
Technical Personnel	17	14.3
Management	11.4	22
Market	14.8	14.3
Competition	10.5	7.2
Business Model	12.8	9.2
Monetization	8.8	3.2
Financial Enablers	7	6.3
Knowledge Creation	2.6	0.6

These data points were transferred to a graphical format to allow visualisation, figure seven.

Figure 7. Showing the point allocation to dimensions as they influence unsuccessful companies.
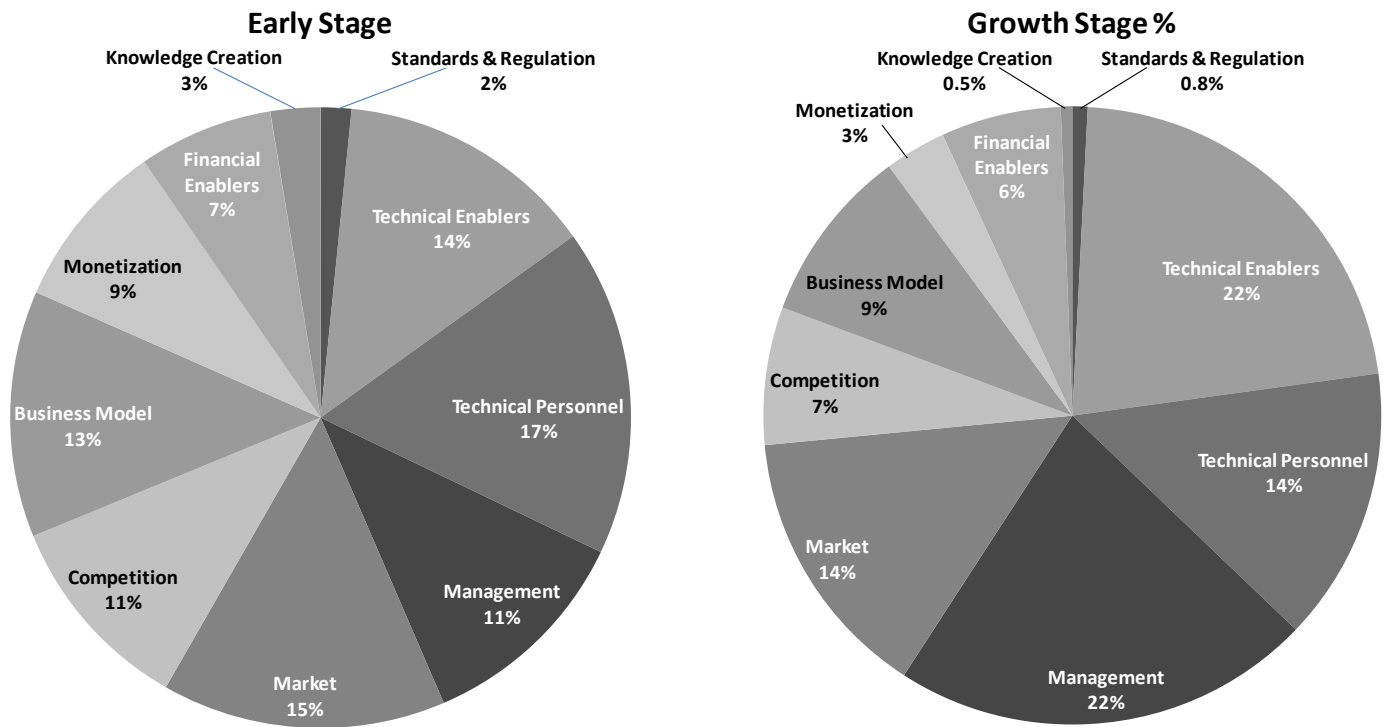
This mirrors the analysis of data point two, showing the top three most influential dimensions are Application and Market, Management and Technical Personnel. However, as noted in the rankings for unsuccessful companies, Technical Enablers play an extremely important role at a growth stage for defining a company's success. This is also shown through the importance of Management at a growth stage over an early stage.

Recommendations

High-growth companies, looking to raise private financing, can take learning points from this report in regard to the evaluation process of potential investments.

The focus on the early stage should be Market and Team. This should focus around the size of the Market and whether it is growing. Factors affecting this may include, but not limited to, whether the market is greater than £1Bn, expected growth rate over the next year and Compound Annual Growth Rate for the following four years for the territories the company is targeting. For an Early Stage company Technical Personnel also has to be a major

focus. This may include investigating potential employees previous track record with academic qualifications but especially any previous commercial product experience.

For companies in the growth stage, in addition to investigating the Market, Management should be able to break down why they are able to lead the company. This can include relevant academic qualifications but a more prevalent example would be their previous experience in the market. Management should be involved in real-time detailed discussions about the market and external factors of the company's success. However, the detail of these conversations are reliant on the investors understanding of the market..

Secondary levels of focus are the Business Model, Monetization and Competition elements. These need to be investigated in more depth for a company in a growth stage since they should be becoming finalized at this point. For Business Model, a simple Powerpoint presentation may suffice for an overall picture of the management's thoughts. This medium is recommended over a written document since it is the instrument of choice in Silicon Valley for distributing investment opportunities, and for good reason.

It enables the presentation 'deck' to be made or altered quickly, the information can be absorbed rapidly and it can be easily passed around multiple parties who have shown an interest in investing. Of course further due diligence for the Business Model and Monetization dimensions can be requested through spread sheets if required. As with all dimensions, Monetization should be taken on a case by case basis. It can be noted that simply because a company hasn't started monetizing its user base does not mean it will not be a successful company, especially in the web sector. A strong user base provides a platform for product feedback. Competition elements can be discussed within the business model deck to cover pricing options, product placement, potential growth and even acquisition.

Due to the extent of the investment community in Silicon Valley Financial Enablers (other investors) can often play an important role in investment decisions since it shows a certain confidence in a company if a top tier investor is also investing. These investors can provide vital introductions and open multiple doors to speed the growth of a company. However, due to the smaller scale of the investment community in the UK this factor holds less weight.

Factors such as Knowledge Creation and Standards & Regulation are not directly required for the decision making process on investment and should not be required to be asked. If suitable levels of questioning are covered in the other dimensions it enables these bottom two dimensions to become insignificant.

Reflections

Throughout the research undertaken in this report it was clear that when the top dimensions had been identified, which they have, the next stage would be to research the most prevalent actions to maximize the opportunity of commercial success. Although recommendations have been given on certain actions that could be taken, a full research paper should be carried out to investigate the questions and answers during successful investments.

One method of doing such an investigation would be to follow a similar methodology to this paper. This would include interviewing top tier private investors such as Venture Capitalists and Angel Investors, along with management from companies that have successfully passed through private funding rounds. Investors may be interviewed about the direct actions that create top tier Management, Technical Personnel and Market opportunities.

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Appendix A

Private Funds
- Redpoint Ventures
- Lightspeed Venture Partners
- XG Ventures
- Union Square Ventures
- August Capital
- Draper Fisher Jurveston
- Reed Elsevier
- Mayfield Fund

Growth Stage companies
- Yotta Mark
- Heroku
- Tesla Motors
- Boku
- Unity
- Le High Technology
- Xobni
- Airbnb
- Vayologic
- Cutting Edge

Early Stage Companies
- Rethink DB
- Heyzap
- Scoopler
- Vid.ly
- Jam Legend
- Uservoice
- Kontagent
- Mooral
- Locarna
- Webgreek

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IFM:

The Institute for Manufacturing (IfM) is the public face of the Department of Engineering's Manufacturing and Management Division. The IfM takes a distinctive, cross-disciplinary approach, bringing together expertise in management, technology and policy to address the full spectrum of industrial issues. The IfM's activities take place within an unusual structure that integrates research and education with practical application in industry, via a university-owned company, IfM Education and Consultancy Services Ltd.

IfM research is undertaken in close collaboration with companies, ensuring its relevance to industrial needs and the rapid dissemination of new ideas and approaches. It aims to develop practical solutions to current industrial issues and covers all areas from understanding markets and technologies, through product and process design to operations, distribution and related services.

Royal Academy of Engineering:

As Britain's national academy for engineering, it brings together the country's most eminent engineers from all disciplines to promote excellence in the science, art and practice of engineering. The Academy's strategic priorities are to enhance the UK's engineering capabilities; to celebrate excellence and inspire the next generation; and to lead debate by guiding informed thinking and influencing public policy.

About the Author

Andrew McCalister was born and raised in Glasgow, Scotland. He initially studied Engineering at the University of Glasgow where, in his final year, he invented an anti-bomb device that has an international patent pending. Due to the novelty of the technology he won the Biggart Baillie National Innovation award and Shell Live Wire Grand Idea.

Following his undergraduate Degree Mr McCalister obtained an EPSRC scholarship to read for a Masters in Engineering and Management at the Universtiy of Cambridge. Graduating with Distinction, he carried out projects in a vast array of industries during his tenure including Chemical Detection, Heavy Machinery, Pharmaceuticals, Defence and Finance.

LIBERALIZATION IMPACT ON INDIAN SMALL INDUSTRIES: AN EMPIRICAL STUDY OF PUNJAB

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Abstract

The aim of the paper is to study the impact of liberalization on the Indian Small-Scale Industry in the leading industrial state of Punjab. After liberalization SSI is facing lot of challenges in various areas such as marketing issues , more competition, customer management and retention and shift in labour and capital. The factors which can boost the small business have also been highlighted in the paper. A number of statements indicating the impact of liberalization on SSI have been developed and the respondents were asked to express their level of agreement/disagreement with these statements on five-point Likert scale. Kruskal-Wallis test has been applied to know the significant differences among the respondents relating to different industries, age and turnover groups with respect to these statements. The test has been applied at assumed p-value =0.05. The statements with less than 0.05 p-value are considered significant and those with p-value more than the assumed value are considered to be insignificant.

Liberalization process in various countries has affected business especially in developing countries. Das (2010) observed that country groups like East Asia in the past and China and India in the present have benefited immensely from economic and financial globalization. Rapid growth in these emerging markets is the result of economic and financial globalization. The growing integration of economies and societies around the world has been one of the most hotly debated topics in international economics over the past few years. Rapid growth and poverty reduction in China, India, and other countries that were poor 20 years ago, has been a positive aspect of Liberalization Privatization and Globalization (LPG). But this process has also generated significant international opposition over concerns that it has increased inequality and environmental degradation. India opened up the economy in the early nineties following a major crisis that led by a foreign exchange crunch that dragged the economy close to defaulting on loans (Goyal,2010). Faiz (2009) believed that in the era of liberalization, SAFTA will be operative when there will be free trade between India and Pakistan. Each country has to give most favored nations (MFN) status to each other. It is also important that both countries should remove the barriers of trade such as tariffs and customs duties for normal trade relation.

Due to liberalization, inequality and poverty among the self-employed increased in Mexico; as the economy stabilized inequality started to go down, but poverty kept

increasing (Popli,2010). The study by (Obokoh, 2008) shows that most Nigerian SMEs still find it difficult to compete and merely struggle to survive the liberalized economic environment in Nigeria in spite of the policies to assist the development of manufacturing small and medium sized enterprises (SMEs).Political and economic liberalization and stability of political system have a significant effect on the financial development of the African continents. (Michael and Sylvaine,2010)

In the Less Developed Countries (LDC;s) small and medium companies has been affected and facing new challenges but on the other side these companies have new opportunities also. The firms capabilities can be enhanced with innovation, learning, internationalization and strong relationship with government and non-government institutions to increase its competitiveness in the market. (Gabriel and Mohammed, 2011). The companies need to understand the layer of environment from national to international environments (Olga and Castellano, 2011).

Liberalization and Indian Small Industry

Indian business scenario changed in the post-liberalization period which started after 1991. The new industrial, foreign trade and economic policies encouraged the foreign companies entry into Indian market. Due to this the manufacturing sector of India faced stiff competition in almost all the sectors. After liberalization process started, the Government of India aimed at deregulations in various sectors, encouragement to foreign direct investment and privatization in the manufacturing sectors restricted for government and public sector undertakings. This initiative of the government resulted in opening of the economy and created competition among the manufacturing sectors comprising large, medium and small-scale sector.

Small Scale Industry (SSI) constitutes a vibrant and dynamic sector of the industrial economy of India. In India, SSI is defined on the basis of limit of historical value of investment in plant and machinery, which at present is up to (Indian Rupees. 50 million = USD 1099143*). SSI has been divided into two categories:

Category I, units engaged in manufacturing or production. Category II, units engaged in providing or rendering services.

The Ministry of Small and Medium Enterprises Development (MSMED) Act, 2006 defines the small unit in category I (manufacturing sector), as an industrial unit in which the investment in plant and machinery is more

than (Rupees 2.5 million = USD 54950) but does not exceed (Rupees 50 million = USD 1099150). In category II (service sector), The MSMED Act, 2006 defines the small unit as an enterprise, where the investment in equipment is more than (Rupees 1 million =USD 21985) but does not exceed (Rupees 20 million = USD 439650). * (Exchange rate, 1 USD = Rupees 45.50, figures have been rounded off).

The small scale sector has recorded consistently good growth in terms of production, creation of employment and phenomenal growth in exports over the years. The post-liberalization era in the Indian economy has enhanced the opportunities and challenges for the SSI sector. With their dynamism, flexibility and innovative drive they are increasingly focusing on improved production methods, penetrative marketing strategies and management capabilities to sustain and strengthen their operations. They are thus poised for global partnership to absorb and more importantly to impart latest technologies in diverse fields. In the light of globalization, liberalization and privatization, the SSI has been undergoing rapid transaction in India. The speed of transition of small-scale sector has increased due to economic reforms by both central and state governments and the World Trade Organization (Krishna, 2004). In the post-liberalization period, business environment is changing dramatically. All countries are being exposed to the fierce competition both from domestic as well as international competition. Moreover, being member of the WTO, India is committed to further liberalizing economy (Nag, 2000). The SSI sector takes priority as an instrument of industrialization in India. The industrial scenario of the world is changing very fast. In the liberalization process, around 58 countries have introduced changes in their investment regime annually during the period 1991-2000. In 2000 alone, 69 countries made a total of 150 regulatory changes, of which 147 (98%) were more favourable to foreign investors. As a result, global FDI inflow increased to USD 1271 billion in 2000 from USD 209 billion in 1990(Subrahmanya,2004).

The central and state Governments in India have taken certain measures for improving the small-scale sector's performance in the era of liberalization. The era of globalization will benefit mostly the industrialized countries or multinational companies operating in developing countries like India. Globalization will bring prosperity to the country only if government and multinational companies are willing to adopt a code of conduct which permits their profit motives to be harmonized with the self-reliant interest of the developing nations like India.

Objectives of the Study

The specific objectives of the study are:
- To ascertain the overall impact of liberalization on the performance of selected small sector units manufacturing textiles, bicycle and bicycle parts, food products and beverages and leather and leather products.
- To identify the factors for boosting the SSIs in the era of liberalization.

Research Methodology

For the purpose of present study, selected SSI units manufacturing textiles, bicycle and bicycle parts, leather and leather products, and food products and beverages in the state of Punjab have been considered. The planned sample of 200 units comprised 50 small-scale units each selected from manufacturing areas such as textiles, leather and leather products, bicycle and bicycle parts, and food products and beverages. However, as the information provided by the respondent entrepreneurs of 27 units was not complete, therefore, they were excluded from the final analysis. Thus, the final sample comprised of 173 SSI units of Punjab. The study is based on primary data which has been collected by a structured, non-disguised and pre-tested questionnaire. The analysis has been done on the basis of three variables, viz. Industry, Age of the units and Turnover of the units. Industry-wise analysis has been done on the basis of four industries, viz. textiles (TX), bicycle and

bicycle parts (BBP), food products and beverages (FPB), and leather and leather products (LLP), and food products and beverages (FPB). On the basis of age, units have been categorized into three age-groups, viz. A1 (up to 10 years), A2 (10 to 20 years), and A3 (above 20 years). Turnover-wise units have been classified into three categories, that is T1 (up to Rs. 2 crore), T2 (Rs.2 to 4 crore) and T3 (above Rs. 4 crore).

Discussion and Analysis

The sample comprising 173 units includes 43 textiles units, 46 bicycle and bicycle parts units, 43 food products and beverages units, and 41 leather and leather products units. It has been observed that 82 units fall into age group A2, 54 units belong to A1 and 37 units relate to age group of A3. It has also been seen that 66 units relate to turnover-group T1 followed by group T3 (65) and T2 (42).

A number of statements indicating the impact of liberalization on SSI have been developed and the respondents were asked to express their level of agreement/disagreement with these statements on five-point Likert scale. Kruskal-Wallis test has been applied to know the significant differences among the respondents relating to different industries, age and turnover groups with respect to these statements. The test has been applied at assumed p-value =0.05. The statements with less than 0.05 p-value are considered significant and those with p-value more than the assumed value are considered to be insignificant. The data obtained from the respondents has been presented in Tables 1, 2 and 3.

Table 1: Impact of Liberalization (Industry-wise Mean Scores)

Statements	Total	TX	BBP	FPB	LLP	K.W. Statistics	*P-Value*
(a) Liberalization resulted in more competition	4.61	4.58	4.48	4.63	4.78	7.809	.050
(b) Liberalization resulted in more quality consciousness and maintenance	4.54	4.37	4.46	4.56	4.78	15.667	.001*
(c) Liberalization has led to reduction in profit margin	4.25	4.30	4.35	4.05	4.32	3.880	.275
(d) Liberalization has created new opportunities	4.09	4.00	3.63	4.09	4.68	35.583	.000*
(e) Attitude of employees has changed because of liberalization	3.68	3.77	3.59	3.77	3.59	1.134	.769
(f) Marketing is more difficult in era of liberalization	4.28	4.33	3.85	4.42	4.56	34.055	.000*
(g) Customer satisfaction level have increased	4.06	4.12	3.67	4.16	4.32	23.261	.000*
(h) Liberalization has led to inconsistency in production	3.65	3.74	3.43	3.63	3.83	8.874	.031
(i) Liberalization has led to dumping of cheaper goods by other countries	4.31	4.30	4.30	4.16	4.49	7.453	.059

Statements	Total	TX	BBP	FPB	LLP	K.W. Statistics	P-Value
(j) Liberalization is the right step of Govt. of India	3.61	3.60	3.35	3.77	3.73	8.686	.034
(k) Shift in labor and capital is easy due to liberalization	2.93	2.74	3.15	2.74	3.07	8.248	.041
(l) Any other	1.05	1.00	1.15	1.05	1.00	5.586	.134

*Note : * denotes significant results having p-value less than 0.05.*

Table 1 shows that most of the respondents from different industries agree with the statements 'liberalization resulted in more competition', 'liberalization resulted in more quality consciousness and maintenance', 'liberalization has led to dumping of cheaper goods by other countries', 'marketing is more difficult in era of liberalization', 'liberalization has led to reduction in profit margin', 'liberalization has created new opportunities', and 'customer satisfaction level have increased'(mean scores being more than 4 in all). The table further reveals that most of the respondents agree or were neutral with the statements 'attitude of employees has changed because of liberalization', 'liberalization has led to inconsistency in production, and 'liberalization is the right step of Govt of India' (mean scores being more than 3).

Industry-wise analysis reveals that units relating to textiles industry agree with the statements, 'liberalization resulted in more competition'(mean score 4.58), 'liberalization resulted in more quality consciousness and maintenance'(mean score 4.37), 'marketing is more difficult in era of liberalization'(mean score 4.33) 'liberalization has led to dumping of cheaper goods by other countries', 'liberalization has led to reduction in profit margin' (mean score 4.30 in both), and 'customer satisfaction level have increased'(mean score 4.12). Majority of the units from bicycle and bicycle parts are of the strong opinion that 'liberalization resulted in more competition' (mean score 4.48), 'liberalization resulted in more quality consciousness and maintenance' (mean score 4.46), 'liberalization has led to reduction in profit margin' (mean score 4.35), 'liberalization has led to dumping of cheaper goods by other countries' (mean score 4.30). The respondents belonging to food products and beverages also agree with statements 'liberalization resulted in more competition'(mean score 4.63), 'liberalization resulted in more quality consciousness and maintenance'(mean score 4.56), 'marketing is more difficult in era of liberalization'(mean score 4.42), 'customer satisfaction level have increased'(mean score 4.16), 'liberalization has led to dumping of cheaper goods by other countries'(mean score 4.16), 'liberalization has created new opportunities'(mean score 4.09) and 'customer satisfaction level have increased'(mean score 4.05). Further, the units relating to leather and leather products have strongly felt that ''liberalization resulted in more competition', 'liberalization resulted in more quality consciousness and maintenance' (mean scores 4.78 in both), 'liberalization has created new opportunities'(mean score 4.68), 'marketing is more difficult in era of liberalization'(mean score 4.56), 'liberalization has led to dumping of cheaper goods by other countries' (mean score 4.49), 'liberalization has led to reduction in profit margin' and 'customer satisfaction level have increased'(mean scores 4.32 in both).

The foregoing analysis reveals that relatively more units belonging to leather and leather products are of the opinion that 'liberalization resulted in more quality consciousness and maintenance', 'liberalization has created new opportunities', 'marketing is more difficult in era of liberalization' and 'customer satisfaction level have increased' as compared to the units relating to other surveyed industries. Statistically, significant differences have emerged among the units relating to different industries with respect to the various beliefs regarding liberalization.

K-W statistics shows that there are significant differences among the units relating to different industries with respect to the statements liberalization resulted in more quality consciousness and maintenance', 'liberalization has created new opportunities', 'marketing is more difficult in era of liberalization', and 'customer satisfaction level have increased' as the p-values are lower than the assumed p-value of 0.05.

Age groups wise information relating to impact of liberalization is presented in Table 2.

Table 2: Impact of Liberalization (Age-wise Mean Scores)

Statements	Total	A1	A2	A3	K.W. Statistics	P-Value
(a) Liberalization resulted in more competition	4.61	4.67	4.59	4.59	.710	.701
(b) Liberalization resulted in more quality consciousness and maintenance	4.54	4.54	4.49	4.65	2.638	.267
(c) Liberalization has led to reduction in Profit margin	4.25	4.28	4.26	4.22	.014	.993
(d) Liberalization has created new opportunities	4.09	3.96	4.12	4.19	2.339	310
(e) Attitude of employees has changed because of liberalization	3.68	3.81	3.68	3.46	3.478	.176
(f) Marketing is more difficult in era of liberalization	4.28	4.35	4.28	4.16	.563	.755
(g) Customer satisfaction level have increased	4.06	4.13	4.09	3.89	1.667	.435
(h) Liberalization has led to inconsistency in production	3.65	3.61	3.78	3.43	4.713	.095
(i) Liberalization has led to dumping of cheaper goods by other countries.	4.31	4.19	4.30	4.51	8.140	.017
(j) Liberalization is the right step of Govt. of India	3.61	3.57	3.67	3.51	1.065	.587
(k) Shift in labor and capital is easy due to liberalization	2.93	2.85	2.99	2.92	.748	.688
(l) Any other	1.05	1.00	1.11	1.00	4.517	.104

Age-wise analysis in the above table shows that majority of the respondents belonging to different age groups strongly consented that 'liberalization resulted in more competition', 'liberalization resulted in more quality consciousness and maintenance', 'liberalization has led to reduction in profit margin', 'marketing is more difficult in era of liberalization' and 'liberalization has led to dumping of cheaper goods by other countries' (mean scores being more than 4). Further, the respondents from category A1 agree that 'liberalization has created new opportunities' (mean score 3.96), whereas the respondents relating to category A3 also agree that 'customer satisfaction level have increased' (mean score 3.89). It can also be observed from the table that the respondents from all age categories are neutral with the statement 'shift in labour and capital is easy due to liberalization' (mean score less than 3).

K-W statistics reveals that there are no significant differences in the perception of units relating to different age groups with respect to various statements relating to impact of liberalization.

In nutshell, it has been revealed that units belonging to all three age groups do not differ in their opinions regarding the impact of liberalization.

The information with respect to impact of liberalization has also been analyzed across turnover categories and the responses are presented in Table 3.

Table 3: Impact of Liberalization (Turnover-wise Mean Score)

Statements	Total	A1	A2	A3	K.W. Statistics	P-Value
(a) Liberalization resulted in more competition	4.61	4.59	4.62	4.63	.216	.898
(b) Liberalization resulted in more quality consciousness and maintenance	4.54	4.47	4.60	4.57	2.035	.361
(c) Liberalization has led to reduction in profit margin	4.25	4.29	4.19	4.26	.668	.716
(d) Liberalization has created new opportunities	4.09	4.08	3.76	4.31	8.480	.014
(e) Attitude of employees has changed because of liberalization	3.68	3.74	3.60	3.66	.554	.758
(f) Marketing is more difficult in era of liberalization	4.28	4.38	4.24	4.20	1.369	.504
(g) Customer satisfaction level have increased	4.06	4.14	3.95	4.05	1.620	.445
(h) Liberalization has led to inconsistency in production	3.65	3.70	3.71	3.57	.786	.675
(i) Liberalization has led to dumping of cheaper goods by other countries	4.31	4.33	4.19	4.37	2.968	.227
(j) Liberalization is the right step of Govt. of India	3.61	3.64	3.43	3.69	2.596	.273

Statements	Total	A1	A2	A3	K.W. Statistics	P-Value
(k) Shift in labor and capital is easy due to liberalization	2.93	3.03	2.98	2.80	1.622	.444
(l) Any other	1.05	1.11	1.00	1.03	2.624	.269

The table depicts that most of the respondents belonging to turnover group T1 feel that 'liberalization resulted in more competition' (mean score 4.59), 'liberalization resulted in more quality consciousness and maintenance' (mean score 4.47), 'marketing is more difficult in era of liberalization' (mean score 4.38), 'liberalization has led to dumping of cheaper goods by other countries' (mean score 4.33), 'liberalization has led to reduction in profit margin' (mean score 4.29), 'customer satisfaction levels have increased' (mean score 4.14), and 'liberalization has created new opportunities' (mean score 4.08). The units relating to age group T2 have strong opinion that 'liberalization resulted in more competition' (mean score 4.62), 'liberalization resulted in more quality consciousness and maintenance' (mean score 4.47), 'marketing is more difficult in era of liberalization' (mean score 4.24), 'liberalization has led to dumping of cheaper goods by other countries' (mean score 4..19), and 'liberalization has led to reduction in profit margin' (mean score 4.19). Majority of the respondents from category T3 also strongly felt that ''liberalization resulted in competition' (mean score 4.63), 'liberalization resulted in more quality consciousness and maintenance' (mean score 4.57), 'liberalization has led to dumping of cheaper goods by other countries' (mean score 4.37), 'liberalization has created new opportunities'(mean score 4.31), 'liberalization has led to reduction in profit margin' (mean score 4.26) 'marketing is more difficult in era of liberalization'(mean score 4.20), and 'customer satisfaction levels have increased'(mean scores4.05). The table further

reveals that the respondents relating to all turnover groups also agree that 'attitude of employees has changed because of liberalization', 'liberalization is the right step of Govt of India' (mean score being more than 3). Further, units from categories T2 and T3 are indifferent to the statement 'shift in labour and capital is easy due to liberalization' (mean score being less than 3).

In brief, it has been found that majority of the units relating to different turnover groups opined that their businesses have been affected but do not differ in their opinions regarding the impact of liberalization. It has also been noticed that relatively more units from the category T3 agreed with the statement that 'liberalization has created new opportunities' as compared to units from the categories T1 and T2.

K-W statistics reveals that statistically, no significant differences have been found among the units relating to different age and turnover groups with respect to various beliefs relating to liberalization.

Factors for Boosting the SSI

The respondents were further asked to rate the importance of factors which can boost the functioning of the small-scale industry on five-point rating scale. Kruskal-Wallis test has been applied to know the differences in perception of the respondents belonging to different industries, age and turnover groups. Industry-wise, age-wise and turnover-wise information has been presented in Tables, 4, 5, and 6.

Table 4: Factors for Boosting the SSI (Industry-wise Mean Scores)

Factors	Total	TX	BBP	FPB	LLP	K.W.Statistics	P-Value
(a) Latest machinery	4.87	4.84	4.78	4.88	4.98	9.828	.020
(b) Quality improvement	4.69	4.77	4.76	4.47	4.78	5.310	.150
(c) Cheaper finance facilities	4.55	4.70	4.46	4.49	4.59	4.439	.218
(d) Exploring global partnership possibilities	4.08	4.02	3.91	4.00	4.41	5.849	.119
(e) Product reservation for SSI	4.09	4.07	4.09	4.21	3.98	1.349	.717
(f) More Govt. incentives	4.26	4.09	4.30	4.35	4.29	2.435	.487
(g) Using computer aided management	4.34	4.42	3.89	4.47	4.61	34.523	.000*
(h) Being innovative, pro-active and aggressive	4.45	4.58	4.17	4.58	4.49	16.592	.001*
(i) Any other	1.15	1.19	1.39	1.00	1.00	13.609	.003*

*Note : * denotes significant results having p-value less than 0.05.*

Table 4 shows that most of the respondents belonging to all the surveyed industries considered 'latest machinery', 'quality improvement', 'cheaper finance facilities', (mean score being more than 4.5) as the most important factors for boosting the small units. The other factors such as 'exploring global partnership possibilities', 'product reservation for SSI', 'more government incentives', 'using computer aided management' and 'being innovative, pro-active and aggressive' (mean score being more than 4) have also been considered important for boosting the SSI by the units relating to different industries.

Industry-wise analysis shows that units relating to textiles considered 'latest machinery' (mean score 4.84), 'quality improvement' (mean score 4.77), 'cheaper finance facilities' (mean score 4.70), 'being innovative, pro-active and aggressive' (mean score 4.58), as the most important factors and other factors like 'using computer aided management' (mean score 4.42), 'more government incentives' (mean score 4.09), 'product reservation for SSI' (mean score 4.07) and 'exploring global partnership possibilities' (mean score 4.02) important for boosting the SSIs. The respondents belonging to bicycle and bicycle parts believed 'latest machinery' (mean score 4.78), 'quality improvement' (mean score 4.76), 'cheaper finance facilities' (mean score 4.46), 'more government incentives' (mean score 4.30) and 'product reservation for SSI' (mean score 4.09) as the important factors for boosting the SSIs. However, the units from food products and beverages considered 'latest machinery' (mean score 4.88), 'being innovative, pro-active and aggressive' (mean score 4.58), 'cheaper finance facilities' (mean score 4.49), 'quality improvement' and 'using computer aided management' (mean score 4.47 in both), 'more government incentives' (mean score 4.35) and 'product reservation for SSI' (mean score 4.21) and 'exploring global partnership possibilities' (mean score 4.0) as the important factors for improving the functioning of small scale sector. Similarly, the respondents relating to leather and leather product have evaluated 'latest machinery' (mean score 4.98), 'quality improvement' (mean score 4.78), 'using computer aided management' (mean score 4.61), 'cheaper finance facilities' (mean score 4.59), 'exploring global partnership possibilities' (mean score 4.41) and 'more government incentives' (mean score 4.21) as the important factors to uplift the small scale units. The table further shows that the respondents from leather and leather products as compared to other industries have not considered 'product reservation for SSI'(mean score being less than 4) as the most important factors for boosting the SSI.

The foregoing analysis reveals that units belonging to bicycle and bicycle parts do not attach much importance to 'exploring global partnership possibilities' and 'using computer aided management'. Further, the units relating to leather and leather products also do not give much importance to 'product reservation for SSI' in comparison to units belonging to other industries.

It can be observed from K-W statistics that significant differences exist among the units from different industries regarding the factors 'using computer aided management' and 'being innovative, proactive and aggressive' for boosting the SSI.

The responses of the respondents from different age groups are presented in Table 5.

Table 5: Factors for Boosting the SSI (Age-wise Mean Scores)

Statements	Total	A1	A2	A3	K.W. Statistics	P-Value
(a) Latest machinery	4.87	4.80	4.89	4.95	4.828	.089
(b) Quality improvement	4.69	4.52	4.74	4.84	5.605	.061
(c) Cheaper finance facilities	4.55	4.41	4.57	4.73	7.188	.027
(d) Exploring global Partnership possibilities	4.08	3.98	4.18	4.00	1.455	.483
(e) Product reservation for SSI	4.09	4.24	3.96	4.14	1.507	.471
(f) More Govt. incentives	4.26	4.31	4.20	4.32	.448	.799
(g) Using computer aided management	4.34	4.35	4.30	4.38	.232	.890
(h) Being innovative, pro- active and aggressive	4.45	4.37	4.51	4.43	3.585	.167
(i) Any other	1.15	1.07	1.20	1.16	1.888	.389

Age-wise analysis in the Table 5 shows that majority of the respondents relating to different age groups considered 'latest machinery', 'quality improvement', 'cheaper finance facilities', 'using Computer aided management', 'more government incentives', and 'being innovative, pro-active and aggressive'(mean scores being more than 4) as the important factors for boosting the SSI. However, the units in the category A1 ranked 'exploring global partnership' (mean score 3.98) important for improving the SSI. Similarly, the respondents from age group A2 considered 'product reservation' (mean score 3.96) as the important factor for boosting of SSI.

In brief, it has been found that relatively higher number of units in age categories A1 and A3 rated 'product reservation for SSI' as the most important factor as compared to the units in category A2.

K-W statistics reveals that there is no significant difference among the units relating to different age groups with respect to various factors for boosting the SSIs.

Table 6 shows the information with respect to the factors for boosting the SSI given by the respondents belonging to different turnover groups.

Table 6: Factors for Boosting the SSI (Turnover-wise Mean Scores)

Factors	Total	T1	T2	T3	K.W. Statistics	*P-Value*
(a) Latest machinery	4.87	4.83	4.86	4.92	2.485	.289
(b) Quality improvement	4.69	4.59	4.71	4.78	2.125	.346
(c) Cheaper finance facilities	4.55	4.58	4.43	4.62	3.772	.152
(d) Exploring global Partnership possibilities	4.08	4.09	4.17	4.02	1.119	.571
(e) Product reservation for SSI	4.09	4.23	4.00	4.00	.505	.777
(f) More Govt. incentives	4.26	4.33	4.21	4.22	.353	.838
(g) Using computer aided management	4.34	4.36	4.31	4.32	1.162	.559
(h) Being innovative, pro-active and aggressive	4.45	4.44	4.29	4.57	5.763	.056
(i) Any other	1.15	1.32	1.07	4.57	3.491	.175

The responses of the respondents shown in Table 6 reveals that majority of the respondents belonging to different turnover groups considered 'latest machinery', 'quality improvement', 'cheaper finance facilities', 'exploring global partnership possibilities', 'product reservation for SSI', 'more government incentives', 'using computer aided management', and 'being innovative, pro-active and aggressive' (mean score being more than 4) as the most important for boosting the small scale sector.

It has been observed that respondents relating to all turnover groups considered all the factors important for boosting the small-scale sector.

K-W statistics reveals that there is no significant difference among the units relating to different turnover groups regarding the different factors for boosting the SSIs.

Conclusion

The findings of the study indicate that small manufacturers are affected in the liberalized era and facing lot of problems to run their businesses. It has been observed

that units from all surveyed industries irrespective of age and turnover believed that liberalization has resulted into more competition, increased quality consciousness, difficulty in marketing, dumping of cheaper goods by other countries, reduction in profit margin and high level of customer satisfaction. But units from food products and beverages and leather and leather products believed that new opportunities have come up after liberalization. Units relating to higher turnover group also opined that liberalization have opened new opportunities for them.

The main reasons of these problems are lack of infrastructural and operational facilities in comparison with large, medium and foreign companies. Small units are not using latest machinery to manufacturer quality product with latest design as per international standards. There is absence of clear policies relating to marketing and human resource management. Most of the units do not have separate marketing and human resource departments. Small manufacturers are unable to attract the professionals because of their financial limitations. Units operating at small level are lacking behind in obtaining relevant international

quality certification which is restricting their entry into foreign markets. Small entrepreneurs are not advertising there products through electronic and print media which further limits market coverage. Another problem of the small units is that there is lack of cluster association for the small industry. The operational cluster associations are ineffective and not helping much to the industry. Though in India there are government organizations to promote and to assist the industry but still these manufacturers are facing financial and other operational difficulties due to time consuming lengthy procedural methods of these agencies. Industry is no longer enjoying the protection from the government as very few items are reserved exclusively for production by small manufacturers. Due to these reasons the industry is finding difficult in shift of capital and labour. This is resulting in closure of small units which is not healthy sign for the Indian manufacturing sector as the small scale sector is the largest employer after agriculture in India.

The domestic and foreign markets have become highly competitive due to the process of liberalization and globalization. The consumers are becoming more and more quality conscious as well as demanding for different product categories. The small industry should realize the need of modification and diversification of their production as per international standards. Therefore, manufacturers need to improve the existing products and develop new products as per market trends. The small manufacturing units must obtain relevant quality certification as per international standards which would be beneficial to operate in foreign markets. Small entrepreneurs also have to explore the possibilities of collaborative manufacturing and marketing with other foreign units of their size and nature.

In the modern business scenario, it is the technology which makes the industry competitive. There is urgent need to update the technology by the small manufacturers as the machinery they have been using is slow and outdated. This ultimately is affecting the quality of the product and delayed production schedule. Installation of new computerized machines, skilled supervisors to operate these machines is the need of the hour for more productivity in the SSIs. It is also important that small manufacturers should understand the importance and relevance of innovative and creative ideas right from manufacturing to sale of their products.

Small industry should also understand that if liberalization has created competition then it has also opened new markets and business opportunities for them in the long run.

It is also important that Government of India must focus on polices for infrastructure development such as power, roads, railways and modern technology up-gradation for the growth and survival of the small scale sector. The small entrepreneurs have to be more innovative and aggressive in identify their competitive advantage. The usage of latest technology and modern management techniques would help them to compete in the market and also to face the impact of new challenges in future.

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A COMPARATIVE STUDY BETWEEN FREE CASH FLOWS AND EARNINGS MANAGEMENT

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Abstract

This paper examines and compares free cash flows in the firms listed in Indian Stock Exchange with an emphasis on earning management. The main purpose of the study is the inquiry of disparity between free cash flows in Indian Stock Exchange with an emphasis on earnings management. Data and statistics of free cash flows and earnings management variables are measured by Len and Poulsen (1989) model and Jones model. The results of this study signify that there is a positive significant relationship between earnings management and free cash flows and confirm that firm's free cash flows can stimulate earnings management. **Key Words:** Free cash flows earnings management, discretionary accruals, non-discretionary accruals.

Naturally, all individuals have been looking for increasing their wealth in order to maximize their benefit, security and so on. This tendency escorts them to look for suitable opportunities in order to maximize their wealth by the investment. Nonetheless, there have been individuals who are unable to manage their own properties to make profit, so they have to employ others to do this task behalf of them.

According to agency theory, first groups are principals or owners and second ones are agents or managers. Indeed, managers are representatives for principals to conduct owner's property accurately and finally increase their owner's wealth. It should be noticed that individuals have tendency to maximize their vested-interest and also managers do so. Managers are eager to show a good picture of the firm's financial position to shareholders and other stakeholders to facilitate maximize their vested-interest and social welfare and or to keep their position. Agency problem arises when maximizing agent's or manager's wealth doesn't necessarily lead to maximize stockholder and stakeholders wealth. This position refers to interest conflict between agents and principals. However, taking this interest conflict into account, agents or managers may have an incentive to manipulate earnings to maximize their self-interest.

Operating cash flows on cash flow statement indicate firm's ability to produce cash flows. However, most of financial analysts argue that cash flows from operating activities are funds that not only should be invested in new fixed assets to enable firms to keep current level of

operating activities, but also a proportion of that fund should be distributed as a dividend or share-repurchase to satisfy stockholders. Earning management is defined as intentionally taking steps under generally accepted accounting principles (GAAP) to achieve from the reported earnings to the desired earnings. The converging the reported earning to the desired earning is done through accounting manipulation. Therefore, this call for a full diagnosis of the malady, that is identification, analysis and quantification of the interfering constraints in achieving maximization of profits, thus opens a vast field for research and enquiry.

In the present study, therefore; an attempt has been made to examine and compare the inquiry of disparity between free cash flows in Indian Stock Exchange with an emphasis on earnings management.

Review of Literatures

Free Cash Flows (FCF)

Operating cash flows on cash flow statement indicate firm's ability to produce cash flows. However, most of financial analysts argue that cash flows from operating activities are funds that not only should be invested in new fixed assets to enable firms to keep current level of operating activities, but also a proportion of that fund should be distributed as a dividend or share-repurchase to satisfy stockholders. Therefore, cash flows from operating activities, on its own, can't be considered as a firm ability

to produce the cash flows. Jensen (1989) was among the pioneers who introduced free cash flows theory and presented a definition for it. In his view, free cash flows is defined as the cash from operating activities after deducting the necessity cash in order to the investment in positive net present value projects. However, projects should be measured regarding to net present value through applying a reliable cost of capital; if the result is positive, the necessity cash for the investment deduct from firm's available cash, whatever remains will be considered as free cash flows.

According to Len and Poulsen (1989) free cash flows is operating income before depreciation expense after tax, interest expense and preferred and common stockholders' dividends. Also, Copeland (1995) defines free cash flows as the operating income after tax plus non-cash expenses after deducting the investments on working capital, property, plant, equipment and other assets. According to Dechow and Ge (2006) free cash flows is the cash flows from operating activities plus the cash flows from investment activities.

Earnings Management (EM)

One of the aims of financial statements is to reflect the results of management stewardship or their accountability in the face of resources under their control. Since the management of trade (business) unit is responsible for preparing the financial statements, the managers in doing this important matter have enjoyed opportunities to exercise judgment in their reporting (Salehi, 2009a). Accrual accounting will give significant right of selection to determine earning in the different time periods to managers. In deed, under this accounting system, the managers have significant control time of distinction over some cost items such as advertisement, research and development expenditures. Significantly on the other hand in accrual accounting system, the manager will face different options about time of distinction of income. For example, the most rapid distinction of income is thorough credit sales. This kind of performance by managers is called "earnings management" (Moradi and et al., 2011).

Earning management is defined as intentionally taking steps under generally accepted accounting principles (GAAP) to achieve from the reported earnings to the desired earnings. The converging the reported earning to the desired earning is done through accounting manipulation (Malla-Nazari & Karimi-e-Zand, 2007). Today, earning management is one of the most debatable and interesting issues in accounting research since investors put lots of

emphasis on the profit digit as a one of the most important factors in the decision-making. Researches suggest that low earnings variation and its persistency indicate the quality of earnings. However, investors can invest with more confidence in the firms with more persistent earning trend. In this regard, earning management would be one of the methods of the window dressing of financial position that is done by management interfering in earning determination (Noravesh & et al., 2005).

On other hand, Jensen and Meckling (1976) defines the agency relationship as a contract under which one or more principals engage the agent to perform some service on their behalf which involves delegating some decision-making authority to the agents. With establishing agency relationship, both sides try to maximize their self-interest. Because principal and agents utility function aren't equal, interest conflict arises between them and drive in agency costs. It should be noticed that individuals have tendency to maximize their vested-interest and also agents do so. Agents are willing to show a good picture of firm's financial position to shareholders and other stockholder in order to maximize their vested-interest and social welfare and or to keep their position. Agency problem arises when maximizing agent's wealth doesn't necessarily lead to maximize stockholder and stakeholders wealth. However, with consideration of the interest conflict between agents and principals, agent will have an incentive to manipulate earnings to maximize their self-interest. Because earning management is done on various purposes by agents, empirical evidences of the research literature about agency relationship and earning management, in some extent, are mixed and vague. If earning management is done on an opportunistic purpose, firms will have more agency costs and agent will show more profit. In other words, there is positive relationship between earning management and interest conflict momentum. But if earning management isn't in favor of agent's vested-interest, it is expected that firms with high agency costs, have low earning management because earning management isn't done in favor of agent's interest (Pornsit, et al., 2008).

Jaggi and Gul (2000) in his research found that positive relationship between earning management and high free cash flows in firms with low growth. They argue that according to Jensen theory, in these firms, agents instead of distributing these free cash flows invest it in the projects with negative net present value which drops firms market value (market reacts). Therefore, these firms' managers try to adjust this situation by applying discretionary accruals items that step up income and achieve their vested-interest.

In addition, they showed that debt (financial leverage) adjusts the mentioned relationship.

Jones and et al. (2001) studied relationship between earning management and free cash flows in the firms with new and old-structured economy in Australia. He observed that there is positive relationship between discretionary accrual items and free cash flows in the firms with an old-structured economy (usually have low growth) because these firms' managers try to compensate their weak performance through discretionary accrual items, but he didn't find significant relationship in the firms with a new-structured economy (with high growth).

Chung, et al. (2005) investigated the relationship between earning management and free cash flows in firms with low growth during the period of 1984-1996. Their research sample consists of 22576 American firms. Their results indicate positive significant relationship between earnings management and free cash flows. Additionally, after survey on relationships among institutional stakeholders, audit firms and high audit quality they found out that the mentioned variables lead to a decrease in the relationship between earnings management and free cash flows and prevent managers from managing the earnings.

Opler and Titmen (1993) stated that firms with high growth opportunity are more probability to have low free cash flows, since available cash is invested on projects with positive NPV. Tsui and Gul (2000) investigated audit fee in high free cash flows and low growth firms in Hongkong. Their findings show, in this sort of firms, because of related agency problems of high cash flows, audit fee is high. Also, they explained that according to Jensen theory, debt factor can have important role in the audit fee reduction. According to Jensen theory, Jagi and Gul (2000) highlighted that debt factor adjusts the relationship between earning management and free cash flows in low growth firms. In other words, more debt ratio in these firms cause managers can invest less in negative NPV projects. Richardson (2006) found in firms with high free cash flows, the investment is more than optimal level. In his research sample, during 1998-2002, on average 20 percent of non- financial firms invested their free cash flows over optimal level.

Bukit & Iskandar (2009) studied about Surplus Free Cash Flow, Earnings Management and Audit Committee and found that independent audit committee helps companies with high surplus free cash flow to reduce income-increasing earnings management practices.

Wang and et al (2010) studied impact of compositions and characteristics of board of directors and earnings management on fraud and concluded that discretionary working capital accrual has not influence on fraud and the interaction of institutional director holding and the discretionary working capital accrual has negative influence on fraud before the act of the independent directors and auditor, but the discretionary working capital accrual has negative influence on fraud afterward.

The conclusive sum of this retrospective review of relevant literature produced till date on the offered subject reveals wide room for the validity and originates of this work and reflects some decisive evidences that affirm its viability, as may be marked here it. Nor has any previous research examined the free cash flows and Earnings management and the existence of free cash flows and Earnings management relationship of firms' listed in Indian stock exchange.

Objectives of the Study

The main object of the present study is to examine the inquiry of disparity between free cash flows in Indian Stock Exchange with an emphasis on earnings management. More specifically it seeks to dwells upon mainly the following issues:

i.　To observe the free cash flows and earnings management situation under the study;

ii.　To compare the free cash flows and earnings management situation under the study;

iii.　To explore the free cash flows and earnings management association;

Methodology of the Study

Research Hypothesis

There is a difference among firms free cash flows listed in Indian Stock Exchange with an emphasis on earnings management.

Sub hypotheses

H1: *There is a difference among firms free cash flows listed in Indian Stock Exchange with an emphasis on discretionary accrual items of earning management.*
H2: *There is a difference among firms free cash flows listed in Indian Stock Exchange with an emphasis on non-discretionary accrual items of earning management.*

Research Design

Research methodology which is used in this study is the correlation type. Since research aimed to investigate and compare firm's free cash flow with an emphasis on earning management, Correlation method is used for free cash flows and earning management variables. Statistical analysis is done by Eviews 6 software.

Documental along with survey-field methods are used in data collection.

Survey-field method for collecting data is from the financial statements of firms listed in Indian Stock Exchange and documental method is for literature study and research background review. In Survey-field method, required data for research variables measurement were acquired by using data bases of Indian Stock Exchange.

Research data sample consists of the listed firms in Indian Stock Exchange at all sorts of industry during the period of 2004-2010. Systematic-elimination random sampling is used for data sampling. Taking these characteristic into consideration, data sample reduced by 215 firms and from this number 142 firms selected, considering firms homogeneity and statistical guidance.

Research Variables

Research variables are free cash flows as an independent variable and earning management as a dependent variable. Len and Pulson model (1989) is applied for measuring free cash flows. According to this model free cash flow is calculated by deducting total of taxes, interest cost and dividend from operating income before depreciation and standardized by dividing it to assets as following:

$$FCF_{i,t} = (INC_{i,t} - TAX_{i,t} - INTEP_{i,t} - PSDIV_{i,t} - CSDIV_{i,t}) / A_{i,t-1}$$

Where:

$FCF_{i,t}$ is FCF of firm (i) at year (t)

$INC_{i,t}$ is operating income after depreciation of firm (i) at year (t)

$TAX_{i,t}$ is total taxes of firm (i) at year (t)

$INTEP_{i,t}$ is interest expense of firm (i) at year (t)

$PSDIV_{i,t}$ is preferred stock holders dividends of firm (i) in year (t)

$CSDIV_{i,t}$ is common stock holders dividends of firm (i) in year (t)

$Ai, t-1$ is total assets carrying value of firm (i) in year (t-1)

Adjusted Jones model (introduced by Dechow, et al. 1995) is used for EM measurement, for its ability to solve present research problem.

The model is as follow:

$$NDA_t = \alpha_1(1/A_{it-1}) + \alpha_2(\{\Delta REV_t - \Delta REC_t\}/A_{it-1}) + \alpha_3(PPE_t/A_{it-1})$$

Where:

NDA_t is discretionary accrual items at year (t)

$Ait-1$ is total asset of firm (i) at year (t-1)

ΔREV_t is the difference between percent years sale to previous year

ΔREC_t is the difference between present net receivables to previous year

PPE_t is gross plant, property and equipment in year (t)

$\alpha 1, \alpha 2, \alpha 3$ are firm's special parameters and calculated by following equation:

$$TA_t / A_{it-1} = \alpha_1(1/A_{it-1}) + \alpha_2(\Delta REV_t / A_{it-1}) + \alpha_3(PPE_t / A_{it-1}) + \varepsilon_t$$

TA_t is a proxy for total accrual items at year (t) total accrual items is calculated by following equation:

$$TA_{it} = NI - CFO$$

And discretionary accruals ($DA_{i,t}$) is calculated by the difference between total accruals and non-discretionary accruals as following:

$$DA_{it} = TA_{it} / A_{it-1} - NDA_{it}$$

$A_{i, t-1}$ is total assets carrying value of firm (i) in year (t-1).

Empirical Results and Analysis

Descriptive statistic of research variables are shown in Table-1. Free cash flows as the independent variable have the most co-efficient of variation and dispersion (400) and vice versa, discretionary and non-discretionary accruals as the dependent variable have fewer coefficient of variation

than free cash flows (69.3 and 153.4 respectively). The low persistence of free cash flows shows that, to some extent, level of free cash flows is independent from discretionary and non-discretionary accruals and can't explain these variations.

Table 1: Descriptive Statistics

Variables / Criteria	Discretionary Accruals	Non-Discretionary Accruals	Free Cash Flows
Mean	0.39	0.43	0.05
Median	0.38	0.39	0.04
Maximum	3.54	8.96	1.94
Minimum	0.87	4.63	1.13
Std. Dev.	0.27	0.66	0.20
C.V. (%)	69.3	153.5	400

Pool unit root test is used for investigation of variables persistency. Results from pool unit root test of Levin, lin and chu statistic and also Im, Pesaran and Shin-W statistic is shown in Table-2. All research variables including dependent and independent variables are persistent in studied period.

Method	Discretionary Accruals	Non-discretionary Accruals	Free Cash Flows
Levi, Lin & Chu t	-44/32 (0/0000)	-27/69 (0/0000)	-114/23 (0/0000)
Breitung t-stat	-2/76 (0/0000)	-3/25 (0/0000)	-3/82 (0/0001)
Im, Pesaran & Shin W-stat	-7/85 (0/0000)	-9/34 (0/0000)	-26/34 (0/0000)
ADF-Fisher Chi-square	126/25 (0/0000)	279/02 (0/0000)	309/53 (0/0000)
PP-Fisher Chi-square	289/37 (0/0000)	331/26 (0/0000)	351/58 (0/0000)
Hadri Z-stat	8/48 (0/0000)	11/99 (0/0000)	14/79 (0/0000)

To analysis sub-hypothesis 1 and 2, free cash flows effects on discretionary and non- discretionary accruals of earning management along with compare means test for discretionary and non-discretionary accruals in firms with low and high free cash flows are shown in Table-3 and

Table-6. It should be noticed that, since free cash flows data isn't normal and has positive skewness, the median is used for dividing data into two groups- high and low free cash flows. Finding of free cash flows effect on discretionary accruals in table 3 show positive relation between these two variables; it means that increasing free cash flows in firm causes increasing discretionary accruals. Also, the relationship between free cash flows and discretionary accruals with taking regression coefficient of free cash flows (0.037) and t-statistic (0.684) into consideration is not significant and shows that discretionary accruals is relatively independent from level of free cash flows.

Results of F-statistic indicate model in whole is significant and considering Durbin-Watson statistic, it hasn't auto-correlation problem. Results of coefficient of determination show that 0.288 of discretionary accruals variations is related to the firm's free cash flows.

Table-3: Associations between Discretionary Accruals and Free Cash Flows based on Regression Model

Dependent Variable: Discretionary Accruals		Method: Least Squares	
Variables	Coefficient	t-Statistic	Probability
Discretionary Accruals	-0.38	-12.35	0.000
Free Cash Flows	0.037	0.31	0.684
R-squared	Durbin-Watson Stat	F-statistic	Prop. (F-statistic)
0.229	1.99	2.16	0.000

Results of free cash flows effect on non-discretionary accruals which is shown on table 4 indicate negative relation between two variables. The relationship between firms free cash flows and non-discretionary accrual with taking regression coefficient of free cash flows variable (-0.016) is very weak and t-statistic (0.771) is not significant which indicates non-discretionary accruals is independent from firms free cash flows.

Results of F-statistic show that model isn't significant in whole and there isn't auto-correlation problem considering Durbin-Watson statistic. Results of coefficient of determination shows 0.192 of non-discretionary accruals variations is reversely related to firms' free cash flows.

Table-4: *Associations between Non-discretionary Accruals and Free Cash Flows based on Regression Model*

Dependent Variable: Discretionary Accruals		Method: Least Squares	
Variables	Coefficient	t-Statistic	Probability
Non-discretionary Accruals	0.32	17.20	0.000
Free Cash Flows	-0.016	-0.114	0.771
R-squared	Durbin-Watson Stat	F-statistic	Prop. (F-statistic)
0.192	1.69	2.01	0.000

In order to complete research results, compare means test is also conducted for discretionary accruals and non-discretionary accruals in firms with high and low free cash flows which is shown in Table-5 and Table-6.

ANOVA and t-statistic which is shown in Table-5 indicates that there isn't significant difference among discretionary accruals means in firms with high and low free cash flows.

Table-5: *Compare Means Test of Discretionary Accruals in Firms' with High and Low Free Cash Flows*

Method	df	Value	Probability
t-test	140	0.49	0.19
ANOVA F-statistic	1.14	0.38	0.19

Table-6: *Compare Means Test of Non-discretionary Accruals in Firms' with High and Low Free Cash Flows*

Method	df	Value	Probability
t-test	140	0.62	0.11
ANOVA F-statistic	1.14	0.85	0.11

ANOVA and t-statistic which is shown in Table-6 indicates that there isn't significant difference among non-discretionary accruals means in firms with high and low free cash flows.

Conclusions of the Study

To test research hypothesis, two regression models with a constant effects are estimated which is explained as followings:

1. According to Len and pulson model 0.229 variations of discretionary accruals is related to firms' free cash flows;
2. There is weak and negative relation between non-discretionary accruals and level of free cash flows according to Len and Pulson model and 0.192 of non-discretionary accruals variations is related to free cash flows, reversely;
3. Results of Anova and t-statistic indicate that there isn't significant difference among discretionary accrual means in firms with high and low free cash flows;
4. Results of Anova and t-statistic indicate that there isn't significant difference among non-discretionary accrual means in firms with high and low free cash flows. Research results are consistent with Jaggi and Gul (2000), Jones (2001) and Chung, et al. (2005).

Limitations of the Study

The findings have important implications for policy makers and practitioners. The results reveal an association, not a causal link, between surplus free cash flow condition and the level of earnings management. Also, inferences in this paper are limited by the selected sample and time period, and the sample size is relatively small. A larger sample size may be necessary in order to obtain a more statistical power for the data analysis and significant results of hypothesis testing. Thus, future research may employ a larger sample size in order to also improve the generalizability of results.

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GLOBAL ECONOMIC MELTDOWN AND ITS PERCEIVED EFFECTS ON BRANDING OF BANK SERVICES IN NIGERIA

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Abstract

This research paper examines the impacts of the global financial crisis on the Nigerian banking industry with particular emphasis on branding of bank services. The objective of this study is to determine what effects the crisis had on the Nigerian economy and to examine its effects on branding of bank services. It also focused on measures put in place to mitigate the negative effects of economic meltdown by the central Bank of Nigeria. Primary data were generated through in-depth interview and the use of the questionnaire. The study employed the use of chi-square in analyzing the data obtained. The findings of this study pointed out the fact that the global economic meltdown had a deteriorating effect on all sectors in the economy and had a greater effect on the financial sector in Nigeria most especially the banking sector. However, this economic meltdown has a positive effect on branding of bank services. Banks are investing on branding more than ever before, in order to survive the turbulent environment. It is therefore recommended that the regulators of the banking sector need to strengthen their legal framework in order to close all avenues which may create gaps for unethical practices to take place. Managements of banks are also encouraged to embrace internal marketing in order to promote excellent service culture.

Broadly defined, a recession is a downturn in a nation's economic activity. The consequences typically include increased unemployment, decreased consumer and business spending, and declining stock prices. According to Ogunleye (2009), recessions are typically shorter than the periods of economic expansion that they follow, but they can be quite severe even if brief. Recovery is slower for some recessions than from others. The global financial crisis, brewing for a while, really started to show its effects in the middle of 2007 and into 2008. Around the world stock markets have fallen, large financial institutions have collapsed or been bought out, and governments in even the wealthiest nations have had to come up with rescue packages to bail out their financial systems. Many blame the greed on the Wall Street for causing the problem in the first place because it is in the US that the most influential banks, institutions and ideologies that pushed for the policies that caused the problems are found.

For the developing world, the rises in food prices as well as the knock-on effects from the financial instability and uncertainty in the unindustrialized nations which were first witnessed in the late 70's and through the 80's are having a compounding effect. Global capital flows have largely frozen; credit crunch persists despite massive global liquidity injections; global aggregate demand fallen sharply (about $50 trillion value lost through capital markets, housing, etc); commodity prices collapsed; world trade shrinking; major global banks recapitalized by governments; international financial institutions without adequate resources to intervene: Global coordination failure. Major industrial countries and rich developing countries began designing trillions of dollars stimulus packages.

The former Governor of the Central bank of Nigeria Soludo (2009), at a special briefing of the Federal Executive Council said "resource flows and capital flows around the world are frozen up. Nigeria depends for more than 95 percent of its foreign exchange on oil and the price has crashed to the extent that from about July 2008, the outflow of foreign exchange has actually far outstripped

the inflows. According to him, Nigeria sold about a billion dollars a month to the bureau de change in 2008 but by early 2009 the inflow has been about $800 million a month.

The ICAN president in Appiah-Dolphyne, (2009) at a seminar also addressed the loss of N9 trillion clipped off from investors in the nation's capital market. Also the national coordinator of Independent Shareholders Association of Nigeria (ISAN) Mr. Sunny Nwosu in Ogundipe, (2009) explained that while some other nations have well spelt out recovery plans, Nigeria has been virtually inactive in taking visible revival steps to bring the economy out of the woods. Executive Secretary of Nigerian Automobile Manufacturers association M R. Arthur Madueke in Obi (2009) lamented that the productive sector which could have given stimulus to financial market's growth has been on a long recess in Nigeria. This paper therefore, examines the implications of the global financial meltdown on the Nigerian economy and seeks to assess the effect of the Soludo's led banking sector consolidation and recapitalization on the economy.

This is calling on the backdrop of the fact that although some analyst are painting the industry horizon with various brushes of gloom and doom, it came as a surprise and a relief when Forbes released its 2009 global rankings of companies and had three Nigerian banks namely; Intercontinental Bank Plc, First Bank, and the United Bank for Africa (UBA) Plc on the list of top 2000 world biggest companies, joining 248 other companies around the world to displace some number of companies that featured on the list in the 2008 ranking. Though the recent events in the Sanusi led sanitization of the Nigeria's banking sector have refuted such event through the indictment of eighth commercial banks for poor banking processes especially in giving out some non-performing loans to some individuals and corporate organizations without passing through the normal due process. This was well-received by the industry and regulators as a confirmation of the 2009 global banking industry ranking which also listed the same three banks among the top 500 banks in the world. Broadly speaking, First Bank of Nigeria Plc, Intercontinental Bank Plc, and Union Bank of Nigeria Plc, Zenith Bank Plc and United Bank for Africa are on the world's top 500 banking brands by the account of most international analyst

The primary objective of this paper is to examine the impact of global economic meltdown on the Nigerian banking services.

The specific objectives of this study are;

1. To determine the extent of the impact of the global financial crisis on the Nigerian banking industry and the entire economy.

2. To assess the perceived effect of global economic meltdown on branding of bank services.

3. To identify various measures put in place to mitigate the effect of the economic meltdown in Nigeria.

Research Hypothesis

For the purpose of this research work, some hypotheses were formulated and tested. The hypotheses are drawn from the objective and research questions of the studies. The hypotheses are:

H0: The global economic meltdown had no effect on the Nigerian Economy.
H1: The global economic meltdown affected the Nigerian Economy.
H0: The global economic meltdown is not perceived to have effect on the branding of bank services.
H1: The global economic meltdown is perceived to have effect on the branding of bank services.

Literature Review

Branding in Financial Services

History of Branding

Historically, the word brand comes from the Old Norse brandr, meaning to burn, and from these origins made its way into Anglo-Saxon. Early man stamped ownership on his livestock by burning; even the trade buyers used brands as a means of distinguishing between the cattle of one farmer and another. The utility of brands as a guide to choice has been established since that period. For example, a farmer with a particularly good reputation for the quality of his animals would find his brand much sought after, while the brands of farmers with a lesser reputation were to be avoided or treated with caution.

Some of the earliest manufactured goods in mass production were clay pots. A potter would identify his pots by putting his thumbprint into the wet clay on the bottom of the pot or by making his mark: a fish, a star or cross, for example. From this we can safely say that symbols (rather than initials or names) were the earliest visual form of brands. Even though in Ancient Rome, principles of commercial law acknowledged the origin and title of potters' marks, but this did not deter makers of inferior pots from imitating the marks of well known makers in order to deceive the public. In the British Museum there are even examples of imitation Roman pottery bearing imitation Roman marks, which were made in Belgium and exported

to Britain in the first century AD. Thus as trade followed the flag – or Roman Eagle – so the practice of unlawful imitation lurked close behind, a practice that remains commonplace despite the strictures of our modern, highly developed legal systems.

During the era of 17th and 18th centuries in France and Belgium, the manufacturers of fine porcelain, furniture and tapestries began increasingly to use brands to indicate quality and origin. During this time, laws relating to the hallmarking of gold and silver objects were enforced more rigidly to give the purchaser confidence in the product. However, the wide scale use of brands is essentially a phenomenon of the late 19th and early 20th centuries.

Developing countries, such as Nigeria, were not left out in the use of mark as a brand. Branding in Nigeria could be traced to the use of tribal marks which were used extensively for tribal identity. The use of tribal mark could be claimed to be identical to branding in business world since it is also not without linkage with (slave) trade.

The industrial revolution, with its improvements in manufacturing and communications, opened up the Western world and allowed the mass-marketing of consumer products. Many of today's best-known consumer brands date from this period: Coca-Cola soft drink, Nestle, Cadbury, Sunlight soap and Kodak film are just some examples. Hand in hand with the introduction of these brands came early trademark legislation. This allowed the owners of these brands to protect them in law.

Sequel to the arrival of the Internet and mass broadcasting systems, and greatly improved transportation and communications, brands have come to symbolize the convergence of the world's economies on the demand-led rather than the command-led model. But brands have not escaped criticism. Recent anti-globalization protests have been significant events. They have provided a timely reminder to the big brand owners that in the conduct of their affairs they have a duty to society, as well as customers and shareholders.

Services Branding

The developed world has seen a huge shift in output from industry and manufacturing to services, and as demand for financial and leisure services increases, brands will play an increasing role in a brand savvy world in which people have become more and more discriminating and difficult to please. Brand owners therefore need to ensure that they deliver high-quality services that are aligned with a compelling vision and delivered with a genuine commitment to customer satisfaction. In the highly competitive arena of financial services, the creation of solid core brand benefits is no longer sufficient to carve a competitive advantage in the face of intense competition and increasing deregulation (Debling, 1998; Harris, 2002). In the digital age (Melewar and Brains, 2002; Wright, 2002), it is critical to develop a multidimensional financial service brand along meaningful functional and emotional values, to enhance brand distinctiveness and superiority and to execute the financial services positioning and brand concept (Chernatony, 2001; Romaniuk and Sharp, 2000). Rather than being solely created by marketing communications or the marketing mix, brand equity is developed by the entire organization (Aaker, 1997, Schreuer, 1998).

Brands are a unique ways of communicating critical information to the market to influence decisions. Across a multitude of consumer focused industries, brands are an important means for differentiation and competitive advantage, although they are most influential when customers lack the data to make informed product choices and/or when the differentiation between competitors' versions of the same product are small to non-existent.

Contrast this with the financial services sector. Banks, in particular, have struggled to create and

deliver a well-differentiated customer experience. But in truth it is exceptionally difficult for banks to differentiate; all have broadly the same products, premises and services, and all seek to recruit the same type of employee. Employees can make a difference, however, as anyone who has had a memorable experience when dealing with their bank branch will know. Employees can make or mar a long-standing relationship, and as banking has traditionally been the business of relationships, investment in staff training is clearly one of the most important commitments to brand management that a bank can make. Brands have always been about trust, and it is instructive to reflect on the level of trust customers may have in their banks and other financial advisers.

Building and preserving satisfying customer relationships are crucial strategic motivators among those leading corporations that understand brand and regard customer relationships as true assets of the total business and not merely marketing communications icons (Davis and Alligan, 2002). Therefore, marketing actions must be in a position to create branding that is based on delivering critical elements of value, and must design marketing communications and customer experiences to reinforce that

value. Under this view of branding, customer relationships and brand equity management are no longer the sole domains of marketing operations.

Aaker (1992) suggests that customer relationships are one of five valuable assets that can be keys to building strong a brand. Shocker et al. (1994) propose that brand equity management must be viewed from a systems perspective that focuses on adaptation and responsiveness to competitors, customers and past actions. Strategies proposed by Lemen et al. (2000), based on customer equity, allow firms to trade off between customer value, brand equity and customer relation-ship management. While brand equity could be more important in some industries and companies than others, the role of brand equity depends on the level of customer involvement, the nature of the customer experience, the ease with which customers can evaluate the quality of the product or service before purchasing and the extent to which relationship equity will drives business. The convergence between the relationship marketing and branding and the close linkages between rationale for relationship marketing and the rationale for branding suggests that branding and relationship marketing are interdependent and could possibly be seen as two stages of the same process (Dall' Olmo, Riley and Chernatony 2000).

Before banks can create or take advantage of the brand associations consumers have with their banks, they must first understand consumers' existing perceptions of their brands. As such, an important component of banks' effort to build better relationships with their customers will be an increased focus on soliciting, listening and responding to consumer needs. According to Keller (1998), a strong brand in the twenty-first century also will rise above other brands by better understanding the needs, wants and desires of consumers to create marketing programmes that fulfill and even surpass consumer expectations. Services have advantages over products because they foster more direct experiences, which are vital to brand building (Joachimsthaler and Aaker, 1999).

The Nigerian Banking Sector and the Global Economic Meltdown; Actions and Reactions

Before the global financial crisis spread into the Nigerian banking industry, the banks had passed through different kinds of reforms and restructuring policies initiated by the Nigerian government through the Central Bank of Nigerian. The reforms gave the banks a lot of

challenging issues, because for the first time in the history of the Nigerian banking sector such major reforms were introduced. The global economic meltdown led into actions and reactions within the Nigerian banking sector. Some of these challenging issues discussed below preceded the global financial crisis in the sector while some were hydra-headed monsters that raised its ugly heads as a result of global economic meltdown;

Returns on Investment
According to Adeyemi (2005), after the 2005 consolidation period, a lot of challenging issues came up for the banks with the minimum capitalization of 25billion naira. This, he contended, made the managements of the banks to operate under pressure from shareholders who needed quick and maximum returns on their shares. He argued further that, before the consolidation exercise, the average returns on invested capital (ROIC) in the Nigerian banking industry was estimated to be about 38%. With the substantial increase in shareholder fund following from the consolidation exercise, each bank needed to generate an averaged minimum of 9.5billion naira in profit before tax in order to maintain the same rate of return. Therefore the pressure to meet this target by the management of banks has been forcing them to be more innovative and creative in coming up with new products and financing the real sector, which has been neglected for a long period.

System Integration
Adeyemi (2005) also argued that after the merger and acquisition exercise, integration poses a lot of challenges to the banking institutions that are involved. He argued that most of the consolidated banks lacked the flexibility to respond to global banking challenges that requires technical skills for good judgments on asset management. Furthermore, he contended that the integration of the operation, processes, procedures, people and products as well as allowing the consuming public to see the emerging entity as one group is a daunting challenge which the consolidation banks had to face. In relation to this, Hall (1999) pointed out that experience of consolidation from developed countries shows that the integration of system and human capital sometime takes between 3 to 4 years. Therefore, the urgency at which the CBN carried out the exercise, coupled with the need to have a computerised operation was a basic challenging issue for the bank. Financial player in the banking industry have constantly argued that computerisation of the entire sector will cost a total of 300 billion naira and some of the banks have already commenced the exercise. He contended that, the successful consolidation and system integration of the 25 big banks

notwithstanding, system integration is also required in other sectors like telecommunication, insurance, trade and commerce, power supply, fiscal policy etc. The absence of this would come with the tendencies for disruption in the entire macro-economic development.

Human Capital Integration

According to Nnanna (2004) harmonisation of cultural differences in the merging banks is a big challenge that needs to be addressed. This is because the merging banks will come with their different attitudes, processes and priorities. He argued further that where integration is not properly done it could lead to disintegration and collapse of banks. This argument is further buttressed by Adeyemi (2005) who argues that two-thirds of mergers worldwide fail due to irreconcilable differences in corporate culture and management squabble. Therefore, the emergence of mega banks in the post consolidation era was an uphill task which required the skills and competencies of boards and management. In the light of this, the integration of human capital in consolidated banks became a burden which a lot of the big banks contended with before the present economic meltdown (Osunkeye, 2008).

Corporate Governance

The CBN financial report (2005) pointed out that a survey of the Nigerian economy by the SEC shows that about 40% of quoted companies in the stock exchange market, including banks, have no recognized code of corporate governance in place. In addition to this, two thirds of mergers worldwide are said to fail due to inability to integrate personnel and systems as well as irreconcilable differences in corporate culture and management squabbles. These are the reason why banking experts say that unless the CBN releases codes of corporate governance, the post consolidation banking sector would still contend with the challenges of high turnover in board and management staff, inaccurate reporting and non-publication of annual accounts.

Re- Capitalization

According to Soludo (2005) one of the conditions for participating in the management of the nation's external reserve is to re-capitalize to the tune of one billion US dollar. In addition, he stated that any foreign bank that is wishing to manage Nigerian external reserves in the succeeding year must be ready to partner with one or more local banks to develop them into world class players. In contrast, local Banks that recapitalized to the tune of one billion US dollars will receive at least five hundred million US dollar from the reserves to manage. In order to meet the post consolidation requirement some the banks approached the Nigerian

stock exchange market either through public offers or right issues. For instance Zenith Bank and Guaranty Trust Bank in early 2008 raised additional fund from the stock market to comply with these directives.

Stock Market

According to Al-Faki (2005) the consolidation and the spring up of highly capitalized mega-banks has had tremendous concentration effects on the NSE; a development which he says could exacerbate market volatility and instability. He further remarked that SEC and the NSE must constantly monitor the market for signs of weakness in order to protect investors. In addition, he noted that consolidation would create mega banks that would threaten the competing market space with monopolistic tendencies, remarking that SEC will have to be particularly active to prevent this.

Remedial Measures to Mitigate the Impact on the Banking Sector

Current Banking Sector Reforms

Given the precarious state of the Nigerian banks, the CBN in June 2009, took a three pronged approach to assess the financial condition of the 24 banks. The first was the special examination exercise jointly conducted by the CBN and the Nigerian Deposit Insurance Corporation (NDIC). This exercise highlighted inadequacies in capital asset ratios and liquidity ratios as well as weaknesses in corporate governance and risk management practices in 9 banks. These banks were found to be in a grave situation as a result of capital, liquidity and corporate governance concerns. They failed to meet the minimum 10 per cent capital adequacy ratio and 25 per cent minimum liquidity ratio. Apart from accumulating high non-performing loans, these banks were seriously exposed to the oil and gas sector as well as the capital markets. Poor risk management practices in the form of absence of necessary controls measures were prevalent as the board and management of the banks had failed to observe established controls. The remaining 14 banks were found to be in a sound financial state and did not require the CBN to take any action.

The second approach was to carry out diagnostic audit through independent consultants. The report of the audit exercise revealed greater magnitude of weak financial condition of the nine banks. All of them were "technically" insolvent with significant negative asset value. It also exposed several illegal activities that had been taking place in five of the affected banks.

It was against this background that the CBN moved decisively to strengthen the industry, protect depositors and creditors, restore public confidence and safeguard the integrity of the Nigerian banking industry. The initial measures/ initiative taken by the CBN in conjunction with NDIC and the Federal Ministry of Finance (MOF) included injection of N620 billion into the nine banks; the replacement of the chief executive /executive directors of eight of the nine banks with competent managers with experience and integrity; reaffirmation of the guarantee of the local interbank market to ensure continued liquidity for all banks; and guaranteeing of foreign creditors and correspondent banks' credit lines to restore confidence and maintain important correspondent banking relationships.

When the new management of the banks took office, it became necessary to also carry out further detailed and independent assessment of the financial conditions of the banks. Thus, the third approach was to carry out management account audit of the affected banks by their new management. The outcome was very much in line with that of the audit report. Consequently, the management took numerous actions under the CBN guidance to ensure that the banks operated effectively with particular emphasis on improving transparency and operations. To improve operations, the new management took steps to: Improve reporting infrastructure, internal governance and risk management procedures; increase transparency and disclosure; ensure effective and continuous communication with all stakeholders and ensure weekly reporting between the MDs and the CBN on financial performance, loan recoveries, and Immediately report of any material developments to the CBN. Measures taken to improve operations included continued focus on loan recovery to improve NPL ratios; reducing cost to income ratio; avoiding unnecessary costs; focus on de-risking and de-leveraging the balance sheet and liquidity management. There is no doubt that these initiatives enabled some of the banks to continue normal business operations and prevented a total collapse of the banking sector.

Long Term Reforms Measures

The focus of the Central Bank of Nigeria is first of all to ensure that there is financial sector stability and, secondly, that the financial system assists in growing the real sector of the economy. It is important to note that any economy that cannot create jobs on a continuous basis, reduce poverty, and guarantee its citizens functional and qualitative education as well as world class infrastructural facilities is not only

unsustainable but would remain globally uncompetitive. Attainment of this fit goes beyond short term palliative measures. It requires a strategic medium to long term measures. This explains why the focus of the recent CBN reforms is in the following four areas (pillars) namely: enhancing the quality of banks; establishment of financial stability; enabling healthy financial sector evolution; and ensuring that the financial sector contributes to the real economy.

Enhancing the Quality of Banks

This consists of a five part programme to enhance the operations and quality of banks in Nigeria. These are industry remedial programmes to fix the key causes of the crisis, implementation of risk based supervision (RBS), reforms to regulations and regulatory framework, enhanced provisions for consumer protection, and internal transformation of the CBN.

The industry remedial programmes include a set of initiatives to fix the key causes of the crisis, namely, data quality, enforcement, governance, risk management and financial crime. These initiatives are structured in such a manner that the banks do most of the work to entrench new behaviours in the industry, with the CBN playing a cross-industry management role. The focus is to ensure that governance best practices are embedded in the industry including the CBN as well as ensuring that risk-based supervision (RBS) principles, methodology and processes are established across the CBN and NDIC. Under the RBS, the intention is to establish a programme management structure within the CBN to ensure that there is a high level of communication with the industry, implementation quality is measured and examiners acquire the necessary skills. A monitoring mechanism to measure the programme's impact and ensure a high level of responsiveness to issues raised by the industry will also be established.

The regulation and regulatory framework reform programme involves systematic review of regulations and guidelines around the key causes of the crisis by industry regulators; harmonization and raising to world-class standards of the supervision processes, technology and people within the various financial regulators; and establishment of a centre of competence for international Financial Reporting Standard (IFRS) and N-GAAP+ implementation.

In the area of consumer protection, the aim is to ensure that consumers receive appropriate protection with the CBN acting as the consumer's advocate, setting standards of customer service for the industry and ensuring that customers are treated fairly in all their dealings with the

industry. Already, there is a Consumer Protection Unit in the newly created Financial Policy and Regulation Department of the Bank. This Unit will work with supervisors to ensure that appropriate rules and regulations are enforced by the banks.

Under the reform, the CBN will be transformed to ensure good corporate governance, stronger information management system, people development, and enhanced disclosure to levels expected in major investor countries such as the United States, the United Kingdom, South Africa, China and India.

Establishing Financial Stability

The main thrust of this pillar is for the CBN to provide leadership in some areas and championing some causes. The key features of this pillar centre around strengthening the Financial Stability Committee within the CBN, establishment of macro-prudential rules, development of directional economic policy and counter-cyclical fiscal policies by the government and further development of capital markets as alternative to bank funding. The creation of a new macro-prudential framework designed to ensure that monetary policy is not only shaped by systemic risk trends but also consistent with the expanded goals for product and asset stability is a major component of this pillar. This will be complemented by the establishment of the Financial Stability Committee (FSC) which will work together with the Monetary Policy Committee in achieving these objectives. It is the intention of the CBN to champion the development of the capital market through the improvement of its depth and accessibility as an alternative to bank funding as well as encourage implementation of directional economic policy, particularly counter-cyclical fiscal policies, that will reduce oil-related volatility in the system. It is time to make better use of our oil endowment by harnessing it for strategic investment and also ensure that lending and investment get to the real economy, especially the priority sectors, instead of being used to inflate financial asset bubbles.

Enabling Healthy Financial Sector Evolution

The focus here is on ensuring the emergence of a competitive banking industry structure; provision of the required infrastructure for financial system such as the credit bureau and registrars; improvement in the cost structure for banks through cost control and business process outsourcing; reliable and secure payments system; reduction of the informal sector and greater financial inclusion. Foreign bank participation would be encouraged in order to improve and strengthen the financial system provided such entry does not affect the development

of the local banking sector. Market-based merger and acquisitions activities that would create stronger banks would be supported while other banks that would drive regional economic development will be licensed. In the area of infrastructure provision, three private credit bureaus (XDS Solutions, CRC Limited and CR Services Limited) have been licensed while the CBN would work with the Securities and Exchange Commission (SEC) towards the creation of an acceptable number of Registrars for all securities in the country. Central to the reform is the need to check the excessive costs in the banking system which is attributable, in the main, to infrastructure cost, high salaries/emoluments for executives and poor operational efficiencies. It is the intention of the CBN to encourage the development of electronic channels to drive down industry cost structure while working with the banks to improve on the quality of service delivery in order to improve customer confidence.

Nigeria presently has a large informal sector which has been estimated by the World Bank to constitute about 57.9 per cent of Nigeria's Gross National Product (GNP). This is higher than what obtains in Brazil, Ghana, Turkey, Malaysia and South Africa. Developing a financial system that will take care of this large segment of the economy is of utmost necessity. Thus, enhanced financial inclusion strategy would result in more accurate measurement of economic outputs, increase in tax base and tax revenue, more effective policy development and more efficient use of financial infrastructure. All these will in turn improve policy efficiency and help in poverty reduction.

Central to healthy financial sector evolution is the establishment of the Asset Management Corporation of Nigeria (AMCON) as part of a broad banking sector crisis resolution strategy. The AMCON Act 2010 was signed into law on July 19, 2010. When operational, AMCON would serve as a vehicle to free the banks from the weight of their non-performing assets and accelerate the process of financial revitalization of the banking sector. Besides, the CBN is currently reviewing the basic one-size-fits-all model of banking that has emerged since consolidation. In addition to reviewing the universal banking model, we consider it appropriate to introduce greater diversity in bank mandates. In the near-term, it should be possible to have international, national, regional, mono-line and specialised banks such as Islamic banks in the country. Already the guidelines for specialized institution have been fixed as follows: non-interest bank (regional), N5billion, noninterest bank (National), N10 billion, and primary mortgage institutions, N5 billion. The commercial banks

have also been restructured into regional, national, and international banks with paid-up share capital of N10 billion, N 25 billion, and N 50 billion, respectively.

Ensuring the Financial Sector Contributes to the Real Economy

The last and final pillar of the reform blue print is ensuring that the financial sector contributes to the real economy. Rapid financialisation in Nigeria did not benefit the real economy as much as had been anticipated. Development financial institutions set up for specific purposes such as housing finance; trade finance and urban development have not fulfilled their mandates. Many successful emerging markets have witnessed proactive government actions to ensure that the financial sector contribute to the real economy. Nigeria can learn from countries with successful track records in creating financial accommodation for economic growth through initiatives such as development finance, foreign direct investment, and venture capital and public-private partnerships.

Materials and Method

The major sources of data for this research were in-depth interview with experts in banking and finance matters as well as a set of questionnaires distributed to marketers in strategic management level in three different banks situated within a particular community in Ogun state, Nigeria. The questionnaire has three sections. The first section of the questionnaire dealt with demographic information of the respondents, while the second section of the questionnaire dealt with global financial crisis and Nigerian economy, third section dealt with branding of bank services.

Each question in sections B and C, was designed so that information could be elicited from the respondents based on their observations

The population for the study consisted of all the strategic marketers in these three banks under study. 45 copies of the research instrument (questionnaire) were hand-delivered to a purposive sample of 15 strategic marketers from each of the banks. Some copies of the questionnaire were returned directly by the respondents or were retrieved personally by the researcher after reasonable time period had elapsed. In all cases, the researcher allowed reasonable time for questionnaire completion.

This study relied on both primary and secondary data. The latter was obtained from the official website of the Central Bank of Nigeria and the Nigeria Deposit Insurance Corporation. The primary data, collected was used to complement data from the secondary sources.

In the process of testing the hypotheses, this study considered the use of a Chi-Square statistic as a method to test the hypotheses raised in this research study. According to Newbold et al, (2007), the Chi-Square method is a statistical method used to determine whether an observed distribution of answers shows a significant difference from a hypothetical distribution of answers.

Assume that there are answers which can be divided into K categories. Let the number of observed answers in category i be O_i and let the number of expected answers of type i be E_i. Then the chi-square statistic is;

$$x^2 = \sum_{i=1}^{k} \frac{(O_i - E_i)(O_i - E_i)}{E_i}$$

Where the degree of freedom is K-1. If the difference between the E_i:s and the O_i:s is small then x^2 takes a smaller value. Then the hypothesis represented by the expected values (E_i), is more likely to be confirmed.

Result and Discussion

Hypothesis Testing

Hypothesis 1
H0: *The global economic meltdown had no effect on the Nigerian Economy.*
H1: *The global economic meltdown affected the Nigerian Economy.*

Table 1: Analysis of Hypothesis 1

RESPONSE	OBSERVED N(0)	EXPECTED N (E)	(O-E)	(O-E)²	(O-E)²/E
NO	11	22.5	-11.5	132.25	5.88
YES	34	22.5	11.5	132.25	5.88
TOTAL	45				11.76

The degree of freedom can be calculated as:

$$(R-1)(C-1) = (2-1)(2-1)$$
$$= 1$$

Where: R = Row
C = Column

From the table calculated above, we have 11.76, while the t table at 0.05% level of significance at degree of freedom one is (3.84). Therefore, we reject the null hypothesis and accept the alternative hypothesis which states that the global economic meltdown affected the Nigerian economy.

Hypothesis 2

H0: *The global economic meltdown is not perceived to have positive effect on the branding of bank services.*
H1: *The global economic meltdown is perceived to have positive effect on the branding of bank services.*

Table 2: Analysis of Hypothesis 2

RESPONSE	OBSERVED N(0)	EXPECTED N (E)	(O-E)	(O-E)²	(O-E)²/E
NO	16	23.5	-7.5	56.25	2.39
YES	31	23.5	7.5	56.25	2.39
TOTAL	47				4.78

The degree of freedom can be calculated as:

$$(R-1)(C-1) = (2-1)(2-1)$$
$$= 1$$

Where: R = Row
       C = Column

From the table computed above, we have 4.78, while the t table at 0.05% level of significance at degree of freedom one is (3.84). Therefore, we reject the null hypothesis and accept the alternative hypothesis which states that the global economic meltdown has a positive effect on branding of bank services.

Discussion of findings

Secondary sources as well as findings from the in-depth interview, which the researchers had with a group of experts in banking and financial matters, indicate that the global financial crisis was manifested strongly in liquidity crisis due to the withdrawal of credit lines by foreign banks (Soludo, 2009). According to the CBN annual report (2008), in order to cushion the impact of the global financial crisis and ensure adequate bank liquidity, the Monetary Rate of Policy (MRP) was reduced from 10.25% to 9.75% and the Cash Requirement Ratio (CRR) was also reduced from 4% to 2%. In addition to this, the rate at which banks lend to each other, the Inter Bank rate was also increased from 14.01% to 15.79%.

An expert believed that the impact of global financial crisis on the Nigerian banking industry was also reflected in the Broad and Narrow money. During this period, the Broad and Narrow money contracted by 1.9% and 3.9% respectively, compared to the preceding quarter. According to the CBN Quarterly report (2008) the decline in Broad money was as a result of the fall in the asset values of the banking system caused by the global financial crisis.

Furthermore, the lending and deposit rates have increased since the global financial crisis began. Evidence from the CBN annual Report (2008) indicates that the maximum lending rate has widened from 8.13% to 9.97%. Also, the margin between average saving deposit and maximum lending rate has widened from 16.62% to 19.33% during this period of crisis. These various impacts led to a confidence crisis in the banking industry and consequently to the capital market downturn. Presently, disinvestment by foreign investors with attendant tightness has resulted in capital market downturn. In terms of capital decline, the Nigeria capital market has since March 5th, 2009 to date lost about 3.38trillion or about 26.7%.

Evidence from the in-depth interview shows that immediately after the consolidation exercise of bank, the banks had a lot of liquidity to meet customer demand for loans and advances. In addition to this, the banks were desperate to meet the required minimum rate of return on investment. This could be regarded as their own concept of sub-prime mortgage, because banks borrow money to customers to investors in the IPO's of the same banks. So when foreign investors withdrew their credit lines, the impacts manifested strongly as a lot of the banks loans became toxic.

Further, the CBN pronouncement after the consolidation exercise that banks with a minimum of one billion dollars will be allowed to participate in the management of the country's foreign reserves was untimely. This might to a large extent have increased the level of their exposure to financial institutions with poor record of capital adequacy. Therefore, when these financial institutions began to recall their credit lines the Nigerian banks became more vulnerable to the crisis.

It became revealing from this study that banks exert more efforts and invested more in branding during as well as after global financial crisis. This finding is similar to the position of Monrabal-Puerta, in his work titled; "How can Brand and Crisis Co-exist in a Turbulence Environment". According to him, 'Turbulence with Brands has the same

effect that it does with other things in a hurricane, it takes the weakest things and only the strongest survive it". In the current worldwide financial crisis this scenario is very similar. Therefore, the crisis in Marketing terms might be defined as an unpredictable and hostile situation. The objective of this research is to study the effects of the global financial Crisis on Branding. While it becomes obvious that global financial crisis will have adverse effect on bank service brand, managements of these banks were all out to mitigate the effect by investing more money to promote its brands.

Conclusion and Recommendation

The study explored the perceived effect of global financial crisis on branding of bank services. This has become necessary because the present financial crisis in the Nigerian banking industry has been attributed to a lot of factors. The characteristic features of the Nigerian banks show that the banking sector before the global financial crisis was sound and vibrant enough to support the nation's economic growth and development. This was revealed from the in-depth interview and questionnaire that was distributed to strategic marketers in the banking industry. The management teams attempt to boost the standards of their banks and also to have high returns on investments have exposed some the banks to the financial crisis. The impacts of the crisis could have been avoided if there were precautionary measures. Based on the findings of this study, it becomes very crucial to suggest the following;

- The Nigerian banks do not have access to long term deposits that would enable them to grant long term loans to their customers. This made the banks to over rely on foreign financial institution and banks for credit lines. In order to avoid this, the Nigerian government through the CBN should organize and strengthen the growth of institutions like the pension fund, Housing fund, Health insurance fund etc. This could be achieved through a financial liberalization policy.
- The Nigerian government should find alternative ways to fund their budget deficit so as to reduce the pressure of financing projects in the real sector of the Nigerian economy by banks.
- Nigeria Deposits Insurance Corporation should strengthen its legal frame on insuring of deposit fund. This will create confidence in the mind of the public.

- Banks should stop giving out loans to invest in the stocks of banks that are quoted in the Nigerian stock market.
- The survival and strength of the brand will be determined by the strength of the marketing strategy of that organization. Therefore, in order to maintain a strong brand in a turbulent environment there is need for bank management to engage a team of marketers who are strategic thinkers.
- Business leaders need to change their business models if they are to maintain strong brands. One of the major strategies required is excellent service culture. This service culture will be as a result of staff branding.
- The managements of such banks are encouraged to embrace internal marketing. The vision, mission and strategies put in place should be properly marketed to the employees.Teamwork must also be encouraged among the staff.

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AN ANALYSIS OF GLOBALIZATION AND HIGHER EDUCATION IN MALAYSIA

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Abstract

This study aims to examine the impact of globalization on private higher education in Malaysia. The impact of globalization and the development of knowledge-based economy have caused much dramatic change to the character and functions of higher education in Malaysia. The major trend is the reforming and restructuring of private higher education in Malaysia to make it more competitive globally. Malaysia and many of the Asia Pacific countries are promoting higher education to the world. However, criticism from world educational councils have highlighted that the impact of globalization on higher education in Asia Pacific countries to follow the ideologies and global practices without developing their own unique systems and disregarding their rich tradition and cultures. **Key words:** Higher Education, the impact of globalization, Ministry of Higher Education's role, major trends and policies.

Globalization is a term frequently used in the world today, but its precise meaning is not always clear. Globalization and internationalization are sometimes interchangeably used so that the differences between them are not consistently defined. In higher education, there are a dizzying variety of definitions of both words. Higher education in Malaysia is delivered through both public and private systems under the jurisdiction of the Ministry of Education. In this paper, higher education system refers to the system that incorporates post-secondary education, namely colleges and universities. The bulk of the higher education is carried out by the country's public institutions but the private education sector also complements the efforts of the government by offering the opportunity to pursue higher education at a more affordable fee than is available elsewhere. Higher education in Malaysia began with the formation of University Malaya in 1959. To date, twenty public universities have been established in Malaysia to cater for the increasing needs of business and industry. However, the public institutions cannot cater for the rising demand for higher education in the country. The private colleges began to emerge in Malaysia in the early 1980's but started to mushroom only when the Private Higher Educational Institutional Act (PHEIA) was enforced in 1996, allowing the private sector to enter the higher education market. There are now about 600 private higher learning institutions including eleven private universities in Malaysia that complement the work of public institutions in providing higher education. The most recent development amongst private colleges in the last decade was the introduction of twinning programmes where a local college enters into an arrangement with a foreign university and provides the first stage of degree course in this country, while the final part is taken at the university concerned overseas. Apart from public universities, and private universities and colleges, polytechnics were also established by the government in 1969 to provide training in engineering and commerce to students specializing in technical and vocational areas.

Tengku Shamsul Bahrin, President, Malaysian Association of Private Colleges: Free flow of information and knowledge has always been a major instrument in promoting globalization. Malaysia's liberal approach to higher education provides a host of opportunities for people from various parts of the world to come here to acquire

knowledge at affordable prices. Malaysian colleges have been able to offer foreign academic programmes from established universities in the UK, Australia, New Zealand, US and Canada to students from a number of other countries. This way, Malaysia has become a "middle man" in the provision of higher education.

Dr. Ismail Rejab, Director, International Business School, Universiti Teknologi Malaysia: Globalization has created awareness amongst universities and other institutions of higher learning that they must foster working relationships with their overseas counterparts. This arises from the need to benchmark their performance with select foreign universities in areas such as teaching pedagogy, course content and its market relevance, quality of the teaching faculty, learning facilities and work culture of the support staff.

Mass private sectors are present in countries where the provision of public higher education has been limited to relatively few institutions of high academic standing. The excess demand for higher education in these systems has been absorbed through the rapid expansion of private institutions. In most mass private sectors the majority of students are enrolled in private institutions. However, it is not size that matters but the character of the private education that is decisive. The distinctive feature of mass private sectors is the accommodation of a large portion of students in low-cost, low-selective, and usually low-quality institutions. Following Geiger, "hierarchy is a prominent and inherent feature of mass private sectors. The peak institutions are usually the flagship national universities, but below the peaks institutional stratification depends upon much more than public or private status". However, other older, mature public universities and colleges usually enjoy greater prestige and are usually perceived as being of higher quality than private providers.

Private higher education institutions in mass private sectors are heavily dependent on tuition fees, demand-absorbing, and market-oriented. They usually offer few study programs, vocationally oriented, in high demand study fields, with mostly part-time academic staff and low tuition fees. The state plays a decisive role in the emergence and existence of such mass private sectors. States take such a course for a time in order to meet the demand for higher education, which the public sector is not able to absorb. In the majority of mass private sectors, the state does not provide any subsidies for private colleges and universities (Geiger, 1986).

Therefore, the policy problem for mass private sectors is whether low-quality higher education is preferable to no higher education for large number of students, mostly from lower socioeconomic backgrounds. The response of government to the proliferation of low quality private higher education has generally been extensive regulation of the content and method of instruction in an effort to uphold minimum standards, usually with the introduction of state accreditation. Governments also attempt to rein-in the proliferation of new private higher education by introducing more strict requirements for opening private institutions (Scott, 1998).

Globalization Era

In today's globalization era, knowledge is increasingly a commodity that moves between countries. The growth of the knowledge-based economy has led not only to competition among employers worldwide for the best brains but also among the institutions that train the best brains. Globalization is seen here as the root cause of changes taking place in higher education and can simply be defined as "……..the flow of technology, economy, knowledge, people, values, ideas………..across borders (Knight, 1999). The traditional form of cross-border flows in higher education has been for students to migrate from one country to another to advance their studies. Several economic and social factors encourage international student mobility and competition between countries for foreign students (Clark and Sedgwick, 2005, OECD, 2004).

One of the dramatic changes in the private higher education in Malaysia in recent years (since mid 1990's) has been to adopt the higher education of foreign developed nations. By this adaptation, many foreign campuses have been set up to cater for a vast majority of local students and some international students. Malaysia is then viewed as an "educational hub" by foreign partners who are keen to work closely with private education institutions for a win-win solution. There are vast numbers of definitions of the term "globalizing higher education". Further, this term is often used interchangeably with terms such as "cross-border" higher education, "borderless" higher education or "multinational" higher education. For example, according to UNESCO, the term "transnational education" is generally defined as education "in which the learners are located in a country different from the one where the awarding institution is based" (UNESCO/Council of Europe, 2000).

Similarly, Jane Knight has argued that, transnational and borderless as well as cross-border education are terms that are being used to describe real or virtual movement of students, teachers, knowledge and educational programs from one country to another (Knight, 2002). In 1995, the 20 percent of Malaysian students who were studying abroad cost the country around US$800 million in currency outflow, constituting nearly 12 percent of Malaysia's current account deficit (Silverman, 1996). While part of the solution was to increase the capacity of public universities (Neville, 1998), the government saw the local private sector as the key means of reducing this currency outflow and in the long term of transforming Malaysia into a net exporter of tertiary education (Ismail, 1997). With the passage of the Private Higher Educational Institutions (PHEI) Act 1996, the government formally began to encourage the private sector to play a complementary role in the provision of tertiary education. As a result of these measures, by the end of 1999 the proportion of young Malaysians between 17 and 23 years of age in tertiary education had increased dramatically to 22 percent, with 167,507 enrolled in public universities and an estimated 203,391 in private institutions according to government figures (Johari, 2000). By 2000, there were 11 public tertiary educational institutions, seven new local private universities, three foreign university branch campuses and more than 400 private colleges approved by the Malaysian Government (Challenger Concept, 2003).

One of the most important developments of recent years is that governments have come to realize the key contribution of higher education in global national positioning, creation of national wealth and welfare and attracting significant foreign exchange. New private universities and branch campuses of foreign universities may only be established following an invitation from the Minister of Education. The PHEI Act of 1996 was amended in 2003 in response to new challenges in the provision of private higher education. Specifically, the amended act provides for the establishment and upgrade of private universities, university colleges and branch campuses of foreign universities in Malaysia. Indeed, several private higher educational institutions were subsequently upgraded to university colleges. The number of international students in Malaysia has been increasing between 1996 and 2008 with the liberalization of education. Overall, the market in Malaysia experienced a 42.7 percent year-on-year growth between 1997 and 2002. It is reported that although the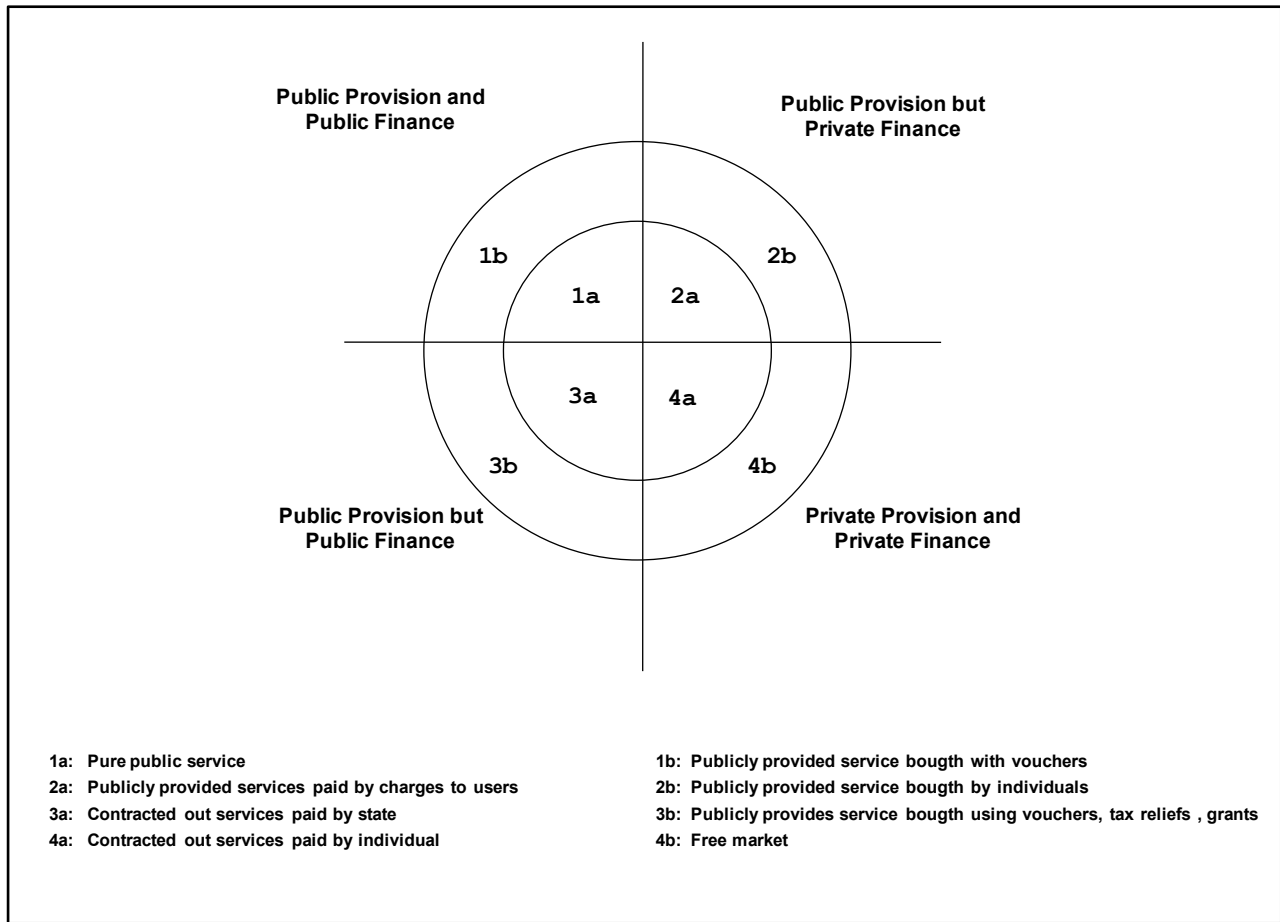 number of international students in Malaysia has fallen in 2001 from the previous year, the number continues to increase within leading educational institutions both in the private and public sectors (PWC Consulting, 2008).

The presence of a large number of foreign programs in Malaysia has brought the expected trade benefits and Malaysia is already making progress in its quest to become a net exporter of tertiary education by 2020 (Malaysia, 1999). There has been a rapid growth in the number of international students studying in Malaysia, jumping from 5635 in 1997 to 45, 636 in 2008 (Education Quartely, 2009, Lee, 2009). Similar to many developing countries across the world, education at the highest level in Malaysia is used as a vehicle by the state for nation-building agenda that promotes national unity, alleviates poverty and bridging up the social disparity gaps. This nationhood agenda is of paramount importance to the policymakers in light of the ethnic diversity of the country. Bearing this in mind, the massification of higher education, the increasing cost burden, and the global trends in restructuring higher education, the government response can be seen in various policy initiatives that paved the way for the liberalization and privatization of the higher education sector (Morshidi, 2006).

Privatization of the Higher Education Sector

The restructuring of higher education worldwide has seen the shift in thinking of education as a pure welfare or social good to one that is subject to market principles. The World Bank and OECD have been instrumental in encouraging governments to change their public policy based on social good to one based on economic good (Currie and Vidovich, 2000). The World Bank Report of 1994 on Higher Education urged countries to reduce their universities' overdependence on a single (state) source of funding; and to diversify towards more money from tuition fees, consultancies and donations. This stems from the thinking that the benefits of education is made up of two major components – social benefits that accrued to the society at large and also the private benefits that goes directly to the recipient of the education. Countries are dismantling centralized bureaucracies to quasi markets with emphasis on parental choice and competition (Whitty and Powell, 2000). This marketisation and corporatization of what used to be a public good may best be seen as in the following Figure 1below.

Figure 1: Spectrum of Marketisation and Privatisation ofWelfare

1a: Pure public service	**1b:** Publicly provided service bougth with vouchers
2a: Publicly provided services paid by charges to users	**2b:** Publicly provided service bougth by individuals
3a: Contracted out services paid by state	**3b:** Publicly provides service bougth using vouchers, tax reliefs , grants
4a: Contracted out services paid by individual	**4b:** Free market

Source: Whitty and Powell (2000)

Thus, the introduction of market principles into the education sector has seen a whole gamut of types of higher education institutions from the creation of fully private for profit institutions, to institutions that are largely government funded but having undergone reforms to incorporate market principles in their operations, which are commonly referred to as corporatized institutions (Currie and Vidovich, 2000). Just as there is a whole range of modes of privatization and marketisation of higher education institutions, there is also a whole host of reasons for the growth of private and corporatized institutions.

Another reason that supports the growth of private higher education is the declining capacity of public institutions to meet the increasing demand for tertiary education. This is the "overcrowding" thesis where over-subscription of the public systems leads to migration of unsatisfied demand to the private sector (Oketch, 2004). This is particularly true in rapidly expanding developing nations, as education is perceived as the quickest route for social mobility.

Another reason cited for the growth of private educational institutions is the differentiated demand thesis, where the needs of particular social groups can only be catered through the private delivery system. This is true in many cases of denominational private higher education institutions in countries such as the Philippines, Brazil and Kenya. Some evidence of it is also seen in Malaysia at one stage. However, the one common theme that drives privatization and marketisation of higher education institutions the world over is the impact of globalization and its imperatives of competition, commercialization, deregulation, efficiency and accountability.

The privatization of the education sector in Malaysia is part of the devolution of the education system. It is a political move on the part of the government to meet the excess demands for tertiary education (Lee, 2002). This upsurge in demand for tertiary education in Malaysia resulted from two major factors: (1) the government's decision in 1991 to extend free basic education from nine

years to eleven years and (2) the escalating tuition fees in overseas institutions which have reduced this access to higher education. One unique feature of the expansion of the private higher education sector in Malaysia is the influx of transnational education, where private higher education institutions offer foreign linked degree programmes to the locals. These foreign-linked programmes take on a variety of forms where the proportion of time a student has to spend in their overseas institutions ranges from zero to about 50 percent. Further, the ownership of the private higher education institutions is also diverse to include private investors, government-linked companies, major political parties and also foreign owned (in the form of branch campuses of foreign universities). Though the majority of these private higher education institutions are for-profit organizations, social responsibility issues are also pertinent for those owned by political parties and government-linked corporations.

As seen earlier, the growth of private education can be for any number of reasons. In the case of Malaysia however, the private higher education institutions are seen as a conduit to absorb the spillover of the excess demand for tertiary education, not met by the public system. This does not mean, however, that the public capacity is shrinking. In fact, the number of public higher education institutions has increased many folds; from a total of 6 before 1984 to 20 now, with the intake increasing at an average of 10 percent per annum. However, the rate of increase in demand far outpace the growth in number of higher education seats in the public sector, that it is inevitable for the government to liberalize and transfer some of the responsibility for higher education to the private sector.

Another important role that the private higher education institutions have is in fulfilling the government's aspiration to make the nation a centre for educational excellence in this region. Education is a lucrative economic sector with a global annual fee income estimated at US$30 billion, and this market has been growing at an annual rate of seven percent since 1990s (Economist, 2005). Given the relative importance placed by Asian parents on tertiary education, this economic potential has yet to tap into successfully by the Malaysian government. Further, the financial crisis of 1997 in this part of the world has exposed the serious economic impact in foreign exchange outflow of depending on foreign (Western) education for their nationals. The public education system, with the primary language of instruction being Bahasa Malaysia and the resource constraints it faced, is perceived to be unattractive for potential foreign students from this region, and cannot cater for any significant increase in numbers. Private higher education institutions with lesser demand on it by the government will be able to cater for the needs of foreign students.

In Malaysia, the private higher education sector is still in its infancy and number wise, it is still dominated by for-profit institutions (Morshidi, 2006). It is therefore expected that the quality of education in private higher education institutions is perceived to be lower than that offered in public institutions. This can also be explained by the resource based theory, in that average private higher education institutions can be considered lightweight, relative to an average public higher education institution, in terms of the amount and quality of resources it can command in its provision of the educational services to the students. As Lee (2004, p. 26) noted that private higher education institutions in general suffer from an acute shortage of academics, particularly for degree programmes that are very much in demand like IT, medicine, engineering, management, that they have to resort to employing foreign staff. However, there are private higher education institutions, such as Universiti Teknologi Petronas, Universiti Multimedia and Universiti Tenaga Nasional that are linked to large government-linked corporations and Unviersiti Tuanku Abdul Rahman, which is linked to the the second largest political party, that have resources comparable to that of a public institution to ensure quality. The government needs to liberalize in order to develop and expand the private higher education sector for reasons addressed earlier. At the same time however, it needs to regulate and control the sector as it holds that higher education is very critical in nation-building. Issues of equity of access, consumer protection and advocacy and national identity will be jeopardized if left to the market forces. These are issues that are not within the accounting framework of corporate for-profit decision-making; and therefore responsible government will have to find a handle for them.

Challenges for Higher Education

Education and more particularly higher education are seen as a major foundation in implementing the complex process of globalization. With the advent of globalization, advanced information technology and increased transnational travel, higher education services have already been expanding beyond territorial boundaries either electronically or through physically-based campuses. Exporting higher education services emerged in the late 1980s and early 1990s and is now becoming global, market-oriented and private industry prevailing not only

among those developed countries but also in the Asia Pacific region. For instances, Australia and Singapore have already established their international networks by setting up international academic offices and collaborating with partner institutions to attract overseas students to study in their own countries. Australia is now the third largest provider of education to overseas students in the world after USA and United Kingdom (Dunn and Wallace, 2004; Marginson, 2002).

Higher education, as a consequence, has moved from a peripheral to a central position in the responses of governments to globalization; it is a key factor in the developing countries, evidenced by the World Bank's "Task Force Report on Higher Education in Developing Countries" (2000); it is undoubtedly viewed as crucial to the developed countries, as illustrated in a number of chapters in this book (Lillie, Sporn, Marginson et al). Peter Scott (writing in the Globalization of Higher Education) pointed out that "all universities are subject to the same processes of globalization – partly as objects, victims even, of these processes but partly as subjects or key agents of globalization" (Scott 1998). They are positioned within national systems "locked into national contexts and the majority are still state institutions. Yet globalization "is inescapably bound up with the emergence of a knowledge society that traders in symbolic goods, worldwide brands, images as commodities and scientific know-how" (Scott 1998).

In fact, policies on globalization of higher education have been moving towards the rising Asian populated countries such as India, China, Indonesia and Malaysia. Asia will dominate the global demand for international higher education for the next two decades. In forecasting global demand for international higher education, Bohm, Davis and Pearce (2002) found that the global demand for higher education is poised to grow enormously. The demand is forecasted to increase from 1.8 million in 2000 to 8.4 million international students in 2025. Asia will represent some 70 percent of total global demand and an increase of 31 percent from the year 2000. The significant demand for higher education in Asian countries is provided for by the Organization for Economic Co-operation and Development (OECD). Table 1 below shows the share of tertiary foreign students in OECD countries.

One the one hand, globalization is seen to create pressure on the education system to produce de-contextualized and human capital-oriented knowledge. The highly globalized sectors of the economies require that students in school learn certain basics but they also have to become creative,

innovative and flexible and to find new solutions to new problems (Adler, 1992). On the other hand, in strongly multi-cultural countries, ethnic groups place a demand on nation states for local and contextualized knowledge and so on. Furthermore, education is under pressure to adapt to a "world model" (Meyer et al., 1997) but also to respond to national and local forces.

Countries	Share of Tertiary Students Abroad within the OECD Countries
1. China	7%
2. Korea	5%
3. Japan	4%
4. India	3%
5. Malaysia	**3%**
6. Hong Kong	2%
7. Indonesia	2%
8. USA	2%
9. Morocco	3%
10. Italy	3%
11. Germany	4%
12. France	3%
13. Turkey	3%

Source: From OECD Education Data Base, 2009

In the mid 1990s, four educational acts were implemented: the Education Act of 1995, the 1995 Amendments to the University and University Colleges Act of 1971 (1995 Amendments to the UUCA 1971), the Private Higher Education Institutions Act of 1996 (PHEI 1996) and the National Council on Higher Education Act of 1996 (NCHEA 1996). With the implementation of the PHEI Act of 1996, the private sector increased its involvement in providing tertiary education (Malaysia, 2001). The Act allowed private institutions of higher education and foreign universities to establish franchises and degree courses. In particular, private-sector universities were encouraged to offer science and technology courses in order to increase enrollment at higher educational institutions and to produce a greater number of highly skilled graduates (Malaysia, 1998).

To meet the demands of changing market economies Malaysia is evolving from a production-based economy to an innovative, knowledge-based one that requires the development of a highly skilled and knowledgeable workforce. To ensure the growth of this critical workforce, there needs to be increased accessibility and flexibility to

higher education. To date, Malaysia has close to 20 public-funded universities, 37 private universities and university colleges and approximately 460 private colleges (Ministry of Higher Education, 2010). Besides these, Verbik and Lasanowski (2009) highlight that the increase of foreign students in Malaysian institutions of higher learning and other international comparatives has made Malaysia one of the "emerging contenders" as an international market for foreign students. While such expansion is taking place, Malaysia is challenged to address some crucial issues related to higher education. Firstly, there is a quest for Malaysia to become a regional hub for educational excellence providing world-class university education. In order to fulfill this noble aspiration, higher education institutions have come under greater public scrutiny since no Malaysian institute of higher education secured a position in the Top 100 in the recent Times Higher Education (THES) World University Rankings 2009 (The Star, 13 November 2009).

According to the Malaysian Association of Private Colleges and Universities (MAPCU), there were some 512,000 students at private institutions of higher learning as at December 2010. This accounted for slightly more than 50% of the total enrolment in both public and private universities and colleges. There are no two ways about it: the private sector's involvement in education over the last few decades has contributed significantly to the nation's progress. "Private education has been absolutely central to the development, stability and harmony of Malaysia for the past 25 years", says Mark Disney, Chief Operating Officer, (Asia) of London Chamber of Commerce and Industry (LCCI), which provides vocational and business qualifications. "It is the engine room for developing outward-looking graduates and it is the reason why Malaysia can legitimately call itself a regional educational hub".

Globalization and Higher Education in Malaysia

Globalization is defined as the broad economic, technological and scientific trends that directly affect higher education and are largely inevitable in the contemporary world. It encompasses markets and competition between institutions and between nations, but it is also much more than that. The new public management and marketisation (Marginson, 1997) pre-date the Internet and are not reducible to a function of globalization per se. One can occur without the other. Nevertheless, in important ways

reforms based on new public management have become generatively joined to a particular kind of globalization. The transmission of reform templates is global in scale, and has rendered the different national systems more similar to each other in form and organizational language. One justification for reform is that competition, performance funding and transparency render institutions and systems more prepared for the global challenge. "We are living in a period of crisis", declares Michael Apple (2001), referring to the era of globalization. According to him, "the crisis has affected all of our economic, political and cultural institutions" (Apple, 2001). In the context of globalization, higher education systems have become sites for competition and contestations of various kinds in various societies. The competition and contestation for access and equality has become inevitable as there are higher levels of demand for fewer places in higher education and employment and therefore calls for the attention of policy makers and sociologists to examine the impacts of globalization on strategies adopted to include the hitherto historically excluded social, ethnic and racial groups on the one hand and to achieve the requirements of the emerging labor market, industry and the global system of higher education on the other.

In this context, the study of Malaysia provides an opportunity to learn and understand the experiences of countries that have adopted neo-liberal economic reforms to address and balance the challenges posed by globalization. The forces of globalization drive the state to initiate policy reforms to achieve excellence, relevance and marketability of the higher education system and the local ethnic polarizations work in diagonally opposite directions by demanding equity in opportunities, access and treatment.

The term "globalization" has become short hand for the condition of our time (Wagner, 2004) suggesting that some world-wide processes have begun to shape each and every walk of our lives. If globalization is such an encompassing change in our condition, then there is a good reason to assume that educational systems are also affected by it (Daun, 2003). Many nations are now witnessing a transformation in the ways in which education systems are organized, controlled and managed. "The period after nineties saw fundamental changes in the structure and nature of educational institutions, in the organization of the curriculum, in the nature of teachers' work and professionalism and in the aims and purposes of assessment" (Philips and Furlong, 2001). It is also a period which has been characterized by profound and often confrontational

debates over the nature and purposes of higher education in society, particularly those between education, the economy and the society. Specifically, institutions of higher education now face new pressures and demands for accountability, access, quality and the introduction of new technologies and curricula (Altbach and Davis, 1998).

Globalization pressures have made it imperatives upon governments to ensure that the public higher education institutions to become more competitive and at par with its global counterparts. At the local front, there is a growing demand for enhanced accountability and transparency of public institutions as policy makers ponder on the escalating cost of funding these public institutions. In 1995, the Universities and University Colleges Act of 1971 was amended to pave the way for the corporatization of public institutions, and by 1998 five of the older public universities were corporatized. Through corporatization, these institutions are expected to generate more and more of their operating expenses through sources other than the government. The drive to make Malaysian institutions to be world class also sees the growing emphasis on research and the greater accountability of research productivity. This requires greater liberalization of public higher education from the bureaucratic shackles of the central administration, to allow for greater dynamism at institutional level to response to the changes quickly. This corporatization era has seen greater infusion of corporate practices such as quality assurance, capital budgeting, governance and many more into the corporate culture of public universities.

Conclusion

There is little doubt that these broad trends will continue into the future. Academic institutions, departments and individuals must all understand the implications of the new global environment. It is, of course, possible to develop strategies and approaches to cope with the pressures and impact of globalization on higher education. An important element of the pressures surrounding the impact of globalization on higher education in Malaysia arose from the penetration of transnational education service providers in the Malaysian tertiary education landscape (Sirat, 2003). During the 1990s, opportunities and challenges resulting from globalization confronted the higher education sector in Malaysia. Admittedly, these private higher education providers have in some ways threatened the traditional "monopoly" of local (public) higher educational institution

in the provision of tertiary education in Malaysia. The 1969 Essential (Higher Education Institution) Regulation has effectively barred private sector providers from conferring degrees and most importantly, foreign higher educational institutions were not allowed to establish branch campus in Malaysia. With the onset of globalization in Malaysia in the late 1980s and coupled with other global developments and domestic pressures, private higher education institutions offering pre-university courses, twinning and franchise programs were introduced. These important developments were the precursors to significant reforms in higher education in Malaysia.

Globalization clearly presents new opportunities, challenges and risks for higher education. For Malaysia in the next five years, the government's strategic objective to turn the country into a "regional educational hub" by fully endorsing and implementing an action plan suggests that globalization will impact further the Malaysian higher education sector.

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ECONOMIC PERFORMANCE OF INDIAN AUTOMOBILE INDUSTRY: AN ECONOMETRIC APPRAISAL

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Abstract

Indian automobile industry embarked on a new journey in 1991 with delicensing of the sector and subsequent opening up for 100 percent FDI through automatic route. In view of this, the study attempts to estimate the economic performance of Indian automobile industry in terms of capacity utilization at an aggregate level. It estimates econometrically rate of capacity utilization in the industry at aggregate level and analyses its trend during the post liberalization period,1991-92 to2005-06.The study also tries to assess the impact of various factors influencing capacity utilization. In this paper, optimal output is defined as the minimum point on the firm's short run average total cost curve and the rate of capacity utilization is merely ratio of its actual output to capacity output level. We use an econometric model to determine the optimal capacity output. Our result shows that capacity utilization has been improved after the path breaking economic reforms initiated in 1991 at the rate of around 5 percent per annum but capacity grows more rapidly than output growth. In view of identifying several factors that influence capacity utilization, result suggests that coefficient of export-intensity variable, import penetration ratio are negative which indicate that capacity utilization was relatively lower in firms belonging to industry characterized by high export-intensity and import penetration. A positive relationship is found between size and capacity utilization and similarly between market share and capacity utilization. **Key word:** Liberalization, Capacity Utilization, Automobile, Industry.
JEL classification: L620

Indian automobile industry went aboard on a new journey in 1991 with deli censing of the sector and subsequent opening up for 100 percent FDI through automatic route. Since then ,almost all the global majors have set up their facilities in India taking the level of production from 2 million in 1991 to 9.7 million in 2006[SIAM,2007-08].The growth of Indian middle class with increasing purchasing power along with strong growth of economy over a past few years have attracted the major auto manufacturers to Indian market. Increase in income level, decline in tax and interest rates have helped to increase in personal disposable income .Change in mindset leading to changing investment / spending pattern from property investment to increasing consumerism ,explosive growth in communication have led to urbanization of rural consumers' attitude and has increased the propensity to consume. Therefore, increased disposable income and fast changing spending habits have led to the increased consumerism of capital good product for human comfort.

The market linked exchange rate and availability of trained manpower at competitive cost have further added to the attraction to Indian domestic market. The growing of Indian market on one hand and the near stagnation in auto sector in market of USA, EU and Japan on the other hand have worked as a push factor for shifting of new capacities and flow of capital to the auto industry of India. The increasing competition in auto companies have not only resulted in multiple choices for Indian consumers at competitive costs, it has also ensured an improvement in productivity by almost 20 percent a year in auto industry which is one of the highest in Indian manufacturing sector.

The rate of capacity utilization (CU), measuring the extent to which actual output differs from capacity output, is one of the central variables in economic analysis. As a yardstick for evaluating economic performance in a capital-scare economy like India, manufacturing capacity utilization is a key indicator which not only determines how much more output can be obtained by fuller utilization of existing capacity but also defines the required expansion of capacity for a targeted output and also explains changes in investment, inflation, level of resource utilization, assesses possible future demand for investment goods, a demand that tends to vary directly with increase in CU, permits economic analysts to adjust current productivity growth calculations for departure from full equilibrium. etc. Therefore, the estimation of capacity output and its utilization will be very useful to evaluate the variations in the performance of an industry over a period of time.

Rigorous changes have been made in industrial policy of India Government with the initiation of major economic reforms since 1991. Relaxing of licensing rule, reduction of tariff rates, removal of restrictions on import etc. are among those which have been initiated at early stage. After delicensing of the sector, with the enhancement of purchasing power of common masses in India, the Indian automobile market is flourishing gradually. Even better, ancillary sectors that extensively supply spares and inputs to the automobile sector are themselves booming, ensuring that this sector stays firmly on the growth path for times to come. In the past two years, more than a dozen multi-national firms have announced plans to enter the Indian market. Most of them have formed joint ventures with Indian firms, while there are exceptions such as Hyundai which plan to form fully-owned units. Despite the large growth potential of the Indian market (analysts expect the growth to triple in the next five years), no one expects the industry to sustain the fragmentation caused by more than a dozen suppliers. Many of these new firms will not enjoy the scale economies and relationships with suppliers that Maruti does, so they have decided not to challenge Maruti at its price of $5,500 in the smaller car segment. Most are planning to produce between 20,000 and 50,000 higher-end vehicles. The stiff competition is building up in the mid-sized car range (1,300 cc and above), where several of these multi-national and Indian companies are planning to go head-to-head. Although these newly announced vehicles at $12,000 or above remain expensive by Indian standards and planned capacity exceeds projected demand, new entrants are betting on the rising incomes of middle-class families.

The advocates of liberalization expect that this policy reforms will perk up industrial growth and performance significantly while critics argue that absolute elimination of restrictions on several matters will have an unwanted effect on future growth and performance of the industry.

In this background, this paper attempts to measure capacity utilization of Indian automobile industry econometrically and tries to assess the impact of various factors influencing capacity utilization . This study is conducted for the aggregates of an industry where Capacity Utilization(CU) has been taken as bench-mark in measuring performance on the assumption that all the firms in an industry behave alike and therefore industry level characteristics could be attributable to all the firms operating in that industry. It is not claimed that CU is the only specification for evaluating the performance of an industry where there exist profitability and productivity variables for evaluating industrial performance.

Overview of Indian Automobile Industry

The Indian Automotive Industry after de-licensing in July, 1991 has grown at a spectacular rate of 17% on an average for last few years. The industry has now attained a turnover of Rs. 1,65,000 crores (34 billion USD) and an investment of Rs. 50,000 crores. Over of Rs. 35,000 crores of investment is in pipeline. The industry is providing direct and indirect employment to 1.31 crore people. It is also making a contribution of 17% to the kitty of indirect taxes. The export in automotive sector has grown on an average CAGR of 30% per year for the last five years. The export earnings from this sector are 4.08 billion USD out of which the share of auto component sector 1.8 billion USD. Even with this rapid growth, the Indian Automotive Industry's contribution in global terms is very low. This is evident from the fact that even though passenger and commercial vehicles have crossed the production figure of 1.5 million in the year 2005-06, yet India's share is about 2.37 percent of world production as the total number of passenger and commercial vehicles being manufactured in the world are 66.46 million against the installed capacity of 85 million units. Similarly, export constitutes only about 0.3% of global trade. It is a well accepted fact that the automotive industry is a volume driven industry and a certain critical mass is a pre-requisite for attracting the much needed investment in Research and Development and New Product Design and Development. R&D investment is needed for innovations which is the life-line for achieving and retaining the competitiveness in the industry. This competitiveness in turn depends on the capacity and the speed of the industry to innovate and upgrade. No nation on its own can make its industries competitive but it is the companies which make the industry competitive. The most important indices of competitiveness are the productivity both of labour and capital.

Table 1: Estimated Market share of Passenger Vehicles By the Top 5 Firms in the Indian Automotive Industry (%)

Company	2002	2003	2004	2005	2006
Maruti Udyog Limited (MUL)	50.29	51.43	51.15	52.20	50.38
Hyundai Motor India Ltd	19.08	18.65	17.36	18.18	18.13
Tata Motors LTD	13.83	16.10	16.75	16.98	17.00
Fiat India Automobiles(P) LTD	5.96	1.85	0.84	0.19	0.21
Hindustan Motors Ltd	3.63	2.28	1.90	1.69	1.42

Source: Association of Indian Automobile Manufacturers (AIAM),2007-08.

In Table 1, Maruti Udyog Limited (MUL) is the number one Indian automotive assembler commanding more than a 50% share of the Indian passenger vehicle market. MUL's relatively large production volumes offer scale economies in production and distribution that pose formidable barriers to entry. It has also established a solid supplier-base located around India. Occupying the second position in 2006 is Hyundai Motor India Ltd which occupies more than 18 percent market share over the last five years of our study. Despite occupying the third position and producing passenger vehicles only in small volumes,Tata Engg. & Locomotive Company Ltd. (TELCO) is noteworthy, not only because it is a part of the powerful Tata industrial family, but also because it is one of the few firms with indigenous product development capabilities, and has been a dominant player in the commercial vehicles segment. TELCO holds about 70% of the heavy commercial vehicles market, and (after entering the market late) has also managed to fend off Japanese competition by gaining about 50% of the light commercial vehicles segment with its in-house product development. It entered the passenger vehicles market only in 1991-92, and has quickly established itself in the higher end of this segment with its Estate and Sierra models. The firm has entered into a joint venture with Mercedes Benz to assemble the E220's, and is also said to be planning an entry into the small/economy car segment challenging Maruti's stronghold.

Table 2:Category-wise Production trend in Indian Automobile Industry(In Nos)

Category/Year	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
Passenger vehicle	669719	723330	989560	1209876	1309300	1544850
Total Commercial vehicle	162508	203697	275040	353703	391083	520000
Two Wheeler	4271327	5076221	5622741	6529829	7608697	8444168
Three Wheeler	212748	276719	356223	374445	434423	556124
Grand Total	5316302	6279967	7243564	8467853	9743503	11065142
Percentage Growth	11.70%	18.60%	15.12%	16.80%	15.06%	13.56%

Source: Society of Indian Automobile Manufacturing(SIAM),2007-08.

The Indian automobile industry produced around 5.3 billion vehicles during 2001-02 which amounting to around USD 16 billion. During the financial year,2006-07 ,industry produced 11 billion vehicles amounting USD 32 billion. The sector shows average growth of production at the rate of 15 percent per annum.More interestingly, India is the second largest two wheeler market in the world. Due to the contribution of many different factors like sales incentives, introduction of new models as well as variants coupled with easy availability of low cost finance with comfortable repayment options, demand and sales of automobiles are rising continuously. Government has also contributed in this growth by liberalizing the norms for foreign investment and import of technology and that appears to have benefited the automobile sector.

Table 3:Category-wise Domestic sales trend in Indian Automobile Industry(In Nos)

Category/Year	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
Passenger vehicle	675116	707198	902096	1061572	1143076	1379698
Total Commercial vehicle	146671	190682	260114	318430	351041	467882
Two Wheeler	4203725	4812126	5364249	6209765	7052391	7857548
Three Wheeler	200276	231529	284078	307862	359920	403909
Grand Total	5225788	5941535	6810537	7897629	8906428	10109037
Percentage Growth	-	13.70%	14.60%	15.96%	12.77%	13.50%

Source: SIAM,2007-08.

The growth rate in domestic sale of different vehicles (Table 3) has increased @13% p.a over the decades.The growth in percentage of sale of different vehicles have been due to the enhanced purchasing power,especially among middle class people of India, easy availability of finance,favourable government policy, development of infrastructure projects, replacement period of vehicle.

Indian vehicle exports have grown at the rate of 39% CAGR over our study period, led by export of passenger car at 57% and two wheeler export at the rate of 35%.The key destination of exports are SAARC countries, European Union(Germany, UK, Belgium, Netherlands,Middle east and North America.

The export growth of Indian automobile sector is showing declining trend (Table 4) at least during our observation period. While a beginning has been made in export of vehicles, potential in this area still remains to be fully tapped. More significantly, the export in two/three wheeler sector of the industry have been displaying drastic improvement in export of these vehicles.The automobile exported crossed 1 billion mark in 2003-04 and reached USD 2.28 billion mark during 2006-07.

Table 4:Category-wise Export trend in Indian Automobile Industry(In Nos)

Category/Year	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
Passenger vehicle	50088	70828	126249	160677	170193	189347
Total Commercial vehicle	11870	12255	17432	29940	40600	49766
Two Wheeler	104183	179682	265052	366407	513169	619187
Three Wheeler	15462	43366	68144	66795	76881	143896
Grand Total	181603	306131	476877	623819	800843	1002196
Percentage Growth	-	68.57%	55.77%	30.81%	28.38%	25.14%

Source: SIAM,2007-08

In June 2008, India based Tata Motors Ltd announced that it had completed the acquisition of the Two iconic British brands-Jaguar and Land Rover from the US based Ford Motors for USD 2.3 billion. The deal included the purchase of JLR's manufacturing plants, two advanced design centres in the UK, national sales companies across the world and also the license of all intellectual property rights. There was widespread skepticism in the market over an Indian company owning the luxury brands. According to industry analysts, some of the issues that could trouble Tata Motors were economic slowdown in European and US markets, funding risks and currency risks etc.

Tata Motors was interested in the deal because it will reduce company's dependence on the Indian market, which accounted for 90% of its sale. Morgan Stanley reported that JLR's acquisition appeared negative for Tata Motors as it had increased the earning volatility given the difficult economic conditions in the key markets of JLR including the US and Europe.Tata Motors raised 3 billion dollars(Rs 12000 crores approximately) through bridge loan from a clutch of banks .

Nevertheless, Tata motors stood to gain on several fronts from the biggest deal. First, the acquisition would help the company acquire a global footprint and enter the high end premier segment of the global automobile market. Second, Tata also got two advance design studio and technology as a part of the deal that would provide Tata motor to access latest technology thereby allowing to improve their core product in India. Moreover, this deal Provided Tata instant recognition and credibility across the world which would otherwise have taken years. Third, the cost competitive advantage as Corus was the main supplier of automotive high grade steel to JLR and other automobile industry in Europe and Us market would have provided a synergy for Tata Group as a whole. Last but not least, in the long run, Tata motors will surely diversify its present dependence on Indian market(which contributed to around 90% of Tata's revenue). Moreover, Tata's footprint in South East Asia will help JLR do diversify its geographical dependence from US (30% of volumes) and Western Europe(55% of volumes).

This paper is divided into the following sections: Section 2 describes conceptual issues related to capacity. Section 3 provides data base and methodology. Section 4 presents and interprets empirical results and section 5 presents a discussion on the strengths and weaknesses of the various

players in automobile market. Section 6 assesses the key challenges faced by the industry. Section 7 presents summary and conclusions.

Economic Notion of Capacity

Simply, capacity output is defined as the maximum feasible level of output of the firm. An economically more meaningful definition of capacity output originated by Cassel (1937) is the level of production where the firms long run average cost curve reaches a minimum. As we consider the long run average cost, no input is held fixed. For a firm with the typical 'U' shaped average cost curve, at this capacity level of output, economies of scale have been exhausted but diseconomies have not set in. The physical limit defines the capacity of one or more quasi-fixed input. Klein (1960) defined capacity as the maximum sustainable level of output an industry can attain within a very short time, when not constrained by the demand for product and the industry is operating its existing stock of capital at its customary level of intensity. Klein (1960) argued that long run average cost curve may not have a minimum and proposed the output level where the short run average cost curve is tangent to the long run average cost curve as an alternative measure of capacity output. This is also the approach adopted by Berndt and Morrison (1981). We prefer choice-theoretic model because it is firmly based in the behavioural concept of economic theory.

Methodological Issues

This paper covers a period of 16 years from 1991-92 to 2005-06, particularly the post-liberalization period. It has been taken into account that the Indian automobile industry consists of two wheelers, three wheelers and four wheelers also.

Considering variations in CU as a short-run phenomenon caused by the quasi-fixed nature of capital, an econometrically tractable short-run variable-cost function which assumes capital as a quasi-fixed input has been used to estimate CU.

Econometric Model

Considering a single output and three input framework (K, L, E) in estimating CU, we assume that firms produce output within the technological constraint of a well-behaved[1] production function.

$Y = f (K, L, E)$ where K, L and E are capital, labour and energy respectively. Since capacity output is a short-run notion, the basic concept behind it is that firm faces short-run constraints like stock of capital .Firms operate at full capacity where their existing capital stock is at long-run optimal level. Capacity output is that level of output which would make existing short-run capital stock optimal.

Rate of CU is given as:

$$CU = Y / Y* \tag{1}$$

Y is actual output and Y* is capacity output.

In association with variable profit function, there exist a variable -cost function which can be expressed as:

$$VC = f(P_L, P_E, K, Y) \tag{2}$$

Short run total cost function is expressed as:

$$STC = f(P_L, P_E, K, Y) + P_K K \tag{3}$$

P_K is the rental price of Capital.

Variable cost equation[2] which is variant of general quadratic form for (2) that provide a closed form expression for Y* is specified as:

$$
\begin{aligned}
VC = &\alpha_0 + K_{-1}\left(\alpha_K + \tfrac{1}{2}\beta_{KK}\left[\frac{K-1}{Y}\right] + \beta_{KL}P_L + \beta_{KE}P_E\right) \\
&+ P_L\left(\alpha_L + \tfrac{1}{2}\beta_{LL}P_L + \beta_{LE}P_E + \beta_{LY}Y\right) \\
&+ P_E\left(\alpha_E + \tfrac{1}{2}\beta_{EE}P_E + \beta_{EY}Y\right) + Y\left(\alpha_Y + \tfrac{1}{2}\beta_{YY}Y\right)
\end{aligned}
\tag{4}
$$

K_{-1} is the capital stock at the beginning of the year which implies that a firm makes output decisions constrained by the capital stock at the beginning of the year.

Capacity output (Y*) for a given level of quasi-fixed factor is defined as that level of output which minimizes STC. So, the optimal capacity output level, for a given level of quasi-fixed factors, is defined as that level of output

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[1]A production function is considered to be well-behaved if it has positive marginal product for each input and it is quasi concave and also satisfies the conditions of monotonocity. Quasi-concavity required that the bordered Hessian matrix of first and second partial derivatives of the production function be negative semi definite.

[2]Similar functional form has been previously estimated by Denny et al (1981). The variable cost function is based on the assumption that some input like capital cannot be adjusted to their equilibrium level. Therefore, the firm minimizes variable cost given the output and the quasi-fixed inputs.

which minimizes STC. So, at the optimal capacity output level, the envelop theorem implies that the following relation must exist.

$$\partial STC / \partial K = \partial VC / \partial K + P_K = 0 \qquad (5)$$

In estimating Y*, we differentiate VC equation (4) w.r.t K_{-1} and substitute expression in equation (5)

$$Y * \frac{-\beta_{KK.}K_{-1}}{(\alpha_K + \beta_{KL}P_L + \beta_{KE}P_E + P_K)} \qquad (6)$$

The estimates of CU can be obtained by combining equation (6) and (1).

Description of Data and Variables

Difficulty faced by researchers in conducting studies on CU in Indian industries is that available official data on Industrial capacities are quite unsatisfactory. The present study is based on industry-level time series data taken from several issues of Annual Survey of Industries, National Accounts Statistics(NAS) and Economic Survey ,Monthly statistics of foreign trade, Govt. of India, Statistical Abstracts (various issues), RBI bulletin, CMIE etc covering a period of 15 years commencing from 1991-92 to 2005-06. Selection of time period is largely guided by availability of data.[3]

Output and Variable Cost:
Details of methods employed for the measurement of variables are given in Appendix. Output is measured as real value added[4] produced by manufacturers (Y=P_LL+P_K.K -1+P_E.E) suitably deflated by WIP index for manufactured product (base 1981-82=100) to offset the influence of price changes variable cost is sum of the expenditure on variable inputs (VC=P_LL+P_E.E).

Labour and Price of Labour:
Total number of persons engaged in Indian aluminium sector is used as a measure of labour inputs. Price of labour (P_L) is the total emolument divided by number of labourers

which includes both production and non-production workers.[5]

Energy and Price of Energy:
Deflated cost of fuel ([Appendix-A1]) has been taken as measure of energy inputs. Due to unavailability of data regarding periodic price series of energy in India, some approximations become necessary. We have taken weighted aggregative average price index of fuel (considering coal, petroleum and electricity price index, suitably weighted, from statistical abstract) as proxy price of energy.[6]

Capital Stock and Price of Capital:
Deflated gross fixed capital stock at 1981-82 prices is taken as the measure of capital input. The estimates are based on perpetual inventory method. ([Appendix-A2]) Rental price of capital is assumed to be the price of capital (P_K) which can be estimated following Jorgenson and Griliches (1967):

$$P^t_K = r_t + d_t - \frac{P^{\bullet}_k}{P_k}$$

Where rt is the rate of return on capital in year t, d_t is the rate of depreciation of capital in the year t and

$$\frac{P^{\bullet}_k}{P_k}$$

is the rate of appreciation of capital .Rate of return is taken as the rate of interest on long term government bonds and securities[7] which is collected from RBI bulletin (various issues). The rate of depreciation is estimated from the reported figures on depreciation and fixed capital as available in ASI which Murty (1986) had done earlier. However, we have not tried corrections for the appreciation of value of capital[8] in the estimates of price of capital services.

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[5]One serious limitation of this assumption is that this does not take into account variations in quality and the composition of labour force.

[6]To compute the price of energy inputs, some studies have aggregated quantities of different energy inputs using some conversion factors (say British Thermal units or coal replacement etc.) and then take the ratio of expenditure on energy to the aggregate quantity of energy. This method is criticized because it assumes different types of energy inputs to be perfect substitutes.

[7]Prime lending rate is generally viewed as an opportunity cost of capital, but problem is that there is no unique lending rate available for use. So, we have used rate of interest on long term government bond and securities as rate of return on capital [as previously used by Jha, Murty and Paul (1991)].Alternatively, one can use the gross yield on preferential industrial shares, if available, as Murty (1986) has done.

[8]As Jorgenson and Griliches note capital gains should be deducted from (rt +dt) but several studies have not done so and adjustment for capital gains does not seem to make much difference to the result.

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[3]Till 1988 – 89, the classification of industries followed in ASI was based on the National Industrial classification 1970 (NIC 1970). The switch to the NIC-1987 from 1989-90 and also switch to NIC1998 requires some matching. For price correction of variable, wholesale price indices taken from official publication of CMIE have been used to construct deflators.

[4]Griliches and Ringstad (1971) have preferred GVA to gross output and reasons for imposing preference have been mentioned in their study.

Empirical Estimation of Capacity Utilization

This section presents the results of a multiple regression analysis applied to measure capacity output. The variable cost equation shown as equation (4) above has been estimated by the ordinary least square methods (OLS). Our model assumes that CU is a function of input prices, output and quasi-fixed capital. We find that CU and input prices have a negative relationship and CU and output have a positive one. The derivative of VC (equation 4) with respect to K is negative since capital will substitute labour and energy. In order to test for the concavity of the variable cost function with respect to variable input prices, its Hessian matrix for negative semi-definiteness is evaluated and it is found that concavity condition is fulfilled at all observation points. Therefore, the partial derivative with respect to each of input prices is negative. The partial derivative of VC with respect to output is positive because in our empirical results, $\beta_{KK} > 0$ and $(\alpha_K + \beta_{KL}P_L + \beta_{KE}P_E + P_K) < 0$ for all data points. Therefore, positive relation between output

and CU is an indication that an increase in demand will lead to higher levels of CU.

Table 5 below present a broad picture regarding variation in CU. From the above two tables, the following important observations can be observed.

First, it emerges from the estimated results that CU ratios are less than unity for all observations. This implies that actual output fell far short of capacity output of Indian Automobile industry which in turn signifies a widening difference between capacity output and actual output. The existence of idle or excess capacity in the industry for the entire study period is prevalent from the analysis of the trend in capacity utilization.

Second, if capacity output is taken to be the economic capacity derived from optimization process, the CU ratio could exceed one or it may be less than one. The implication of economic CU less than unity (as our result suggests) is that production is to the left of the minimum point of short-run average total cost curve which further signifies that Indian automobile sector could have reduced its short run generation costs with gradually moving to the tangency point or minimum point of the short run average cost curve.

Table-5: Trend in Utilization of Capacity of Indian Automobile Industry at Aggregate Level (Post- Reform Period Analysis)

Year	Economic capacity (Cr. Rs) output (Y*)	Actual output (Y) (Cr. Rs)	Economic CU = Y/Y*	Growth in capacity (%)	Growth in output (%)	Growth rate of CU (%)
91-92	1029	520	0.5054	9.39	25.91	15.10
92-93	1058	620	0.5862	2.80	19.23	15.98
93-94	981	659	0.6718	-7.25	6.29	14.6
94-95	1162	743	0.6393	18.47	12.75	-4.83
95-96	1285	528	0.4108	10.61	-28.94	-35.75
96-97	1371	685	0.4996	6.67	29.73	21.62
97-98	1008	706	0.7002	-26.47	3.07	40.16
98-99	1449	722	0.4983	43.72	2.27	-28.84
99-00	1241	913	0.7359	-14.37	26.45	47.68
00-01	2403	1131	0.4707	93.65	23.88	-36.03
01-02	1873	1335	0.7129	-22.05	18.04	51.44
02-03	2580	1176	0.4559	37.75	-11.91	-36.05
03-04	2726	1041	0.3819	5.67	-11.48	-16.23
04-05	2128	1140	0.5357	-21.94	9.51	40.28
05-06	2963	1187	0.4006	39.25	4.12	-25.22
Average			0.5470	11.73	8.60	4.26

Source: Estimated by Authors

Third, it is apparent from our study that the economic CU index ranges in Indian automobile sector from about 0.3819 to 0.7359. Capacity expansion varies from -26.47% to 39.25% during this time frame. Moreover, the correlation between actual output (Q) and capacity output (CQ) is quite high over the entire time period which is nearly 0.82.

Fourth, The CU trends have also registered a gradual decline since late- nineties and earlier years of new millennium. The average growth rate of capacity output (11.73%)during the post reform study period is more than actual output(8.60%). During post liberalization period, capacity has been expanded rapidly because licensing requirement for capacity creation has been abolished coupled with private players being come into operation for creation of additional capacity.

Factors Influencing Capacity Utilization in Indian Automobile Industry

The basic empirical framework employed in this study is based on a simple model.

$$CU_t = \alpha' + X_{it}\beta + \mu_t$$

Where CU refers to capacity utilization. X_i refers to the vector of determinants of CU and μ is the error term.

In order to understand the impact of liberalization on CU more precisely, the above equation is elaborated as follows:

$$CU_t = \alpha' + \beta_1 PENEX + \beta_2 PENIM + \beta_3 SIZE + \beta_4 SHMAR$$

Here, Capacity utilization is regressed on a number of explanatory variables such as import (PENIM) or export penetration ratio (PENEX) as a measure of openness, size (SIZE) and market share variables (SHMAR) etc. The export-output ratio being indicator of export intensity is total exports divided by the gross total output values of the domestic industries while the import-penetration is equal to total import divided by total domestic demand. Size is represented by logarithm of sales of the firms within industry. Market share of each firm is the sales of the firm divided by the market size (= total sales of the CMIE sample + imports).The estimation result is as follows:

$$CUt = 0.337 - 0.643\,PENEX - 0.039\,PENIM + 0.024\,SIZE + 0.0543\,SHMAR$$
$$\quad\quad (2.43)\quad (-1.74)\quad\quad (-2.09)\quad\quad (2.62)\quad\quad (3.29)$$

The result suggests that coefficient of export-intensity variable is negative which indicates that capacity utilization was relatively lower in firms belonging to industry characterized by high export-intensity. The observed negative relationship is confusing because productive capacity can be utilized rapidly to the fuller possible extent with the expansion of export. It may so happen that increased capacity utilization induced by high domestic demand pressure may have adverse impact on export growth. The coefficient of import penetration ratio is found to be negative(as was expected) and statistically significant indicating that an increase in import penetration tends to lower capacity utilization in industrial firms. A positive relationship is found between size and capacity utilization and similarly between market share and capacity utilization.

A firm's competitive position in the industry is ascertained by its ability of retaining or enhancing market share by any means. The process of deregulation and liberalization has increased the intensity of competition in automobile sector. These changes have led to the restructuring of this industrial sector. The restructuring has affected output growth as well as capacity utilization in negative direction in Indian auto industry from 1991-92 to 2005-06.Berndt and Fuss (1986) and Morrison (1988) show that there lies a systematic relationship between capital-to-output ratio and CU.This relationship becomes operational through Tobin's q.[9] If $\beta_{KK} > 0$, then a rise in capital-to-output ratio will lower Tobin's q and hence will lower CU rates. Since in our estimates, $\beta_{KK} > 0$ for all data points, industries with high capital-output ratios will have lower level of CU assuming that other things remain the same. This induces us to infer that the automobile industry whose industrial structure depends heavily on traditional manufacturing activities and have higher capital-to-output ratios will generally tend to have lower rates of CU. Furthermore, industries with comparative advantage are expected to benefit from trade liberalization and on the contrary, comparatively disadvantageous industries are expected to lose. Consequently, capital and labour tend to shift from the latter to former which induces the former's market more competititive .Therefore, growth rate of capacity utilization of industries with comparative advantage (labor-intensive) are

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[9]Tobin (1969) defines q as the ratio of the market value to the replacement cost of the firm's capital stock. Berndt and Fuss(1986) have shown that Tobin's q can be written as Z_k/P_k where Z_k is $-\partial VC/\partial K$ and CU and Tobin's q are positively related .Since $\partial^2 VC/\partial K \partial(K/Y)$ is β_{KK}, which is positive, therefore $\partial q/\partial(K/Y)$ is negative. So, industry with high levels of K/Y will have, other things remaining same, low levels of CU.

higher. CU is regressed on K_{-1}/Y and K/L and the relationship was as follows:

$$CU = 1.192 - 0.1324\, K_1/Y - 0.00174\, K/L$$
$$\quad (2.58) \quad (-13.43) \qquad (-2.217)$$
$$R^2 = 0.81$$

Our result suggests a negative and statistically significant association between CU and K_{-1}/Y which implies that the low CU rate is correlated with high capital-to-output ratio and vice versa and therefore CU is more sensitive to the extent of capital deepening of the automobile sector and association between CU and K/L is also found to be negative and statistically significant. This result suggests that high rate of CU is correlated with high labour-capital ratio. In other word, CU rates of Automobile industry with comparative advantage are higher.

Discussion of the Strengths and Weaknesses of the Various Players

To analyze the strengths and weaknesses of the various players in the Indian automotive industry, it is useful to classify them into the following four categories: (1) Indian Assemblers, (2) Multinational Assemblers (3) Indian Component Makers, and (4) Multi-national Component Makers. Table 2 presents the strengths and weaknesses of each of these groups.

The Indian assemblers, typified by Maruti, have built a formidable distribution and after-sales network. They also have an established supplier base, which gives them cost and delivery time advantages, especially in light of import tariffs and currency exchange rate fluctuations/ devaluations. Their biggest weakness, with the exception of TELCO, is the lack of product design capability. In the coming years, they should focus on acquiring product design and lean production know-how (as the Korean firms did in the eighties and early nineties [Amsden and Kang 95]). They could acquire know-how with help from their joint-venture partners, and also with investments in research and development which at present are at extremely low levels. Multi-national assemblers could really benefit from their lean production capabilities in India, where production runs are expected to be small due to the large number of players entering the Indian market. They could also set themselves apart by incorporating safety and comfort features not currently included in Indian-assembled products. These include seat restraints, airbags, and anti-lock brakes, and comfort features such as power windows, and central locks. U. S. assemblers have a reputation of safety, which they could leverage to their advantage. Close cooperation with the joint-venture partners can overcome the lack of experience with the Indian market, but the small size of the component supplier base will pose a challenge to their need to localize rapidly.

The Indian component industry is small and fragmented, but is growing and learning fast due to exports. It is also estimated to hold a 20-40% cost advantage over multinational component suppliers who are much larger and are themselves opening up units in India to take advantage of the lower-cost, skilled workforce. The Indian component industry needs to invest in capacity and research and development to stay abreast of competition, when the wage gap closes over time. It is likely that some of the multi-national assemblers or component makers might buy some of the small but niche component makers with a reputation for quality.

Table6 Strengths and Weaknesses of the Different Groups in the Indian Auto Industry

Group	Strengths	Weaknesses
Indian Assemblers	Established distribution and after-sales networks, and Supplier base. Understanding of the Indian market and ability to liaison with the government.	Lack of product development capabilities (except TELCO). Brand image (especially HM and PAL).
Multi-national Assemblers	Lean production capability. Ability to design products with differentiating features. Deep pockets, brand image.	Lack of experience with the Indian market, industry, and Government. Small component supplier base and high import tariffs.
Indian Component Suppliers	Low cost, skilled workforce. Learning From exports.	Small Size, Fragmentation. Lack of know-how in certain areas.
Multi-national Component Suppliers	Size, Deep pockets. Experience and Know-how in technology.	Import tariffs, currency exchange rate fluctuations. Inexperience with Indian workforce.

Indian Automobile Industry - Key Challenges Ahead

a. Poor Road Infrastructure

Amongst the many issues facing the Indian automotive industry, the biggest by far is the poor road infrastructure. India's road network, comprising of a modest national highway system (that is only 2% or less of the total roadway length) is unhappily insufficient and decrepit, and can barely keep pace with the auto industry's rapid growth. Most roads are single-lane roads built in the 1950's and 60's, and are crowded with two-wheelers, bullock carts, and even pedestrian humans and cows. Traffic laws are not well enforced leading to one of the highest per-capita accident rates in the world. It is to be expected that the introduction of bigger and more powerful vehicles will only worsen the situation. Upgrading the existing highway system is itself expected to cost $30 billion or more, and resource and land constraints prevent the building of new highways. The Indian government's approach to solving this problem is to privatize the road infrastructure, by having private firms build and operate toll ways. However, it is unclear if this alone will be able to solve this infrastructure problem of enormous proportions, which can severely bottleneck future growth. The significant (about 50%) tariffs imposed on import products and components combined with the vagaries of currency exchange rates make localization an important imperative for foreign companies entering the Indian market. Firms are already making a major effort to localize rapidly; One challenge to localization is a shortage of component suppliers with size and sophistication.

b. Sustaining the Growth Rate

There is a potential for much higher growth rate in the domestic market due to the fact that current penetration level in India is just 7 car per thousand persons . The increase in purchasing power in top stratum of about 300 million people of the country where the per capita income of the country is above USD 1000 implies that passenger car growth in the domestic market is on the verge of a major and sustained boom. It is expected that passenger car market which was 1 million in 2003-04 can easily cross the 3 million mark during 2015. This can lead to an increase in the size of domestic auto component market from the current level of USD 9.8 billion in 2005-06 to a least USD 15 billion in 2015.

c. Need for Innovation:

The competitiveness in the sector will largely depend on the capacities of the industries to innovate and upgrade. The industry will definitely be benefited if it has strong domestic competition, home based suppliers and demanding local customers. It is a crucial fact that labour cost, duties, interest rate and economies of scale are the most important determinants of competitiveness. But the productivity and capacity utilization are the prime determinants of the competitiveness and influence the national per capita income. The globally successful auto makers will make their base in places which are high on productivity factor and capacity utilization and where essential competitive advantages of the business can be created and sustained. It would also involve core products and process technology creation apart from maintaining productive human resource and reward for advanced skill. The auto makers will look for the policies of the state which will stimulates innovation new technologies.

Another major uncertainty facing the Indian market is the government's policies toward foreign investments and joint ventures. Governments play a key role in shaping the growth of the automobile industry in emerging economies (as compared with developed countries). The following are other challenges faced by Indian automobile industry.

- Increasing Competition & WTO Regime
- Cyclicality of businesses
- Increasing Customisation & Application Proliferation
- Accelerated Infrastructure development
- Stiff Emission & Other Regulatory changes
- Operating Cost Pressures
- Increased Customer awareness
- Accelerated Technology up gradation requirements & other Change needs
- Competition from alternative modes.

Summary and Conclusions

This paper tries to examine the trends in capacity utilization in the Indian automobile sector at aggregate level during post liberalized economic scenario. The key findings of the present analysis may be summarized below. First, growth rate of capacity utilization was not uniform over years during our study period. Secondly, annual average growth rate of capacity output shows steep upward trend but actual output grows at a much slower rate than capacity output. Our analysis regarding trend in capacity utilization

suggests that the higher rate of capacity creation can be attributed to the huge amount of public investment during post-reform period made in this sector which provides supply side support to Indian automobile industry. Therefore, the trend in capacity expansion reflects that capacity expanded more rapidly in post-reform period. Gradual delicencing of automobile sector after path breaking economic reforms after 1991 accompanied by growing demand of automobile vehicle among middle income group people of the country might have encouraged the entrepreneurs to invest more and expand their plant capacity. Third, with up gradation as well as modernization of plant technology becoming inevitable, CU has reduced steadily with the extent of capital deepening in the automobile sector in India. Fourth, it is apparent from the estimated result that variations in demand were a significant driving force for variations in CUand it has been found that CU is positively related to the magnitude of labor intensity in production. Fifth, the high correlation (0.81) is observed, in Indian automobile sector, between the actual and capacity output which suggests that a substantial part of capacity could have been kept unutilized by the firms within the industry to cope-up with the unforeseen excessive demand shock coming from customers' front.

Finally, in view of identifying several factors that influence capacity utilization, result suggests that coefficient of export-intensity variable is negative which indicates that capacity utilization was relatively lower in firms belonging to industry characterized by high export-intensity. The coefficient of import penetration ratio is found to be negative(as was expected) and statistically significant indicating that an increase in import penetration tends to lower capacity utilization in industrial firms. A positive relationship is found between size and capacity utilization and similarly between market share and capacity utilization.

In conclusion, Indian Commercial Vehicle Industry has been balanced for major growth phase and despite challenges, the industry is catching up fast with global trends and standards - both on technology and quality processes. Indian Auto Industry is likely to retain low cost advantage for a sizeable period. Attractive collaboration opportunities between Indian CV industry / Auto component manufacturing with global OEMs and the Supply Chain majors are being noticed. Therefore, there is a great opportunity to associate and use India's competitive advantages for sourcing and setting up collaborative operations which is a Win-Win opportunity – both for Indian Commercial vehicle industry and the global counterparts.

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Appendix

A-1 Energy Inputs: - Industry level time series data on cost of fuel of Indian automobile sector have been deflated by suitable deflator (base 1981-82 = 100) to get real energy inputs. An input output table provides the purchase made by manufacturing industry from input output sectors. These transactions are used as the basis to construct weight and then weighted average of price index of different sectors is taken. Taking into consideration 115 sector input- output table (98-99) prepared by CSO, the energy deflator is formed as a weighted average of price indices for various input-output sectors which considers the expenses incurred by manufacturing industries on coal, petroleum products and electricity as given in I-O table for 1998- '99. The WIP indices (based 1981-82) of Coal, Petroleum and Electricity have been used for these three categories of energy inputs. The columns in the absorption matrix for 66 sectors belonging to manufacturing (33-98) have been added together and the sum so obtained is the price of energy made by the manufacturing industries from various sectors. The column for the relevant sector in the absorption matrix provides the weights used.

A-2 Capital Stock: - The procedure for the arriving at capital stock series is depicted as follows:

First, an implicit deflator for capital stock is formed on NFCS at current and constant prices as given in NAS. The base is shifted to 1981-82 to be consistent with the price of inputs and output.

Second, an estimate of net fixed capital stock (NFCS) for the registered manufacturing sector for 1970-71 (benchmark) is taken from National Accounts Statistics. It is multiplied by a gross-net factor to get an estimate of gross fixed capital stock (GFCS) for the year 1970-71. The rate of gross to net fixed asset available from RBI bulletin was 1.86 in 1970-71 for medium and large public Ltd. companies. Therefore, the NFCS for the registered manufacturing for the benchmark year (1970-71) as reported in NAS is multiplied by 1.86 to get an estimate of GFCS which is deflated by implicit deflator at 1981-82 prices to get it in real figure. In order to obtain benchmark estimate of gross real fixed capital stock made for registered manufacturing, it is distributed among various two digit industries (in our study, automobile industry) in proportion of its fixed capital stock reported in ASI, 1970-71)

Third, from ASI data, gross investment in fixed capital in Indian automobile industry is computed for each year by subtracting the book value of fixed in previous year from that in the current year and adding to that figure the reported depreciation on fixed asset in current year. (Symbolically, $I_t = (\beta_t - \beta_{t-1} + D_t) / P_t$) and subsequently it is deflated by the implicit deflator to get real gross investment.

Fourth, the post benchmark real gross fixed capital stock is arrived at by the following procedure. Real gross fixed capital stock (t) = real gross fixed capital stock (t − 1) + real gross investment (t). The annual rate of discarding of capital stock (D_{st}) is assumed to be zero due to difficulty in obtaining data regarding D_{st}.

THE IMPACT OF TOURISM IN A DEFICIT ECONOMY: A CONCEPTUAL MODEL IN BANGLADESH PERSPECTIVE

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Abstract

Countries all over the world nowadays perceive tourism as a sustainable means for economic prosperity in macro and micro levels. This conception is indeed supported by experiences learned from the successful ones. Nevertheless, the impact of tourism is differently observed in the economies with deficits and those of with surpluses. In the cases of deficit economies, the inputs necessary to support the tourism industry have to be largely acquired through import. Moreover, emphasizing tourism development can largely enhance the scarcity of resources for other industries and thus, result in adverse economic impacts. Therefore, an argument remains on whether accelerated tourism development is causing a deficit economy to loose more of its resources than it is earning through the same or not. The study is an effort to probe into the economics of tourism to find out to what extent a country with a deficit economy has to give up the proceeds of the tourism to support the very industry and its growth. The methodology of the study encompasses literature review and conceptual reasoning. By nature, the study is qualitative. The study is largely based on a conceptual model devised to explain the leakage and injections of the tourism industry and its actual impact on the economy as a whole. The study bears immense significance on the context that, Bangladesh, with a largely deficit economy, is on is way to venture on tourism development with an expectation to boost up the economic development. The study can also act as the background of further and larger research on the similar issues that would encompass empirical and quantitative studies. Due to the qualitative nature, the study does not offer any conclusive findings or definite recommendations; rather it concludes with proposition for empirical studies to test the viability of the proposed model in reality.
Key Words: Tourism Development, Economic Impact, Investment, Deficit Economy, Conceptual Model.

For the last few decades, a growing concern and interest has been seen on the economic impacts of tourism that are largely expressed through the numbers of supported jobs and millions of dollars earned through the activities of the industry at national and global levels (Stynes, 1999). A number of methods have been employed to measure the effects and benefits of tourism on a wide range of sectors of a country's economy. As the economic benefits and costs of tourism reach virtually everyone in the region in one way or another, an economic impact analysis provides tangible estimates of the role and importance of tourism in a country's economy. Tourism's economic impacts are therefore, an important consideration in economic development as it clarifies the relative importance of tourism and its contribution to economic activity in the area (Sahli and Nowak, 2005). Researchers throughout the world have used variety of methods, ranging from conceptual frameworks to complex mathematical models, to estimate tourism's economic impacts. However, these studies have projected mentionable variation in their findings and proposed implications, as well as which aspects of tourism are included (Zortuk, 2009). Simultaneously, oversimplification and frequent misinterpretation of digits sometimes provide a distorted and incomplete understanding of tourism's economic effects (Stynes, 1999). Nevertheless, most of the studies largely focus on the proceeds of tourism earned by the developed countries, keeping developing and under developed countries rather out of focus (Narayan, 2004).

Significance of the Study

International tourism is becoming a major foreign exchange earner for many low income countries, and

it is a principal export for 83% of developing countries and the principal export sector for one third of these countries (World Tourism Organization, 1998). A useful overview of the economic importance of tourism can also be found in World Tourism Organization's Tourism Economic Report (1998). According to the estimates of the World Tourism Travel Council, the scale of the world tourism industry will cover 10.9% of the world's GDP in 2014. The 10-year growth forecast is for US$9.5 trillion in 2014. Thus, thoroughly investigating all aspects of tourism development and economic growth is extremely important for all concerns (Leea and Chang, 2008). In this perspective, a clear conception of the economic impacts of tourism on an economy with deficit (largely the cases of the developing and under developed countries) would not only carry significance for the economic planners, but also would come to test the justification of tourism investments. The core concern of this study is to explain the actual impact of tourism in a deficit economy, i.e. Bangladesh. The study identifies the expenditures made by the tourism stakeholders to support the activities of the industry and thus, sum up the total cost of the industry. The study is a qualitative quest to know to what extent a deficit economy that would have to import the majority of the products and services to support the tourism, would really be benefited by emphasizing tourism industry over the other productive sectors.

The Economics of Tourism: A Review of the Impact Analyses

Simultaneous with the earnings, tourism activities involve economic costs, including the direct and indirect costs of tourism businesses, government costs for infrastructure, as well as costs incurred by the support services providers. As tourism is increasingly viewed as one of the best opportunities and most viable options for the sustainable economic development of developing countries, a sound assessment of the merits of tourism in economic development strategy is indeed a requirement. But many of the popular approaches in tourism's economic measurements i.e. Keynesian multipliers and Input-Output analysis are based on incomplete and hypothetical perception that primarily considers unlimited resources within the economy (Flechter, 1994; Frechtling and Horvath, 1998; Crompton, Lee and Shuser, 2001; West and Gamage, 2001). These approaches ignore the scarcity and volume of available resource within an economy and as a result largely overlook the leakages caused by importing

resources and savings by the earners of the industry. So, an over-estimated a positive impact on the economy is projected (Dwyer et al, 2004).

However, the gradual development of economic impact analysis of tourism can be seen through the four largely used methods: the multiplier method, the input-output method, the computable general equilibrium method and cost-benefit analysis method. The 'Tourism Multiplier Method' that was first developed by Archer (1973) can be considered as a significant breakthrough in tourism studies. The core concept of multiplier is the purchases of inputs made by different parties from others within or outside the tourism industry in a recurring manner that are generated due to tourism activities. By connecting different sectors in this process, they collectively contribute to increased government revenue and induce further economic activities (Egan and Nield, 2003). Tourist spending provokes a process of repeated rounds of purchases by supplying industries as well as other induced consumption. After each round there are some leakages that reduce the consumption in the next round. They are: import, taxes, savings, government consumption and personal consumption of wages, salaries and profit. Among the many types of multipliers, income and employment multipliers are most frequently used as they produce figures on the income and employment impact of tourism. This method has been used by a number of researchers and authors, including Archer (1976, 1977a, 1977b); Henderson (1975); Wheller and Richards (1974); Archer, Shea, and Vane (1974). Although the multiplier has been praised in the literatures (Gustavsen & Almedal, 1998; Baaijens, Nijkamp & van Montfort, 1998; Felsenstein & Freeman, 1998; Dwyer & Forsyth, 1998), concern over the misuse of multiplier analysis has also been seen (Hudson, 2001; Yu & Turco, 2000; Harris, 1997; Wang & Bixler, 1997).

The second method, the 'Input-Output (I-O)' analysis is a general equilibrium approach to examining the structure of an economy, its dependency and the economic impact of exogenous changes in final demand (Fletcher in Witt and Moutinho, 1994). The model is also utilized for the tourism industry for its importance in the economic development of many countries. This is a method of tabulating in matrix form sales and purchases, made by each sector of the tourism industry compared with all other sectors. It started with input-output table focusing on the flows of transactions between the different productive sectors. There is a unidirectional causality between variables, from tourist arrivals to economic growth. However, the I–O technique has been criticized for a lack of robustness and

the reliability of results obtained with this technique has therefore been questioned (Dwyer et al, 2000).

Recently, computable general equilibrium (CGE) models have been advocated and have been widely used for impact studies of tourism. A CGE model proffers a complete map of an economy in that it entails a complete specification of both the supply and demand sides of all relevant markets. The general equilibrium nature of CGE models means that all sectors are incorporated into a single model. The tourism industry fits the rationale for using a CGE model, for it is a multi-sector activity. In light of this, the effects of tourism on other sectors of the economy are likely to be significant and can be accurately captured within a CGE framework. In sum, a CGE model entails a complete specification of both the supply and demand sides of all relevant markets. However, despite the overwhelming superiority of CGE models for impact studies, they are rare in the tourism economics literature (Dwyer et al, 2004).

Cost-benefit analysis is used for evaluation of assessing tourist impacts on national economy. By a simple listing, evaluation and comparison of costs and benefits of tourism, analysts can understand a problem and chose a better solution. This approach analyses projects on macro bases, in term of foreign exchange, employment, income and government revenue in relation to the expenditure on development. It can be used for comparison of costs and benefits during the investment in different sectors. Apart from implications on tourism, cost-benefit analysis is a screening also for other economy branches which are in interaction with tourism.

None of these models focuses the background costs of tourism development that are expressed through diversion of economic resources from other productive industries to tourism, amplified expenditures on tourism support activities and increased cost of maintenance due to exhaustion of resources. The total cost of tourism is much more than those are expressed through these methods. Thus, a simple yet comprehensive method is required for estimating the true impact of tourism in a deficit economy.

Issues of Economic Impact of Tourism in a Deficit Economy

The circular flow model has significant implications for the tourism industry in explaining the incoming and outgoing of money in the industry and the economy as a whole. The economic activities of the tourism industry can be fit into the five sectors 'Circular-Flow Model' of economy that has been constructed through the studies

of a number of scholars (Freeman & Sultan, 1997; Luft, 1997; Wagner, 1997; Raguraman, 1997; Wang, 1997), if the monetary transactions among different parties are shown accordingly. Here, the areas of injections and leakage are the movements of tourism proceeds to and from the industry. The injections of the model would be the earnings of tourism firms from local and foreign tourists (Export), expenditure made by concerned government bodies on infrastructure and facilities (Government Spending) and expenditures made for developing new tourism based businesses (Investments). Whereas, the leakages here would be, withdrawal of profits from tourism businesses (Savings), revenues collected by the government from tourism services and products (Tax) and expenditures made to collect tourism related products and services from overseas (Import). In summary, the five sector circular flow of income model for the tourism industry would be the flow of money generated through tourism activities within the industry and outside the industry. In the cases of a deficit economy, this model would allow to explain the net income of the industry within the economy. A deficit economy that typically represents an import oriented structure is expected to spend more on imports to support its activities than what it earns through export. The case should also represent the situation of its tourism industry. As most of the deficit economies, especially developing countries like Bangladesh, are less sufficient in manufacturing products and services, and are low on resources; they would have to spend a considerably larger share of the proceeds of the income generated from tourism industry in importing 'tourism-support' products and services.

But along with the direct expenditures on tourism related imports, there are also a number of 'Background Expenditures' that take place in a deficit economy as leakages. They are:

a. Increased import of goods, technologies and services to support more tourism activities that would otherwise not be needed for other purpose. This could have negative impact on the balance of trade.

b. Increased cost of maintenance of tourism and support infrastructure (i.e. roads, buildings) due to faster exhaustion for increased tourism.

c. Increased cost of promotion of the destinations in international media.

However, there are a number of 'Spill-over' expenditures due to tourism activities that also take place in the background. They are:

a. Rise in the expenditures on imported luxury items made by workers of the tourism industry due to increased income that would result in an increment of import for the economy.

b. A part of the earnings made by the workers and entrepreneurs of the tourism industry may be used to pay for the outbound tourism products, thus causing leakage by diverting a portion of the income from the local and foreign tourists in other countries.

Tourism industry growth can also force the economy to decrease its injections. The cases would be:

a. Reduction in the tax rates on tourism related activities (for facilitating its growth) can cause the government to get less revenue from the industry, thus reducing leakage, but at the same time reduced expenditure on infrastructure and facilities (due to less earnings).

b. Sometimes, over emphasis on tourism development can divert the resources from other productive industry to tourism industry. This would reduce the investments in the other productive sectors as a whole. Also crowding the tourism industry would increase competition and increase the cost of investment (prices of inputs would be higher)

If all these costs are summed up, the model for economic impact of tourism industry in monetary terms would be as follows:

Net Tourism Income = Total Tourism Industry Earnings – (Direct Tourism Expenditures + Background Expenditures + Spill-over Expenditures) – (Loss of Government Revenues due to Tourism Support Policies + Increased Cost of Resources due to Diversion from other Industries)

For the economies with deficit, the expenditures and increased cost of resources would be higher and carry greater numeric value. Thus, the net tourism income and the efficiency of tourism industry would be lower than those of the economies with balance or surplus due to their less dependence on import and higher capacity of resource generation. Therefore it can be implied that,

Net Tourism Income $_{deficit\ economy}$ < Net Tourism Income $_{surplus\ economy}$

Here, the differences of income between two economies would be determined by the volume of resources available to be used in tourism industries in the two economies in

consideration. Also, per-capita income, size and nature of manufacturing and service industries, balance of trade etc. economic variables and law and order scenario (expenditures for tourist and destination security), human resource indicators (for sourcing in the industry) etc. non economic indicators are expected to exert influence individually and collectively. Thus, we can re-establish the balance between net tourism income (NTI) between deficit and surplus economies by provisioning for the values individual and collective impacts of the influencing factors (VIF) in either side:

(NTI $_{deficit\ economy}$) X VIF $_{collective}$ X VIF 1 X VIF 2 X . . . X VIF $_n$ = NTI surplus economy
Here, VIF $_{collective}$ = Collective value impact of all the influencing factors
VIF $_{1, 2 . . . . . n}$ = Individual value of each of the influencing factors

Due to the qualitative nature of the study and lack of empirical data, this equation is restrained hereby from further development. Large scale empirical studies may establish the equation and construct a complete and practical model for use.

Economic Implications for Bangladesh

Bangladesh, as a country with a highly deficit economy has to take into consideration the actual impact of the tourism industry in its current situation and devise long term strategies for improved efficiency and economic impact of this thrust sector. The following implications can be proposed:

a. Experience shows that, almost all the technologies (i.e. machineries, software) of tourism industry of Bangladesh are imported. Policies and initiatives should be taken so that, these technologies can be produced locally as there are sufficient demands in the local levels.

b. With an exception on few occasions, human resource for Bangladesh tourism industry is dependent on foreign man power or trainers. These areas should be immediately taken into strategic planning by the legitimate authorities as this is the largest area of significance for the development of the industry and saving monetary resources from getting out of the economy.

c. Local communities should be involved in tourism industry so that man power, support services and

products (i.e. food) can be acquired indigenously, thus reducing expenditures of import.

d. To prevent expenditures of luxury items, local manufacturing industries should be enriched, so that individuals can purchase quality local items.

e. Over crowing the tourism industry is not desirable as it has an adverse impact on the other manufacturing and service industries of the economy. Proper government interventions are desirable in this regard so that there is a balanced development of all the industries within the economy.

Conclusion

There are important implications for the use of tourism development in economic regeneration of a country's economy. Nevertheless, the development of the industry has its economic pluses and minuses for the economy as a whole. This study is a qualitative and humble effort to point out the areas of economic impacts of tourism development. This study, for the sake of its ultimate fulfillment, calls for larger quantitative study. If proper studies are done on this issue and long term strategies are taken in action, the efficiency and impact of tourism development is expected to be much higher for deficit economies like Bangladesh.

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EFFECT OF ENVIRONMENTAL CONCERN & SOCIAL NORMS ON ENVIRONMENTAL FRIENDLY BEHAVIORAL INTENTIONS

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Abstract

The author has done factor analysis of environmental friendly behavioral intentions taken from an earlier study, to study the effect of environmental concern & social norms on these intentions. The results indicate that these intentions can be grouped into "active" intentions & "passive" intentions. The environmental concern plays significant role in active intentions while social norms plays significant role in passive intentions. Implications of these results for consumer researchers, marketing managers & public policy makers are outlined.**Key Words**: Environmental concern, Social norms, Consumer behavior.

The issue of environment has grown important over the past few decades, however the critical part of this issue remains that the rate at which the problems related to environment are increasing is quite higher than the rate at which the actions are taken to solve these problems. Whether it is government, population or other organizations all are responding to the furies caused by the nature or human actions rather than behaving proactively & taking a check at their current actions. The most important part in this environmentally friendly behavior is to be played by the consumer.

Follows & Jobber (1999) in their study to develop a model to predict environmentally purchase behavior found that there will be a positive relationship from attitude towards environmental consequences & a negative relationship from attitude towards individual consequences to environmentally responsible purchase intention. Their study also indicated that motivation to promote & enhance the welfare of others underlies positive environmental attitudes.

The present theory of attitude (Bagozzi &Warsaw, 1990) differentiates between attitude, intention & behavior. In theory of planned behavior (Ajzen, 1985, 1991) the strength of behavioral intention is the antecedent of behavior. This behavioral intention is further formed by the combination of a positive or negative attitude towards the behavior, a subjective norm to perform the behavior, and perceived control over the behavior. Moreover, the attitude is determined by strengths of beliefs about consequences of the behavior & evaluations of these consequences.

Review of Literature

Environmental concern can be taken as an attitude towards facts, one's own behavior or other's behavior with consequences for environment (Weigel, 1983). This implies that environmental concern may refer to both a specific attitude directly determining intentions or more broadly to a general attitude or value orientation (Fransson & Gorling, 1999). Van Liere & Dunlap (1980) has proposed five determinants of attitude towards environment. These are age, social class, residence, political ideology & gender. Fransson & Gorling (1999) tested these hypotheses & found that age was negatively correlated with attitude. Support for social class hypothesis was limited to the moderately strong association between environmental concern & education. Regarding residence hypothesis, those living in metropolitan areas were significantly more concerned than those living in towns or in countryside.

Social norms can be very useful in understanding the critical component of human behavior & predicting the individual behavior (Berkowitz, 1972; Fishbein and Ajzen, 1975; Triandis, 1977). On the other hand some scholars have also viewed social norms of little value in predicting human behavior (Darley and Latane, 1970; Krebs, 1970; Marini, 1984; Krebs and Miller, 1985). Studies on social norms further divided it into many types. Two of them are injunctive norm & personal norm. The injunctive norm is conceptually like the subjective norm of the theory of reasoned action (Fishbein & Ajzen, 1975). It refers to what "others think I should do" & motivates behavior

by imposing informal social sanctions (Minton & Rose, 1997). The personal norm is tied to the self concept & is experienced as a feeling of moral obligation (Schwartz 1973, 1977). It refers to what "I feel morally obligated to do" & motivates behavior by the desire to act in ways that are consistent with one's values (Minton & Rose, 1997).

Behavioral intention is an indication of an individual's readiness to perform a given behavior. It is assumed to be an immediate antecedent of behavior (Ajzen, 1991). The strength of behavioral intention further determines the likelihood of the behavior.

Purpose of the Study

The purpose of this research was to study the effect of environmental concern & norms (injunctive & personal) on environmental friendly behavioral intentions. This study is a partial replication of the work of Minton & Rose (1997) in Indian context, as it discussed the effects of environmental concern & social norms on environmental friendly behavioral intentions. Also it extends the above study by carrying out factor analysis of environmental friendly behavioral intentions & then studying the effect of environmental concern & norms on each factor.

Materials and Methods

The sample consisted of working & non – working population of Chandigarh city & was taken on the basis of convenience sampling. The working population consisted of employees of two private companies of Chandigarh. 50 questionnaires were mailed out of which 21 were received. The non- working population consisted of students of Panjab University. The students were contacted personally & questionnaires were filled. 50 students were contacted

out of which 30 were received in usable form. Thus total number of usable observations was 51.

Measures

The variables were operationalized with previously developed scales which were adapted from earlier conducted study. All the measurement scales used in this study are included in appendix.

Dependent Variable Measures – The dependent variables included in this study were six behavioral intentions. These six environmentally friendly behavioral intentions were measures with single item which were taken from the Antil & Benett scale (1979).

Independent Variable Measures – The independent variables in this study were environmental concern, personal norm & injunctive norm. All were measured by Likert type response formats, using a five point response anchored by "strongly disagree" to "strongly agree". All were scored in the direction of agreement, meaning that higher score indicated more favorable environmental attitudes & stronger norms. Respondents completed a 16 item measure of environmental concern which was adapted from Antil & Benett (1979) scale to measure socially responsible consumption behavior.

The personal norm measure (what I feel morally obligated to do) & injunctive norm measure (what others think I should do) were taken from study done by Minton & Rose (1997) on environmental behavior.

Results

Factor analysis was carried on six behavioral intentions to summarize them. Further linear regression analysis was carried out to look into the effect of independent variables on these factors of dependent variable.

1 Factor Analysis of six Behavioral Intentions

Table 1 - KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.719
Bartlett's Test of Sphericity	Approx. Chi-Square	76.150
	df	15
	Sig.	.000

Table 2 - Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.726	45.438	45.438	2.726	45.438	45.438	2.027	33.783	33.783
2	1.074	17.896	63.333	1.074	17.896	63.333	1.773	29.551	63.333
3	.879	14.658	77.991						
4	.590	9.831	87.822						
5	.415	6.911	94.733						
6	.316	5.267	100.000						

Extraction Method: Principal Component Analysis.

Table 3 - Component Matrix(a)

	Component	
	1	2
Intentions 1	.590	-.684
Intentions 2	.782	-.424
Intentions 3	.490	.390
Intentions 4	.699	.367
Intentions 5	.602	.365
Intentions 6	.822	.082

Extraction Method: Principal Component Analysis.
a 2 components extracted.

Table 4 - Rotated Component Matrix(a)

	Component	
	1	2
Intentions 1	.003	.903
Intentions 2	.318	.830
Intentions 3	.626	.023
Intentions 4	.769	.176
Intentions 5	.695	.115
Intentions 6	.678	.472

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a Rotation converged in 3 iterations.

The values of KMO test & Bartlett's test (Table 1) shows that the data is appropriate for factor analysis. The table of total variance (Table 2) shows that there are only two factors with eigen values greater than 1 & both the factors are able to explain approx. 63% of variance.

The rotated component matrix (Table 4) shows that the intention 1 & intention 2 have large loadings on factor 2, while intention 3, intention 4, intention 5 & intention 6 have higher loadings on factor 1.

The intention statements in each factor are as follows.

Factor 1

I would be willing to pay more taxes to support greater government control of pollution.

I would be willing to pay more each month for electricity if it meant cleaner air.

I would be willing to stop buying products from companies guilty of polluting the environment even though it might be inconvenient for me.

I would be willing to make personal sacrifices for the sake of slowing down pollution even though the immediate results may not seem significant.

Factor 2

I would be willing to sign a petition to support an environmental cause.

I would consider joining a group or club which is concerned with the environment.

If we look at the statements under each factor, we can expect the observed factorization. The intentions under factor 1 demand active participation as well as economic & personal sacrifices. Moreover these intentions clearly mention the rewards & sacrifices attributed to them. That means the consequences of these intentions are clear to the consumer.

However, the factor 2 consists of intentions which are easy to confirm & practically do not demand active participation. Moreover the consequences of these intentions are not very clear.

We can call factor 1 as "Active intentions" & factor 2 as "Passive intentions" depending upon efforts required by consumer to pursue them.

2 Results of Regression Analysis of Factor 1

Table 5 - Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.591(a)	.349	.308	2.20957

a Predictors: (Constant), Injunctive norm, Environmental concern, Personal norm

Table 6 - ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	123.282	3	41.094	8.417	8.417
	Residual	229.464	47	4.882		
	Total	352.745	50			

a Predictors: (Constant), Injunctive norm, Environmental concern, Personal norm
b Dependent Variable: Factor1

Table 7 - Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.259	2.721		.830	.411
	Environmental concern	.154	.068	.464	2.262	.028
	Personal norm	.061	.098	.130	.627	.534
	Injunctive norm	.029	.052	.066	.548	.586

a Dependent Variable: Factor1

3 Results of Regression Analysis of Factor 2

Table 8 - Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.579(a)	.336	.293	1.28409

Table 9 - ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	39.130	3	13.043	7.910	.000(a)
	Residual	77.497	47	1.649		
	Total	116.627	50			

a Predictors: (Constant), Injunctive norm, Environmental concern, Personal norm
b Dependent Variable: Factor2

Table 10 - Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.306	1.581		2.091	.042
	Environmental concern	-.001	.039	-.003	-.013	.990
	Personal norm	.162	.057	.595	2.844	.007
	Injunctive norm	-.025	.030	-.098	-.804	.425

a Dependent Variable: Factor2

Above tables (Table 5 & Table 8) of regression analysis show that independent variables are explaining 35% of variance in factor 1 & 34% of variance in factor 2. Anova table (Table 6 & Table 9) shows that both the regression models are significant *(p<.01)*.

The first factor that is "Active intentions" is dependent mainly (though significance level is little less) on environmental concern (Table 7) or attitude.

The second factor that is "Passive intentions" is dependent significantly on personal norm (Table 10).

Discussion

In case of factor 1 (Active intentions) the rewards & sacrifices of the intentions are already clear. Hence, a person can affirm these intentions only if he believes that by making sacrifices (economic or personal) he will be getting the mentioned consequences. Moreover, affirming to these statements also means that the person evaluates those consequences favorably. According to theory of planned behavior (Ajzen, 1991) the person who has belief in consequences & who evaluates those consequences favorably has an attitude towards these intentions. Or we can say that a person will affirm to these intentions if s/he has an attitude towards these intentions. The similar results have been found in study as these intentions are mainly dependent on environmental concern or attitude.

In case of factor 2 (Passive intentions), these intentions as such do not demand any sacrifice & a person can affirm to these intentions without knowing too much about consequences or we can say the person does not necessarily need an attitude to affirm to these intentions. The personal norm or a feeling of moral obligation can be a sufficient reason for affirming to these intentions.

Limitations

The first limitation of this study is low significance level of the effect of environmental concern or attitude on factor 1 (active intentions). This may be due to small sample size. With greater sample size, it is possible that environmental concern or attitude show significant affect on active intentions. Secondly confirmatory factor analysis need be carried out to understand the factors in better way.

Implications & Directions for Future Research

This study has implications for researchers, marketing managers & public policy makers. For researchers, the classification of behavioral intentions can be useful to understand the effect of other variables on these intentions, in the sense that whether any variable has significant effect on any particular group of intentions.

For marketing managers & public policy makers, this study is useful in development of themes of promotion related to environmental cause. For example, if the policy makers are promoting an idea of contribution towards any environmental cause, in that case they need to develop the ad/theme giving importance to the attitude of the person.

With respect to future research, the moderating role of socio demographic variables on the relation between environmental concern & behavior could be studied. Secondly, role of some other factors like perceived behavioral control in above relation could be studied.

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APPENDIX

Questionnaire Items

Injunctive Environmental Norm Measure

1. Most of my friends think I should use household products that are safe for the environment.
2. Most of my friends think I should recycle household garbage.
3. Most of my neighbors think I should use environmentally friendly household products.
4. Most of my neighbors think I should recycle.
5. Most of my coworkers think I should use environmentally friendly household products.
6. Most of my coworkers think I should recycle.
7. Most of my family members think I should use environmentally friendly products.
8. Most of my family members think I should recycle.
9. The leaders of my community encourage us all to be good to the environment.

Personal Environmental Norm Measure

1. Do you feel a personal, moral obligation to buy environmentally friendly products for your household?
2. Do you feel a personal, moral obligation to recycle household waste?
3. Do you feel a personal, moral obligation to pay attention to advertisements about products which are safe for the environment?
4. Do you feel a personal, moral obligation to read and compare package labels for environmentally safe ingredients when you shop?
5. Do you feel a personal, moral obligation to buy products made with recycled ingredients?
6. Do you feel a personal, moral obligation to buy larger size products in order to reduce waste?
7. Do you feel a personal, moral obligation to do whatever you can to help improve the environment?
8. Do you feel a personal, moral obligation to buy products made by companies known for being environmentally responsible?

Environmental Concern Measure

1. I think we are not doing enough to save scarce natural resources from being used up.
2. Natural resources must be preserved even if people must do without some products.
3. I feel sorry that the government does not do more to help control pollution of the environment.
4. (Reversed) Much more fuss is being made about air and water pollution than is really justified.
5. I feel angry and frustrated when I think about the harm being done to plant and animal life by pollution.
6. I think the government should devote more money toward supporting conservation and environmental programs.
7. Consumers should be interested in the environmental consequences of the products they purchase.
8. Consumers should pay higher prices for products which pollute the environment.
9. Non-recyclable containers should be taxed to reduce waste.
10. The government should subsidize research on technology for recycling waste products.
11. Manufacturers should be required to use recycled materials in their operations whenever possible.
12. Commercial advertising should be required to mention the environmental disadvantages of products.
13. Products which pollute the environment during manufacturing or consumption should be taxed.
14. Public schools should require all students to take a course dealing with the environment and conservation problems.
15. I feel angry and frustrated when I think of the ways industries are polluting the environment.
16. (Reversed) Environmental issues are overrated and do not concern me.

Behavioral Intentions Measures

1. I would be willing to sign a petition to support an environmental cause.
2. I would consider joining a group or club which is concerned with the environment.
3. I would be willing to pay more taxes to support greater government control of pollution.
4. I would be willing to pay more each month for electricity if it meant cleaner air.
5. I would be willing to stop buying products from companies guilty of polluting the environment even though it might be inconvenient for me.
6. I would be willing to make personal sacrifices for the sake of slowing down pollution even though the immediate results may not seem significant.

THE FDI PERMIT FOR MULTI BRAND RETAIL TRADING IN INDIA - GREEN SIGNAL OR RED SIGNAL

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Abstract

The Indian consumers have undergone a remarkable transformation. Just a decade or two ago, the Indian consumers saved most of their income, purchased the bare necessities and rarely indulged themselves. Today, armed with a higher income, credit cards exposure to the shopping culture of the west and a desire to improve their standard of living, the Indian consumers are spending like never before. Organized retail with its variety of products and multitude of malls and supermarkets is fueling their addiction. Their new mentality, in turn, is fueling the growth of organized retail in India. This paper firstly speaks about the global giants' entry to India and their myths and realities. The second part shows the status of organised food retailing in India with SWOT Analysis and highlights on farmer's issues towards FDI in multi brand retailing. The third part overviews the two faces of retail sector – Challenges and key success factors. The fourth part reviews the impact of Organized Retailing on the Unorganized Sector. The last part reveals the recommendations before allowing FDI in Multi brand Retailing. **Key Words:** Carrefour, FDI, Indian retail, Multi brand retail, organised food retail, Wal-Mar.

Organised/Modern retailing refers to trading activities undertaken by licensed retailers and includes formats such as hypermarkets and supermarkets, and retail chains. Organised Retail, valued at INR 96500 Crores in 2008, accounts for around 5% of the total retail market. Organised Retail has been growing at an impressive rate of 35% to 40% Y-O-Y in the last few years compared to 9-10% growth in the overall retail industry.

Retail in India is essentially "unorganized." 98% of the retail industry is made up of counter-stores, street markets, hole-in-the-wall shops and roadside peddlers. The term "unorganized retail" is better understood when comparing this form of retail to the organized retail that one is familiar with in developed countries. Unorganized retail is characterized by Family-run stores, lack of best practices when it comes to inventory control and supply-chain management, lack of standardization and essentially a sector populated by anyone who has something to sell.

Unorganized Retail is essentially the next-step above agriculture for those seeking to climb the ladder of affluence in search of a higher income. Recognizing the short-term and long-term growth of retail in India, a number of domestic business giants have entered the retail industry or are planning to do so in the near future. Some like Pantaloon Retail, Shopper's Stop and Pyramid Retail have been in the industry for a decade. Others like Reliance Retail Ltd. (RRL) (RRL is part of the Mukesh Ambani run

Reliance Industries Ltd., one of India's largest industrial houses) have entered and Birla (Also known as the Aditya Birla Group, another large industrial house with various business interests) and Bharti (India's largest cellular service provider) opened up a number of stores across the country.

French supermarket giant Carrefour has opened its first cash and carry store in India, hoping the government will soon relax restrictions on foreign investment in its massive retail sector. The 5,200 sq. m. wholesale store in the east of the capital New Delhi and is open to food companies, institutions, restaurants and retailers. The arrival in India of Carrefour - the world's second-largest retailer - comes some years after its main rival in the sector. US giant Wal-Mart has already opened two wholesale stores and plans to open 10 more within four years. India agreed in 2006 to allow foreign investment of up to 51 per cent in the retail sector but only for shops selling single-branded products like Reebok, forcing overseas companies to sign franchise agreements with Indian firms. Wal-Mart signed a partnership agreement in 2006 with India's Bharti Enterprises while Britain's Tesco formed a tie-up with the giant Tata Group conglomerate. The arrival of foreign companies into the Indian retail sector is a sensitive issue, as small shopkeepers fear being driven out of business by multinationals. Industry bodies want the retail sales sector to be liberalised gradually but calls for the market to be opened up to foreign competition

have increased in recent months, notably during visits by Western leaders. Both US President Barack Obama and his French counterpart Nicolas Sarkozy urged India to remove restrictions on foreign trade and investment.

Each of these domestic and international retail giants have or will introduce a number of modern retail formats like malls, hypermarkets and supermarkets. Initial consumer response to these novelties in the retail sector has been very promising and as the middle-class continues to grow, organized retail in India is sure to see large returns. In fact, organized retail is growing at a staggering 35% per year.

As organized retailers enter the Indian market, however, they must be mindful of the unique status of retail in the country. Retail in the country has been dominated by millions of unorganized retailers who have used consumer proximity and home-delivery as their operating ideals to cater to the Indian consumer that has become accustomed to this convenience. Unorganized retail has both shaped the mentality of the Indian consumer and been shaped by it.

Another factor that major retailers must be wary of is the lack of infrastructure to support supply chains and efficient retail operations in India. Companies like Wal-Mart that grew from the ground-up leveraged the infrastructure of U.S.A to build a large supply-chain which has been the backbone of its success. The story in India is very different. Inadequate highways, the absence of cold storage facilities, an underdeveloped supply chain, limitless bureaucracy and the lack of regulations created a situation where the local corner-stores and hawkers thrived. What was the street-vendors gain will be a major hurdle for large-scale organized retailers. They will have to demonstrate unprecedented innovation, adaptation and experimentation to succeed in the Indian retail industry.

Review of Literature

Organized retail, one of the most notable emerging sectors of the Indian economy, continues to attract significant investments and interest from leading national and international retail players. It has also generated considerable opposition from small traders and shopkeepers who are worried about the impact of large-scale organized retail on their businesses. As a result, the government has been forced to carefully examine the long-term implications of organized retail in India.

Indian traditional retailers have a number of inherent strengths which helped them not merely survive the competition from organized retail but flourish. These include proximity to consumers, consumer goodwill, credit sales and amenability to bargaining, sale of loose items, convenient timings and home delivery. The Indian Council for Research on International Economic Relations (ICRIER) study (M. Joseph and N. Soundararajan, 2009) has shown that hardly 1.7 per cent of small shops have closed down due to competition from organized retail. They have competed successfully against organized retail through adoption of better business practices and technology. FDI has positive spillover effects on the economy as its ownership advantages get disseminated to locally owned enterprises, enhancing their productivity. All these benefits of foreign direct investment have been well proven in India in sectors such as automobiles, telecom and consumer electronics.

A study conducted by Mukherjee and Patel (2005) found that foreign retailers are working with small manufacturers for in-house labels and are providing them technologies like packaging technologies and bar coding. Sourcing from India has increased with the advent of foreign retailers and they also bring in an efficient supply-chain management system. Joint ventures with foreign retailers are helping the Indian industry to get access to finance and global best practices. Besides, retailing being a non-tradable service there is no possibility of improved efficiency through import competition and foreign investment is the way forward.

India stands out as an example for the late coming of modern organized retail in emerging markets and also for the kind of restrictions placed on foreign investments in retail. The arrival of modern retail in developing countries occurred in three successive waves (Reardon and Hopkins, 2006; Reardon and Berdegue, 2007). The first wave took place in the early to mid-1990s in South America, East Asia outside China, North-Central Europe and South Africa. The second wave happened during the mid to late 1990s in Mexico, Central America, Southeast Asian countries, Southern-Central Europe. The third wave began in the late 1990s and early 2000s in parts of Africa, some countries in Central and South America, Southeast Asia, China, India, and Russia.

According to the authors, the main reason why the third wave countries which include China, India and Russia lagged behind was the severe restrictions on foreign direct investment (FDI) in retailing in these countries. The demand side features of these countries, such as income, size of the middle class, urbanization, and the share of women in workforce, etc., have been similar to countries

in the second wave. In China and Russia these restrictions were progressively relaxed in the 1990s and in India only partially in the 2000s. In January 2006, India allowed foreign companies to own up to 51 per cent in single-brand retail joint ventures (JVs), but multiple brand foreign firms are still barred in retail although they can set up wholesale operations.

The domestically driven organized retail expansion in India is facing difficulties. The food inflation in the country has stayed high for some time now. The gap between the farm level prices and consumer prices is very high in India which has not come down with the expansion of organized retail. Why? While the number of domestic restrictions on the operation of organized retail in India is partly responsible for this, the ban on foreign entry into multi-brand retailing is also partly responsible.

India permitted foreign direct investment in cash-and-carry wholesale trade up to 100 per cent through the automatic route and in single-brand retail up to 51 per cent in 2006. The former brought in US$ 1.8 billion during April 2000 to March 2010 and the latter just US$ 195 million during April 2006 to March 2010. India perhaps remains the only exception in emerging economies in barring the multi-brand retail for foreign investment. The reason why India has not allowed FDI in multi-brand retail is the fear that it will harm the traditional small retailers.

Research Objectives

Having presented the immense potential and current status of the entry of the global giants to Indian retail industry, this paper continues to flesh out the Indian retail story with the objective of highlighting some of the major concerns that organized retailers will have to consider as they venture into the Indian market.

The objective of the paper has five dimensions:
- Discussion about the myths and realities of global giant's entry to India.
- Status of organised food retailing in India with SWOT Analysis and highlights on farmer's issues towards FDI in multi brand retailing.
- Overview the two faces of retail sector – Challenges and key success factors.
- Review the impact of Organized Retailing on the Unorganized Sector.
- Recommendations before allowing FDI in Multi brand Retailing.

Global Giants in India

Wal-Mart

Wal-Mart has emerged as one of the largest corporations in the world, and definitely the largest in retail. It started only fifteen years ago. In May 2009, Wal-Mart was ready to open its first store in India. The reason for Wal-Mart's entry in India was clear – The Indian middle class. The world's biggest retailer had been silently working on its strategy for India for around two years. Mom-and-pop stores and traditional distribution networks dominated the $375 billion Indian retail market. Wal-Mart's first outlet was set to launch in the city of Amritsar, Punjab in North India. The first store air-conditioned and built over 50,000 sq. ft. was on the outskirts of the city, Amritsar. The store employed 200 locals and was likely create 500 indirect jobs. In the first few weeks itself, the company had managed to sign on close to 35,000 members.

A typical Wal-Mart store sells 60,000 different items; a super centre sells 120,000 items. Wal-Mart is one of the best beneficiaries of corporate led globalization, and has made communities dependent on supplies from thousands of miles away for everyday items – including the food we eat and the clothes we wear. If Wal-Mart and other retail chains get a foothold in India, it will mean displacement of small retailers and farmers. Yet Wal-Mart is spreading myths about its corporate reach and its predatory growth. These myths have been totally exposed in the best seller "Wal-Mart effect" by Charles Fishman.

Myth I "Localization"
In an article Wal-Mart's vision of India published in the Financial Express, 1st June 2007, Raj Jain, President, emerging markets, Wal-Mart has stated: "One key reason for Wal-Mart's success is localization. We carry local products from local suppliers that appeal to local tastes, needs and fashions."

Myth II: "An Ally of Small Retailers"
Wal-Mart is presenting itself as an ally of the small retailers it will destroy. "The Joint Venture will sell quality merchandise directly to retailers – big and small, including 'mom and pop' or kirana stores. The purpose is to establish an efficient supply chain linking farmers and small manufacturers – who have limited infrastructure or distribution strength."

Myth III: "Provide Quality Jobs"
"Provide quality jobs to India's unskilled workforce. We expect to provide direct and indirect jobs to thousands of Indians."

Myth IV: "Help Develop and Grow Local Suppliers"

Wal-Mart's profits are based on destroying local production and local retail. In 2004, Wal-Mart bought products from fifty three hundred factories in sixty countries around the world. This is not local supply. Wal-Mart pushes prices so low that local producers cannot supply. In 1991, Ridlen Adhesives was abandoned by Wal-Mart because they could not lower the prices further. As Nancy Ridlen, the owner reports, Wal-Mart said: "We don't want to pay 50 cents for these glue sticks. We'll pay 45 cents. Either you take it or we'll go elsewhere." This is what has happened to every product, from locks to lawn movers from shirts to jeans. And every producer who was destroyed had been tempted by Wal-Mart's large volumes. As Jim Wier, who said no to Wal-Mart states: "They had the lure of the Wal-Mart volume? Once they get hooked on the volume, it's like getting hooked on cocaine. You've created a monster for yourself." Let us not fall into the trap of Wal-Mart's myths. Let us not create a monster for India's small producers and retailers.

Carrefour

French retail major Carrefour, the second-largest in the world in terms of revenue (euro 90 billion) after Wal-Mart, is going slow in India, even as its rivals are chalking out bold expansion plans in the country.

Ever since Carrefour launched its first store in India, a cash-and-carry wholesale format store at Seelampur, East Delhi on 30th December 2010, the retailer has maintained an awkward silence on its expansion plan for the country. Interestingly, Carrefour's only cash-and-carry store in Asia at present is in India. The group has a total of 151 cash-and-carry stores - 137 in France, 13 in Europe (excluding France) and 1 in Asia.

Experts point out three specific reasons why Carrefour is quiet on its India expansion. First, it wants to be clear about the country's FDI policy on multi-brand retail before it formulates a concrete cash-and-carry strategy here. (Currently, FDI is not permitted in multi-brand retail, but the government is said to be in a review mode. And, Carrefour has kept its potential Indian partner for multi-brand retail guessing). Second, the French retailer set up shop in India only towards the end of December last year and it may still be watching the market before embarking on an expansion plan. Third, economic slowdown, cost cuts and related business decisions in many of its European markets have forced it to turn more than cautious.

Myths and Realities About the Global Giants Arrival to India

	Myths	Realities
Price	Prices of different items are less here.	The rates at which the vendors sell are less as those in the corporate retail shops.
Middlemen	Corporate retail is throwing away middlemen.	They are becoming the new mega middlemen and creating monopolies by becoming the wholesaler, distributor and the retailer.
Employment	They are creating employment. The employment potential projected is 2 million jobs.	They are robbing livelihoods many more times then the number of jobs they are going to create. For creating 2 million jobs they are going to destruct 40 million livelihoods in retail sector.
Better deal or Best deal	Farmers are getting better deal. Corporations are friends of farmers and consumers.	Corporations are buying from existing mandis and not straight from farmers at this point of time, so there is no question of farmers getting a better deal. In future when the corporation will have control over the whole supply chain of food, farmers will have no place to sell other than these corporations. Then our farmers will face monopsony as the farmers of the west are facing now.
Fresh Products	Corporate retail sell fresh.	The hawker sells much fresher than any of these shops. Long distance supply chain and refrigeration means stale fruits and vegetables.
Local Economy Promotion	Corporate retail is promoting local economy.	They have destructed local economy wherever they have gone, and are doing the same in India. Attacks on the reliance stores in Ranchi and Indore are preemptive action by people dependent on local economy.
Efficient Supply Chain Management	Corporate entry will make the supply chain more efficient. They are more scientific than the existing system.	The supply chain gets more centralized, and the average distance traveled by food increases manifolds. In scientific, social and ecological terms this is inefficient compared to our hawkers.
Push or Pull Strategy	There is huge consumer demand for corporate retail.	The corporations are pushing the agenda, never have people in India demanded for corporation led retail.
Grow without Kill	There is room for all, as Indian economy is growing at an enormous pace.	The corporate retail chains cannot prosper without killing the small businesses. The experience of west shows us the truth.
Money saving or money wasting shopping	Corporation led shops sell cheap and consumers save money shopping there.	Corporations are propagating the habit of wasteful consumerism among the Indian consumers.

Status of Organised Food Retailing in India – Before and After Global Giant's Arrival

Organised retailing in food is poised to grow from about Rs.150 billion to about Rs.620 billion by 2020. The share of organised players within total food retail is likely to grow from the current 1.5% to around 2% over these years.

Organised Food Retailers	Started in the year
Nilgiris	1905
Trinethra Super Retail Limited	1986
Foodworld	1994
RPG Enterprises - Foodworld (In 2005 Spencers)	1994
Pantaloon Retail India Limited (PRIL) - Food Bazaar	2001
Tata Trent Ltd. - Star Bazaar	2004
Wadhwan Group formed Retail Food & Grocery Business	2005
Reliance industries ltd	2006
Aditya birla, Group's foray into the retail sector	2006
Landmark group formed SPAR	2008
Bharti Retail Pvt Ltd launched Easy day	2008

SWOT Analysis of Organised Food Retailing

In any strategic planning process, two factors namely internal and external environmental factors play an important role. A scan of these factors is important for future planning. The environmental factors, which are internal to the retail sector, can be classified as strengths and weakness. The factors, which are external to the sector, can be opportunities and threats. The strategic analysis of environmental factors is referred as SWOT analysis. This analysis provides the information that is helpful in understanding the retail sector resource mobilization and capabilities to the competitive environment in which it operates. Finally, this will be an instrumental in formulation of strategies for future growth and development of the sector.

Strengths
- Most of the organised food retailers have diversified into retailing from other businesses. These highly diversified business groups are able to support the investment requirement of organised retailing business as well as absorb business losses through their own funds.

- The parent groups normally have a robust balance sheet, which acts as a strength of the group giving them ability to negotiate funds with banks and institutions.

Weaknesses
- The industry does not have an established business model. Most of the organised food retailers are not making sustainable profits. This has forced all the players to experiment to get an understanding of a viable model for survival and growth.

- India has a huge diversity in the food habits, buying pattern, customer attitude, and the supply chain related issues. This creates hurdles for all organised food retailers to scale up and realize the much necessary economies of scale.

- Food retail has retained its commodity nature without any clear brand differentiation among players operating in the market. Hence, customer loyalty to a particular type of organised retailer is very low.

- Lack of trained and motivated manpower remains one of the main weaknesses of the organised food retailers. While initially there were some attempts to provide quality training to employees, at present, the players are not keen on such investments. As a result, customer expectation on the quality of staff has come down. Odd hour work, monotonous nature of the work and low salary levels among employees (relative to other comparable urban ventures such as BPO, IT) lead to high employee churn and attrition.

- There are genuine problems in demand management and associated planning in case of food retail. Initially, it was thought that proper demand planning could be done with the help of IT. However, it was realized later that a larger issue is that of response time from the supply side, which has to do with suppliers as well as logistics and warehouse management.

- The retail sector depends heavily on rented infrastructure. Inability to have a control on the rental cost element is a weakness that the industry has to encounter.

- High level of wastage and losses including store level shrinkage remains an important area of concern.

Opportunities
- The overall retail sector including food retail is poised for an impressive growth in the next 10 years owing mainly to high income growth measured by per capita GDP.

- Researchers have placed the growth of overall retail between 18-40%.

- The progressive decline in customs duty and other non-tariff barriers under the WTO regime liberalization policy of the Government would enable the organised food retailers to import premium foods and international brands. Global sourcing would create more choices for the consumers and improve the attractiveness of organised retailing.

- The proportion of Indian residents who seek international food products is increasing. This is owing to increasing exposure of many Indians towards foreign products by their visits abroad and through the increasing NRI population.

- The consumer attitude in India is changing. This change is marked by an attitude towards saving, debt and deferred payment (credit card etc.). This is in favour of organised food retailers as they can develop schemes to purchase on debt (credit card, payment in installments etc).

- The idea of 'India as a consumer' has been accepted globally in the last 10 years. The result has been strong MNC product flows into India and our doors have just opened up.

- The openness of the government to review some of its policies such as policy on FDI investment in multi-brand retail, policy on reforming agricultural marketing systems is an important opportunity in the present context which is going to favour huge capital investment in the sector. The FDI investments from the countries where the organised retail has attained steady phase can bring the experience, knowledge and also strategies for India.

- Government also have initiated schemes like Terminal markets to create rural infrastructure. This could bring competitive marketing advantage for farmers produce.

- Unexplored rural organised retailing is a great opportunity in front of the retail sector.

- In the existing supply chain, a considerable portion of the produce is wastage due to handling and bruises damages caused. Particularly in case of perishable commodities like Fruits and Vegetables, the direct procurement can reduce such losses to 7% by increasing efficiency up to 17% at the same time. Currently the prices of commodities are skyrocketing; tapping such wastage by investment in supply chain could be an opportunity.

Threats

- Regulatory threats- Unfortunately, many growth levers for organised retail are outside the industry. Be it clarity on FDI in organised retail, implementation of agricultural reforms by the states facilitating direct procurement and so on. In a functional democracy such as India, decision-making on such vital issues is often long-drawn.

- Policy threats- Government is deeply concerned with food inflation in the last 12 months. One of the areas that economists point out is the widening difference between wholesale prices and retail prices. The general perception in this regard is tilted against organised retailing and thus, it might slow down growth.

- Competition from FMCG-backed unorganized retailing could reduce the appeal of organised retail. This is expected to have a more profound effect in case of the food-retailing category.

- Our primary survey with organised retailers reveal that in the existing supply chain, the retailers are uncomfortable in handling perishable commodities. This is due to multiple handling and the lack of rural infrastructure facilities.

- Decreasing turnover due to mushrooming of unorganised outlets is posing threat for the sector as a whole and is affecting both unorganised and organised food retail. The competition in the sector is increasing and could impact turnover and profits.

- Lack of uniform tax system for retailers is a burden which constrains the establishment of an efficient pan India supply system. The goods and services tax is expected to stream line the tax structure. However, it is facing many hurdles in its final implementation.

- Amendment to APMC act in inviting private partners to establish a direct marketing system in mooted. But there is an opposition from majority state governments fearing that they may lose market fee. The progress in the direction of implementing second-generation agricultural marketing reforms is very slow.

The organised food retail sector does not have much strength except the back up of the promoters. The sector should look for the upcoming opportunities to develop a competitive advantage between strengths and opportunities. At the same time the sector can overcome the weakness in order to prepare itself to take up the compelling opportunity. Thus, along with the strengths and opportunities the

defensive mechanism for threats and weakness are to be countered through a balanced strategy. The Government support is needed for the sector in a balanced way by taking steps such as opening up the FDI in multi-brand retail, initiating second-generation reforms in the agricultural marketing with adequate safeguards to ensure that the interests of the producers and the consumers are not harmed in the process.

FDI in Organised Retail Industry- Farmers' Perspective

Multi-brand global retail giants like the Wal-Mart, Metro and Carrefour have entered and may enter into multi brand retail in Indian retail markets if this bill gets approved. However, the expansion of supermarkets in developing countries is expected.

In India, growing middle class with changing consumption patterns are ideal for supermarkets to prosper. The total size of Indian retail sector, including organized and unorganized sector is $300 billion, where currently the organized sector accounts for 2% only but near future the supermarket retail chains are going to play major role in agro-food sector in India. The supermarkets concerns are stable, year around supply with high quality and competitive prices. Supplying to large chain supermarkets gives both potential and large opportunities to our Indian farmers. The biggest challenge is to follow the strict guidelines by the retail groups in terms of quality and safety standards since most of the farmers usually deliver their goods to open markets or to local wholesalers. Mainly Indian farmers are marginal and small who are having average farm size of 3.3 acres, lack of infrastructure and poor post harvesting practices.

In India 40% of harvests are lost in storage and transportation. India is the second largest producer of fruits and vegetables but the country is loosing Rs.1 trillion per annum, (estimated 50% of produce) going waste due to lake of storage facilities and difficult to link to far-away markets. We need large investments to improve our agriculture infrastructure in terms of seed supply, agrichemicals, processing, machinery, storage facilities, rural transportation and supply chain linkage to support the current retail trends. This could be achieved through private investors preferably by organized retailers whether domestic or Global. If it truly improves the farmer's income, agriculture growth and food security, there is no need to be concerned about FDI or domestic.

Before bringing the global retailers into the multi brand retailing in India, the following points should be considered.

a. First and foremost... the multinational retailer's trade practices should not dampen the spirit of Indian farmers and consumers. FDI – Retail should be a process of integrating Indian economy to the global economy as well as farmers can be integrated into the world class retail market not on the mercy or control of global retail giants.

b. The Government should make sure that the farmers will receive the remunerative price should be between 60% - 70% (based on product category) of the price paid by the consumer.

c. International retailers should be mandated to work with farmers to improve yields by enabling them provide quality inputs, best farm technologies, timely credit and remunerative prices for their produces.

d. Government needs to identify the trends and ways of supporting farmers to meet the needs of modern supply chains and marketing systems to enable with the supermarket sector.

e. Government should ensure that the agro produces should be procured from the local producers and local people must be given priority in employment opportunities in processing and supply chain.

Overview of the Two Faces of Retail Sector

The one side of the Retail mirror is challenges and the other side is Key success factors which boost up the Retail Sector.

Challenges faced by the Retail Sector

Supply Chain

Finance Minister Pranab Mukherjee had in his 2010-11 budget speech said "... the second element of the strategy relates to reduction of significant wastages in storage as well as in the operations of the existing food supply chains in the country. This needs to be addressed."

India is the seventh largest country (land mass: 3.2 million sq. kms.) with varying climatic conditions over the country. Taste and preferences of people vary strongly all across the country. Catering to people in 35 states and union territories is equivalent to catering to people in 35 countries, leading to complexities in merchandise/ inventory management. Infrastructure has been developing

at a rapid pace over the past decade but has still a significant ground to cover; the planned expenditure of US$ 1 trillion in the 12th five year plan will help bridging this gap. There exists a need for retail to concentrate on developing a strong back-end support especially for perishable products to help reduce wastages which is estimated to be at 40 percent of national produce.

Channel Conflicts

Globally, retailers maintain a direct relationship with their suppliers. Due to the complex taxation structure and geographic spread of the country, most FMCG companies have developed regional distribution and re-distribution network. Cutting out the distribution network will hurt operating structures of distributors, who as an industry body in the past have opposed FMCG companies selling directly to retailers. There exists a need for a retailer to work closely with the suppliers in an attempt to shorten the supply chain network resulting in saving time and money.

Location and Rental

Finding the right location with the right rental for stores has been a challenge for all retailers. Rent forms a large portion of the total expenditure (6 to 11 percent of the revenue) in retailer's income statement and can more often than not convert a profitable store into loss making. The challenge for a retailer would be to find the right location for their stores either in malls or as a standalone store to be able to generate enough footfalls. A retailer could evaluate option of setting up a property development/ management arm that would be able to source/ develop stores at lower rentals.

Unique Indian Customer

The Indian consumer experiencing modern retail has now warmed up to this idea. Buying habits have still not changed, where people prefer to buy most of the fruits and vegetables on a daily basis. The Indian consumers have a strong preference for freshly cooked food over packaged food mainly attributed to dietary patterns, poor electricity supply, low penetration of refrigerators and a family structure where one of the primary roles of the housewife is feeding the family. There is also an impact on the basket size because of non-availability of personal transport facilities, due to which the consumers prefer to buy smaller quantities from stores conveniently located near their homes.

Regulatory

Currently, indirect taxation structure is complex in India with varying tax rates, multiplicity of taxes and multiple tax enforcement authorities. Goods and Service Tax likely to be implemented in 2011 will replace a host of levies like excise,

sales tax, value-added tax, entertainment tax and luxury tax. This is likely to have an impact on the supply chain model and cost structure of distributive trade, followed by consumer packaged goods companies. Opening a new store requires a lot of licenses, which have to be obtained from different government departments leading to considerable lead time in opening up of the stores. A push has been made by existing retailers to get the government to have a single window clearance for getting all the licenses at one place to speed up the process.

Private Labels

Private labels enable retailers to offer products at a better price point attracting footfalls to the store. This, in turn, not only translates to better margins by cutting out middlemen but also enhances retailers bargaining power with supplier. Penetration of private labels in emerging markets is expected to be about 6% of retail sales which in India is estimated to be about 10 – 12%. The concept is still at a very nascent stage in India given the age of modern retail in India. Few players have introduced private labels in the category of Food & Grocery, Apparels, Consumer Durables etc. but reservations still exists towards acceptance of these products with the Indian consumer. Private labels offering competitive pricing proposition has helped to generate interest and a slow but steady acceptance from the Indian consumer.

Key Success Factors

Efficient Supply Chains

Highly fragmented supply chains coupled with infrastructure issues and the vast geographical spread of the Indian market pose huge challenges to the retailers. Indian retailers have to enhance their supply chains to succeed in the cost conscious market. Segments such as food and grocery have to cope with very highly unorganised supply chains. Also, the rising customer expectations would necessitate supply chains with quick reaction times.

Ability to Penetrate Rural Market

The urban area has been the focus of Organised Retail which has led to increased competition. Rural India is home to 72 Crores consumers across 6 lakh villages. 17% of these villages account for 50 % of the rural population as well as 60 % of rural wealth. Hariyali Kisan Bazaars (DCM) and Aadhars (Pantaloon-Godrej JV), Choupal Sagar (ITC), Kisan Sansars (Tata), Reliance Fresh, and others such as the Naya Yug Bazaar have already ventured into the retail market.

Leveraging Technology

The Organised Retail layers have to leverage IT and technology to sustain business growth through innovation and differentiation. A numbers of retail players like DLF Retail, Khadims, Diamexon Diamonds have expanded their SAP footprints to simplify business processes, reduce costs and adapt to the changing industry landscape. GPS and RFID technology can help in logistics and inventory management.

Customized Solutions

The Indian retail market is very heterogeneous in nature. The dynamics for various segments change with the geography and other cultural factors. The challenge for the retailer is to keep this heterogeneous nature of the target market in mind and to balance it with other issues like economies of scale.

Investing In Retail Brand (Store Brand)

A strong retail brand is a critical success factor. The retailers should invest in brand building activities which would help them in attracting new customers as well as retaining the existing ones. The strong retail brand will allow the retailers to push through "private labels "which would strengthen their bottom line.

Customer Relationship Management (CRM)

The retailers have to come up with innovative CRM activities to retain their customer base and to add on to their brand value. CRM activities like loyalty programs have been received well by the customers in the past.

Impact of Organized Retailing on the Unorganized Sector

Unorganized retailers in the vicinity of organized retailers experienced a decline in their volume of business and profit in the initial years after the entry of large organized retailers. The adverse impact on sales and profit, however, weakens over time. There was no evidence of a decline in overall employment in the unorganized sector as a result of the entry of organized retailers. The rate of closure of unorganized retail shops in gross terms was found to be 4.2 per cent per annum, which is much lower than the international rate of closure of small businesses. The rate of closure on account of competition from organized retail was found to still lower, at 1.7 per cent per annum. There was competitive response from traditional retailers through improved business practices and technology upgradation.

Consumers definitely gained from organized retail on multiple counts. Overall consumer spending has increased with the entry of the organized retail. While all income groups saved through organized retail purchases, the lower income consumers saved more. Thus, organized retail is relatively more beneficial to the less well-off consumers. Proximity is a major comparative advantage of unorganized outlets.

There was no evidence of an adverse impact by organized retail on intermediaries. There is, however, some adverse impact on turnover and profit of intermediaries dealing in products such as, fruit, vegetables, and apparel. Over two-thirds of the intermediaries planned to expand their businesses, in response to increased business opportunities opened by the expansion of retail.

Farmers were found to benefit significantly from the option of direct sales to organized retailers. The average price realization for cauliflower farmers selling directly to organized retail was about 25 per cent higher than their proceeds from sale to regulated government mandis. The profit realization for farmers selling directly to organized retailers was about 60 per cent higher than that received from selling in the mandis. The difference was even larger when the amount charged by the commission agent (usually 10 per cent of sale price) in the mandi is taken into account.

Large manufacturers have started feeling the competitive impact of organized retail through price and payment pressures. Manufacturers have responded through building and reinforcing their brand strength, increasing their own retail presence, 'adopting' small retailers, and setting up dedicated teams to deal with modern retailers. The entry of organized retail is transforming the logistics industry. This will create significant positive externalities across the economy. Small manufacturers, however, did not report any significant impact of organized retail.

Major Recommendations

i.   Modernization of wet markets through public-private partnerships.

ii.   Facilitating cash-and-carry outlets, like Metro, for sale to unorganized retail and procurement from farmers, as in China.

iii.   Encouraging co-operatives and associations of unorganized retailers for direct procurement from suppliers and farmers.

iv.   Ensuring better credit availability to unorganized retailers from banks and micro-credit institutions through innovative banking solutions.

v.   Facilitating the formation of farmers' co-operatives to directly sell to organized retailers.

vi. Encouraging formulation of "private codes of conduct" by organized retail for dealing with small suppliers. These may then be incorporated into enforceable legislation.

vii. Simplification of the licensing and permit regime for organized retail and move towards a nationwide uniform licensing regime in the states to facilitate modern retail.

viii. Strengthening the Competition Commission's role for enforcing rules against collusion and predatory pricing.

The Road Ahead...

The sentiment towards 100 percent FDI in retail sector is gathering pace. Currently, the UPA has a majority in the house and it seems quite possible that they will be able to pass the bill, making FDI in multi-brand retailing, a reality. Moreover, with state governments like Punjab working with modern retailers in furthering improvement of trade, there is a possibility that support will flow in from other state governments as well. However, the opposition led by the BJP is not in favour of this move and has presented a report recently to the Parliament recommending a complete ban on FDI in retail.

The proposed FDI norms will open up strategic investment opportunity for global retailers, who have been waiting to invest in India. This may have a significant impact on the current arrangement of foreign players. This policy will require investment from retailers in areas of supply chain, especially for perishable products, thus helping farmers to get better income leading to an inclusive growth in the country. Given the large number of SKU's that retailers stock Small and Medium Enterprises (SME) sector is also set to gain from this move due to preference given by retailers to private label brands. The move will also encourage smaller suppliers to take their products to a national platform that they could not previously manage due to lack of an organised supply chain of their own. This policy will also open up avenues for attracting, developing and retaining talent. Contract manufacturers would also benefit from these policy changes. With the global economy still recovering, investment in India is lucrative to a retailer attributable to strong consumerism, rising disposable income, growing middle class population, favorable macro and micro economic indicators supplemented by a stable government.

Conclusion

The objective is modernization of Indian retail. To achieve it we need to move on three fronts: first, the government has to proactively assist traditional retailers in competing successfully with the organized retail by modernizing themselves; second, remove the domestic regulatory and interstate movement restrictions on retail; and third, allow foreign entry into multi-brand retail.

Corporate retailing in India is witnessing considerable growth. The share of corporate retail in overall retail sales is projected to jump from around 3% currently to around 9-10% in the next three years. A number of large domestic business groups have entered the retail trade sector and are expanding their operations aggressively. Several formats of corporate retailing like hypermarkets, supermarkets and discount stores are being set up by big business groups besides the ongoing proliferation of shopping malls in the metros and other large cities. This will have serious implications for the livelihood of millions of small and unorganized retailers across the country. Large organized retail is controlled across the world by many governments. An appropriate regulatory framework for the organized retail sector in India has to be framed keeping in mind the Indian specificities. India has the highest shop density in the world with 11 shops per 1000 person. If the corporate retail starts spreading in India without any control and if the Government brings in Foreign Direct Investment in the sector, the potential social costs of the growth and consolidation of organized retail, in terms of displacement of unorganized retailers and loss of livelihoods will be enormous. Regulation needs to be more stringent and restrictive.

Retailers entering the Indian market need to ensure that they have considered the opportunity along with the challenges to maximize their returns. Retailers will need to bank on the local knowledge brought in by their partners/ employees/ service providers to be able to reduce the lead time required by them to set-up operations and get a foothold in the Indian market.

Catering to people in 35 states and union territories is equivalent to catering to people in 35 countries, leading to complexities in merchandise/inventory management…

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AN OBSERVATION ABOUT GOODNESS-OF-FIT TESTS OF DISTRIBUTIONS

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Abstract

We consider univariate goodness-of-fit tests. A result stating the non-existence of a uniformly most powerful test, for all combinations of null and alternative distributions, which are completely specified, is given. **Key Words:** Univariate Distribution, Goodness-of-Fit Tests, Uniformly Most Powerful Test.

In a univariate goodness-of-fit (GoF) test of distributions, one verifies if a random variable (RV) X follows a hypothesized distribution function $F(x) = \Pr\{X \leq x\}$ or otherwise. Another distribution may be considered as an alternative for the RV. Distributions may or may not be completely specified. Some parameters may be estimated from the sampled observations. Such GoF tests are of singular importance and have many applications in management, engineering and science. For example, we may try to see the statistical distribution for the lifetime of a machine and its reliability of operation at a particular time point. We may need to estimate repair times. Such distributions then may be used arrive at optimal maintenance policies. The estimated distribution of demand of an item may be used in production planning. GoF tests also arise in a regression analysis, which again is a topic of high practical significance.

In principle, a GoF test would compare some characteristic features of the ideal distribution, with what is observed in the sampled data, corresponding to such features. There have been extensive discussions in the literature on GoF methods. Many non-parametric and parametric tests have been suggested, using different statistics. The readers may find more elaborate discussion on the topic, for example, in the text by D'Agostino and Stephens (1986).

One commonly used method for GoF test of distribution is the Chi-squared Test (see, for instance, D'Agostino and Stephens (1986), Spanos (1999)) given by Prof. Karl Pearson. The test is based on differences in expected and actual number of different cells or subsets of the population.

This gives binomial distributions which are approximated with the standard normal distribution ($N(0,1)$). Then the fact that the sum of the squares of a few random variables which are independent and follow $N(0,1)$ is a RV, which follows the chi-square distribution, is used. Chi-squared Test is a large sample test, because of the normal approximation used. But, it is a non-parametric test, applicable for both of continuous and discrete distributions. The test is also modified without much complication, to take into account the situations where some parameters of the distribution have to be estimated from sampled observations.

Another important type of GoF test is based on empirical distribution function (EDF). The well-known Kolmogorov-Smirnov Test (refer to, for instance, Spanos 1999) is one of such techniques. The EDF may be described in the following manner. Let $X_{(1)}, X_{(2)}, ..., X_{(n)}$ be n ordered sampled observations from the distribution $F(.)$ and let one realization be denoted as, $x_{(1)}, x_{(2)}, ..., x_{(n)}.$ Then EDF $\hat{F}_n(x)$ is given as:

$$\hat{F}_n(x) = 0, x < x_{(1)};$$
$$= i/n, x_{(i)} \leq x < x_{(i+1)}, i = 1, 2, ..., n-1;$$
$$= 1, x \geq x_{(n)}.$$

An oft-used test based on the EDF is the Anderson-Darling Test (Anderson and Darling 1952). Further discussions on some EDF tests and a comparison are found in the article by Stephens (1974).

Various other statistics as empirical characteristic function (see, for instances, the papers by Gurtler and Henze 2000, Wong and Kim 2000), empirical Melin transform of distribution function (by Meintanis 2008) etc. have been proposed by different authors.

In this article, we give a result that, there cannot be a single test which would be uniformly most powerful in all combinations of null and alternative single variable distributions, which are completely specified. As much as we are aware, such a result, although quite intuitive, has not been discussed analytically in the relevant literature. The result has some practical implications.

A Result on Goodness-of-Fit Tests

Denote with n the sample size and with α, the level of significance. Let us consider tests as,
H_0 (null hypothesis): X follows the distribution F_0;
H_1 (alternative hypothesis): X follows the distribution F_1;

Where F_0 and F_1 are completely specified ($F_0 \neq F_1$). We assume simple random sampling, $X_1, X_2, \ldots, X_n$ being the independent sample observations. Tests have acceptance criteria as, $a_1(\alpha, n) \leq t(X_1, X_2, \ldots, X_n) \leq a_2(\alpha, n)$, where $t(X_1, X_2, \ldots, X_n)$ is the statistic used in the test. It does not depend on F_0 and F_1. The critical values a_1, a_2 are real values which possibly are dependent on α and n; but are not, like the test statistic, dependent on F_0 and F_1. For example, this is case with the Chi-squared Test. A test should have level of significance α or lower.

Proposition 1: For fixed level of significance ($\alpha < 1$) *and sample size, there cannot be a test which has higher power than any other test for all combinations of* F0 *and* F1.

Proof: Let there be such a test with the statistic $t_0(X_1, X_2, \ldots, X_n)$. Consider, F_0 as $X = 0$, with probability 1; F_1 as $X = 1$, with probability 1. Then, $a_1 \leq t_0(0, 0, \ldots, 0) \leq a_2$; otherwise, level of significance is 1. Power is zero if, $a_1 \leq t_0(1, 1, \ldots, 1) \leq a_2$. So take, $t_0(1, 1, \ldots, 1) < a_1$; or, $t_0(1, 1, \ldots, 1) > a_2$, when power is 1.

Then, take the reversed condition, F_0 as $X = 1$, with probability 1; F_1 as $X = 0$, with probability 1. In this case, level of significance is 1, power is zero. A test can be designed for this case as, $t_1(X_1, X_2, \ldots, Xn) = \sum_{i=1}^{n} X_i / n, a_1 = a_2 = 1$ giving level of significance of 0 and power 1.

Thus, the proposition is proved. □

It is not difficult to see that, instead of degenerate Bernoulli distributions, Bernoulli distributions with

probabilities in (0, 1) could also be used in the proof, with some probabilities sufficiently close to 1. Other distributions may also be found to construct such examples.

The proposition is an analytical statement about the non-existence of a uniformly most powerful test in the situation considered and highlights the need of devising different types of tests for different combinations of hypothesized null and alternative distributions. Acceptance criteria too should take into account the combination of null and alternative distributions, for more accurate tests. This in most cases can be done with numerical experiments.

We may also note that, from the above it follows that if the tests are as,

H_0 (null hypothesis): X follows the distribution F0;
H_1 (alternative hypothesis): X does not follow the distribution F0.

In that case also there cannot be any test which is uniformly most powerful for all F0. This is so as power has to be considered here for various alternative distributions.

Conclusion

Goodness-of-fit tests for distribution are of high practical importance. For a given situation, such a test needs to be selected appropriately. A suitable test can give higher accuracy, both in terms of level of significance and power, even with a smaller sample size. But selection of an appropriate test is sometimes difficult- a large number of tests being available. In this article, we have presented a result highlighting the need of having different tests for different conditions. Variety of tests is preferable. But there should be guidelines to select the most appropriate test for the problem at hand, which would help the practitioners and the researchers.

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APPLICATION OF ANALYTICS IN BUSINESS STRATEGY

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Abstract

In the most well-known ancient treatise of war, Sun Tzu Art of War, the following quote was made by Sun Tzu, He who knows his enemy and himself well will not be defeated easily. He who knows himself but not his enemy will have an even chance of victory. He who does not know himself and his enemy is bound to suffer defeat in all battles. (Sun Tzu Art of War, Chapter 3) In most of the papers written on analytics, they are mostly focus on certain operations or functions of the business. The current literature lacks the discussion of analytics on the strategic planning and execution. As such in this paper we are going to discuss more about using analytics where possible to improve upon the strategy planning and execution. This paper will at times use quotes from Sun Tzu Art of War as support for analytics application in strategic planning and execution. **Key Words:** Strategic Planning, Strategic Execution, Sun Tzu Art of War, Management.

Sun Tzu Art of War

Sun Tzu Art of War is a well-known Chinese ancient treatise of war. Its popularity can be seen by the fact that it is translated into many languages even though it is an ancient text that is written more than three thousand years ago. The book has also gained much traction in business strategic planning due to the close nature between war and business, providing inspirations for business managers on how to succeed in the competitive business situations.

In Sun Tzu Art of War, there is a well-known quote that goes.

He who knows his enemy and himself well will not be defeated easily. He who knows himself but not his enemy will have an even chance of victory. He who does not know himself and his enemy is bound to suffer defeat in all battles. (Sun Tzu Art of War, Chapter 3)

Thus in terms of strategic planning and execution, it is of utmost importance that the business manager knows the "enemy" and "himself" well.

What is "Enemy"?

In the context of war, the enemy is referred as someone you are up against or competing with. But in the context of business, it should be referred to as external sources of competition. With that in mind, the well-known Porter's five forces would serve as a relevant framework to determine what the external forces that a company has to compete with are and they are potential competitors, substitutes, customers, suppliers and intensity of competitive rivalry.

With Porter's five forces being a permanent feature in many strategic management courses, it needs no further introduction so let us discuss how analytics can be used to assess these forces.

Potential Competitors

Markets that give high return will attract new firms to be set up to serve the market. But before the company starts to scurry to find out more about these potential competitors with intent to 'squash' them, a recommendation would be to first understand the markets that you are serving in, lookout for potential barriers of entry and exit in the market. Tactically, where possible, you would set up high barriers of entry and play up barriers of exit in the market. This is in line with Sun Tzu Art of War. In Sun Tzu Art of War it can be seen that the terrain, where two or more competing parties, fought out their battles can be seen as very important since a whole chapter (i.e. Chapter 10) is dedicated to it. And in the chapter, it discuss about the various terrains based on its characteristic of ease of entry and exit. We can easily

find that the terrain is similar to the market that companies compete in. With that in mind, what is of most importance would then be the market's barrier of entry and exit.

Thus in terms of analytics there is a need to understand the macro environment of the market the company is working in. Know what are the barriers of entry for instance, first-mover advantage, high set-up costs, lack of skilled labor and so on. The next step would be to know where the barriers of exit are and play them up in the minds of competitors. Why do we work on the barriers of entry and exit first instead of working to 'squash' the enemy? Please look at the following quote from Sun Tzu Art of War.

Thus to fight a hundred battles and win a hundred battles, is not a reflection of the most supreme strategy. The ability to subdue the enemy without battle is a reflection of the ultimate supreme strategy. (Sun Tzu Art of War, Chapter 3)

As advocated by Sun Tzu, by working on the barriers of entry and exit, you are able to discourage potential competitors from entering the market avoiding 'battle' with them.

Only after playing out the tactic, would company then seek to find out more about these potential competitors, discourage each of them where possible and proceed to compete with them when they turn into real competitors.

Competitors

Let us now look at competitors. It is always difficult to obtain data on competitors but that does not mean that companies cannot get data or information on their rivals. Public information such as advertisement that comes from rivals marketing effort are some source of information that companies can get. Companies can also seek out relevant information from the suppliers and customers too since they would most likely have in contact with the rivals. But one has to take note that getting information from customers might be difficult as customers tend to make rivals play against each other so as to reap the most benefit out of it. But this is only true for a B2B relationship. If it the company is B2C then it can be easier to scout out more information.

Suppliers might be a good source of information but care must be taken that there are no detrimental effect on the suppliers' benefits if they do divulge information.

Substitutes

In Porter's five forces, substitutes are defined as products that would increase the propensity of customers to switch to alternatives. As such, companies have to decrease the propensity to switch as such an understanding of the available substitutes and a deeper understanding of the customers is required. As the discussion on Customers would cover part of the using analytics on the latter, the focus of this discussion would be instead on the former, having a good understanding of the available substitutes.

In order to gather better intelligence on the available substitutes and its standing in customers, companies should directly conduct surveys with the customers themselves. With customers being more astute consumers, always seeking out the best deal and with the Internet rapidly reducing the barriers that arise from information asymmetric, customers are the best data source to seek out the available substitutes. What companies need from customers would be the name of the substitutes and what customers are thinking about these substitutes. With such information, companies can go online to seek out more information on these substitutes, understand what their value proposition to the customers is and how customers are reacting to it. Companies can also purchase reports from industry researchers such as Gartner and IDC to understand more about the standing of existing substitutes or competitors.

With such information, companies would be able to react better to changes in tactics by companies producing substitutes, thus retaining market share.

Customers

Analytics have definitely found its way into consumer industry, mostly the banks and telecoms. It has found its ways especially into marketing where there is a strong desire to reach the right people at the right place and at the right time. As such marketing analytics has entrenched itself firmly in helping companies to understand more about their customers, areas of opportunities, building brand loyalty and preventing attrition.

Suppliers

In many battles that are fought out in ancient China, there are some battles that are fought out by cutting the supply chain or eradicate the logistics of enemy's army. The most famous of such war is Battle of Guandu fought during the Three Kingdom period of Ancient China (Wikipedia, 2011). It was a classic battle because although Yuan Shao has a obvious numerical advantage as compared to Cao Cao (110,000 vs 40,000), it was Cao Cao who emerged as

the victor of the battle. The battle was won when Cao Cao sent troops to attack a weakly defended Wuchao the supply depot of Yuan Shao's troops.

Such battles have shown the importance of logistics in any battle and this is especially true in the business arena. For a business to be able to meet its demand well, the management of suppliers is of utmost importance. As such, in recent years we have seen companies like Tesco and Wal-mart working together with their suppliers to ensure that they can meet demand when it happens in their retail stores. Companies can use analytics and work with their suppliers to ensure constant supply of goods and services. Another thing to take note of is the need to have a Business Continuity Plan that is worked together with suppliers. Such importance is seen in the Japan Earthquake of March 2011. Many electronic goods have parts that come mostly from Japan. As such, most of the electronic goods suppliers found out that they cannot meet the orders because of such supply chain disruption.

Thus analytics could be used together with suppliers to better predict demand, manage delivery lags and ensure constant and just-in-time supply of materials.

What is "Himself"?

As can be judged from the quote, himself means the party himself that is planning to go into war. In the business context, it would refer to the company itself.

Thus is also of utmost importance that the company understands itself well. The importance of such knowledge can be seen from the following quote by Sun Tzu.

In ancient times, those who were skilful in warfare ensured that they would not be defeated and then waited for opportunities to defeat the enemy. The ability to prevent defeat lies on oneself while the opportunities of victory depend on the enemy. Thus those who are adept at warfare can ensure that they will not be defeated by the enemy, but will not be able to ensure victory over the enemy. Thus one is able to predict victory but not necessary be able to achieve it. (Sun Tzu Art of War, Chapter 4)

Companies are responsible for putting themselves in a position that they would not lose whereas the opportunity for victory comes from the action of the rivals. Thus in order for companies to truly put themselves in a good position, they first have to know their companies well.

Over here we recommend to follow the framework that is found in Sun Tzu Art of War.

Which Ruler has a higher Political Intelligence? Which general is more capable? Which side has the advantages created by the weather and terrain? Which side is capable of executing orders effectively and efficiently? Which army is better equipped, stronger and larger in numbers? Which side has better training? Which side is more enlightened in the administration of rewards and punishment? (Sun Tzu Art of War, Chapter 1)

If you look at these seven areas they can be grouped into the following areas; Leadership, Human Resource Management, Process & Operations.

Let us now discuss more about each area.

Leadership

Although the usage of analytics to improve leadership is far and few, there is a need for leadership to drive the analytics movement in the company. The need for that as mentioned is that for anything to be successfully implemented, the strong support from leadership is greatly needed. Without the strong support, it would be difficult to push through a motion in the company. This can be seen in literature that discuss about the implementation of analytics in companies.

Besides giving the strong support, there also is a need to a culture where decisions are made based on facts, made up of available data in the companies, rather than decisions based on gut feel.

Process & Operations

Another area that analytics have found its way into has been in the Process & Operations area of businesses. Most of the common usage of analytics is to find areas for improvement, like cutting down unnecessary steps, reduction in requirements or materials, optimizing delivery process, optimizing manpower in service industries, optimizing the inventory to hold and so on. The usage of analytics brings to the management more clearly the areas of improvement in their operations and processes. But one has to take note of the customer experience implications when deciding to make changes to the operations or process.

Human Resource Management

In the areas quoted above by Sun Tzu, we can see that Human Resource Management is very important. The need

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for them to be well-equipped, well trained, stronger both physically and mentally and also carrying out the orders effectively and efficiently.

In the Knowledge Economy that we are in, the need for an effective management of human resources has taken precedence over many other areas.

The area of talent analytics has slowly been emerging in the business world with the focus on mainly retaining talents, improving staff engagement and optimizing the work schedule.

For instance, using the behaviors such as making claims, taking both sick and annual leave and other forms of interaction between the employee and the employer to predict when a staff is likely to leave. If the staff is a talent that the company wants to retain, it can then start to take pre-emptive measures, to start engaging the talent so as to prevent turnover where possible. Or finding out more about the low performers and understand the reason for their performance.

With reference to "Competing on Talent Analytics" from October 2010 Harvard Business Review (Davenport, 2010) and Sun Tzu's quote above, analytics can now be used to determine whether employees are meeting key objectives and if they are not, what the reason could be. Is it a lack of equipment or skills? Analytics could also be used to identify and intervene so as to retain the good performing managers.

The world of talent analytics is still very new but as mentioned it would definitely be adopted in the arena of human resource management given the strong need for the 'right' employee in the Knowledge Economy.

Conclusion

In this paper, we have mentioned the several areas that companies can use analytics to improve upon their strategic planning and execution. It was broken down into external and internal factors. External factors would be, according to Porter's five forces, potential and existing competitors, suppliers, customers and substitutes. For the internal factors where analytics can be used, they are Process & Operations and Human Resource Management, together with the strong support from leaders or top management.

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