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RESEARCH PAPERS

BOOK REVIEWS

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All correspondence pertaining to editorial and circulation matters may be addressed to:

The Editor, *NICE Journal of Business*
School of Business Studies, Shobhit University, Modipuram, Meerut - 250 110
Phone: 0121 326-4005, 2575091/92; Fax: 0121-257 5724
e-mail:*editornjb@gmail.com*, *verma.dps@gmail.com*

SHOBHIT UNIVERSITY, MEERUT

Shobhit University, notified by the Government of India as a Deemed University, under Section 3 of the University Grants Commission Act, 1956, was envisaged and inspired by Babu Vijendra Kumar *ji*, an eminent agriculturist and social worker from Gangoh (Saharanpur) of U.P. The University seeks to go beyond the established standards to nurture technocrats and prospective managers that have a global vision and insight in their chosen field.

SCHOOL OF BUSINESS STUDIES

School of Business Studies (SBS) is an integral part of the Shobhit University, Meerut. It has inherited the academic legacy of the NICE Management College (established in 1995), together with autonomy in curriculum-designing and flexibility for foreign collaborations, through academic exchange, credit-transfer mechanism, and increased institution-industry interface. The SBS offers MBA programmes with numerous specialisations, including marketing, finance, human resource management, production and operations management, pharmaceuticals marketing, and insurance and risk management. It also offers M.Phil. and Ph.D. programmes in management.

NICE JOURNAL OF BUSINESS

NICE Journal of Business is a half-yearly journal, earlier published by NICE Management College, Meerut, and now brought out by the School of Business Studies, Shobhit University, Meerut. It provides a platform to research scholars, practising managers, and academicians in business management, commerce, economics, and allied fields, to present their research findings and share their views and experiences.

The Journal aims at disseminating research output and providing information about recent developments in the relevant fields, by way of research articles, book reviews, Ph.D. thesis abstracts, case studies, and bibliographies, on topics related to business and allied areas. It is listed in *Cabell's Management Directory* (USA).

Original contributions received for publication in the Journal are subjected to a blind review, by experts in the relevant fields.

From the Editor's Desk

I feel privileged to place before you the new issue (Volume 5, Number 2: July-December, 2010) of the *NICE Journal of Business*. The issue presents a panorama of research papers and book reviews on various topics of common interest in the field of business.

The research papers pertain to the major business areas of banking and finance, services and tourism marketing, human resource management, knowledge management, information and communication technology, and management education.

The slogan 'the customer is king' has never been more true than it is today for the banking sector in India. Banks have adopted *e*-banking system to provide better service to ensure customer satisfaction, an antecedent to the sustainable competitive advantage. In order to maximise their profits and wealth, banks have to gain a better understanding of customers' perceptions. Mr. Poolad Daneshvar, an Iranian research scholar, working at the Mysore University, and Professor H.N. Ramesh of Kuvempu University, PG Centre, Kadur (Karnataka) demonstrate the model of service quality gaps about the *e*-banking services. Their findings have policy implications for improving the Internet banking services in the banks.

Dr. Sunita Mehla and Dr. S.K. Goyal, both from the Business Management Department of CCS Haryana Agricultural University, Hisar, examine the day-of-the week effect in the Indian stock market, during the pre-crisis and the 2008 crisis periods. Their study has revealed that such effect did exist during the pre-crisis period and during the entire period in the case of the Nifty and the Nifty Jr. indices, but no such effect was noted for the crisis period.

Dr. Amit Sharma of the Government Engineering College, Ajmer, and Mr. Naveen Kumar Sharma of Savitri Institute of Management, Ajmer, seek to measure the satisfaction of foreign tourists visiting the two beautiful cities of Rajasthan – Udaipur and Jodhpur. They assess the expectations and experiences of foreign tourists, using the HOLSAT model. Their findings are expected to be used in planning and implementing the tourism policies to develop Rajasthan as a major tourists' destination.

The study by Dr. Meera Mathur of MLS University, Udaipur, and Dr. Rahila Gorach of the Pacific Institute of Management, Udaipur, examine the motivating factors and current practices for implementing knowledge management systems in selected organisations located in the Udaipur region. They have found a subtle difference in the priorities accorded to motivational factors in service and manufacturing organisations.

Dr. Lakhwinder Singh Kang of GND University, Amritsar, and Dr. Surinder Sharma of Doaba College, Jalandhar, seek to measure the perception of stakeholders of the quality of management education in the State of Punjab. Based on a survey of the selected alumni, teaching faculty, and practising managers, they have suggested necessary reforms in the admission policy, fee structure, programme duration, curriculum design, pedagogical tools, etc., for improving the quality of management education in the State.

Dr. K. Srinivasan of Christ University, Bangalore, and Professor Malabika Deo of the School of Management, Pondicherry University, examine the causal nexus between the various stock market variables, with the help of the Toda-Yamamota method. Their study has revealed that there is a significant contemporaneous and bi-directional relationship between the stock market variables, including stock returns, trading volume, and volatility.

The banking system in India has received increasing attention of research scholars, administrators, and government agencies in the recent years. Professor R.C. Dangwal of HNB Garhwal University, Srinagar (Uttarakhand), and Ms. Reetu Kapoor of Government Bikram Post-Graduate College, Patiala, make an appraisal of the financial performance of all the nationalised banks in India. The banks have been grouped into various categories on the basis of their financial performance during the post-Reforms period.

Based on the interview of 60 managers in ten logistics companies in the Gaborone city of Botswana, Mr. Henry Ongori of the University of Botswana identifies the major benefits arising from the adoption of the information and communication technology (ICT) in logistics companies. His findings are expected to encourage managers in logistics companies to adopt various ICT tools.

An organisation cannot achieve its goal unless its workforce works enthusiastically and has job involvement, which, in turn, is influenced by the organisation's management styles. Through a survey of 200 managers, taken from two large public-sector organisations, Dr. Surekha Rana and Dr. Nirupama, both from the Department of Management Studies of Gurukul Kangri University's Dehradun campus, examine the relationship between management styles and employees' job involvement in public-sector organisations. They have found a significant relationship between the two variables.

The section on book reviews contains eight items, penned by subject experts in the relevant fields. The books reviewed pertain to subjects, such as applied statistics for business and economics, services marketing, human resource management, corporate law, innovation, skills development for business and management, and value investing and behavioural finance.

I express my indebtedness to the authors and book-reviewers for their valuable contribution to the journal. Several experts made available their time and expertise, in assessing the articles received for publication. Not only did they make critical comments on the papers sent to them for refereeing, but also offered suggestions for improvement. They richly deserve my applause and gratitude.

Mr. Shobhit Kumar, Chancellor; Kunwar Shekhar Vijendra, Pro-Chancellor; and Professor Anoop Swarup, Vice-Chancellor; of Shobhit University, took keen interest in this academic endeavour. I express my gratitude to these visionaries.

DPS Verma
Editor

CONTENTS

QUALITY OF INTERNET BANKING SERVICE
A Study of Selected Banks in India

Poolad Daneshvar* and H.N. Ramesh**

Abstract

This paper examines the concept of service quality and demonstrates the model of service quality gaps. It seeks to measure the gap between customer satisfaction of services and their preferences of the interpretive service in the Internet banking in commercial banks in India. The research questions were used to measure the gap between expectation and satisfaction levels of customers with the quality of the Internet banking. For this purpose, a questionnaire with five-point Likert's scale was used. The data was collected from 102 respondents and analysed with the help of the SPSS 12 software by employing correlation and step-wise regression analysis. The study has revealed that there are significant differences between overall expectations and satisfaction of customers. For practitioners, it is worth noting that customers are concerned with the 'sufficient menu for transaction', 'variety of services readily accessible', 'availability for business', and 'have a user-friendly system', as important factors for the Internet banking. The findings shall have policy implications for improving the Internet banking services.

Key words: ***Satisfaction, Expectation, Customer services quality, Gap model of service quality, Internet banking.***

INTRODUCTION

THE digital revolution has changed almost every aspect of our daily life in the 21st century. One of the technologies which has really brought information revolution in society is the Internet and it is rightly regarded as the Third Wave of revolution after the agricultural revolution and industrial revolution. The Internet allows banks to conduct transactions from anywhere and anytime, and is used for transactions, payments, etc. The rapid diffusion of the Internet, has revolutionised the delivery channels used by financial services.

A major force behind these developments is technology, which is breaking geographical and regulatory barriers, creating new products,

* Mr. Poolad Daneshvar is Research Scholar in B.N. Bahadur Institute of Management Science, Department of Business Administration, University of Mysore; Mysore; e-mail: *poulad_danesh@yahoo.com*

** Dr. H.N Ramesh is Associate Professor and Director, Kuvempu University, PG Centre, Kadur (Karnataka); e-mail: *rameshhn2003@yahoo.co.in*

services, and market opportunities and developing more information and system-oriented business and management processes.

Numerous factors, such as competitive cost, customer service and increase in education and income level of customers, force the banks to evaluate their technology and assess their electronic commerce and Internet banking (*i*-banking) strategies. The significance of the Internet in today's competitive and increasingly global banking environment has been widely acknowledged (Thorton and White, 2001).

The success in *i*-banking business depends on an understanding of the key factors determining customer satisfaction and service quality. This has become more critical in view of the increasingly global competition in the banking and financial services, and the increasing presence of powerful foreign players in the domestic banking. On the other hand, in the competition within the corporate banking, banks have realised the importance of service quality in the development of good bank-corporate relationship. Improving such relationship should increase bank profitability and accrue other benefits, such as commitment (Perrien and Ricard, 1995) and co-operation (Zineldin, 1995).

In India, commercial banks have been quick to realise the importance of this factor to competitive advantage. The banking industry has witnessed several regulatory changes, during recent years, which have resulted in increased competition among the banks. The entry of private-sector banks and foreign banks, subsequent to the recommendations of the Narasimhan Committee, has increased the expectations of the customers in all areas relating to customer service (Thampy and Madanmohan, 1999). Since the 1990s, they have incessantly innovated, through technology-superior products and services, such as multi-function automated teller machines (ATMs), electronic share application, tele-banking, electronic money transfers, electronic cash cards, and *e*-banking.

The *i*-banking is a new delivery channel for banks in India. Ravi, *et al.* (2007) declared *i*-banking channel as both an informative and a transactional medium. However, the *i*-banking has not been popularly adopted in India as expected. The banks with lower market share also identify the *i*-banking technology as a means to increase the market share by attracting more and more customers through this new delivery channel.

Applications of information technology in the service industry are now on the constant increase and the *i*-banking is one of the prominent examples. For the Internet users, on-line banking is both convenient and time-saving, as compared with traditional retail banking. Now-a-days, superior service quality has entered the picture as a differentiating strategy (Parasuraman, *et al.*, 1991). The complex nature of services, together with the growing prominence of the services sector, has further increased the need for better service quality. Therefore, the topic of service quality is increasingly recognised as one of the key strategic values of organisations in both the manufacturing and service sectors (Lewis and Mitchell, 1990). Service quality enables the company to differentiate itself from its competitors by increasing sales and market share; it results in the satisfaction and retention of customers; it leads to enhanced post-purchase satisfaction and brand loyalty; and enables it to attract new customers through positive word-of-mouth (Newman, 2001; Wang, *et al*., 2003).

Lin, *et al.* (2004) demonstrated that the level of service quality had positive impact on customer satisfaction and, the level of customer satisfaction influenced the level of customer retention accordingly. The study of Bolton and Drew (1991), shows that service quality is an antecedent factor of customer satisfaction and retention. It was an interesting finding that service quality does not directly influence the level of customer retention.

On the other hand, service quality has been linked with customer satisfaction within the banking industry (Avkiran, 1994) and has been recognised as a key strategic issue for organisations operating in any service sector (Lewis and Mitchell, 1990). Zeithaml, *et al.* (2008) defined customer satisfaction as the "customers' evaluation of a product or service in terms of whether that product or service has met their needs and expectations". On the other hand, Oliver (1997) defined satisfaction as "the consumer's fulfillment response and the degree to which the level of fulfillment is pleasant or unpleasant". Thus, organisations achieving higher levels of service quality have high levels of customer satisfaction and an antecedent of sustainable competitive advantage (Lewis and Mitchell, 1990).

Internet Banking

The Internet banking means the offering by a bank to its customers the facility to transact business with the bank over the Internet. It refers to the use of the Internet as a remote delivery channel for banking services. Recently, dial-up connections, personal computers, tele-banking, and automated teller machines (ATMs) have become the order of the day in most of the developed countries (Uppal and Jatana, 2007).

Features

The common features of the Internet banking fall broadly into the following categories:

1. Transactional (e.g., performing a financial transaction, such as an account-to-account transfer, paying a bill, wire transfer, and applying for a loan, or a new account);
2. Electronic presentment and payment of bill;
3. Funds transfer between a customer's own checking and savings accounts, or to another customer's account;
4. Investment purchase or sale;
5. Loan applications and transactions, such as repayment of loan;
6. Non-transactional (e.g., issue of on-line statements, check links, co-browsing, and chat);
7. Bank statements;
8. Financial Institution Administration;
9. Support of multiple users having varying levels of authority; and
10. Transaction approval process.

The features unique to the Internet banking include the personal financial management support, such as importing data into personal accounting software. Some on-line banking platforms support account aggregation to allow the customers to monitor their accounts in one place whether they are with their main bank or with other institutions.

The Concept

It is a system allowing individuals to perform banking activities at home, via the Internet. It is a web-based service that allows the bank's authorised customers to access their account information. In the system, customers are allowed to log in the banks' website with the help of identification (password) issued by the bank and personal identification number (PIN). Bank replies to the user and enables the customer to access the desired services (Uppal and Jatana, 2007).

LITERATURE REVIEW

Attributes of *i*-Banking Service

Over the past few decades, service organisations, including retail banks, have been forced by such key trends as innovation in technology and deregulation to their attention on their distribution channel strategies (Bauer, *et al*., 2005).

Liu and Arnett (2000) identified five important dimensions of on-line service quality in relation to customer satisfaction on the website. Among these, the quality of information, that is relevant, accurate, timely, customised and complete, are given priority for the customer satisfaction in the on-line service. Joseph, *et al*. (1999) investigated the influence of the Internet on the delivery of banking services. They found six dimensions of *i*-banking service quality, namely, convenience and accuracy, feedback and complaint management, efficiency, queue management, accessibility, and customisation.

Ziqi, *et al*. (2002) measured and identified consumer attitudes towards the usefulness and willingness to, use the Internet in e-retail banking in Singapore. They showed that expectations of accuracy, security, network speed, user-friendliness, user-involvement and convenience were the most important quality attributes underlying the perceived usefulness.

Vasya, *et al.* (2006) developed a theoretical model for measuring the quality of on-line services. They modified the theoretical model (instrument) for measuring the quality of on-line banking services in particular. As a result of the analysis, the initial theoretical model has been modified, so that the final version of the model (instrument) for measuring quality of on-line banking services includes four quality dimensions, namely, service performance, website characteristics, communication, and efficiency.

Customer Satisfaction and Service Quality

Service quality represents the difference between customer expectations of what a firm should provide and perceived service performance. If expectation is greater than performance, perceived quality is less than satisfactory and, therefore, customer dissatisfaction arises (Lewis and Mitchell, 1990). Thus, service quality can be defined as the difference between customer expectation and perception of service.

Customer satisfaction is the leading criterion for determining the quality that is actually delivered to customers through the product/ service and by the accompanying servicing (Vavra, 1997). Customer satisfaction and service quality are two distinct, though highly correlated, constructs (Bansal and Taylor, 1997; Dabholkar, *et al*., 2000).

So, understanding customer expectations is a pre-requisite for delivering superior service (Parasuraman, *et al*., 1991). Achieving customer satisfaction is a vital target for most service firms today (Jones and Sasser, 1995) as it leads to improved profits, favourable word-of-mouth and less marketing expenditure (Yeung, *et al*., 2002). In case of competitive marketplace, where business firms compete for customers, customer satisfaction and service quality are seen as a key differentiator and has increasingly become a key element of business strategy and critical success factor for organisations to build their competitive advantage and enhance their competitiveness. Competitive advantage refers to capabilities that differentiate an organisation from its competitors and enable it to create a defensible position over its competitors (Porter, 1985). Competitive capabilities consist of price/cost, quality, delivery, flexibility (Handfield, *et al.*, 1995), and time-based competition (Kessler, *et al.*, 1996). Service-quality-based differentiation is another barrier to entry. It enhances the reputation for the organisation and is an intangible asset creating most of corporate growth and shareholder value.

While Suresh Chandar, *et al*. (2003) examined the service quality in public, private and foreign banks in India. Yavas, *et al*. (1997) studied the relationship between service quality, customer satisfaction, complaint-behaviour, commitment in the banking industry in India. They found positive relationship between service quality and customer satisfaction with customer behavioural intentions (Anderson and Sullivan, 1993; Parasuraman, *et al*., 1988) as well as financial performance (Yeung, *et al*., 2002). Siu, *et al.* (2005) studied about measuring service quality in *i*-banking in Hong Kong. They attempted to examine customers' service quality perceptions in *i*-banking as well as the impact of such perception on customer satisfaction and future consumption intention.

Rodand, *et al*. (2009) investigated the relationships among the three dimensions of service quality that influence overall *i*-banking service quality and its subsequent effect on customer satisfaction in a New Zealand banking context. The results showed significant relationship among on-line customer service quality, on-line information system quality, banking service product quality, overall *i*-banking service quality, and customer satisfaction.

Horn, *et al.* (2005) investigated the composition of customer relationship management (CRM) in *e*-business by examining the possible elements that determine the different aspects of the relationship between customers and *e*-business firms. The study revealed that customers perceived three main dimensions of relationship attributes of *e*-business (general CRM, personalisation, and privacy) and they significantly contribute to customer attitude. The findings supported the importance of including relational-type *e*-business attributes when investigating interactions between customers and *e*-business. The study concluded with related implications and design guidelines to enhancing customer perception of *e*-business.

Dutta and Dutta (2009) examined the consumer expectations and perceptions across the three banking sectors in India. They identified the factors affecting the quality perception of the customers in the banking sector. They found that in the banking sector, it was the foreign banks which were perceived to be offering better service quality, followed by the private-sector and then public-sector banks. They also found that the perceptions were reflected in the financial performance of the banks. With the increasing competition among banks, the findings could act as a strategic tool to achieve competitive advantage and customer satisfaction.

Perception Vs. Satisfaction

Customer satisfaction refers to the satisfaction a customer derives from the quality of product and service, the nature of relationship, the price-performance ratio of a product/service, and the ability of the product/service to meet the customer's expectations (Brown, 1998). While perception of service quality is considered more long-term (Parasuraman, *et al.*, 1988), satisfaction is more transaction-specific and transitory, and service quality is considered a predecessor of satisfaction (Dick, *et al.*, 1994).

Thus, the perceived service quality and customer satisfaction are closely related. However, the difference between the two can be seen by the fact that a consumer can be satisfied with a specific service, and yet he may not feel that the range of services was of high quality. Using a similar example, Storbacka, *et al.* (1994) explored this aspect. Thus, "a customer could, therefore, respond to a questionnaire that a particular bank is of high quality, even if this did not mean that the customer was satisfied with the bank. It might have too high interest rates on loans or it might not fit the customer's preferences for some other reason". Sohail and Shaikh (2008) measured the quality of service from customers' perspective. With an enormous growth in *i*-banking, they discussed how banks can be competitive by providing quality services. Results were based on a factor analysis identifying three factors that influence the users' evaluation of service quality of *i*-banking services. These factors were labelled as 'efficiency and security', 'fulfillment', and 'responsiveness'.

Gaps Model of Service Quality (SERVQUAL)

The widespread adoption of service quality concept and the keen attention paid by the service-firms to this concept motivated many a researcher to explore more solid methods for service quality measurement and its evaluation (Parasuraman, *et al.*, 1988; Dabholkar, *et al.*, 1996; Brady and Cronin, 2001). For this purpose, the gap theory is the most accepted model in the service literature, although some criticisms about its validity are also discussed by certain researchers (Teas, 1993). Zhu, *et al*. (2002) assessed the impact of information technology (IT) on service quality in a large consumer bank. Their results showed that IT-based services have a direct impact on the SERVQUAL dimensions and an indirect impact on customers' perceived service quality and satisfaction.

The gaps model positions the key concepts, strategies, and decisions in services marketing in a manner that begins with the customer and builds the organisation. Tasks around what is needed to close the gap between customer expectations and perceptions should be identified (Zeithaml, *et al.*, 2008). Not knowing what customers expect (Gap 1), not selecting the right service designs and standards (Gap 2), not delivering to service standards (Gap 3),and not matching performance to promises (Gap 4), are the underlying causes behind the customer gap (Gap 5) (**see Figure 1**).

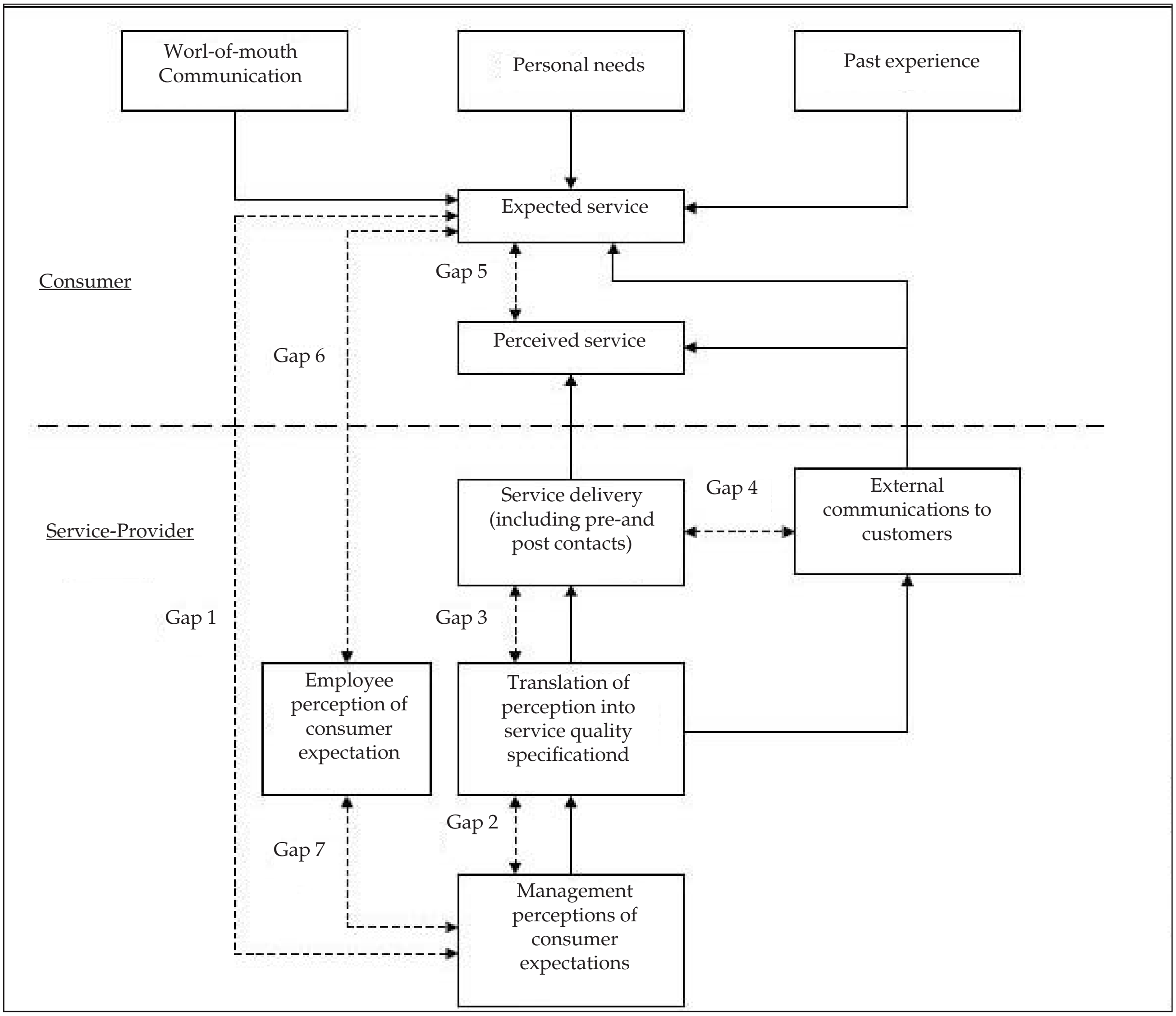

Figure 1
Model of Service Quality Gaps

Among these five service quality gaps, the customer gap is the most vital point to consider. The major aim of the gaps model in this study is to analyse the difference between customer expectations and perceptions. To increase customer satisfaction firms first need appropriate measurement techniques for measuring and evaluating the gap between the expectations and perception. After receiving the service, customers compare the performance of the service-provider with their expectations which are mainly influenced by word-of-mouth, personal needs, and past experiences. In most of the service settings, however, customers may not get the service they expected before the service experience. The performance of the service-provider falls either below the customer's expectations or above them. When expectations are high, service is perceived to be of exceptional quality and to be a pleasant surprise. When expectations are not met, service quality is deemed unacceptable. When expectations are confirmed by perceived service quality, it is satisfactory. However, quality, which falls short of expectations, has a greater effect on customer satisfaction than the quality which exceeds satisfaction (Zeithaml, *et al.*, 2008).

In the services sector, being different has a special advantage among rivals who offer similar goods and services. Parasuraman, *et al.* (1988) argue that with minor modification, SERVQUAL can be adapted to any service organisation. They further argue that information on service quality gaps can help managers diagnose where performance improvement can best be targeted. The largest negative gaps, combined with assessment of where expectations are highest, facilitate prioritisation of performance improvement. At the same time, if gap scores in some aspects of service turn out to be positive, implying expectations are actually not just being met but exceeded. This allows managers to review whether they may be "over-supplying" this particular feature of the service and whether there is potential for re-deployment of resources into the features which are underperforming.

Lin, *et al*. (2004) examined the antecedents and consequences of service quality in on-line banking. They introduced the modified version of the SERVQUAL instrument for on-line banking and from the exploratory and confirmatory factor analysis. Furthermore, they attempted to investigate the causal relationship among service quality, customer satisfaction, and customer retention.

OBJECTIVES OF THE STUDY

The main purpose of this study is to ascertain the gap between customers' their perception and expectation of interpreting *i*-banking services and predicting the key factors of the customer perception toward *i*-banking service quality in Indian banks. Specifically, this study attempts to examine the effectiveness of the Internet services and to determine if such services provided by the Indian banks meet the needs of the general public.

HYPOTHESES

The following hypotheses were formulated for testing:

1. There is no significant difference between customers' expectation and satisfaction with service dimensions (attributes).
2. There is a positive correlation between the overall customers' satisfaction and service dimensions (attributes).

RESEARCH METHODOLOGY

The Sample

A survey was conducted to ascertain the gap between customers' perception and expectation based on the SERVQUAL model, in selected commercial banks in India. Out of a total of 118 customers, only 102 completed the questionnaires correctly. These were obtained from all categories of customers from different types of banks (public, private, and foreign), who used *i*-banking facilities in October and December of 2009, and January of 2010. The demographic characteristics of the respondents are shown in **Table 1.**

The respondents included 37 per cent females and 63 per cent males. While the dominant age-group of the respondents was 25 to 35 years (53 per cent), followed by 35 to 45 years (22 per cent), less than 25 years (10 per cent), and 45 to 55 (10 per cent), people above 55 years made up the smallest group, (only 5 per cent of the respondents).

In terms of the level of education, 48 per cent of the respondents had a post-graduate degree, 39 per cent had got university education; and 7 per cent had only secondary school education. This shows the relatively-high educational background of the respondents. With regard to the occupation, the most-often-mentioned occupations were 'business' (45 per cent), followed by 'salaried' (33 per cent), 'professional' (18 per cent), and 'others' (4 per cent).

With regard to the respondents' monthly income, the largest group included those with a monthly household income of Rs. 20,000-35,000 (41 per cent), 37 per cent had a monthly income of Rs. 10,000-20,000, 15 per cent had a monthly income of over Rs. 35,000, and 7 per cent had a monthly income of under Rs. 10,000.

In case of the Internet usage frequency, almost 48 per cent used the Internet every day, 28 per cent

Table 1
Respondents' Demographic Profile

	Demographic Characteristics	*Percentage*
Gender	Male	63
	Female	37
Age	Less than 25 years	10
	25-35 years	53
	35-45 years	22
	45-55 years	10
	Above 55 years	5
Education	Below Graduation	7
	Graduation	39
	Post-graduation	48
	Others (e.g., some high school, completed high school, some college)	6
Profession	Professional	18
	Salaried	33
	Business	45
	Others	4
Household monthly income	Below Rs 10000	7
	Rs 10000 -20000	37
	Rs 20000-35000	41
	Over Rs 35000	15
Internet usage frequency	Every day	48
	4–6 times per week	19
	1–3 times per week	28
	3 times in a month or more	5

used it 1 to 3 times per week, 19 per cent used it 4 to 6 times per week, and 5 per cent used it three times a month or more seldom.

The survey was conducted over a 6-week period at different branches and ATMs. In this study, judgmental sampling method was employed. The represendents each type of bank, i.e., public, private, and foreign banks, and the desired range of demographic characteristics (sex, age, profession, etc.), previous Internet experience and the product-related knowledge. The data was collected through personal contact with the respondent. To ensure that the instrument reached the target customer, a screening question was asked at the beginning of the questionnaire as to whether the respondent had performed a banking transaction on the Internet.

The Instrument

The primary data was collected through a structured questionnaire, which consisted of three sections. The first section deals with the customers' expectation and satisfaction of *i*-banking attributes. In this section, the respondent was asked to indicate the level of perception based on a Likert-type scale from one (strongly disagree) to five (strongly agree). The second section of the questionnaire dealt with the frequency of the customer's usage of *i*-banking channel. The third section contained questions related to the demographic profile of the respondent. SPSS 12.0 for Windows was employed in order to access the particular results required for the scale measurement. Mean and standard deviation were calculated. The reliability of the scale was tested, dimensionality of the scale was confirmed through an exploratory factor analysis, and the regression analysis led to causal results.

DISCUSSION AND RESULTS

Expectation and Perception Gaps

This paper develops a measure of service quality gaps in *i*-banking service through the SERVQUAL model and contributes to the understanding of the relationship among overall customer satisfaction and service quality attributes. The concept of measuring the difference between expectations and perception, in the form of the SERVQUAL Gap score, proved useful for assessing the level of service quality (Shahin, 2005). The statistical analysis shows that the average ratings for expectations are higher than the average perception ratings in almost all the attributes. The results of the quantitative application of the SERVQUAL model in *i*-banking show that the overall expectations of the customers are higher than their overall perception. This proves the existence of a negative SERVQUAL gap (-0.40) (see **Table 2**).

In order to measure the gaps between the expected and perceived service levels (Gap 5), 15 major *i*-banking service dimensions were grouped. Then, to assess the significant difference of the arithmetic means for each dimension, the paired

Table 2
Descriptive Statistics on Customer' Expectation, Perception and Gap Mean of Service Quality in Internet Banking

(N=102)

No	Service Dimension (Attribute)	Expectation		Perception		Gap	t	Sig.	Results (Accept/ Reject
		Mean	S.D.	Mean	S.D.	Mean (P-E)			
1	Having up-to-date equipment	4.06	0.85	3.86	0.89	-0.20	1.36	0.18	Accept
2	Performing the service right the first time	4.47	0.63	4.14	0.73	-0.33	2.59	0.01	Reject
3	Speedy service delivery	4.26	0.63	4.06	0.76	-0.20	1.62	0.11	Accept
4	Availability for business	3.59	0.88	3.93	0.69	0.34	-2.36	0.02	Reject
5	Wide variety of services readily accessible	4.00	0.56	4.03	0.68	0.03	-0.30	0.77	Accept
6	Having a user-friendly system	4.07	0.35	3.56	0.85	-0.51	4.98	0.00	Reject
7	Easy to use	3.87	0.72	3.73	0.83	-0.14	1.11	0.27	Accept
8	Sufficient menu for transaction	4.39	0.52	3.96	0.82	-0.43	3.44	0.00	Reject
9	Provision of accurate information	3.89	0.69	3.47	0.74	-0.41	5.17	0.00	Reject
10	Feeling safe	4.14	0.75	3.31	0.88	-0.83	5.94	0.00	Reject
11	Easy access to necessary information	4.14	0.64	3.80	0.71	-0.34	2.81	0.01	Reject
12	Availability in the understandable languages	3.66	0.80	3.91	0.74	0.26	-2.03	0.05	Reject
13	Personalisation of the website	4.39	0.60	3.44	0.96	-0.94	6.43	0.00	Reject
14	Knowledge of administration	4.14	0.67	3.89	0.79	-0.26	2.12	0.04	Reject
15	Customer service	4.24	0.71	3.60	0.79	-0.64	5.12	0.00	Reject
16	Overall	4.44	0.56	4.04	0.75	-0.40	3.45	0.00	Reject

Notes: 1. 'Gap mean' is defined as the perception mean minus the expectation mean;
2. A negative gap indicates that the customers perceived that service delivery did not meet their expectation. A positive gap indicates that customers perceived that service delivery exceeded their expectation.

t-tests were performed between the expectation and perception scores at 95 per cent confidence level. According to the results, the mean differences between the expected and perceived service levels regarding all the 15 dimensions, 11 dimensions were statistically significant (see Table 2). This suggests that there were service quality gaps in 11 service categories. The paired differences shown in Table 2 showed that the largest discrepancy existed between the customers' expectations and perceptions in terms of 'personalisation of the website', 'feeling safe', and 'customer feedback service' factors, which include the bank's website design, *i*-banking security, and customer relationship management (CRM). The insight gained from the study may offer a foundation for future research on self-service technology, and provide useful recommendations for improving *i*-banking services in commercial banks in the country. On the other hand, the widest positive gap was in the 'availability for business', followed by the 'variety of services readily accessible'.

These results lead to reject the first hypothesis that there is a difference between customers' expectation and satisfaction with the selected *i*-banking service attributes.

Correlation Analysis

As shown in **Table 3,** there is a positive correlation between the overall satisfaction of the respondents and the nine factors, namely:

1. Having up-to-date equipment;
2. Performing the service right the first time;
3. Availability for business;
4. Variety of services readily accessible;
5. Sufficient menu for transaction;
6. Easy access to necessary information;
7. Availability in the understandable languages;
8. Personalisation of the website; and
9. Knowledge of administration.

The correlation coefficients between the overall satisfaction and nine factors were positive and significant at the 0.01 and 0.05 levels. For example, the correlation between the overall satisfaction and 'having up-to-date equipment' (Factor 1) was 0.270 (p=0.024); between the overall satisfaction

Table 3
Correlations between *i*-Banking Attributes and Overall Customer Satisfaction

No	Service Dimension (Attribute)		Over-all Satisfaction	Result (Accept/ Reject)
1.	Having up-to-date equipment	Pearson Correlation	0.270*	Accept
		Significant Level	0.024	
2.	Performing the service right the first time	Pearson Correlation	0.307**	Accept
		Significant Level	0.010	
3.	Availability for business	Pearson Correlation	0.652**	Accept
		Significant Level	0.000	
4.	Variety of services readily accessible	Pearson Correlation	0.650**	Accept
		Significant Level	0.000	
5.	Sufficient menu for transaction	Pearson Correlation	0.706**	Accept
		Significant Level	0.000	
6.	Easy access to necessary information	Pearson Correlation	0.287*	Accept
		Significant Level	0.016	
7.	Availability in the understandable languages	Pearson Correlation	0.295*	Accept
		Significant Level	0.013	
8.	Personalisation of the website	Pearson Correlation	0.417**	Accept
		Significant Level	0.000	
9.	Knowledge of administration	Pearson Correlation	0.497**	Accept
		Significant Level	0.000	

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

and 'performing the service right the first time' (Factor 2) was 0.307 (p=0.010); between the overall satisfaction and 'availability for business' (Factor 3) was 0.652 (p=0.000); between the overall satisfaction and 'variety of services readily accessible' (Factor 4) was 0.650 (p=0.000); between the overall satisfaction and 'sufficient menu for transaction' (Factor 5) was 0.706 (p=0.000); between the overall satisfaction and 'easy access to necessary information' (Factor 6) was 0.287 (p=0.016); between the overall satisfaction and the 'availability in the understanding languages' (Factor 7) was 0.295 (p=0.013); between the overall satisfaction and 'personalisation of the website' (Factor 8) was 0.417 (p=0.000); and between the overall satisfaction and 'knowledge of administration' (Factor 9) it was 0.497 (p=0.000), (Table3). Thus, the correlations between the overall satisfaction and attributes 'Sufficient menu for transaction' and 'availability for business' were higher than that between the overall satisfaction and other attributes.

These results support the second hypothesis, namely, there is a positive correlation between the overall satisfaction and the selected *i*-banking service attributes.

Step-wise Multiple Regression

In statistics, step-wise regression includes regression models in which the choice of predictive variables is carried out by an automatic procedure (Draper, *et al.,* 1981). In the present study, regression analysis predicted four independent variables in terms of 'sufficient menu for transaction', 'variety of services readily accessible', 'availability for business' and 'having a user-friendly system', respectively. So, in Model 1 (see **Table 4**), when a single independent variable (X_1 = 'Sufficient menu for transaction') was used to calculate the regression equation for predicting the dependent variable, overall customer satisfaction (Y), the correlation coefficient (R) was 0.706, representing 70.6 per cent degree of association of Y and X_1. The coefficient of determination ($R2$) indicates the percentage of total variation of Y explained by X_1. Using the value of X_1 reduces the error of predicting the dependent variable by 49.8 per cent. The standard error of estimate represents the standard deviation of the actual dependent values around the regression lines. The standard error was 0.536.

With the addition of another dependent variable into the model, 'variety of services readily accessible' (X_2) increased $R2$ (0.664, respectively). Model 3 further added another variable called 'availability for business' (X_3) into the equation, which further improved the capability of the model to explain the variation in Y, 'availability for business' (X_3) increased $R2$ (0.745, respectively). In addition, Model 4 further added another variable called 'have a user-friendly system' (X_4) into the equation which further improved the capability of the model to explain the variation in Y, 'have a user-friendly system' (X_4) increased R (0.764, respectively).

Table 4
Factors Affecting the Existence of Service Quality in *i*-Banking Industry in India: Regression Analysis

Model	Service Dimension (Attributes)	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	Sufficient menu for transaction	0.706[a]	0.498	0.491	0.536
2	Variety of services readily accessible.	0.815[b]	0.664	0.654	0.441
3	Availability for business.	0.863[c]	0.745	0.734	0.387
4	Having a user-friendly system	0.874[d]	0.764	0.750	0.376

Notes: a. *Predictors*: (Constant), sufficient menu for transaction

b. *Predictors*: (Constant), sufficient menu for transaction, wide variety of services readily accessible.

c. *Predictors*: (Constant), sufficient menu for transaction, wide variety of services readily accessible, availability for business.

d. *Predictors*: (Constant), sufficient menu for transaction, wide variety of services readily accessible, availability for business, having a user-friendly system

The adjusted *R*-squared (0.750) in **Table 4** suggests that the model accounts for 75 per cent of variance in the friendliness of the system usage. In other words, this model can predict service quality almost 75 per cent, correctly.

As a result, the attribute 'sufficient menu for transaction' factor (*R*=0.706) has 49.1 per cent contribution. Moreover, the attributes 'variety of services readily accessible', 'availability for business', 'having a user-friendly system', and 'sufficient menu for transaction' make 65.4 per cent, 73.4 per cent, and 75 per cent contribution to improve the *i*-banking service quality of Indian bank industry, respectively.

Consequently, the findings of this study show that we can reduce the service quality gap by upto 75 per cent and 25 per cent, if the improving factors are unaccounted and unexplained for recognition of customer satisfaction dimensions. These factors can relate to other banking policies, in terms of the interest rate on deposit and loans, penalty, amount of minimum balance for the savings account, several types of charges, employee's manners, and the marketing strategy used.

These results show that certain qualitative factors can predict the level of the overall customer satisfaction with the *i*-banking service quality.

A four-dimension model, using regression analysis, was developed for measuring the overall service quality of i-banking. For this purpose, in case of *i*-banking, the commercial banks should pay attention to four factors: 'sufficient menu for transaction', 'variety of services readily accessible', 'availability for business', and 'having a user-friendly system'. This will enhance the Internet service quality in the banking industry in India. As shown in Table 4, these factors contribute 75 per cent to the improvement of quality of *i*-banking service. The banks may conduct research to ascertain the customer expectation with *i*-banking services and establish a proper feedback system to evaluate the customer expectation and perception regarding such services.

CONCLUSION

The results of the study have a number of practical implications for managers of commercial banks in India, who wish to ascertain the customer satisfaction: First, the banks ought to provide reliable services in order to ensure high level of customer satisfaction, an antecedent to of sustainable competitive advantage, especially through increasing the availability of the website for business transactions, improving the variety of services, and performance of the bank's website as well as safety and on-line customer services. In the present competitive environment, most of the banks offer the same or similar products around the world and the service quality is an effective tool to differentiate them in the market place.

Second, the bank managers should delight their customers by exceeding their expectations to improve customer satisfaction. It is observed that customers are satisfied with the reliability of the services provided by the bank but are not very much satisfied with the service attributes of 'feeling safe'. So, they could be applied to technology-based service encounters, such as those in *i*-banking. Security has long been considered one of the most essential issues for *i*-banking users (Black, *et al.*, 2001). This involves guarding the users from the risk of fraud and financial loss; while conducting a financial transaction. This requires commitment to invest in the relevant emerging technology, particularly those with significant prospects for enhancing the convenience and accuracy of *i*-banking service. Furthermore, to enhance the attribute of 'availability for business', the banks can meet customer's satisfaction by increasing and extending *i*-banking network-centric terms, like delay and bandwidth by improving the electronic infrastructure.

For closing and decreasing the Gap 6, the bank managers should ensure that the employees are well-trained so as to understand the level of service for solving customers' technical problems. Ensuring that the employees are well-trained, and pay attention to other attributes required for the provision of a high-level service quality, it might incur have to increased expenditure, should also give customers the opportunity to talk about their positive as well as negative experiences by improving electronic Customer Relationship Management (*e*-CRM).

Other factors that affect customer satisfaction pertain to human interaction, interest rate on deposits and loans, penalty, amount of minimum balance for a savings account, several types of charges, and the marketing strategy of the bank. This approach will assist the banks in assessing their performance in relation to the Internet service quality, and provide impetus to researchers to explore alternative methods of customer interaction for improving their satisfaction and loyalty.

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DAY-OF-THE WEEK EFFECT IN THE INDIAN STOCK MARKET DURING PRE-CRISIS AND CRISIS PERIODS

Sunita Mehla* and S. K. Goyal**

Abstract

The study seeks to examine the day-of-the week effect in the Indian stock market on the returns of the Nifty and the Nifty Jr. indices, during the period January 2002 to April 2009. The total sample period was sub-divided into two sub-sample periods, namely, the pre-crisis period, ranging from January 2002 to December 2007, and the crisis period, ranging from January 2008 to April 2009. The study has revealed that the pre-crisis and the entire period had the highest mean return on Friday and the lowest on Monday in the Nifty and the Nifty Jr. On the other hand, the crisis period presented a gloomy scenario, exhibiting negative returns on most of the days, except Wednesday, in both the indices. Further, the mean returns were not significantly different across the five trading days for both the sub-sample periods as well as for the entire period on both the Nifty and the Nifty Jr. index returns. The results of the GARCH (1,1) model of regression analysis has indicated that the day-of-the week effect did exist during the pre-crisis period and the entire period in the case of both the indices. However, no such effect was noted for the crisis period.

Key words: ***Financial crisis, Day-of-the week effect, GARCH (1,1) model***

INTRODUCTION

THE 'efficient market hypothesis' affirms that the financial markets are information-efficient and that the actual price of the security is the true estimate of its intrinsic value. As the present stock market prices reflect all available information, it is not possible to earn any abnormal return by formulating the trading strategies.

Some statisticians, however, have provided the evidence against the market efficiency which suggest that, with the constant release and rapid dissemination of new information, efficient markets are often hard to achieve and more difficult to maintain, which can be used to formulate such strategies so as to earn abnormal returns. These are termed as market anomalies. In the recent past, market anomalies in the stock return has been an active field of research. Most often, there exists a number of effects, such as the month-of-the year effect, May effect, turn-of-the year effect, turn-of-the month effect, day-of-the

* Dr. Sunita Mehla is Associate Professor in the Department of Business Management, CCS Haryana Agricultural University, Hisar (Haryana); e-mail: *spaul@hau.ernet.in*

** Dr. S.K. Goyal is Associate Professor in the Department of Business Management, CCS Haryana Agricultural University, Hisar (Haryana); e-mail:*goyalsk@hau.ernet.in*

week effect, the week-end effect, Monday effect, hour-of-the-day effect, week-of-the month effect, and the holiday effect.

One of the most common anomalies relates to the day-of-the week effect. Many researchers have examined this anomaly time and again, selecting different sample periods, indices, and countries. Mostly, it has been found that the largest decrease in stock prices takes place during the first two days of the week, i.e., Monday and Tuesday, and the highest returns are observed on the last trading day of the week, i.e., Friday.

India is an emerging economy, which has undergone many structural reforms with respect to trading and settlement of shares during the last decade. As the floor trading system was replaced by the Internet trading, commencement of derivative trading in index futures, introduction of compulsory rolling settlement in December 2001 on the 'T+5' basis. The switching over from the weekly settlement system to the rolling settlement was a significant development from the point of view of the day-of-the week effect. Therefore, an attempt is made to investigate the day-of-the week effect on the National Stock Exchange of India for the period January 2002 to April 2009.

The year 2008 witnessed the global financial crisis. Although the roots of financial crisis existed in the United States, the meltdown was felt globally. Earlier, it was thought of that the impact of the crisis will remain confined only to the financial sector of the advanced countries. However, the contagion, later on, spread in the emerging markets too. The panic and bearish environment spread the world over, and covered the majority of the market economies of the world. The crisis was serious in terms of the global spread. India has also been affected by the financial crisis as these days all economies are globally integrated. The Indian securities market also witnessed the slowdown that has affected the world markets. The uncertainty surrounding the crisis has affected business confidence leading to the crash of the Indian stock market. Due to the global economic crisis, the Indian stock market (Nifty), after touching the high of 6287 on 8th January, 2008, crashed to a low of around 2524 points on 27th October, 2008. We, therefore, divided the total sample period into sub-sample periods, indicating the pre-crisis period, ranging from January 2002-December 2007, and the crisis period, represented by the January 2008-April 2009 period.

The paper seeks to examine the day-of-the week anomaly during the pre-crisis and the crisis periods. The two sub-periods have relevance for the researchers, as the first sub-period depicted the boom in the Indian stock market, where all the traders/investors would try to book profits on their investments, whereas the second sub-period showed a gloomy scenario for the market investors.

REVIEW OF LITERATURE

The paper takes into account various researches conducted on the day-of-the week anomaly in the domestic stock market and international stock markets. However, we could not find any paper analysing the impact of the recent financial crisis and the day-of-the week anomaly.

Cross (1973), French (1980), Gibbons and Hess (1981), Theobald and Price (1984), and Smirlock and Starks (1986) found that the average stock return on Monday was significantly lower or negative, as compared to the other days of the week. However, Jaffe and Westerfield (1985) found the lowest average return for the Japanese and the Australian stock markets was on Tuesday. They studied the stock market returns for four countries, namely, the U.S., U.K., Japan, Canada, and Australia.

Aggarwal and Rivoli (1989) examined the seasonal and daily patterns in the equity returns of four emerging markets, namely, Hong-Kong, Singapore, Malaysia, and the Philippines. They found the presence of the day-of-the week effect in these markets and observed a weekend effect in the form of low Monday return. Kato (1990) studied the Japanese stock market and found low Tuesday and high Wednesday returns for close-to-close returns. Chaudhury (1991) reported the existence of anomalous price behaviour in the Indian stock market. He observed that the average return on Monday was negative but Tuesday marked a higher level of average negative returns.

Broca (1992) examined the daily closing values of the BSE National index and found the negative average daily returns on Wednesday and it touched the peak on Friday. Poshakwale (1996) studied the day-of-the week effect on the Bombay Stock Exchange and confirmed that the mean returns on Monday and Wednesday were negative. The weekend effect was evident as Fridays witnessed the highest average return as compared to the rest of the days of the week. Mishra (1999) studied the day-of-the week effect in the Indian stock market, using the Sensex and the Natex for the period 1986 to 1998, indicating the presence of the day-of-the week effect in the Indian stock market.

Choudhry (2000) examined the weekly pattern of the stock return and volatility in seven emerging countries, including India. He observed a positive Friday effect on returns and positive Thursday effect on volatility for India. Sharma (2004) examined the seasonality across the days of week in the Indian stock market, using the BSE indices – SENSEX, NATEX, and BSE 200. He found highest variance on Monday and confirmed the week-end effect. Nath and Dalvi (2004) examined this anomaly in the Indian stock market for the period 1999- 2003, using high frequency data of the S&P CNX NIFTY. They found that before the introduction of rolling settlement, Monday and Friday were the significant days. However, after the introduction of the rolling settlement, Friday became significant. Mondays were found to have higher standard deviations followed by Fridays.

Chandra and Mehta (2007) documented the lowest Friday returns in the pre-rolling settlement period as an evidence of the weekend effect. In the post-rolling settlement period, the anomaly disappears.

Badhani (2008) examined the presence of day-of-the week effect on stock returns, trading volume, and price volatility at the NSE during the period of 10 years from 1995 to 2005. The Wednesday effect was found during the earlier weekly settlement regime, which disappeared during the rolling settlement period. Monday and Tuesday returns were consistently low but after rolling settlement period, these were not significantly different from the other days of the week. Moreover, on Monday, the average trading volume was significantly low and price volatility was high, consistently across the entire sample period.

Thus, most of the studies on day-of-the week effect in various countries during different sample periods, conducted by different researchers, have found Monday as the least-return day, and Friday as the highest-return day. Some of the studies on the Asian countries have also documented Tuesday as the least-return day (Kato, 1990). This may be due to the spill-over effect of the European and the U.S. markets. While a majority of the studies on the Indian stock market have presented Monday as the least-return day, a few others have reported Tuesday (Chaudhury, 1991) as the least-return day. Some of the academicians have also shown the results of the absence of the day-of-the week anomaly in the Indian stock market, during the post-2002 period (Chandra and Mehta, 2007; and Badhani, 2008).

OBJECTIVE OF THE STUDY

The objective of the study is to investigate the existence of the day-of-the week effect, during the pre-crisis, crisis, and the entire period, in the Indian Stock Market, using the NSE indices.

DATA AND METHODOLOGY

The stock prices are represented by daily closing values of the S&P CNX Nifty and the CNX Nifty Junior, popularly known as 'Nifty' and 'Nifty Jr.', respectively, at the National Stock Exchange (NSE) of India, obtained from its website (*www.nseindia.com*). Nifty is a benchmark stock index based on the selected stocks traded at the NSE. It is owned and managed by India Index Services and Products Ltd. (IISL), which is a joint venture between the NSE and the CRISIL a leading creditrating company. It is a representative index of the Indian stock market, which comprises the blue-chip stocks of the largest fifty companies at the NSE. Nifty Jr. index represents the growth stocks of the next fifty companies. Both the price indices can be considered as the representative index of the Indian stock market and an indicator of the performance of the whole economy. The study uses the data covering the period of six years and four months, from January 2002 to April 2009. The data was also reported for certain weekly closing days, i.e., Saturdays and Sundays. These days were excluded from the analysis. In order to achieve the objective of the study, we divided the sample data into two sub-samples, viz., pre-crisis period, from January 2002 to December 2007 and the crisis period, represented by January 2008-April 2009.

In the present study, the variables are log-transformed and then their first differentials are used in the analysis. The daily closing value of index is differentiated in the logs to create the price change series or returns. The following equation is used to determine the daily returns:

$$R_{t} = \ln(P_t / P_{t-1}) * 100 \qquad (1)$$

Where:

R_t is the daily return on the share price index for the day t;

P_t is the closing value of the index for the day t; and

P_{t-1} is the closing value of the index for the preceding day.

HYPOTHESES

The following hypotheses were formulated:

H_{01}: The mean return of every working day of the week is not statistically different from zero.

H_0: $\mu_i = 0$; $H_0 : \mu_i = 0$; where $i = 1, 2, \ldots, 5$ (the working weekdays from Monday to Friday)

H_{02}: The mean returns are not statistically different across the week days.

$$H_0 = \mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5 \qquad (2)$$

$$H_0 \neq \mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5 \qquad (3)$$

To test whether the average daily returns on all the week days are statistically different from zero or not, one-sample t test is used. Next, we tested whether the average daily returns on every working day of the week is statistically equal or not. For testing this hypothesis, we have used the single-factor ANOVA.

The unit root tests were conducted to verify the stationary properties of the time-series data. The formal test of stationarity, i.e., the Augmented Dickey-Fuller (ADF) test, was used for this purpose.

Many earlier studies investigating the day-of-the week effect in mean returns employed the conventional OLS methodology on defined dummy variables. However, the use of the standard OLS methodology by regressing returns on five daily dummy variables has two drawbacks. First, error in the model may be auto-correlated resulting in misleading inferences. To address this drawback, we can include lagged values of the return variables in the model with the following stochastic equation:

$$R_t = a_M M_t + a_T T_t + a_W W_t + a_{TH} TH_t + a_F F_t + \sum_{i=1}^{n} a_i R_{t-1} + \varepsilon_t \qquad (4)$$

where:

R_t represents the return on a selected index, M_t, T_t, W_t, Th_t, and F_t are the five dummy variables at time t, and n is the lag order. The dummy variable takes the value of unity for a given day, and a value of zero for all other days.

and

$M_t = 1$, if day t is a Monday, and 0 otherwise;

$T_t = 1$, if t is a Tuesday, and 0 otherwise, and so on.

The final prediction-error criterion (FPEC) specifies the lag order such that it eliminates the auto-correlation in the residual.

The second drawback is that the error variances may not be constant over time. To overcome this problem, we allow variances of errors to be time-dependent to include a conditional heteroskedasticity that captures time-variation of variance in stock returns. The following GARCH (p,q) model, proposed initially by Engle (1982) and further developed by Bollerslev (1986), is used in analysing the behaviour of the time-series over time:

$$h_t^2 = \alpha_0 + \sum_{i=1}^{p} \beta_i \varepsilon_{t-i}^2 + \sum_{i=1}^{q} \lambda_i h_{t-i}^2 \qquad (5)$$

Thus, the error terms have a mean of zero and time changing variance.

We consider the GARCH (1,1) model to investigate the day-of-the week effect in returns. The model is specified as under:

$$\mathrm{R}_t = \sum_{i=1}^{5} \acute{a}_i \mathrm{D}_i + \sum_{i=1}^{n} \lambda_i \mathrm{R}_{t-i} + \mathring{a}_t \qquad (6)$$

$$\mathrm{h}_t^2 = \acute{a} + \hat{a}_1 \mathring{a}_{t-1}^2 + \beta_2 \mathrm{h}_{t-1}^2 \qquad (7)$$

RESULTS AND DISCUSSION

The trend of the S&P CNX Nifty and the Nifty Jr. and the movement of the index values during the pre-crisis and the crisis periods are shown in **Figure 1**.

The figure reveals that for a long time, hovering between 1000 and 2000, the Nifty crossed the 2000 mark in December 2004. Since then, it has seen only the rising trend with the 3000-index figure in February 2006, 4000-mark in January 2007, 5000-index mark in September 2007, and soon touched the peak of 6287.85 on 8th January, 2008. It was during August-September 2008 that the stock markets in different parts of the world could smell the impact of the U.S. mortgage crisis in the form of the economic slowdown and even recession in many parts of the world. The impact of crisis on the Indian stock market is clearly visible in the month of January 2008, with an almost continuous fall of the index. The trend of the Nifty during the cri sis period shown in the figure presents the down trend as it plunged to the lowest level of 2524 on 27th October, 2008. The Nifty Jr. also after touching the highest level of 13069 on 4th January, 2008 plummeted to 3782 on 25th November, 2008. But because of the strong fundamentals and timely appropriate decisions by the Government of India, the Indian market could bear the shocks of the global crisis and showed the signs of recovery during the first quarter of 2009-10.

The descriptive statistics, presented in **Table 1,** shows the position of the Nifty and the Nifty Jr. during both the sub-sample periods and entire period.

The table clearly indicates that for the Nifty, the average return during the pre-crisis period and for the entire sample period is positive, whereas it is negative during the crisis period. The variability in the returns is measured by the standard deviation, which is a conventional measure of the volatility in the stock returns. It is clearly visible that the crisis period has been

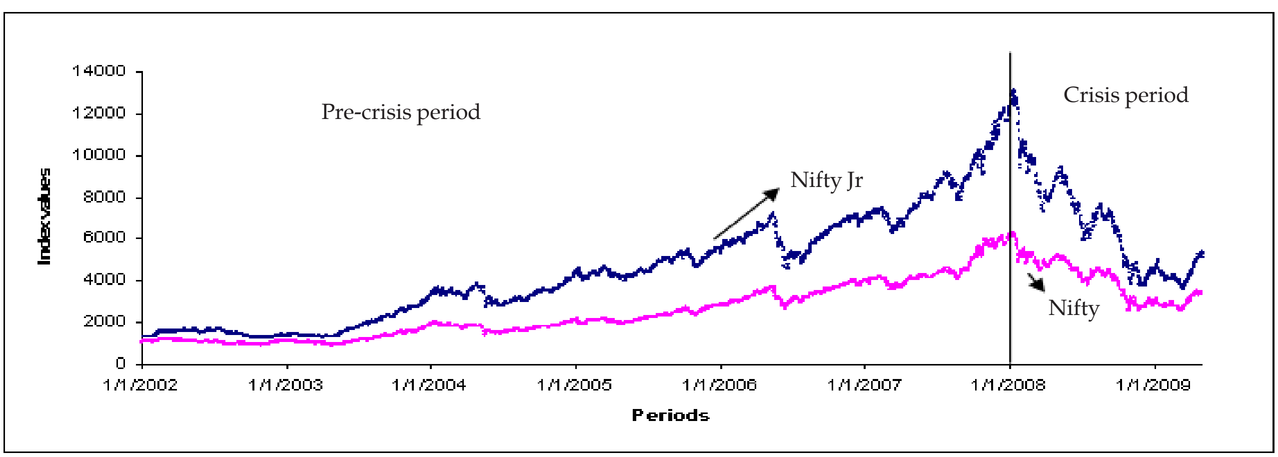

Figure 1: Index Values of Nifty and Nifty Jr.

Table 1
Descriptive Statistics of Average Daily Returns for Nifty and Nifty Jr.
(During Different Time Periods)

Particulars	*Nifty*			*Nifty Jr.*		
	Entire Sample (2002-09)	*Pre-Crisis Period (2002-07)*	*Crisis Period (2008-09)*	*Entire Sample (2002-09)*	*Pre-Crisis Period (2002-07)*	*Crisis Period (2008-09)*
Mean	0.065234 (1.609498)	0.117226 (3.1652)*	- 0.176803 (-1.1747)	0.077057 (1.6838)**	0.151016 (3.5844)*	- 0.2672 (- 1.5931)
Median	0.156039	0.182820	- 0.00866	0.232351	0.278013	- 0.1118
Maximum	7.969092	7.969092	6.757427	8.292245	8.210039	8.2922
Minimum	-13.05386	- 13.05386	-13.01419	- 13.13332	- 13.01739	- 13.1333
Std deviation	1.72958	1.4339	2.700763	1.952847	1.631187	3.0101
Skewness	-0.74598	- 0.836782	- 0.33326	- 0.882435	- 1.081437	- 0.3199
Kurtosis	8.816866	10.2146	4.506719	8.701915	10.92724	4.2029
Jarque-Bera	2736.198	3425.93	36.41886	2703.168	4217.136	24.9059
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.00000
observations	1821	1499	322	1821	1499	322

Note: * and ** denote the significance at 1% and 10% levels, respectively.
The figures in parentheses indicate the *t* values.

more volatile as compared to the pre-crisis period. Stock returns show negative skewness for both the sub-sample periods as well as for the entire period, indicating that they are non-symmetric. Furthermore, the return series have kurtosis >3, which implies leptokurtic distribution, i.e., flatter tails than the normal distribution. The Jarque-Bera test indicates that the returns are not normally distributed.

The Nifty Jr. also shows almost the similar trend, but when compared to the Nifty, the Nifty Jr. presents a higher average return in the pre-crisis period and a lower average return in the crisis period. As indicated by standard deviation, the Nifty Jr. is more volatile than the Nifty, implying the Nifty Jr. to be more risky. Similar to the Nifty, the Nifty Jr. return series also shows negative skewness and is leptokurtic. Thus, the initial findings show that the daily returns are not normally distributed. They are leptokurtic and skewed.

The results of ADF unit root test are presented in **Table 2**.

As shown in the table, in all the cases, the ADF test statistic in absolute term is greater than the absolute critical value, at 5 per cent level of significance. Thus, the ADF test indicates that the return series for both the sub-samples as well as the entire sample periods for both the Nifty and the Nifty Jr. indices are found to be stationary.

Table 2
Augmented Dickey-Fuller (ADF) Unit Root Test

Particulars	*ADF – Nifty*	*ADF -Nifty Jr.*
Pre-crisis Period	- 39.07 (0) (-2.86)	- 24.93 (1) (-2.86)
Crisis Period	- 17.88 (0) (-2.87)	- 19.03 (0) (-2.87)
Entire Period	- 42.67 (0) (-2.87)	- 27.76 (1) (-2.86)

Note: The optimum lag length is indicated within parentheses determined by the Schwarz criteria.
The figures in parentheses show critical the *t* statistics for the ADF stationarity testing. A value greater than the critical *t* value indicates the non-stationarity.

For testing whether the mean return of every working day of the week is not statistically different from zero, one sample *t* test was used and the results are presented in **Table 3.**

It is apparent from the table that for the Nifty, as expected during the pre-crisis period, the mean return of all the five days of the week have positive signs with the highest returns on Friday (0.196) and the lowest on Monday (0.079). On the other hand, during the crisis period, Wednesday is the only day that has shown the positive mean return, and for all other days the returns are negative.

Table 3
Mean Daily Returns during Different Sample Periods

Days	*Nifty*			*Nifty Jr.*		
	Entire Sample (2002-09)	*Pre-Crisis Period (2002-07)*	*Crisis Period (2008-09)*	*Entire Sample (2002-09)*	*Pre-Crisis Period (2002-07)*	*Crisis Period (2008-09)*
Monday	-0.005850 (-0.058)	0.079189 (0.842)	-0.400951 (-1.101)	- 0.037173 (- 0.319)	0.089394 (0.840)	- 0.625222 (- 1.451)
Tuesday	0.041319 (0.501)	0.099345 (1.281)	-0.221555 (- 0.761)	0.078107 (0.798)	0.138816 (1.518)	- 0.196924 (- 0.566)
Wednesday	0.084823 (1.025)	0.081308 (1.102)	0.100224 (0.325)	0.122325 (1.288)	0.123739 (1.441)	0.116127 (0.333)
Thursday	0.052910 (0.619)	0.130859 (1.588)	-0.346087 (- 1.128)	0.049271 (0.531)	0.147986 (1.644)***	- 0.456014 (-1.399)
Friday	0.153900 (1.543)	0.195819 (2.308)**	-0.041283 (- 1.02)	0.173748 (1.618)	0.256055 (2.666)*	- 0.209493 (- 0.511)
ANOVA (F-test)	0.4260	0.3415	0.3905	0.6027	0.4413	0.5754
P-value	0.7899	0.8500	0.8154	0.6607	0.7789	0.6807

Note: 1.The figures in parentheses indicate the *t* values.

2. *, ** and *** denote the significance at 1%, 5% and 10% levels, respectively.

As regards to the entire study period, all the week days except Monday have positive average returns. Moreover, none of the day is statistically significant during the crisis period as well as during the entire sample period. However, the pre-crisis period has indicated Friday as the only significant day, at 5 per cent level of significance, which indicates the presence of the Friday effect in daily Nifty returns during this period.

Thus, the null hypothesis, that the average daily return of every working day of the week is not statistically different from zero, cannot be rejected for the crisis period and the entire sample period. However, it can be rejected for the pre-crisis period. The Nifty Jr. also presents the similar results for all the periods under study, barring one exception, i.e., Thursday is also a significant day alongwith Friday during the pre-crisis period.

From the ANOVA (F-Test), shown in Table 3, it is noted that the mean returns are not significantly different across the five trading days for both the sub-sample periods as well as for the entire period on both the Nifty and the Nifty Jr. Index returns. This suggests no evidence in favour of the day-of-the week effect.

The day-of-the week effect in returns for the Nifty and the Nifty Jr., using GARCH (1,1) model is shown in **Table 4**.

The FPEC suggests that the order of the return equation in the case of the Nifty index is 6 for the pre-crisis period, 1 for the crisis period, and 2 for the entire period. In the case of the Nifty Jr., the order of the return equation is 6, zero and 3 for the pre-crisis, the crisis, and the entire periods, respectively. The table also shows that during the pre-crisis period, all the days of the week for the Nifty index have positive coefficients with the highest coefficient on Friday (0.2579), and the lowest on Wednesday (0.0929). Furthermore, it is also observed that all the days are statistically significant except Wednesday.

Badhani and Kavidayal (2008) also presented the positive Mondays and Tuesdays. However, the crisis period showed positive coefficient for Wednesday and Friday dummies and rest of the days observed negative coefficients. Wednesday has the positive highest average return, even though insignificant. On the other hand, Thursday is a significant day with the lowest average return (-0.4321). Similar to the pre-crisis period, the estimated coefficients of returns for the entire sample period are also positive for all the weekdays, but Tuesday turned to be a non-significant day, which was significant during the pre-crisis period.

In the case of the Nifty Jr., the pre-crisis period observed positive significant coefficients for all the

Table 4
Day-of-the Week Effect on Stock Returns of Nifty and Nifty Jr.

Variable	*Coefficient Nifty*			*Coefficient Nifty Jr*		
	Entire Sample (2002-09)	*Pre-Crisis Period (2002-07)*	*Crisis Period (2008-09)*	*Entire Sample (2002-09)*	*Pre-Crisis Period (2002-07)*	*Crisis Period (2008-09)*
Monday	0.118661 (1.9026)**	0.162868 (2.559)*	- 0.301631 (- 0.952)	0.051667 (0.658)	0.130772 (1.682)***	- 0.534337 (- 1.365)
Tuesday	0.092138 (1.2111)	0.118699 (1.646)***	- 0.219773 (- 0.738)	0.110252 (1.186)	0.165096 (1.898)***	- 0.272807 (- 0.735)
Wednesday	0.093423 (1.2035)	0.092950 (1.248)	0.342102 (1.208)	0.137215 (1.416)	0.159357 (1.839)***	0.172843 (0.502)
Thursday	0.118737 (1.6473)***	0.195833 (2.922)*	- 0.432099 (- 1.608)***	0.096552 (1.069)	0.190639 (2.236)**	- 0.533827 (- 1.477)
Friday	0.243024 (3.3673)*	0.257853 (3.683)*	0.317135 (1.099)	0.246661 (2.602)*	0.344904 (3.812)*	- 0.006141 (- 0.9867)
F-Test	3.755 [0.0022]*	6.276 [0.001]*	1.258 [0.2819]	2.2614 [0.0461]**	5.734 [0.000]*	0.9484 [0.4499]
Variance Equation						
á	0.408498 (9.672)*	0.708757 (7.339)*	1.744408 (3.229)*	0.471184 (7.390)*	1.049607 (8.518)*	2.276256 (2.840)*
$\hat{a}_1$	0.272645 (11.339)*	0.294354 (10.592)*	0.331528 (3.665)*	0.205778 (8.980)*	0.235510 (7.015)*	0.156705 (2.486)*
$\hat{a}_2$	0.608802 (23.901)*	0.380556 (6.339)*	0.434193 (4.135)*	0.684731 (21.953)*	0.383394 (5.936)*	0.582390 (5.453)*

Note: 1.*, ** and *** denote significance at 1%, 5% and 10% levels, respectively.
2. The figures in parentheses indicate the *t* values and in brackets indicate the *p* values.

days of the week, with Friday as the highest-return day (0.3449), and Monday as the lowest return day (0.1307). Furthermore, the coefficients of Friday, during the entire sample period, and coefficients of all the week days in the pre-crisis period, are found to be statistically significant. Similar to the results of the Nifty, the crisis period has negative coefficients for all the days except Wednesday, and no significant day-of-the week effect has been observed for this period. Hence, the day-of-the week anomaly shows its absence from the market during the crisis period as no coefficient of the day-of-the week dummies is statistically significant, whereas it existed in the pre-crisis period and the entire sample period for both the indices. The positive coefficient on Wednesday may be due to the fact that all the derivative products have their expiration day generally on the last Thursday of the month. The prediction for Thursday will surely affect the strategy of the investors on Wednesday.

The *F*-test has been used to test the null hypothesis that the day-of-the week dummy variables are jointly equal to zero. Using this test, the null hypothesis that the day-of-week-effect are jointly equal to zero is rejected for the pre-crisis period and, of course, for the entire period for the Nifty index. Hence, the day-of-the week effect is present during the pre-crisis period and the entire period. However, the null hypothesis is accepted for the crisis period, indicating the absence of the day effect. Similarly, in the case of the Nifty Jr. also, the day-of-the week effect exists during the pre-crisis period and the entire period, and there is no evidence of day-of-the week effect during the crisis period.

The estimated coefficient of the constant term for the conditional variance equation is â, while $\hat{a}_1$ is the estimated coefficient of the lagged value of the squared residual term. $\hat{a}_2$ represents the lagged value of the conditional variance. Each of these coefficients is statistically significant and positive for both the sub-sample periods and entire period as well as for both the Nifty and the Nifty Jr. stock indices. Moreover, the sum of

β_1 and β_2 coefficients is less than one. Thus, the results suggest that the conditional variance is always positive.

CONCLUSION

The study investigates the day-of-the week effect in returns of the Nifty and the Nifty Jr. indices during the pre-crisis, the crisis, and the entire periods. The data has been analysed by using the one sample *t* test and the ANOVA, and the GARCH (1,1) models on returns introducing dummies for the week days to examine the day-of-the week effect. The results of *t* test indicate that only during the pre-crisis period, the Nifty has witnessed significant average return on Friday and the Nifty Jr. on Friday and Thursday. All the other days of the week have witnessed non-significant returns during the periods under study. It is obvious from the ANOVA results that the mean returns are not significantly different across the five trading days for both the sub-sample periods as well as for the entire period on both the Nifty and the Nifty Jr. index returns. This suggests no evidence in favour of day-of-the week effect.

The results of the GARCH (1,1) model clearly shows Friday as the significant highest coefficient day in both the indices during the pre-crisis period. Thus, on Friday, being the last day of the trading, the investors would like to book the gains from the market. However, the lowest-coefficient day is Wednesday for the Nifty, although non-significant, and Monday for the Nifty Jr., which is statistically different from zero. It shows that the market is inefficient during the pre-crisis period and provides a clear arbitrage opportunity for the investors who can buy on other days and sell on Fridays, where the chance of making profit is higher.

On the other hand, the crisis period shows the absence of the day-of-the week effect and does not present any significant day in both the indices, except Thursday, for the Nifty. Wednesday is the only day that shows the highest positive coefficient for both the indices. The entire sample exhibits almost the same set of results as depicted during the pre-crisis period. The reason is obvious: the majority of the entire sample period belongs to the pre-crisis period.

Thus, the day-of-the week effect which was present during the entire sample period as well as the pre-crisis period shows its absence during the crisis period. The lowest coefficient day in the Nifty during the pre-crisis period, i.e., Wednesday turned to be the highest-coefficient day in the crisis period, although it is a non-significant day in both the sub-sample periods. Friday, which was the highest-coefficient day and also significant during the pre-crisis period, turns to be a non-significant day in the crisis period. Thus, the crisis period presented a gloomy scenario, exhibiting negative returns on most of the days in both the blue-chip stocks and the growth stocks in the Indian stock market.

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A corporation without a strategy is like an airplane weaving through stormy skies,
hurled up and down, slammed by the wind, lost in the thunderheads.
If lightning or crushing winds don't destroy it, it will simply run out of gas.

Alvin Toffler, *The Adaptive Corporation*

As work becomes more complex and collaborative,
companies where people work together best have a competitive edge.

Daniel Goleman, *Working with Emotional Intelligence*

Management is efficiency in the ladder of success;
leadership determines whether the ladder is leaning against the right wall.

Stephen R. Covey, *The Seven Habits of Highly Effective People*

If you do not have a competitive advantage, don't compete.

Jack Welch

MEASURING THE SATISFACTION OF FOREIGN TOURISTS
A Study of Udaipur and Jodhpur Cities of Rajasthan

Amit Sharma* and Naveen Kumar Sharma**

Abstract

Tourists' expectations and experiences form an integral part of the tourist behaviour. Understanding what comprises tourist satisfaction is one of the areas of research for tourism since satisfied tourists not only transmit their positive experience to others, but also tend to repeat their visit. This study seeks to assess the satisfaction of foreign tourists visiting the two major tourist destinations of Rajasthan, Udaipur and Jodhpur. To assess the expectations and experience of the tourists visiting these cities, we used HOLSAT (HOLiday SATisfaction) Model. The data was collected from 182 foreign tourists visiting these cities. Paired t-test was used to ascertain the relationship between the expectation scores and the actual-service-rendered scores. The study revealed that the tourists who visited Jodhpur were much satisfied in comparison to those visiting Udaipur. Moreover, there was a huge gap between the tourists' expectations and the actual services rendered to them at Udaipur. The findings of this study can be used in planning and implementating tourist policies to develop Rajasthan as a better tourist destination by meeting the expectations of foreign tourists. From the theoretical point of view, the study has demonstrated the workability of the HOLSAT model as a useful instrument for measuring the tourists' holiday satisfaction. The HOLSAT is, therefore, recommended as an instrument for future research for measuring tourists' holiday experience, as it specifically addresses the multi-dimensional character of tourist satisfaction.

Key words: ***Tourist expectation, Actual service rendered, Tourist satisfaction, HOLSAT model, Tourist behaviour.***

INTRODUCTION

TOURISM is the world's largest and fastest-growing industry, generating 10 per cent of Gross Domestic Products (GDP) in the year 2002 and more than 198 million jobs worldwide. According to the World Travel and Tourism Council (WTTC, 2002), its contribution is expected to grow to 10.6 per cent of the GDP by the year 2012, accounting for 249 million jobs across the globe (Paajarvi, 2004). Its contribution in the development of the economy has been significant for many countries, due to the income generated

* Dr. Amit Sharma is Assistant Professor in the Faculty of Management Studies, Government Engineering College, Ajmer; e-mail: *dramitsnsharma@gmail.com*

** Mr. Naveen Kumar Sharma is Lecturer in Savitri Institute of Management, Ajmer
e-mail: *nksharma.ajmer@gmail.com*

by consumption of goods and services by tourists and the taxes levied on the tourism firms, which helps the economy to grow.

The development and growth of such an important industry depends on the quality of the service provided by the firms. The quality of the service has to be regularly assessed and improved in order to give the tourists a memorable and satisfying experience. Satisfaction is one of the most relevant variables when analysing the tourists' behaviour, as it influences the choice of destination, the consumption of products and services, and the decision to return (Jang and Feng, 2007; Kozak and Rimmington, 2000). For this reason, tourists' satisfaction has been a priority area of research in recent years. Tourists, like other customers, usually have certain expectations of the type and quality of the services to be offered at a particular destination. These expectations are formed mainly through the information provided through tourism advertisements, sales promotion tools, brochures, mass media, and informal communication from friends and relatives. The extent to which the tourist expectations are met will eventually determine the level of tourist satisfaction. If the overall performance, after visiting a destination, exceeds or meets the initial expectation, the tourist will be satisfied. However, if the perceived performance falls below his/her expectation, the tourist will be dissatisfied.

Customer satisfaction is increasingly becoming a major issue in service industries. In the context of the tourism and hospitality industry, it can be said that a satisfied tourist is more likely to recommend the tourist destination to others, which is the cheapest and the most effective form of promotion. Furthermore, tourist satisfaction usually contributes to increased retention of tourists' patronage, loyalty, and acquisition, which, in turn, helps in achieving economic goals, like increasing the number of tourists and the revenue. Consequently, there is usually a positive correlation between the tourist satisfaction and the long-term economic success of the destination. Tourists can express their satisfaction through many ways, such as a positive word of mouth, paying compliments to the seller or service-provider, and developing long-term loyalty to the destination. At the same time, through tourist satisfaction, the relationship between the tourist and the tourist destination is strengthened. However, the overall tourist satisfaction is affected not only by the quality of what the tourist receives, but also by the price and the perceived value of the products and services.

REVIEW OF LITERATURE

Different perspectives and theories have analysed the concept of tourist satisfaction in the literature on tourism. Prominent among them is the 'disconfirmation paradigm' (Oliver, 1980; Oliver and Desarbo, 1988), which states that tourists have previous expectations before receiving the service which they compare with the perceived outcome of the service. The other approach is the equity theory, which states that the tourist satisfaction can be analysed as a relationship between the sacrifice and reward he or she expects in terms of the time, cost and effort, and the value received (Oliver and Swan, 1989). In addition, the normative theory establishes the need for a "norm" to be set as a reference point against which one's opinion can be measured (Latour and Peat, 1979). Thus, tourists may compare their present destination with other alternatives or past experiences (Yoon and Uysal, 2005). In any case, assessing the level of tourist satisfaction implies considering multiple dimensions that facilitate the psychological process required to evaluate the experience with a particular product or service (Peter and Olson, 1996).

Tourist satisfaction with a particular destination may be the result of multiple factors, including the expectations generated before and during the trip, as well as the tourist's perception of the service provided. According to Pizam, Neumann, and Reichel (1978), tourist satisfaction is the result of the comparison between a tourist's experience at the destination visited and his expectations about the destination. Cadotte, Woodruff, and Jenkins (1982) suggest that satisfaction refers to the comparison of expectations with experiences in terms of performance. Thus, satisfaction will occur when experience differs positively from expectation. Expectation is confirmed when a service performs as expected; it is negative when the service is worse than expected and is positive when the expectation is exceeded (Oliver and Desarbo, 1988). This definition has been criticised for assuming that expectations are adequate precursors to satisfaction. In fact, the most satisfactory experiences may be those that are not expected (Arnould, 1993). Pearce (1980) agrees that the tourist satisfaction is affected by the pre-and post-trip views of the visitor.

Satisfaction is, thus, a multi-faceted concept and should be assessed by referring to the many aspects of the holiday the individual encounters. However, satisfaction has generally been found to be the outcome of the comparison between expectations and experiences, the difference between expectations, and the perceived performance of destination attributes. In order to determine the level of customers' satisfaction with a specific holiday destination, previous researchers have used various instruments that generate gap scores based on the difference between the expectation and perception of the delivery of a particular service associated with that destination (Moutinho, 1987; Nightingale, 1986; Parasuraman, Zeithaml, and Berry, 1985). The HOLSAT model (Tribe and Snaith, 1998) was chosen as the instrument to measure the level of satisfaction of tourists visiting the Udaipur and the Jodhpur regions of Rajasthan. This instrument measures the tourist satisfaction with holiday experience based upon the analysis of expectation and the actual service rendered. Rajasthan is among the few Indian states which stand in leading status on the world tourism map. For proper and effective administration of the tourism-related services, Rajasthan can be divided into many circuits. The present study seeks to assess the satisfaction level of foreign tourists visiting Udaipur and Jodhpur.

Udaipur is a beautiful city, set amidst the Aravalli Ranges of Rajasthan. Known for its picturesque lakes, Udaipur is called the 'city of lakes'. The elevated hills and the beautiful lakes make a picture-perfect backdrop to the Udaipur city. It is regarded as one of the most romantic cities of the world and is also known as the 'Venice of the East'. In Rajasthan, Udaipur is the second most-sought after tourist destination, the first being Jaipur. Udaipur has been the capital of Mewar for centuries. Although it is famous for its captivating lakes, the city has many more attractions that catch the attention of the tourists with their charm. The Lake Palace of Udaipur has been accredited for being one of the most romantic places across the globe. The massive forts of Udaipur grab the interest of people with their sheer structure and architecture. The beautiful temples create a sense of aestheticism with their spiritual ecstasy. Udaipur also boasts of various museums, palaces, gardens, monuments, and colourful festivals that allure tourists to visit the city. It is undoubtedly a dream destination for a romantic holiday. Every year, thousands of tourists come from all over the world to visit this city.

The other destination which we have taken to measure the tourists' satisfaction is Jodhpur. Jodhpur, the 'Sun City', a is named after its founder, Rao Jodha, a chief of the Rathore clan. Jodhpur was previously known as Marwar. It is the second largest city in Rajasthan. It is divided into two parts - the old city and the new city. The old city is separated by a10-km long wall surrounding it. Also, it has eight gates leading out of it. The new city is outside the walled city. Jodhpur is a very popular tourist destination. The landscape is scenic and mesmerising. It has many beautiful palaces and forts, such as Mehrangarh Fort, Jaswant Thada, Umaid Bhavan Palace, and Rai ka Bag Palace. Other charms of Jodhpur include the Government museum and its beautiful Umed garden. The city is known as the 'Sun City' because of its bright and sunny weather throughout the year.

Although there are many definitions of satisfaction, it is generally recognised as a post-purchase construct that is related to how a consumer likes or dislikes a service or product after experiencing it (Woodside, Frey and Daly, 1989). In the context of travel, Moutinho (1987) notes that this post-purchase construct is primarily a function of the pre-travel expectations and travel experiences. Pizam, Neumann, and Reichel (1978) define tourist satisfaction as the result of comparison between 'a tourist's experience at the destination visited and the expectation about the destination'. According to Jang and Feng (2007) and Kozak and Rimmington (2000), satisfaction is one of the most relevant variables when analysing tourist behaviour, as it influences the choice of destination, the consumption of products and services, and the decision to return. For this reason, tourist's satisfaction has been a priority subject of research in recent years. Tourist satisfaction with a particular destination may be the result of multiple factors, including the expectations generated before and during the trip, as well as the tourists' perception of the service received.

Moscardo, *et al.* (1996) argues that activities are the critical link between tourist motivation and destination choice. They developed a model in which travel motivations are related through activity preferences to vacation destination choice. Lang, *et al.* (1996) aimed to develop a trip-driven attribute segmentation to understand the travel behaviour and further examined whether this approach could prove statistically and substantively appropriate. Other ideas developed on the basis of the literature about tourist behaviour (Mathieson and Wall, 1982; Woodside and Dubelaar, 2002; Woodside and Lysonski, 1989) and the field of services have led to a sound theoretical body (Sirakaya and Woodside, 2005) aimed at explaining the complex process encompassing the tourist before, during, and after his travels (Woodside and Dubelaar, 2002). The fundamental premise behind such ideas is that the thoughts, decisions, and the behaviour patterns for one activity bear upon the thoughts, decisions, and behaviour patterns for a host of activities (Wesley, *et al.*, 2006).

The literature reveals that the tourists' decisions and behaviour patterns depend on a wide range of relationship between the different variables, which appear in three distinct stages. The first stage considers those variables that characterise the decision before the journey and which will influence the tourists' behaviour at his chosen destination, such as the distance to the destination or the reason to make this trip. The second phase – the tourist's experience at the destination – looks at the relevant variables during the consumption of the service. In the third phase, variables regarding the tourist's experience and its future intended behaviour are looked at. The interrelations between the different variables that comprise each of the phases described above lead, in the words of Woodside and Dubelaar (2002), to a "dynamic model of tourist behaviour", which stands as a significant ground base for our research.

The authors have analysed tourist satisfaction from a wide range of contexts: cultural trips (Ross and Iso-Ahola; 1991); depending on the characteristics of the tours (Hsieh, *et al.*; 1994); certain aspects of the tourist programme (Heide, *et al.*, 1999), and principally, research into tourist satisfaction with the chosen destination (Chon and Olsen, 1991; Danaher and Arweiler, 1996; Joppe, *et al.*, 2001; Kozak and Rimmington, 2000). As we can see, a great deal of research focuses on the measurement of the level of tourist satisfaction. On the other hand, analysis of the causes that generate such a level of satisfaction is scarce. In this sense, if satisfaction level is a process linked to need, motivations, and characteristics of the service offering, we need to study in greater depth the antecedents behind such evaluation and not restrict ourselves simply to its assessment, otherwise we would be limiting our capacity to understand the clients' emotional experiences during their interactions with the service-providers (Gountas and Gountas, 2007).

Early studies indicate that the motives that drive holiday-makers are what determine the activities that those tourists will do at their destination (Chang-Hung, Eagles and Smith, 2004; Pearce, 1988). However, a recent study conducted in the field of 'nature' tourism (Mehmetoglu, 2007) reveals that motivation and the activities performed by tourists at their destination should be analysed independently. Furthermore, most of the earlier studies have taken the independence between tourist motivation and the characteristics or attributes of the destination for granted (Nicolau and Mas, 2006).

Among the different types of antecedents that influence the tourist satisfaction, a great deal of analysis has been done on the attributes of the service offering, i.e., to identifying those special characteristics that a tourist service needs to be successful (Tosun, *et al.*, 2007; Weaver, Weber, and McCleary; 2007). In this case, the study of service quality is a clear antecedent of the tourist's satisfaction (Alen, *et al.*, 2007; Sanchez, *et al.*, 2007; White, 2006). On the other hand, the study of those variables that influence the decision before it is made and which reflects the individual's own characteristics (Kim, *et al.*, 2002; Zins, 2001), such as his degree of motivation – represent a field of research which still requires more profound analysis (Gountas and Gountas, 2007).

Thus, little attention has been faced to Udaipur and Jodhpur as a holiday destination and adequate work has done relating to tourism marketing in India. Hence, there is a need to conduct systematic research to fill the gap in the knowledge of tourists from foreign countries in general, and those traveling to important tourist destination of Udaipur and Jodhpur, in particular. This study seeks to measure the level of satisfaction of foreign tourists by comparing their expectations with their experiences. The study should provide important information that can be used in the future planning and formation of Rajasthan tourism policy and management of tourism industry the State.

HOLSAT (HOLIDAY SATISFACTION) MODEL

The HOLSAT is a model developed by Tribe and Snaith (1998). It specifically tackles the issue of travelers' expectations: which are examined prior to the arrival at the destination and compared to the actual level of satisfaction experienced after the holiday. It compares the performance of a wide range of the holiday attributes against a holiday-maker's expectations as a means of evaluating satisfaction with a particular holiday destination or experience. This approach overcomes some of the limitations of other models in dealing with the concept of holiday satisfaction. The HOLSAT differs from the previous models while measuring satisfaction as the relationship between the performance and the prior expectation rather than the performance alone (SERVPERF, Cronin and Taylor, 1994), or performance relative to importance (IPA, Martilla and James, 1997), or performance related to the best quality (an absolute) (SERVQUAL, Parasuraman, Zeithaml, and Berry, 1988). This model argues that the measurement of different attributes of tourist satisfaction can be categorised into five broad dimensions. It is called "Five A's", viz. (1) attractions, (2) activities, (3) accessibility, (4) accommodation, and (5) amenity.

The major strength of this model is that it utilises and modifies the previous work in the areas of tourist satisfaction to develop a credible research instrument. The present study uses the model in the measurement of satisfaction level of tourist traveling to the Udaipur and Jodhpur region of Rajasthan.

OBJECTIVES OF THE STUDY

The present study was conducted with the following objectives:

1. To measure the satisfaction level of foreign tourists visiting Udaipur and Jodhpur;
2. To compare the level of satisfaction of foreign tourists visiting these cities; and
3. To identify the determinants that contributes to the tourist satisfaction by employing the HOLSAT model.

HYPOTHESES

In the light of the above objectives, the following null hypotheses were formulated:

H_{01}: There is no significant difference between the expectation scores and the actual-service-rendered scores of the foreign tourists visiting Udaipur.

H_{02}: There is no significant difference between the expectation scores and the actual-service-rendered scores of foreign tourists visiting Jodhpur.

RESEARCH METHODOLOGY

Nature of the Study

The study has been designed as descriptive as well as empirical one, based on the survey method. The study seeks to describe the state of affairs as it is and collects the first-hand information from the respondents. The data for the study was collected from the primary sources, with the help of a standardised questionnaire. The study aims to investigate the satisfaction level of the tourists from foreign countries visiting Udaipur and Jodhpur and to identify the variables that contribute to the tourist satisfaction, by employing the HOLSAT methodology. More than 200 questionnaires were distributed to foreign tourists visiting Udaipur and Jodhpur each, but only 89 and 93 filled-in questionnaires were received, respectively, which make the sample size for the study. The questionnaire schedules include 25 key variables spanning five broad dimensions of the HOLSAT model. The key variables were identified after a thorough analysis of literature pertaining to the tourist satisfactions, expectation, and perceptions and were recorded on a five-point Likert's scale. Expectations scores were distributed from '1' (very low) to '5' (very high). The actual-service-rendered scores were distributed from '1' (very dissatisfied) to '5' (very satisfied). Statistical tools, such as Mean and Standard Deviation were used to ascertain the expectations and perceptions of the respondents. The paired *t*-test was used to test the hypothetical relationship between the variables.

Respondents' Profile

The demographic profile of the respondents is given in **Table 1.**

Udaipur City

According to age, while 12 tourists fell under the group of 21 to 30 years, 34 tourists belonged to the age group of 31 to 40 years, 27 to the age group of 41

Table 1
Respondents' Profile

Variables	Respondents (No.)		Percent		Cumulative percentage	
Age group (in years)	*Udaipur*	*Jodhpur*	*Udaipur*	*Jodhpur*	*Udaipur*	*Jodhpur*
21-30	12	21	14	22	14	22
31-40	34	39	38	42	52	64
41-50	27	22	30	24	82	88
51 and above	16	11	18	12	100	100
Total	89	93	100	100		
Gender						
Male	57	62	64	67	64	67
Female	22	31	36	33	100	100
Total	89	93	100	100		
Number of Visits						
First	74	54	83	58	83	58
Second	11	23	12	25	95	83
More than two visit	4	16	5	17	100	100
Total	89	93	100	100		
Motivational Factor						
Friends	17	23	19	25	19	25
Media	34	53	38	56	57	81
Past Experience	12	7	14	8	71	89
Any Other	26	10	29	11	100	100
Total	89	93	100	100		
Country/ Region						
Western	14	23	16	25	16	25
Central Asia	17	16	19	17	35	42
Far East	21	13	24	14	59	56
Others	37	41	41	44	100	100
Total	89	93	100	100		

to 50 years, 16 were 51 years or above. The sample consisted of 57 male and 22 female respondents.

The table also shows the number of visits made by the tourists to the destination. While 74 visitors visited the destination first time and 11 tourists travelled for the second time. Only 4 tourists had earlier made more than two visits to the destination. Media and friends were the major motivational factors for the tourists to visit the destination.

Jodhpur City

Out of the tourists visiting the Jodhpur City, 21 belong to the age group of 21 to 30 years, 39 to the age group of 31 to 40 years. 22 to the age group of 41 to 50 years, and 11 were 51 and above. The sample consisted of 62 male and 31 female respondents.

Moreover, while 54 tourists visited the destination for the first time, 23 for the second time, and 16 had made more than two visits to the destination. The media was reported to be the major motivational factor for the tourists to visit the destination.

RESULTS AND DISCUSSION

Section I: HOLSAT Results

Satisfaction of Foreign Tourists: Dimensions of the HOLSAT Model

This gives more meaningful insights into the satisfaction level for the foreign tourists visiting Udaipur and Jodhpur. The 25 attributes identified for the study can be categorised into five dimensions of the HOLSAT model. Four out of

Table 2
Satisfaction of the Udaipur Tourists
(According to Gap Score HOLSAT Model)

Sr. No.	Service Attributes	Expectation		Actual Service Rendered		Gap Score
		Mean	Std. Dev.	Mean	Std. Dev	
1.	Food quality	3.420	1.253	3.220	0.985	-0.200
2.	Eating facility	3.310	1.034	2.710	1.324	-0.600
3.	Behaviour of the service-provider	3.220	0.957	3.200	0.901	-0.020
4.	Availability of food at reasonable price	3.490	0.961	3.580	1.076	0.090
5.	Quality of accommodation at the destination	3.140	0.943	2.880	0.873	-0.260
6.	Adequate washroom facilities	3.350	1.114	3.000	1.127	-0.350
7.	Wide choice in the selection of accommodation	3.410	1.305	3.780	1.002	0.370
8.	Quality of local transportation	2.790	0.974	2.680	0.895	-0.110
9.	Convenient location of the destination	3.220	0.896	2.830	0.977	-0.390
10.	Availability of the shopping facility	3.140	1.147	3.400	1.265	0.260
11.	Availability of communication infrastructure	3.080	1.108	3.290	1.012	0.210
12.	Sufficient access to drinking water	3.120	1.003	2.950	0.983	-0.170
13.	Adequate safety and security facilities in the destination	3.030	0.965	2.710	0.929	-0.320
14.	Cleanliness	3.300	1.085	3.470	1.264	0.170
15.	Adequate space for vehicle parking	2.560	0.764	3.700	1.014	1.140
16.	Availability of tourist guide	3.200	0.938	3.110	0.784	-0.090
17.	Friendliness of the local people	4.130	1.153	3.050	1.112	-1.080
18.	Uniqueness of the destination	3.060	0.845	3.280	1.214	0.220
19.	Relaxed atmosphere/ solitude in the destination	3.470	1.172	3.170	0.984	-0.300
20.	Climatic conditions	3.140	1.137	3.020	0.879	-0.120
21.	Availability of tourist information in the local tourist information countres	3.050	1.203	2.770	0.657	-0.280
22.	Culture, cultural activities and events	2.970	1.016	3.120	0.795	0.150
23	Availability of hospital facility	3.200	1.072	3.060	0.852	-0.140
24	Destination plan (display of sign boards and arrows regarding ways)	3.020	1.012	3.270	1.076	0.250
25	Courteousness and helpfulness of the authorities and staff in the destination	3.150	1.255	2.860	0.968	-0.290

Table 3
Satisfaction of the Jodhpur Tourists
(According to Gap Score of HOLSAT Model)

No.	Service Attributes	Expectation		Actual Service Rendered		Gap Score
		Mean	Std. Dev.	Mean	Std. Dev	
1	Food quality	3.100	0.946	3.760	1.273	0.660
2	Eating facility	3.700	1.037	3.200	1.003	-0.500
3	Behaviour of the service-provider	3.070	1.275	3.350	1.196	0.280
4	Availability of food at reasonable price	2.650	0.846	2.930	0.783	0.280
5	Quality of accommodation at the destination	2.961	0.937	3.350	1.258	0.389
6	Adequate washroom facilities	3.118	1.116	3.559	0.973	0.441
7	Wide choice in the selection of accommodation	2.882	0.821	3.193	1.149	0.311
8	Quality of local transportation	3.204	1.339	2.419	0.682	-0.785
9	Convenient location of the destination	2.920	0.746	3.387	1.110	0.467
10	Availability of the shopping facility	3.279	1.023	3.139	0.918	-0.140
11	Availability of communication infrastructure	3.032	0.998	3.311	1.064	0.279
12	Sufficient access to drinking water	4.053	1.115	3.258	0.770	-0.795
13	Adequate safety and security facilities in the destination	2.397	0.687	2.978	0.938	0.581
14	Cleanliness	3.011	0.974	3.660	1.273	0.649
15	Adequate space for vehicle parking	3.548	1.036	2.640	0.938	-0.908
16	Availability of tourist guide	3.700	1.365	2.440	0.941	-1.260
17	Friendliness of the local people	3.043	1.074	3.460	1.384	0.417
18	Uniqueness of the destination	2.978	0.926	2.950	0.795	-0.028
19	Relaxed atmosphere/ solitude in the destination	2.913	0.846	3.440	0.906	0.527
20	Climatic conditions	3.344	0.987	2.709	0.617	-0.635
21	Availability of tourist information in the local tourist information countres	3.709	1.296	3.204	0.824	-0.505
22	Culture, cultural activities and events at Jodhpur	2.870	0.795	3.440	1.005	0.570
23	Availability of hospital facility	2.838	0.872	2.505	0.755	-0.333
24	Destination plan (display of sign boards and arrows regarding ways)	2.690	0.869	3.354	0.820	0.664
25	Courteousness and helpfulness of the authorities and staff in the destination	2.820	1.187	3.688	1.036	0.868

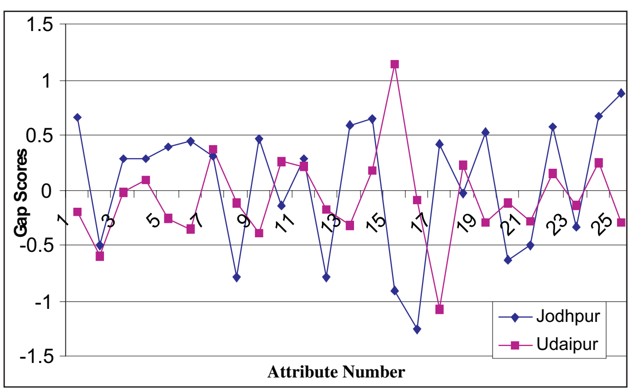

Figure 1: Comparative Gap Analysis of the Foreign Tourist visiting Udaipur and Jodhpur

the five dimensions get negative scores and others get, positive scores, in the case of Udaipur, and two dimensions have negative scores, others got positive scores. To put it in other way, the tourists were satisfied with only the 'amenities'. The other dimensions of the model, such as 'attraction', 'accessibility', 'activities', and 'accommodation' do not appear to provide satisfaction to the tourists, since their gap scores are negative in the case of Udaipur, Jodhpur tourists were satisfied with 'attraction', 'accessibility', and 'accommodation' of the HOLSAT model. The other dimensions 'activities' and 'amenities' did not provide satisfaction to tourists since their Gap Scores are negative.

HYPOTHESIS TESTING

Null Hypothesis: For testing the first hypothesis, we analysed the data, using the paired *t*-test taking the scores of the expectation and the actual service rendered from foreign tourist visiting Udaipur, at the significance level of 0.05.

Table 4
Analysis of the Udaipur Tourists
(Dimensions of the HOLSAT Model)

Dimensions	Number of attributes	Expectation		Actual Service Rendered		Gap Score
		Mean	Std. Deviation	Mean	Std. Deviation	
Attractions	5	3.2580	0.1597	3.1500	0.0971	-0.1080
Activities	5	3.3050	0.2520	3.0580	0.3347	-0.2470
Accessibility	5	3.3440	0.3991	3.0240	0.1631	-0.3200
Accommodation	5	3.2200	0.1334	3.1800	0.3308	-0.0400
Amenities	5	2.9600	0.2641	3.2100	0.3968	0.2500

Table 5
Analysis of Jodhpur Tourists
(Dimensions of the HOLSAT Model)

Dimensions	Number of attributes	Expectation		Actual Service Rendered		Gap Score
		Mean	Std. Deviation	Mean	Std. Deviation	
Attractions	5	3.0350	0.1770	3.0730	0.4630	0.0380
Activities	5	3.0990	0.3541	3.0680	0.3675	-0.0310
Accessibility	5	3.0350	0.3523	3.3660	0.4290	0.3310
Accommodation	5	3.2090	0.4290	3.3340	0.1241	0.1250
Amenities	5	3.1890	0.4617	3.1240	0.3314	-0.0650

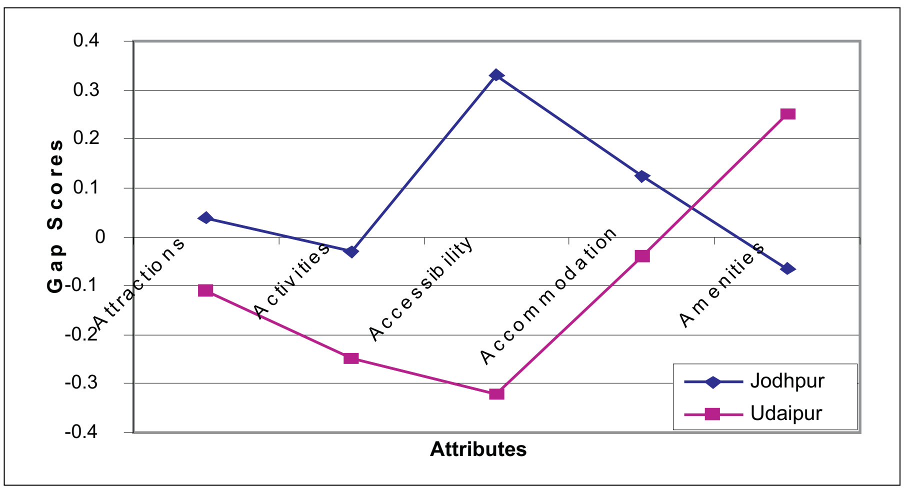

Figure 2: Comparative Analysis of Foreign Tourist visiting Udaipur and Jodhpur (Dimensions of the HOLSAT Model)

The result of the paired *t*-test is shown by:

$$t = \frac{\overline{X}_{Diff.}}{\sigma_{Diff}}\sqrt{n}$$

Mean of differences (or $\overline{X}_{Diff.}$) $\overline{D} = \frac{\sum D}{n}$

$$= \frac{-1.860}{25} = -0.0744$$

Standard deviation of difference (or σ_{Diff})

$$= \sqrt{\frac{\sum D^2 - (\overline{D})^2 \times n}{n-1}}$$

$$= \sqrt{\frac{1.1662 - (-0.0744)^2 \times 25}{25-1}} = 0.2069$$

or $t = \frac{\overline{X}_{Diff}}{\sigma_{Diff}}\sqrt{n}$

$$= \frac{-0.0744}{0.2069}\sqrt{25} = -0.3595 \times 5 = -1.7979$$

or $t = -1.7979$

where

n = Number of attributes

σ_{Diff} = Standard deviation of difference

$\overline{X}_{Diff}$ = Mean of difference

Degree of freedom (n-1) = (25-1) = 24

The table value of t at the 5 per cent level of significance for 24 degrees of freedom is (-1.711to 1.711) for the two-tailed test. Since the calculated value (-1.7979) is in the rejection regions in the case of two-tailed test (left-tail), the difference is significant. Thus, we reject the first null hypothesis (H_{01}) and conclude that there is a significant difference between the expectation and the actual-service-rendered score of the foreign tourists visiting Udaipur.

Null Hypothesis

For testing the second null hypothesis, we analysed the data using the paired t-test, taking the scores of the expectation and the actual service rendered from the foreign tourist visiting Jodhpur, at the significance level of 0.05.

The result of the paired t-test is shown by:

$$t = \frac{\overline{X}_{Diff.}}{\sigma_{Diff}}\sqrt{n}$$

Mean of difference (or $\overline{X}_{Diff}$) $\overline{D} = \frac{\sum D}{n}$

$\frac{-1.495}{25} = 0.0598$

Standard deviation of difference (or σ_{Diff})

$$= \sqrt{\frac{\sum D^2 - (\overline{D})^2 \times n}{n-1}}$$

$$= \sqrt{\frac{8.76 - (0.0598)^2 \times 25}{25-1}} = 0.6010$$

or $t = \frac{\overline{X}_{Diff}}{\sigma_{Diff}}\sqrt{n}$

$$= \frac{0.0598}{0.6010}\sqrt{25} = 0.09950 \times 5 = 0.4975$$

or $t = 0.4975$

where, n = Number of attributes

σ_{Diff} = Standard deviation of difference

$\overline{X}_{Diff}$ = Mean of difference

Degree of freedom (n-1) = (25-1) = 24

The table value of t at the 5 per cent level of significance for 24 degrees of freedom is (-1.711to 1.711) for the two-tailed test. Since the calculated value (0.4975) is less than its table value, the difference is insignificant. Thus, we accept the second null hypothesis and conclude that there is a significant difference between the expectation scores and actual-service-rendered scores of the foreign tourists visiting Jodhpur.

Section II: Discussion

The overall satisfaction of the tourists visiting Udaipur from foreign countries is low as compare to its counter part, Jodhpur.

The overall satisfaction of the tourists visiting Jodhpur from foreign countries is comparatively high (as compared to Udaipur).

The gap score analysis shows that while nine attributes achieved a positive gap scores in the case of Udaipur tourists, 15 attributes achieved positive gap scores in the case of the Jodhpur tourists.

While 'adequate space for vehicle parking' (1.140) got high positive gap score in the case of the Udaipur tourists, 'courteousness and helpfulness of the authorities and staff in the destination' (0.868) got a high positive score in the case of the Jodhpur tourists.

While the tourists assigned negative gap scores to 16 attributes in the case of the Udaipur tourists, in case of Jodhpur, the tourists assigned negative gap scores to 10 attributes.

The service attribute of 'friendliness of local people' (-1.080) was given the highest negative score in the case of Udaipur and its counterpart (Jodhpur), 'availability of tourist guide' (-1.260) was given the highest negative score.

The dimension-wise analysis of the HOLSAT model confirms the belief that the overall performance in the case of Udaipur was very poor and in the case of Jodhpur the tourist was found to be satisfied.

As regards the visitor satisfaction, the dimension 'amenities' (0.25) alone provided satisfaction to the tourists of Udaipur. However, in the case of Jodhpur the dimensions 'attractions', 'accessibility', and 'accommodation' provided satisfaction to the Jodhpur tourists.

In the case of visitor satisfaction of Udaipur, dimensions 'attraction' (-0.108), 'activities' (-0.247), 'accessibility' (-0.32), and 'accommodation' (-0.04) have negative gap scores.

In the case of Jodhpur tourists, the dimensions 'activities' (-0.31), and 'amenities' (-0.065) have negative gap scores.

The null hypothesis (H_{01}) that there is no significant difference between the expectation scores and the actual-service-rendered scores of the foreign tourists visiting Udaipur has been *rejected* on the basis of the paired *t*-test. Thus, the foreign tourists visiting Udaipur are not fully satisfied.

The null hypothesis (H_{02}) that there is no significant difference between the expectation scores and the actual-service-rendered scores of the foreign tourists visiting Jodhpur has been *accepted* on the basis of paired *t*-test. Thus, there is no significant difference between the expectation and actual service provided to the tourist and they are satisfied with the tourist destination of Jodhpur.

POLICY IMPLICATIONS

The study has revealed certain key areas sought by the tourists that will be helpful for promoting Udaipur and Jodhpur regions of Rajasthan as the tourist destinations. It provides relevant input for the development of tourism. The overall tourist perception (pre-trip expectation and the actual performance) and their satisfication level have strong practical and policy implications for target marketing, product development, and management. Needless to reiterate, providing satisfactory experience to foreign tourists is extremely important for building a good image of Rajasthan in the world. Tourism service-providers should ensure that their foreign tourists' travel experiences in Rajasthan are satisfactory. They should consider how to provide added value to the customer experience in order to secure a larger share in this vast emerging tourism market.

CONCLUSION

The perception of the foreign tourists of Udaipur as a tourist centre has been poorer than their expectations. The reasons include the non-availability of well-trained tourist guide, non-cooperation of local people, polluted environment, unfavourable climatic conditions, lack of infrastructure and superstructure for providing right information to the tourists, lack of hospital facility, and certain other services. The foreign tourists visiting Jodhpur generely hold a positive view of Godhpur in comparison to the tourists who visited Udaipur. The reason seems to lack of be the facilities, friendliness of local people, rich culture and culture-related activities, courteousness and helpfulness of authorities, proper destination planning, accommodation facility, and the excellent food quality. From the study, it is found that the tourist were generally satisfied with the holiday characteristics of Jodhpur in comparison to Udaipur. The good experiences reported by the tourists and the significance level of satisfaction of foreign travelers indicate that Jodhpur has a great potential to offer to tourists.

LIMITATIONS AND DIRECTION FOR FUTURE RESEARCH

Although it adds to our understanding of tourism satisfaction, this study has certain limitation that may be taken care of in future research. The major limitation of the study is the usual size of sample. The results of the study surely will improve with a larger sample. With respect to the research setting, it is to be noted that most of the data was collected at a single point in time.

The result may vary for different profile of tourists. The population (foreign tourist) used in this study is a heterogeneous group that presumably has greater than average cognitive capabilities. Hence, there is an obvious need to replicate this study using the sample with common demographic profile to extend generalisability of results.

While this study reveals the level of satisfaction of foreign tourists visiting Udaipur and Jodhpur cities, there are several areas and places which need future research.

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Corporations, because they are the dominant institution on the planet,
must squarely address the social and environmental problems that afflict mankind.

Paul Hawken, *The Ecology of Commerce*

If a company has the competencies that flow from self-awareness and self-regulation,
motivation and empathy, leadership skills and open communication,
it should prove more resilient no matter what the future brings.

Daniel Goleman, *Working with Emotional Intelligence*

IMPLEMENTING KNOWLEDGE MANAGEMENT SYSTEMS
A Study of Motivational Factors and Current Practices in Selected Organisations

Meera Mathur* and Rahila Gorach**

Abstract

Any knowledge management system (KMS) must be geared towards the specific requirements of an organisation. These requirements or motivational factors define the character of the KMS of that organisation. This paper seeks to examine the six motivational factors and the practices behind the implementation of the KMS by any organisation. The study considered the size, age, and the type of the organisation as independent variables. It has been found that there is a subtle difference in the priorities accorded to various motivational factors in service and manufacturing organisations, which is a reflection on their business characteristics. Moreover, while manufacturing organisations are motivated more by internal factors than by external ones, the reverse is true for service organisations.

Key words: ***Knowledge, Knowledge management systems, Knowledge management practices, Intrinsic motivation, Extrinsic motivation.***

INTRODUCTION

BROADLY speaking, knowledge refers to the information or awareness about something. The concept of management of knowledge has been the part and parcel of Indian civilisation for centuries. The science of Ayurveda and the ancient civilisations of Harappa and Mohen-jo-daro are evidences to support the above statement. Now-a-days, one sees a revolutionary trend in the management field. The organisations are going back to the age-old wisdom of yesteryears. The role of Bhagwat Geeta for sound business ethics, communication skills from the conversation between Lord Krishna and Arjuna, the Chanakya philosophy for good administration, and the presence of mind from Birbal, one of the nine gems of Akbar, are the examples in the Indian context.

The organisations have realised the power and importance of knowledge. A new discipline of management referred to as the Knowledge Management, is the classification, dissemination

* Dr. Meera Mathur is Assistant Professor in the Faculty of Management Studies, Mohan Lal Sukhadia University, Udaipur, (Rajasthan); e-mail: *meeramathurfms@yahoo.co.in*

** Dr. Rahila Gorach is Assistant Professor in the Pacific Institute of Managemnet, Udaipur (Rajasthan); e-mail: *rahilagorach@gmail.com*

and categorisation of information and people throughout the organisation (Taft, 2000).

The KMS can be explained as a combination of software products and business practices that help an organisation to capture, analyse, and distil information. This paper seeks to study the motivating factors behind the adoption of the KMS by an organisation as well as the level of the Knowledge Management (KM) practices in manufacturing and service organisations.

Organisations are motivated by several factors to implement a KMS to capture this knowledge. Different organisations are guided by different motivations, which may be external as well as internal. Such a study can highlight the specific needs of these organisations and their practices.

REVIEW OF LITERATURE

Knowledge is a key asset for any organisation (Hayek, 1945). According to Nonaka and Takeuchi (1995), knowledge includes both the experience and understanding of the people in the organisation and the information artifacts, such as the documents and reports, available within the organisation and in the world outside.

Brooking (1996) observes that knowledge management is accumulating the knowledge assets and using them effectively to gain a competitive advantage. According to Bair (2001), knowledge management is a discipline of identifying, capturing, retrieving, sharing, and evaluating an enterprise's information assets.

A knowledge management system provides means for generating new knowledge, transferring the existing knowledge, embedding knowledge in products, services, and processes, facilitates knowledge growth, and framework for accessing valuable knowledge from inside and outside the firm (Davenport and Prusak, 1998).

According to Malhotra and Galletta (2003), a knowledge management system supports the networks of knowledge workers in the creation, construction, identification, capturing, acquisition, selection, valuation, distribution, retention, maintenance, refinement, evolution, accessing, search, and the application of knowledge. Most KMS are based upon some combination of information-enabled communication, co-ordination, and collaboration capabilities; they provide the critical link between the information and technology resource inputs and organisational performance; and, are critically dependent upon active participation and involvement of knowledge workers to transform the inputs into organisational performance.

Garvin (1993) observes that companies that build competitive advantages through effective information and knowledge management must continually refresh and update their intellectual capital.

According to Bollinger and Smith (2001), at least 80 per cent of large companies have undertaken initiatives to better manage their explicit knowledge. Given the importance of the KMS, as judged by a number of organisations implementing it, understanding the underlying motivational factors is of crucial importance.

The literature cited by Whittom and Roy (2009) and Drucker (1969) reveals that there are six forces that have come together to change the way knowledge contributes to business success and sharply compresses the time-frame within which new knowledge has business value. These forces have forged a business environment in which creating new knowledge and managing its rapid application are the keys to competitive advantage, profitability, and market capitalisation. The forces creating this new environment are: the explosion of new knowledge; the urgent need to quickly understand and apply new knowledge; the rise of knowledge as the key value-added to goods and services; financial markets that value knowledge over physical assets; the globalisation of markets; the appearance of new team-based organisational structures; building effective collaboration and knowledge co-ordinating mechanisms has, thus, become a key necessity for all organisations to take advantage of the market opportunities.

The motivating factors behind implementing the KMS in any organisation have traditionally been classified as: (1) intrinsic (that is, those having their sources within the needs or shortcomings of an organisation, such as undocumented knowledge), and (2) extrinsic (where the source is external, such as the threat from competitors). These types of motivation and how they relate to behaviour in the knowledge management process are further described and discussed below.

Whittom and Roy (2009) are of the view that organisations have always been managing knowledge informally but the challenges facing the industry today mean that most organisations now need a more structured coherent approach to knowledge management.

They feel that especially within project-centric organisations, the capture and re-use of learning from projects is considered difficult because the teams often move on to the next project before completion. These factors can limit the flow of information, create barriers to learning and often lead to wastage and poor performance. All these factors are internal to an organisation and arises due to the policies and specific methodologies followed by that organisation. The external factors, consisting of the competitors, regulators, and customers, either have no role or, at best, a very marginal role in defining those specific business policies. Thus, all the factors are considered intrinsic to the organisation.

Drucker (1969) advocated that organisations operate in a competitive environment where their success often depends on factors, such as time to market, quality of their product or service vis-à-vis their competitors, and accurate estimation of the costs and engagement models for price profitability. These factors are clearly extrinsic to the organisation and in order to be successful, the organisation has to better itself against its competitors with regard to these factors. The idea here is that the organisation has to be on the lookout outside itself to find out where it is lacking with respect to other organisations operating in the same business eco-system. Thus, these factors will be called extrinsic motivational factors for implementing the KMS.

Motivation for implementing the KMS can be influenced by the type of business and the size and maturity of the organisation. This paper studies the six motivational factors (a combination of both the extrinsic and the intrinsic factors) for implementing the knowledge management system in an organisation and their relationship with the size (whether small or large), age (whether old or new), and the category (whether manufacturing or service) of the organisation, in an attempt to ascertain whether they have any bearing on the system.

These six motivational factors are: (1) the use of knowledge management tools or practices by competitors; (2) difficulty in capturing the workers' undocumented knowledge; (3) loss of market share; (4) loss of key personnel and their knowledge; (5) problem of information over-load within the organisation; and (6) difficulties in incorporating external knowledge.

A review of various studies related to knowledge management clearly shows that very few researches related to the KMS have been carried out in the Indian context, with the age and size of the organisation as independent variables. However, some in-depth case studies of individual organisations are available. In this context, a study of motivational factors that prompt an organisation to implement a knowledge management system is virtually non-existent. Thus, there has been significant gap in the research studies in such an important area of business.

OBJECTIVES OF THE STUDY

The present study has two objectives:

1. To examine the motivational factors behind the implementation of the knowledge management system by any organisation; and
2. To ascertain the level of knowledge management practices in manufacturing and service organisations.

HYPOTHESES

Commensurate with the above objectives, the following null hypotheses were formulated:

H_{01}: The size of a manufacturing organisation has no influence on the motivating factors.

H_{02}: The size of a service organisation has no influence on the motivating factors.

H_{03}: The age of a manufacturing organisation has no influence on the motivating factors.

H_{04}: The age of a service organisation has no influence on the motivating factors.

RESEARCH DESIGN AND METHODOLOGY

The research design chosen for this study was exploratory. The main objective was to explore the motivational factors behind the implementation of knowledge management system by an organisation and to assess the current status of knowledge management practices. A number of business organisations – including both manufacturing and service organisations – representing a cross-section of industries were chosen for this study.

The Sample and Data Collection

For the purpose of this study, a sample of 42 organisations comprising, 21 service organisations and 21 manufacturing organisations, was taken. A structured questionnaire was administered to the top and middle-level managers who were in charge of the KMS and the related tasks and activities in their organisation. These managers either directly define the knowledge management policies of their organisations or have a say in their implementation. Thus, they are best placed to answer the questions regarding the motivational factors and the current status of knowledge management practices that lead them to the decisions or recommendations they make.

All the organisations chosen for this study were located in the Udaipur region and the chosen sample size accounted for 4.5 per cent of all the organisations in this region. Since the independent variables for the study were the age and the size of the organisation, we sought to ensure that the sample contained only the meaningful representation for the universe.

Measurement Tools

A measuring tool based on the eight critical factors has been constructed. This measuring tool was termed as the 'Knowledge Management Practices Index' (KMPI). It attempts to measure the level of knowledge management practices in an organisation. As such, it is a suitable tool for indexing and comparing different organisations on the basis of the extent of their knowledge practices implementation.

This index considers various questions that are divided into eight groups, each corresponding to one critical factor. To construct this index, the individual score of each question relevant to a critical factor was added up to get the score for that factor. Finally, the scores of each of the eight factors are added up to get a composite score which is termed as the KMPI.

Theoretically, a KMPI score can range from 0 to 36, where the lower values indicate a lower level of implementation and the higher values suggest a higher level of implementation.

The eight critical factors used in the study are: (1) awareness, (2) employee participation, (3) policies and strategies, (4) knowledge acquisition methods, (5) training and mentoring, (6) communication, (7) efficacy measurement, and (8) allocated resources.

The study considers the size, age and the category of the organisation as independent variables. For the purpose of the study, the following parameters have been used:

Organisation's Size: The size of the organisation was taken as the function of number of employees in the organisation. The organisations having 500 or more employees were considered as 'large' organisations and the organisations that had fewer than 500 employees were considered as 'smaller-sized' organisations. In the present study, a sample consisting of 19 large-sized and 23 small-sized organisations was chosen.

Organisation's Age: Age was considered the number of years that an organisation has been in existence. For this purpose, while a reference year was chosen and the organisations established prior to this reference year were termed as 'old' organisations, the organisations that were established later than this reference year were termed as the 'new' organisations.

The year 2000 was considered as the reference year, since the organisations that have been ten or more years in existence can be safely considered as 'old' organisations, while those that have been in existence for less than 10 years can be termed as 'young' organisations and can, thus, be classified as 'new' organisations. A sample of 20 each of the new and old organisations was chosen for the study.

Questionnaire Design

The questionnaire consisted of ten Likert-scale type of questions to be put to the respondents about the priority they accorded to each factor, which motivated them to implement the KMS in their organisation. Each question was carefully chosen to probe about the motivating factor that most prompted the organisation to implement the KMS. The respondents were mostly senior managers and only a few were from the middle management. Since strategic decisions regarding the KMS emanate from senior management, it can be claimed that the responses will reflect a reliable picture.

All those questions that attempted to gather specific information about the indicators for the level of presence of a given knowledge management practices were presented as multiple-choice questions. The respondents were asked to choose none or all the answers as it applies to their organisation. Each response was considered a dichotomous response which if ticked by the respondent was awarded the numerical value of 1, and if left un-ticked was awarded the numerical value of 0. Thus, the real outcome of this type of questions can possibly range from 0 to maximum number of options. For example, one respondent provided the following response to one of the questions:

Question: Does your firm/ organisation:

(√) have a written knowledge management policy or strategy?

(√) have a value system or culture intended to promote knowledge sharing?

(√) have policies or programmes intended to improve worker retention?

( ) use partnerships or strategic alliances to acquire knowledge?

Counting 1 for each selected option and 0 for each unselected option and taking a sum of these numbers, we would arrive at the numerical score of 3 for this response. In this case, the response values would range from 0 to 4.

DATA ANALYSIS AND INTERPRETATION

The test of reliability and validity of the KMPI was performed. Cronbach's Alpha (α) was calculated as a coefficient of reliability (or consistency) to estimate the reliability of the measuring instrument constructed from the responses of the questionnaire. For a reliable instrument $\alpha \geq 0.700$.

The observed value of α came out to be 0.791. It indicates a high level of reliability. Thus, the reliability of the KMPI as a measurement instrument was established. The validity of the instrument is established by calculating the coefficient of correlation between the instrument scores. This correlation would found to be positively significant.

Statistical Analysis of KMPI Scores

The observed values of KMPI scores for all the organisations under study were calculated. While the mean of the KMPI scores was 15.81 and the median was 14.50, the mode was 10. The mean score is less than the theoretical expected mean of 18, suggesting a low level of overall knowledge management practices. It was found that a vast majority (64.29 per cent) of organisations scored in the range 10 to 20, which lies at the lower-mid end.

The mean KMPI score of all the organisations under study was found to be 15.81. This is less than the theoretical expected mean of 18.00, for the 'average' level of the knowledge management practices. Thus, it can be concluded that the level of knowledge management practices is at a 'low level'.

Ranking of Critical Factors of Knowledge Management Practices

The factor-wise ranking was attempted by comparing the scaled mean scores for each of the six factors. The results are shown in **Table 1.**

Table 1
Ranking of Factors of Knowledge Management Practices

S. No.	Factor	Scaled Mean Score	Rank
1.	Awareness	0.79	1
2.	Resource Allocation	0.67	2
3.	Employee Participation	0.56	3
4.	Quality of knowledge storage/ retrieval/availability	0.46	4
5.	Quality of knowledge acquisition methods	0.45	5
6.	Training	0.45	6
7.	Quality of applied policies/strategies	0.44	7
8.	Performance measurement and corrections	0.27	8

Only 37.50 per cent of the factors had an average equal to or greater than 0.5, which indicates that the level of aggregate knowledge management practices in the particular organisations is at a low level.

Of all the factors that contribute to the KMPI score for an organisation, 62.50 per cent of the factors were ranked below the average. This finding highlights the areas where organisations were lagging behind and explains the cause of low scores achieved by the organisations.

The role of 'performance measurement and corrections' scored very low. It ranked the last at number 8. This suggests that the organisations have not yet realised the importance of this critical factor and could be a possible reason why the overall mean score for the KMPI score was mediocre. In our opinion, without taking regular stock of the situation, it is not possible to achieve an effective implementation of the knowledge management practices. The lowest ranking achieved by 'performance measurement' corroborates this reasoning.

Thus, it can be concluded that there is a very little opportunity of realising any learning from the past mistakes, since there has been no measuring and corrective activity in the selected organisations. This is put forward as a major cause for the low level of knowledge management practices in the organisations.

Testing of Hypotheses

The hypotheses have been tested using the Student's *t*-test for difference of means, at the 5-per cent level of significance (α =0.05).

The ranking method was adopted to rank the factors according to their overall priorities and a comparison was made to ascertain the differences and to establish their significance. This was done to study the role of each factor which can be of different priority to the two categories of organisations chosen for the study. The idea is that the rankings would reflect the specific needs of the two categories of organisations and could be used as a basis for recommendations for the future implementation of the KMS in other organisations.

It is hoped that such ranking will serve to highlight the importance of the KMS to the organisations that have not yet implemented any KMS by relating their 'pain areas' to the general perception of pain areas in their category.

The calculated value of *t* and the corresponding significance value *(p)*, for the four hypotheses, are presented in **Table 2.**

Table 2
Tests for Difference of Means for Hypotheses

Null Hypothesis	Calculated Value of |t|	Sig. Value (p)	Result
H_{01}	0.447	0.660	Cannot reject
H_{02}	0.289	0.776	Cannot reject
H_{03}	2.008	0.059	Cannot reject
H_{04}	0.486	0.636	Cannot reject

The results in the table indicate that the size and age of the organisation did not have any influence on the motivational factors behind the implementation of a KMS in that organisation.

The ranks of the six motivational factors, when all organisations are considered irrespective of any of their characteristics, are given in **Table 3**.

The ranks of the factors in respect of the manufacturing oranisations are shown in **Table 4**.

As shown in the table, the size and age of the manufacturing organisations does not have any influence on the motivational factors responsible for the implementation of the KMS in that organisation.

The ranks of the motivational factors in respect of the service organisations are given in **Table 5.**

As shown in the table, the size and age of the service organisation did not have any influence on the motivational factors behind the implementation of the KMS in that organisation.

Table 3
Ranking of the Factors for all the Organisations Combined Together

S. No.	Factors	Score	Percentage	Rank
1.	Use of knowledge management tools or practices by competitors	21	20.80	**1**
2.	Difficulty in capturing the workers' undocumented knowledge	19	18.81	**2**
3.	Loss of market share	18	17.82	**3**
4.	Loss of key personnel and their knowledge	17	16.83	**4**
5.	Information over-load problems within the organisation	15	14.85	**5**
6.	Difficulties in incorporating external knowledge	11	10.89	**6**

Table 4
Ranking of the Factors for the Manufacturing Organisations

S. No.	Factors	Score	Percentage	Rank
1.	Difficulty in capturing the workers' undocumented knowledge	11	20.37	1
2.	Use of knowledge management tools or practices by competitors	10	18.51	2
3.	Information over-load problems within the organisation	9	16.67	3.5
4.	Loss of market share	9	16.67	3.5
5.	Loss of key personnel and their knowledge	8	14.82	5
6.	Difficulties in incorporating external knowledge	7	12.96	6

Table 5
Ranking of the Factors for the Service Organisations

S. No.	Factors	Score	Percentage	Rank
1	Use of knowledge management tools or practices by competitors	11	23.40	1
2	Loss of market share	9	19.15	2.5
3	Loss of key personnel and their knowledge	9	19.15	2.5
4	Difficulty in capturing the workers' undocumented knowledge	8	17.02	4
5	Information over-load problems within the organisation	6	12.77	5
6	Difficulties in incorporating external knowledge	4	8.51	6

CONCLUSION AND POLICY IMPLICATIONS

A reliable and valid quantitative measure is now available to measure the level of knowledge management practices in an organisation. The measurement instrument developed in this research termed as Knowledge Management Practices Index (KMPI) can be used for this purpose. The extrinsic and intrinsic factors are equally balanced as motivational catalysts.

A subtle difference can be seen when looking separately at the manufacturing and the service organisations. The research clearly establishes the fact that the success of an organisation is directly dependent on the level of knowledge management practices in that organisation. The research postulated that a good KMS implementation requires extensive employee training for its efficient use.

As the mean the KMPI score of all the organisations under study was found to be less than the tabulated mean, it can be concluded that the level of knowledge management practices in the selected organisations is at a low level.

The factor-wise ranking of the critical factors of knowledge management practices, such as awareness, resource allocation, and employee participation, had an average equal to or greater than 0.5, which is a good indication. Furthermore, the factor-wise ranking of the critical factors of knowledge management practices, such as the quality of knowledge storage/ retrieval/ availability, quality of knowledge acquisition methods, training and mentoring, and the quality of applied policies/ strategies are pursued moderately by manufacturing and service organisations. The factor-wise ranking of critical factors of knowledge management practices, such as performance measurement and corrections scored very low in all the organisations.

The size and age of the service organisations as well as manufacturing organisations do not have any influence on the motivational factors behind the implementation of a knowledge management systems in that organisation. The study has revealed that the top two motivational factors for service organisations are extrinsic, namely, the difficulty in capturing the workers' undocumented knowledge and the loss of market share. However, in the case of the manufacturing organisations, these factors are intrinsic.

The most important internal motivating factor for the implementation of knowledge management system is the existence of undocumented knowledge irrespective of the type of the organisation. A reliable and valid quantitative measure is available to measure the level of knowledge management practices in the organisation. They can use the measurement instrument, namely, the KMPI, for this purpose.

The success of an organisation is directly dependent on the level of knowledge management practices in that organisation. So, the organisations must seriously think of implementing the KMS. For implementing a good knowledge management system, extensive employee training, for its efficient use, is a must.

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If enterprise is afoot, wealth accumulates whatever may be happening to thrift;
and if enterprise is asleep, wealth decays, whatever thrift may be doing.

John Maynard Keynes *(1883 – 1946), Treatise on Money*

In the affluent society, no useful distinction can
be made between luxuries and necessaries.

John Kenneth Galbraith *(1908 - 2006), The Affluent Society*

There is a tide in the affairs of men, which, taken at the flood, leads on to fortune;
omitted, all the voyage of their life is bound in shallows and in miseries. On such a full sea
are we now afloat, and we must take the current when it serves, or lose our ventures

William Shakespeare, *Julius Ceasar*

Globalisation has changed us into a company that searches the world,
not just to sell or to source, but to find intellectual capital – the world's best talents and greatest ideas.

Jack Welch

The difference between what we do and what we are capable of doing
would suffice to solve most of the world's problems.

Mahatma Gandhi

GUIDELINES FOR WRITING BOOK REVIEWS

We invite academicians and others to write reviews of standard text and reference of books on business management and allied subjects.

The book-reviewers are requested to follow the guidelines given below:

1. The reviewer should begin with a listing of the bibliographical details of the book, comprising the name(s) of the author(s), full title and sub-title of the book (as they appear on the cover), details of the place and name of the publisher, year of publication, number of pages in the book, whether hardbound or paperback, and the price, if mentioned.

2. The review can range from 1000 to 3000 words, depending on the topic and the importance of the book.

3. The review should engage with the issues, problems, and theme raised in the book and make a rigorous attempt to identify and assess the main set of arguments put forth by the author. It should, in other words, have a strong engagement with the conceptual structure of the book and should bring out its major strengths and weaknesses.

4 The book under review should have been published recently, preferably in the current or the previous year, and be preferably the new release

5. The reviewer should also comment on the stylistic aspect and literary presentation of the book.

6. Bibliographical references should be avoided. If the references are considered essential, the citation style, adopted by *NICE Journal of Business*, should be used.

The review should be an objective assessment of the book, indicating its specific strengths and weaknesses, and an overall assessment by the reviewer.

IMPROVING THE QUALITY OF MANAGEMENT EDUCATION IN PUNJAB
Stakeholders' Perspective

Lakhwinder Singh Kang* and Surinder Sharma**

Abstract

The study seeks to measure the perception of the various stakeholders, such as alumni, faculty, and the practising managers of the quality of management education in Punjab and to make appropriate suggestions for admission policy, improvement in the managerial skills of the pass-outs and the measures for regulation of various private and public management institutes. Based on a survey of the respondents from amongst the alumni, faculty members, and the practising managers, the findings of the study would be useful not only to the stakeholders, but also to the monitoring agencies and policy-makers in improving the quality of management education in the State.

Key words: ***Quality, Management education, Managerial skills, Summer training, Project reports.***

INTRODUCTION

THE importance of management education for producing professional managers need not be emphasised. The growth and expansion of management education has become the function of economic development and closely follows the rise and fall of the national economy (Wang, *et al*., 2003). Now all sorts of economies, irrespective of their features, are promoting and focusing on the effectiveness of management education. According to AACSB International (2010), in 2008-09, more than twelve thousand management institutes were imparting management education, either at the graduation or the post-graduation level, all over the world. Since Independence, systematic efforts have also been made in India to ensure the adequate supply of professional managers in different sectors of the economy (Chaudhary, 1993). India (1200) stands at the fourth place after the US (1621), China (1396) and Philippines (1243), in 2008-09, in terms of the number of management institutes in the world (AACSB International, 2010).

* Dr Lakhwinder Singh Kang is Reader and Head of the Department of Commerce and Business Management, Guru Nanak Dev University, Amritsar; e-mail: *lakhwinder_gndu@yahoo.com*

** Dr Surinder Sharma is Senior Lecturer in the Department of Commerce and Business Management, Doaba College, Jalandhar; e-mail: *surindersharma11@gmail.com*

Although there has been a vast expansion in the number of management institutions in India, very few of these institutes are known for quality education. The products of some of the institutes, like the Indian Institutes of Management and other first-rung institutes are sought after by the corporate sector and their students get lucrative job offers even before the completion of their education. On the other end, there are a large number of institutes whose pass-outs find jobs on a small salary. The increasing amount of unemployed or underemployed management graduates of these institutes, and their low acceptability by the corporate sector, calls for a qualitative improvement of management education.

REVIEW OF LITERATURE

With a view to reviewing the status and making recommendations for quality improvement, various committees have been constituted by the Government of India in the past. These include: the Nanda Committee (1981), the Kurien Committee (1992), the Ishwar Dayal Committee (2001), the Management Education Review Committee (2003), and the National Knowledge Commission (2007). The works of Philip and Narayan (1989), Rastogi and Chand (1993), Chowdhury and Bhattacharjee (2002), and Arya and Chadha (2005), which were based on various seminars and conferences, also highlighted various issues related to the qualitaty of management education in India. The various scholars, who carried out research in the field of management education, have made suggestions to improve the quality of management education in India. For instance, Narayan (1989) suggested that management education in India cannot remain in 'isolation' and has 'no relevance and vitality' without having a 'close link with the industry'.

Chaudhary (1993) observed that if we were to succeed, management education itself had to be managed and made relevant and responsive to the environment which it sought to serve.

Krishna (1998) suggested a need for re-orientation and revamping of the entire management education in India. Developing a proper course curriculum would be the initial step towards this change in which knowing what to study and what not to study are both imperative for ensuring the quality of management education. Shollapur (1999) also recommended that association among academicians, industrialists and policy-makers was needed for improving the quality of management education in the country.

Chaudhary (2003) observed that MBA programme should be tailored to suit the needs of the local business community; otherwise, the firms would not get managers of sufficient quality to meet their business needs.

Qamar (2004) observed that the decline in the quality of management education had not arisen as much on account of the proliferation of management programmes as it might have arisen due to the failure to implement quality standards.

According to Bowonder and Rao (2005), about 70 per cent of the management schools in India need to be improved substantially if they wanted to produce the managers who would make a difference.

Paul (2006) expressed concern over the inadequate 'summer training' and 'project report' in management education and suggested that 'summer internship' needed to be made 'mandatory' and 25 per cent weight of marks should be given to the project reports.

Reddy, *et al*. (2006) concluded that the quality of management education was possible only when the business schools interacted with the industry. According to Mayank and Dave (2007), the paucity of faculty was not just a quantitative issue but was also a qualitative one. Some radical and concrete efforts had to be taken at a broader level to curb this problem, and, thus, prevent management education from losing its sheen.

Mulla (2007) suggested that faculty should focus on teaching and consulting, conducting empirical studies, and on building relevant theory, grounded in the Indian context.

Prasad (2007) observed that management was a practical subject and should be treated differently from other subjects, which were purely theoretical, where little or no practical work was required.

Singh (2007) concluded that only those management institutions would survive and excel whose fundamentals were good and which would really ensure quality of management education. Upadhyaya and Soni (2007) recommended the use of appropriate pedagogy for imparting the management education.

Sahay and Thakur (2008) suggested that the key to success lay in innovation and creativity in designing programmes and the pedagogy, creating a strong institution-industry interface and a worldwide network of opportunities for the students to learn in various global business environments. Philip (2008) stressed that the shortage of faculty was the most important problem of the management education in India.

According to Subbiah and Jeyakumar (2009), business schools deal with a wide range of issues and challenges, including the increasing competition, faculty shortages, and the financial constraints. Tandon and Angrish (2009) demanded attention on the key areas, namely, the clarity of vision and the objectives of the sector programmes, competent and motivated faculty, updated syllabi, and the collaborative research for the future of management education.

Though all the studies cited above are useful as they focus on one or the other aspects of management education, most of them are conceptual in nature and hardly any study has focussed on the perception of its stakeholders, including the alumni, teaching faculty, and practising managers, who are directly associated with the management education. The alumni who had acquired their managerial skills and knowledge from these institutes, and were now applying these skills and knowledge to perform their jobs, were considered to be one of the relevant sources of information for the present study. The teaching faculty who develop these managerial competencies were considered to be another relevant source of information for the study. Similarly, the practising managers who hired and employed the management graduates were considered to be the third relevant source of information. The study was confined to the State of Punjab and the information relating to several dimensions, like admission, fee structure, duration and type of MBA, curriculum, teaching faculty, pedagogical tools, and industry-academia interface, were considered to find solutions for improving the quality of management education in the State.

Till 1995, there were only five management institutes in Punjab. By the year 2009-10, the total number of management schools increased to 92. In terms of both the number (80 out of total 92, i.e., 86.95 per cent) and the intake capacity (5670 out of total 6950, i.e., 81.58), private institutes were dominating the management education in Punjab. It is interesting to note that out of the total 92 institutes located in Punjab, 29 private institutes got approval from the All India Council for Technical Education (AICTE) in 2008-09 (DTEIT, 2009). Though the availability of the institutes in a large number is necessary to provide educate management education to students to meet the growing demand of the Indian economy, it is not enough if the quality of management education being imparted in these institutes was not taken care of.

OBJECTIVES OF THE STUDY

The present study was carried out to measure the perception of the stakeholders of the management education in the State of Punjab and to identify the appropriate strategies to improve the quality of such education in the State.

DATA BASE AND RESEARCH METHODOLOGY

This study is based on the primary data, collected from the MBA alumni, faculty members, and practising managers, with the help of a structured questionnaire, designed for the study. The questionnaire consisted of 28 statements, seeking information from the alumni, teaching faculty, and practising mangers, for improving the quality of management education in the State of Punjab. The reliability of the scales used was measured by calculating the Cronbach Alpha (Cronbach, 1951). It was found to be 0.716 for the alumni, 0.772 for the faculty members, and 0.794 for the practising managers. A sample of 260 alumni, 200 faculty members, and 100 practising managers, was selected, using the convenience sampling technique, as it was difficult to locate all the alumni and practising managers who had been involved in the campus placement. The following criteria were used for the selection of respondents:

Alumni: The alumni who had obtained their MBA degree from any of the management institutes located in the State of Punjab in or before 2006-07 and who had at least one year of working experience in the corporate sector, were selected to constitute the sample.

Faculty Members: The faculty members who had been working in any of the AICTE/UGC-approved management institutes in Punjab were selected. Only those management institutes were considered which had been operating since 2004-05. Out of a total of 33 management institutes fulfilling the criteria, only 28 could be covered in the study.

Practising Managers: On the basis of the placement brochures of the management institutes in Punjab (both the university departments and the private management institutes) included in the list of 'Our Recruiters', practising managers who had been involved in the placement of the MBA students from the various management institutes in Punjab were considered.

In the case of the alumni, out of the sample of 260 respondents, 67.3 per cent were male and the rest were female. While 69.6 per cent of the respondents were of more than 25 years of age, 30.4 per cent were below 25 years. About 62 per cent of the respondents had completed their MBA from private management institutes. The others had done it from any university management department or its regional centre. Moreover, 41.2 per cent of the respondents possessed an experience of 4 years, 31.5 per cent of the alumni had an experience of more than 2 years but less than 4 years, and 27.3 per cent had an experience of more than one year but less than 2 years in the corporate sector.

In the case of faculty members, out of the sample of 200 respondents, 47 per cent were male and the rest were female, 62.5 per cent of the respondents were less than 30 years of age and the rest, 37.5 per cent, were over 30 years. Only 15 per cent of the respondents had a doctoral degree, 78 per cent were teaching in private management institutes, and 22 per cent were engaged in the university departments. While 57 per cent of the respondents possessed an experience of over 4 years, 32 per cent had an experience between 2 and 4 years, and 11 per cent of less than 2 years of teaching experience. About 64 per cent of the faculty members did not have any industry experience.

In the case of the practising managers, out of the sample of 100 respondents, 89 were male and the remaining were female. While 52 per cent of the respondents had a degree of MBA, 48 per cent were non-MBAs. While 65 per cent of the respondents were working in the manufacturing sector, 35 per cent were working in the service sector. While 58 per cent of the respondents had an experience of 10 or more years, 42 per cent had an experience of less than 10 years. While 52 per cent were human resource managers, 48 per cent were holding a position, like Vice-President, Regional, Cluster Head, or a Territory Manager.

The respondents were asked to express their extent of agreement/disagreement on a Five-point Likert's Scale, ranging from 'strongly agree' to 'strongly disagree' about the given statements. The weights 5, 4, 3, 2, 1 were assigned to the responses, 'strongly agreed', 'agreed', 'undecided', 'disagreed', and 'strongly disagreed', respectively. The weighted average scores (WAS) were calculated and interpreted according to the following criteria:

- Agreed/Strongly agreed, if $WAS > 3.25$
- Undecided, if $2.25 < WAS \leq 3.25$
- Disagreed/Strongly disagreed, if $WAS \leq 2.25$

DATA ANALYSIS AND INTERPRETATION

This section deals with the viewpoint of the alumni, faculty and the practising managers on how the quality of management education can be improved. The responses are reported in **Table 1.**

Admission Policy

As shown in the table, on the issue of admissions, the respondents agreed that the due weight should be given to industrial experience in admissions (s_1), that the admission should be made not only on the basis of a written test (s_2), that group discussion and interview should be the integral part of the admission criteria (s_3), that admission needs to be made on the basis of a national-level test, like CAT (s_4), and/or that the admission to all the management institutions situated in the State should be made on the basis of a common admission test, conducted at the State level (s_5).

Fee Structure

For the fee structure, the respondents agreed that it should be uniform among all the management institutions (s_6) and that the government should regulate the fee among the management institutes (s_7).

It is noteworthy that though the respondents commonly perceived that the payment seats defy the principle of merit and should be abolished (s_8), but on the necessity of payment seats for generating resources to run an institution (s_9), only the faculty members agreed with the statement, but the alumni and the practising managers disagreed are undecided, respectively.

Duration and Mode of Imparting Instruction

In aspect of the duration and the type of the course, all the respondents agreed that the two-year period was sufficient to make fresh graduates and/ or post-graduates learn about management (s_{10}), that the one-year MBA course was adequate to fulfill the needs of the working executives (s_{11}), the residential MBA programme was best fit for developing management professionals (s_{13}), and that the management institutes also needed to start customised courses of a short duration (s_{16}).

Table 1

Improving the Quality of Management Education: Stakeholders' View-Point

Vari-ables	Statements	Alumni (N = 260)	Faculty (N = 200)	Practising Managers (N = 100)	Total (N = 560)	
		WAS	WAS	WAS	WAS	SD
(I) Comprehensive Admission Policy						
s_1	People with some industrial experience should be given a weight for the management course.	3.84	4.00	4.64	4.04	1.19
s_2	Admission to an MBA programme should be made only on the basis of a written test.	3.62	3.75	4.46	3.81	1.40
s_3	Group discussion and interview should be the integral part of the MBA admission criteria.	4.69	4.62	4.70	4.67	0.50
s_4	Admission to an MBA course should be made on the basis of a national-level test, like CAT.	4.47	4.38	4.62	4.46	0.79
s_5	Admission to all the management institutions situated in the State should be made on the basis of a common admission test conducted at the state level.	4.63	4.38	4.58	4.53	0.69
(II) Government-regulated Uniform Fee Structure						
s_6	There should be a uniform fee structure among all the management institutions.	4.36	4.21	4.70	4.36	0.66
s_7	The government should regulate the fee structure of the management institutes.	4.30	4.27	4.66	4.35	0.62
s_8	Payment seats defy the principle of merit and adversely affect the output of the management institutes. So, these seats should be abolished.	4.38	4.33	4.74	4.43	0.62

s_9	Payment seats have become a necessity for generating resources to run an institution.	1.77	3.38	2.53	2.48	1.53
(III) Adequate Duration and Type of MBA						
s_{10}	Two-years are sufficient to make fresh graduates and/ or post graduates learn about management.	4.33	4.11	4.57	4.29	0.75
s_{11}	One-year MBA course is adequate to fulfill the needs of working executives.	3.93	3.70	3.70	3.81	1.15
s_{12}	Five-year MBA course after +2 is more suitable to groom students for management profession.	2.43	3.93	3.77	3.20	1.53
s_{13}	Residential MBA programmes are best fit for developing management professionals.	4.09	4.08	4.42	4.13	0.82
s_{14}	MBA part-time and through distance education are equally valuable as MBA regular course.	1.24	1.75	1.25	1.42	0.93
s_{15}	On-line MBA is another good option for imparting management education.	1.27	2.02	1.79	1.63	1.09
s_{16}	Management institutes also need to start customized courses of short duration.	4.43	4.22	4.66	4.39	0.69
(IV) Academicians and Executives Jointly Composed Comprehensive Market-oriented Course Curriculum						
s_{17}	Integration of management curriculum with market requirements jointly composed by academicians and executives will enhance its effectiveness and market value.	4.54	4.41	4.72	4.52	0.59
s_{18}	An MBA course requires a focus on the basic knowledge of different functional areas of management.	4.44	4.41	4.66	4.47	0.59
s_{19}	For the practical exposure of the students, 25% or more of the total course time (e.g., 6 months in a 2-year course) needs to be allotted to summer training.	4.65	4.23	4.87	4.54	0.75
(V) Appropriate Faculty (comprising Academicians and Executives) and their Periodic Development						
s_{20}	Management institutes require a mix of both academicians and working executives as faculty.	4.54	4.57	4.60	4.56	0.55
s_{21}	Management institutes should hire only the working executives as faculty.	1.24	2.00	1.59	1.57	0.95
s_{22}	Management institutes need to send their teachers for summer training at specified time intervals.	4.51	4.37	4.61	4.48	0.68
s_{23}	Consultancy and research experience make teaching more effective and add more value to the MBA course.	4.50	4.53	4.61	4.53	0.57
s_{24}	Management faculty should be subject to 360 degree evaluation once in five years.	4.26	4.02	4.64	4.24	0.76
s_{25}	Pay of management faculty needs to be linked with their performance.	4.35	4.09	4.65	4.31	0.80
(VI) Innovative Pedagogical Tools and MOU/Tie-ups for Increasing the Market Value of MBA						
s_{26}	Innovative teaching pedagogy using case method, management games, role plays, etc. develop better managers than the traditional methods of imparting management education.	4.52	4.55	4.72	4.57	0.57
s_{27}	MOU/Tie-up with foreign/other reputed business schools will make management institutes of Punjab more effective and have greater market value.	4.22	4.15	4.47	4.24	0.76
(VII) FurtherScope for Management Institutes						
s_{28}	There is a scope for more management institutes in Punjab.	1.32	2.18	1.90	1.73	1.18
	Overall Weighted Average Score	**3.72**	**3.86**	**4.04**	**3.85**	**1.04**

Similarly, all the respondents disagreed that the MBA (part-time) and the MBA (distance-education mode) were as valuable as the MBA (regular course) (s_{14}), and that the on-line MBA programme was another good option for imparting management education (s_{15}). On the issue of the five-year MBA course after +2, the faculty and the practising managers both agreed that it was more suitable to groom the students for management profession (s_{12}), but the alumni was not sure about the proposal.

Curriculum Design

As shown in the table, the respondents agreed that the academicians and executives jointly needed to design the curriculum having integration with the market requirements (s_{17}). They also agreed that the MBA course requires a focus on the basic knowledge of different functional areas of management (s_{18}), and that for the practical exposure of the students, 25 per cent or more of the total course time (e.g., 6 months in a 2 year course) needed to be allotted to summer training (s_{19}).

Teaching Faculty

In respect of the faculty, all the respondents agreed that the management institutes required a mix of both the academicians and the working executives as the teaching faculty (s_{20}), for MBA programme and that the management institutes needed to send their teachers for summer training at the specified time intervals (s_{22}). They also agreed that the consultancy and research experience made teaching more effective and added more value to the MBA course (s_{23}).

Performance Appraisal of the Faculty

The respondents also agreed with the suggestion that the management faculty should be subject to a 360-degree performance appraisal once in every five years (s_{24}), and that the pay of the management faculty should be linked with their performance (s_{25}). All the respondents disagreed with the suggestion that the management institutes should hire only the working executives as the teaching faculty (s_{21}).

Pedagogical Tools

For the pedagogical tools, the respondents agreed that innovative teaching pedagogy using the case method, management games, role plays, etc., developed better managers than the traditional methods of imparting the management education (s_{26}), and that the MOU/tie-up with foreign/other reputed business schools, would make the management institutes of Punjab more effective and would have greater market value (s_{27}).

Expansion

Showing concern over the mushrooming growth of the management institutes in Punjab, all the respondents categorically disagreed that there was any further scope for opening new management institutes in the State (s_{28}).

Scope for Improvement

The over-all weighted average score individually for all the 28 statements used for obtaining the suggestions of the alumni is 3.72. For the faculty it is 3.86, and for the practising managers, it is 4.04. Collectively, it was 3.85, which indicates that all the respondents perceived that the measures suggested in the study should be considered for improvement of quality in management education.

Perceptual Differences

It was further examined whether there was any significant difference in the perceptions of the three sets of respondents. The one-way ANOVA was applied to test the hypothesis that no significant difference existed among the respondents about the variables considered for obtaining their suggestions for improving the quality of management education. The results are summarised in **Table 2**.

As shown in the table , the calculated value of F is less than its tabulated value, at the 5 per cent level of significance. Hence, the result of the one-way ANOVA supports the null hypothesis that there is no significant difference among the perceptions of the alumni, faculty and the managers with respect to the suggestions made for improving the quality of management education in Punjab. Thus, all the three types of stakeholders have the same perception as to the suggestion for improving the quality of management education.

CONCLUSION AND SUGGESTIONS

In order to meet the requirements of the corporate sector, the management education needs to be managed effectively. For seeking suggestions for improving the quality of management education,

Table 2
Differences in the Perceptions of Alumni, Faculty and Practising Managers (One-way ANOVA Analysis)

Source of Variation	Sum of Squares	Degree of Freedom	Mean Square	Calculated Value of F	Tabulated Value of F at 5% level of Significance
Between Sample	1.45	2	0.72	0.64	3.07
Within Sample	91.99	81	1.14		
Total	93.44	83			

alumni, teaching faculty, and practising managers were considered. The study has revealed that the admission policy needs to provide weight to people having industrial experience; the stakeholders commonly perceive that the admission should be based on the combined written test at the national or the state level, with the inclusion of the group discussion and the personal interview for selecting the right kind of input for imparting managerial skills in the State of Punjab. The stakeholders unequivocally agreed that in order to control the commercialisation of education, the government should regulate the fee structure and make it uniform among the institutes.

Similarly, the stakeholders felt that a period of two years, comprising at least six months of summer training for fresh graduates and one year for the working executives was sufficient for imparting managerial skills, but on-line, part-time and distance education mode MBAs could hardly impart the requisite managerial skills. On the issue of curriculum, the stakeholders have demanded that academicians and executives should jointly design a comprehensive market-oriented curriculum and for imparting it a proper mix of both the academicians and the working executives should be included in the faculty of the management institutes. The study also suggests that for sharpening the teaching skills, sufficient financial aid and time for consultancy, research and development programmes, aids for using the innovative pedagogical tools should be provided to the faculty. The study further recommends that the performance of the teaching faculty should be evaluated once in five years and their pay should be linked with their performance.

The stakeholders have also categorically disagreed with the suggestion that there was any scope for more management institutes in the State. It shows that the quantitative expansion is superseding the qualitative one, in which, except a handful of institutes, the rest are producing only MBAs but not the managers who are employable to meet the demand of the changing business scenario. To hold down the pace of mushrooming growth, regulatory bodies should develop stringent entry barriers while granting approval to the institutes and conduct both the periodic and the surprise visits, frequently, to put a check on the functioning of the institutes. Last, but not the least, for effectively managing the management education, regulating and monitoring bodies for management education in India have to be made accountable. Such agencies, especially the AICTE, has to comprehend that the prescribed norms and recommendations of the various committees, conferences, and scholarly studies conducted for the quality of management education alone cannot serve any purpose, until these are implemented stringently. The findings of the study would be quite useful for the monitoring agencies, teaching faculty, corporate sector, and the governing bodies of various management institutes for improving the quality of management education.

The conclusion and suggestions drawn from the present study are limited, since the study was confined to the state of Punjab. However, using the findings of this study as a starting point and testifying their validity and reliability, the study can be replicated in other states for improving the quality of management education in the country.

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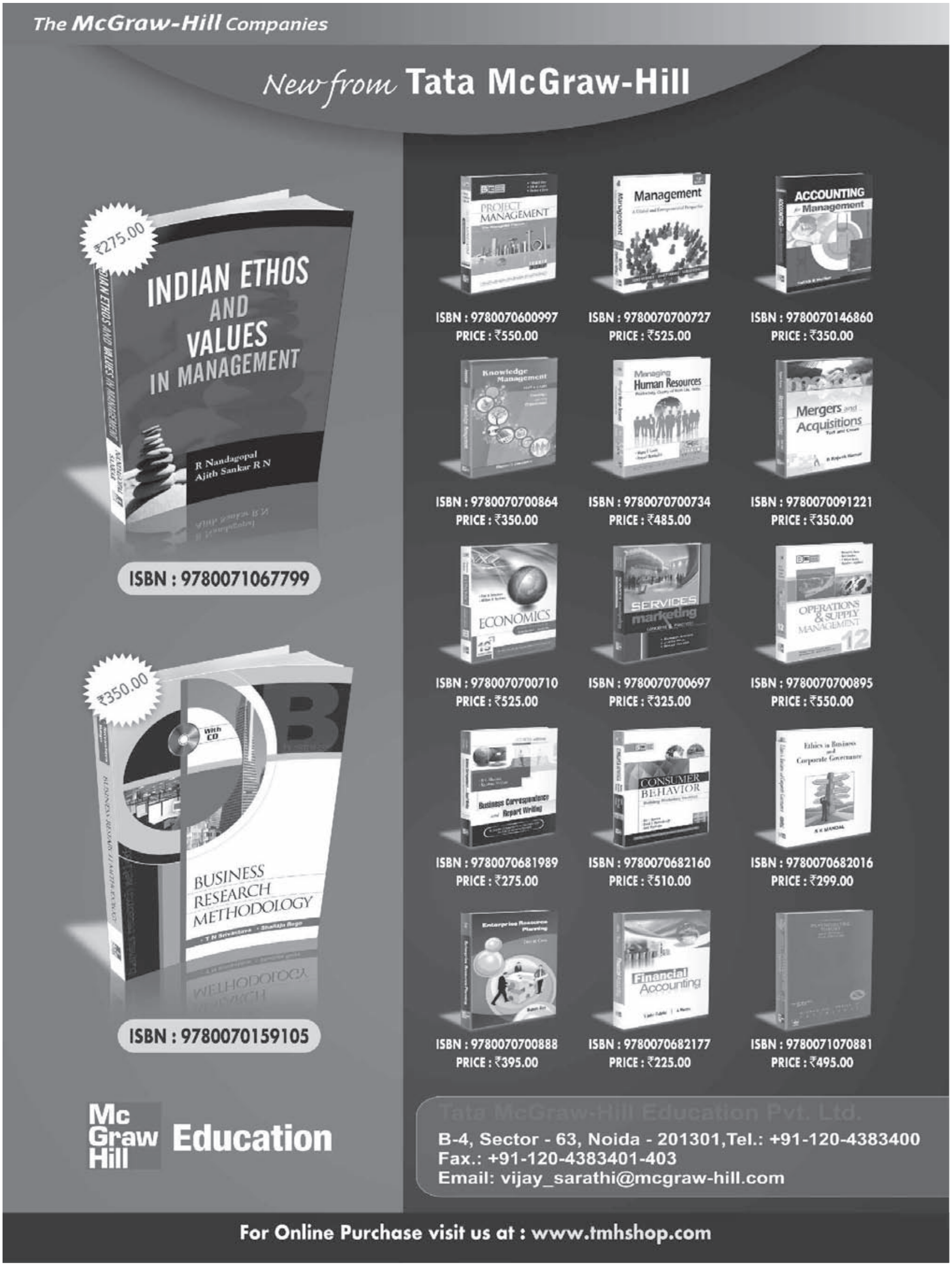
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CAUSAL NEXUS BETWEEN STOCK MARKET VARIABLES
Testing for Granger Non-Causality with the Toda-Yamamota Method

K. Srinivasan* and Malabika Deo**

Abstract

This paper examines the relationship between stock-market variables, such as stock returns, trading volume, and the volatility for the Sensitivity Index of the Bombay Stock Exchange. The data for the analysis were collected for the period of January 2004 to December 2009, for 1478 observations. By applying the techniques of unit-root tests, Co-integration test, and the VECM, based on the Toda and Yamamota tests (1995), it is proposed to check the non-causality test to establish the direction of causation between the multivariate series, viz., stock return, trading volume, and volatility. The study reveals that there is a significant contemporaneous and bi-directional relationship between the variables. Therefore, macro news plays a significant role in the determination of trading volume and leads to a mutual dependence of volume and prices over time.

Key words: ***Stock market, Returns, Trading volume, Volatility, Toda-Yamamota tests.***

INTRODUCTION

THE existing research on stock market volatility mostly focusses on the causal nexus between price changes and trading volume at the aggregate level and concentrates on the well-developed financial markets, although recent studies have increasingly paid attention to emerging financial markets. Several attempts have been made earlier to determine the true relationship between stock return and trading volume at the theoretical and empirical levels in the developed markets.

Due to structural changes and volatility behaviour, the works conducted in the Indian stock market were quite limited, because of reliability and inconsistency of data. Simultaneously, the rapid development of Indian stock market kindled fire to the researchers, policy-makers, and practitioners to concentrate on this topic, although little work has been done on investigating the

* Dr. K. Srinivasan is Assistant Professor in the Department of Management, Christ University, Bangalore; e-mail: *ksrinivasan1979@gmail.com*

** Dr. Malabika Deo is Professor and Head of Department of Commerce in the School of Management, Pondicherry University, Pondicherry – 605 014; e-mail: *deo_malavika@yahoo.co.in*

relationship between stock market variables and such work as exists has employed price changes and trading volume rather than the data for volatility to observe the relationship between the variables.

This paper examines the relationship between stock return, trading volume and volatility between the market variables for the BSE Sensitivity Index. The Indian stock market is rapidly developing, and the government often has to intervene in the domestic market. So, we investigate the effects on the stock return, trading volume and volatility relationship of such intervention, both in the long-run as well as in the short-run. One of the main reasons for preferring BSE Sensex over NSE Nifty is due to the easy way to mobilise additional capital, large number of market participants, offers considerable market liquidity, improves consumer awareness, confidence and improves company marketability and recognition, greater visibility in comparison with listing on larger foreign stock markets. At the same time, the results from the BSE variables will be quite interesting for several reasons. First, price movements can capture the impact of 'good news or bad news' and explains the average change in investor's expectations. Second, trading volume reflects the cumulative response of investors. Finally, volatility is a measure used to assess the trading strategies to exploit risk movements. Therefore, this paper provides a further dimension to the literature by comparing the causal nexus between stock return, trading volume and volatility behaviour in Indian stock market. Furthermore, the results from emerging market are of great importance for the increasing group of peoples, like market participants and research community, who are planning to operate and precede research in the international capital markets in the future. Due to this, the research scholars have focussed on the existing behaviour of stock market in different dimensions.

LITERATURE REVIEW

A large number of studies have been conducted to examine the relationship between stock return and trading volume. But the general consensus is that there exists a positive contemporary relationship between price changes and trading volume in the financial market. On the theoretical level, the existence of such a positive contemporary relationship can be explained mainly by two theories: the Sequential Information Flow (SIF) of Copeland (1976), and the Mixture of Distribution Hypothesis (MDH) of Clark (1973). There has been a considerable amount of empirical research carried out in international market to check the price-volume relationship. Karpoff (1987) reported that the general evidence was in favour of positive relationship between price changes and trading volume. Empirical studies by Crouch (1970), Cornell (1981), Grammatikos and Saunders (1986), Harris (1986), Chatrath, Ramchander, and Song (1996) and Malliaris and Urrutia (1998) provide further evidence in support of this argument and report a positive contemporaneous relationship between the absolute returns and the aggregate volume for the US equity markets. Additional evidence in support of the MDH is also provided by Epps and Epps (1976) who suggested that the logarithmic price changes could be viewed as mixture of distributions, with transaction volume being the mixing variable.

Other studies investigated the relationship between trading volume and price volatility. For instance: Grammatikos and Saunders (1986) for futures markets and Harris (1986) for the US equities, reported the existence of a positive relationship between the trading volume and the volatility of returns. More recent studies, such as those of Lamoureux and Lastrapes (1990) on stocks, Najand and Yung (1991) on treasury bonds futures, Bessembinder and Seguin (1993) on various financial and commodity futures markets, Foster (1995) on oil futures, and Chen, Firth, and Rui (2001) on stock indices, recognised the fact that many asset returns were characterised by time-varying distributions and, hence, advocated for Generalised Auto-regressive Conditional Heteroskedasticity (GARCH) models. Engle (1982) and Bollerslev (1986) sought to capture the time-variability in the conditional second moments. In general, the evidence in literature points to positive price-volume and volume-volatility relationships.

Both the MDH and the SIF attempt to justify the existence of a positive relationship between price changes and volume. However, the MDH assumes that dissemination of information is symmetrical and all traders view the changes in supply and demand simultaneously, which results in an immediate restoration of equilibrium, whereas in the SIF hypothesis, it is assumed that the information is disseminated asymmetrically and the equilibrium is restored gradually. An alternative theory, based on the information content of trading volume was proposed by Blume, Easley, and Hara (1994). Based on their assumption that trading volume considered a proxy for the quality and precision of information in the market and, consequently, contained information about price movements, they suggest that trading volume plays an important role in the price formation process. As a result, they propose that technical trading, based on both the information in price movements and trading volume may produce superior results. This implies that there must be some form of inefficiency in the price determination process.

Recent studies have examined the price and volatility relationship in a dynamic framework, using GARCH-type models, where the trading volume is used as a proxy for the rate of information flow to the market to explain the market volatility. For instance, Tauchen and Pitts (1983) explained the volume and price change as being a joint function of information flow. Lamoureux and Lastrapes (1990) examined the conditional volatility specification expands to include the contemporaneous trading volume, which is a proxy for information arrival. Najand and Yung (1991) performed similar analysis, using Treasury bond futures and found that the lagged volume explains volatility better than contemporaneous trading volume.

Martikainen, Puttonen, and Luoma (1994) demonstrated that the size of the market might affect the price and volume relationship. The study reveals that volume figures can produce important information for both practitioners and researchers. It supports the sequential information hypothesis and suggests asymmetric information between investors in the Finnish stock market. Foster (1995) investigated the temporal relationship for the oil futures market by considering simultaneity problem. In fact, through the GARCH model, he estimated the time-varying variances and incorporates the volatility alongwith volume in a simultaneous-equation model. The results indicate that not only the lagged volume is positively related to volatility, but also that there is a positive contemporaneous relationship between the trading volume and the price volatility.

Brailsford (1996) found that irrespective of the direction in the price change was significant across three measures of daily trading volume for the aggregate market and was significant for individual stocks. Omran and Mckenzie (2000) investigated the relationship between the volume of trade and conditional variance of trade and found a significant relationship between the timing of innovational outliers in returns and volume.

Chen, Firth, and Rui (2001) reported that the persistence in volatility was not eliminated when lagged or contemporaneous trading volume level was incorporated into the GARCH model, a result contradicting the findings of Lamoureux and Lastrapes (1990). Finally, Miyakoshi (2002) found that the inclusion of the trading volume variable in both ARCH and exponential GARCH eliminate the ARCH/GARCH effect for individual stocks listed on the Tokyo Stock Exchange and their price index.

In recent times, numerous studies have been conducted at the international level to test the causal nexus between the stock return and the trading volume, whereas in India, studies on testing the relationship between these two variables are not many. Bhanupant (2001) has investigated the dynamic relationship between the stock return and the trading volume, using linear and non-linear Granger causality and evidenced that the relationship has improved after rolling settlement mechanism. Pati and Kumar (2006) have tested the maturity, volume effects and volatility dynamics for Indian futures market and suggested that time-to-maturity is not a strong determinant for futures price volatility, but rate of information arrival proxies by volume and open interest are the important sources of volatility. They concluded that since the Samuelson Hypothesis did not provide support for the Indian futures market, the investors should not base their investment decision on time-to-maturity. Mahajan and Singh (2008) have examined the trading volume and return volatility dynamics and reported weak unidirectional causality from volume to return and indicate mild support for sequential information from volume to price change. Srinivasan, Malabika, and Murugesan (2009) have demonstrated that return volatility is influenced by both the expected and the unexpected trading volume and open interest, respectively. They concluded that the unexpected volume and the open interest were more likely to have a greater impact on the volatility than the expected trading volume and open interest.

Despite a plethora of studies on the relationship between price changes, trading volume and volatility in financial markets, there has been no study, to our knowledge, to investigate the long-term relationship between return, trading volume and volatility in the Indian stock market.

OBJECTIVES OF THE STUDY

This paper seeks to explore the causal nexus between price changes, trading volume and volatility in the emerging stock market. There are basically two questions that the study attempts to address. First, whether trading volume contain useful information for the predicting fluctuations in the prices. For this purpose, the information contained in the trading volume has been examined with respect to its ability to predict the direction and magnitude of the price changes. Second, we explore whether there is a relationship between the trading volume and the volatility of stock return. Examination of those issues is of considerable interest to academics and practitioners alike, since the trading volume and the volatility relationship has important implications in modelling and forecasting. Therefore, the obvious importance of testing the causal nexus between the price changes, trading volume, and the volatility is due to the paucity of research on this topic in emerging markets. This paper seeks to fill this gap by studying the nexus between the afore-said variables in emerging markets, by using multivariate Johansen's co-integration techniques, Vector-Error Correction Model (VECM), based on the Toda and Yamamota Procedure for the BSE Sensex data.

DATA AND RESEARCH METHODOLOGY

The study makes use of the data obtained from time series of the daily adjusted prices and trading volume for the BSE Sensex from January 2004 to December 2009 for a total 1478 observations. The data required for establishing the relationship between the index return and the trading volume were retrieved from the website *www.yahoofinance.com.*

The BSE and the NSE are the two popular stock exchanges in India. In fact, the BSE is the oldest stock exchange in Asia, with a rich heritage of over 133 years. The BSE Index, viz., the Sensex, is India's first and the most popular stock market benchmark index which constitutes 30 component stocks representing large, well-established and financially-sound, companies representing 12 major key sectors of the economy. The Sensex today is widely reported in both the domestic and the international markets through the print as well as the electronic media. One can identify the booms and busts of the Indian equity market through the Sensex.

The adjusted closing price for the Sensex was converted to daily compounded return by taking the log difference as $R_t = \log(P_t/P_{t-1})$, where P_t represents the value of the index at time *t*. We used the daily trading volume in the stock exchange for the trading volume series, as followed by earlier studies that evaluated the trading volume and the stock returns simultaneously (Gallant, *et al.*, 1992; Campbell, *et al.*, 1993; and Bhanupant, 2001). In the case of volatility, we estimated the model developed by Schwert (1990) and Schwert and Seguin (1990). The equations is:[1]

$$\sigma^2 = \sqrt{\pi/2}\,|R_t - \mu|$$

where

R_t is the stock return for BSE Sensex index calculated as described above, and μ is mean of the series.

Johansen Multi-variate Co-integration Test

In order to estimate the VECM, we first consider whether each series is integrated of the same order. For this purpose, we considered the standard Augmented Dickey Fuller (ADF) test. Assuming that each series contains a unit root, and thus each series is integrated of order one, there is a potential for co-movement between the series, suggesting the existence of a long-run relationship amongst these variables. In order to estimate the long-run relationship between the stock return, trading volume, and the volatility series, we employed the Johansen Multi-variate Co-integration test and adopted the model developed by Johansen and Juselius (1990). Using Δ = 1-L, where L is the lag operator, it will be convenient to rewrite the model (1,1) as:

$$\Delta X_t = \Gamma_1 \Delta X_{t-1} + ... + \Gamma_{k-1}\Delta X_{t-k+1} + \Pi X_{t-k} + \mu + \Phi D_t + \varepsilon_t \quad (1)$$

where

$\Gamma_i = -(I - \Pi_1 - \Pi_2 - ..... - \Pi_i),$ for i =1, 2, 3, k-1;

and

$\Pi = -(I - \Pi_1 - \Pi_2 - ..... - \Pi_k)$, I is an identity matrix

The matrix Γ_i comprises the short-term adjustment parameters, and matrix contains the long-term equilibrium relationship information between the X variables. The could be decomposed into the product of two n x r matrix α and β, so that II=αβ , where the β matrix contains r co-integration vectors and represents the speed of adjustment parameters (Johansen, 1988).

Johansen developed two likelihood-ratio tests for testing the number of Co-integration vectors (r): the trace and the maximum Eigen value test. The trace statistics tests the null hypothesis of $r = 0$, against the alternative that $r > 0$. The maximum Eigen value statistics test the null hypothesis that the number of Co-integrating vectors is r against the specific alternative of r = full rank, Co-integrating vectors.

Vector Error Correction Model based on Toda and Yamamota Procedure

To examine the issue of causations, we have employed a modified version of the Vector Error Correction (VEC) model, by utilising the Co-integrating vector obtained from the Johansen procedure. This robust method was suggested by Toda and Yamamoto (1995), with the objective to overcome the problem of invalid asymptotic critical values when the causality tests are performed in the presence of non-stationary series. Zapata and Rambaldi (1997) explained the advantage of using the Toda-Yamamoto procedure in testing the Granger causality in the VAR framework. But, it is not necessary to pre-test the variables for the integration and Co-integration properties, provided the maximal order of integration of the process does not exceed the true lag length of the VAR model. According to Toda and Yamamoto (1995), their procedure does not substitute the conventional unit roots and Co-integration properties pre-testing in time series analysis. They are considered as complimentary to each other. The Toda-Yamamoto procedure used as a modified-Wald test (MWald) test for zero restrictions on the parameters and can be expressed as follows:

$$\Delta R_t = \alpha_0 + \sum_{i=1}^{p}\alpha_{1i}\Delta R_{t-i} + \sum_{i=1}^{p}\alpha_{2i}\Delta Tr_{t-i} + \sum_{i=1}^{p}\alpha_{3i}\Delta Vo_{t-i} + \alpha ECT_{t-i} + u_{1t} \quad (2)$$

$$\Delta Tr_t = \beta_0 + \sum_{i=1}^{p}\beta_{1i}\Delta R_{t-i} + \sum_{i=1}^{p}\beta_{2i}\Delta Tr_{t-i} + \sum_{i=1}^{p}\beta_{3i}\Delta Vo_{t-i} + \beta ECT_{t-i} + u_{2t} \quad (3)$$

$$\Delta Vo_t = \xi_0 + \sum_{i=1}^{p}\xi_{1i}\Delta R_{t-i} + \sum_{i=1}^{p}\xi_{2i}\Delta Tr_{t-i} + \sum_{i=1}^{p}\xi_{3i}\Delta Vo_{t-i} + \xi ECT_{t-i} + u_{3t} \quad (4)$$

where, the lagged difference terms are being determined by minimum number of residuals free from autocorrelation. This could be tested in standard way such as Akaike Information Criterion (AIC). Return movements can only capture the impact of good news and bad news underlying in the market and explains the average change in investor's expectations, trading volumes reflect the cumulative response of investors and volatility is a measure used to assess the trading strategies to exploit risk movements and it is described as the "rate and magnitude of changes in prices". α_0, β_0 and ξ_0 are the constant terms. Whereas Δ is the first difference operator and ECT_{t-1} is the error correction term obtained from the Co-integration test, which discuss the speed of adjustment between the stock market variables. Finally, the short run coefficients between α_0, β_0 and ξ_0 used to explains the interactions between the lagged variables. In addition, u_{1t}, u_{2t} and u_{3t} are serially uncorrelated random error terms, with a zero mean.

The null hypotheses in this paper are $\alpha_{2i} = 0$, indicating that trading volume does not cause returns and $\beta_{1i} = 0$, implying that the return does not cause trading volume. Even though, both *t* and F-tests can be used for the statistical inferences regarding the hypotheses, all the variables in equations (2)-(4) are co-integrated of the same order. Apart from this, the standard *t* test is used for the inferences regarding individual coefficients in this study.

RESULTS AND DISCUSSION

One of the customary procedures in time-series data is to check the stationarity of the series. A widely-used Augmented Dickey Fuller (ADF) test was to investigate the existence of unit roots in the levels for the stock market variables and their test results are presented in **Table 1**.

Table 1

Augmented Dickey Fuller Test for Bombay Stock Exchange

Particulars	Returns	Trading Volume	Volatility
Level	-1.31	-1.49	-1.55
First Difference	-3.86a	-19.87a	-8.92a

Note: ADF without trend; 'a' denotes significant at 1 % level. The strategy of adding lags to the ADF regression is based on the objective to remove any autocorrelation from the residuals.

As shown in the table, the null hypothesis of unit roots was not rejected at the level form of the data, but was rejected at the first-difference form. Thus, all the variables are said to have single unit roots and are co-integrated of the same order I(1), and the co-integration test can be performed without a problem. Following the results of Akaike's Information Criterion (AIC) tests, the proper lag lengths and the most parsimonious models with no auto-correlation for the variables were chosen.

As the results from co-integration test will be used for the following Vector Error Correction Model (VECM), the co-integration test is performed prior to the VECM in this study. We used a multivariate co-integration technique proposed by Johansen [1988] and Johansen and Juselius [1990] that is the most frequently-used procedure in recent time-series research for identification of any long-run equilibrium relationships among the variables.

Table 2

Johansen Co-integration Likelihood Ratio test

Null Hypothesis	Alternative Hypothesis	5 % Critical Value	λ_{trace} Statistics
r = 0	r > 0	31.94	58.43a
r ≤ 1	r > 1	18.98	10.71
r ≤ 2	r > 2	4.26	1.28
Null Hypothesis	**Alternative Hypothesis**	**5 % Critical Value**	**λ_{max} Statistics**
r = 0	r = 1	22.45	66.96a
r = 1	r = 2	15.28	9.67
r = 2	r = 3	3.85	0.89

Note: Critical value taken from Osterwald and Lenum (1992). 'a' shows the rejection of critical value at 5 per cent level of significance.

A Co-integrating vector implies a long-run relationship among jointly non-stationary endogenous variables; the more the Co-integrating vectors model possesses the more stable system it is said to be. As shown in **Table 2**, 58.43 is greater than 95 per cent critical value of the λ_{trace} statistic. Thus, the null hypothesis of no Co-integrating vectors can be rejected, and instead the alternative hypothesis of one or more Co-integrating vectors (r > 0) can be accepted. Next the λ_{trace} statistic is performed to test the null of r ≤ 1 against the alternative of two or three cointegrating vectors (r > 1). The result shows that the null hypothesis is accepted, because the λ_{trace} statistic of 10.71 is less than 95 per cent critical value of 18.98. Hence, there is one Co-integrating vector said to be present according to the λ_{trace} statistic.

Using the λ_{max} statistic results, the null hypothesis of no Co-integrating vector (r = 0) is clearly rejected against the specific alternative, *r* = 1, because the calculated value l λ_{max} (0, 1) = 66.96 is greater than 95 per cent critical value of 22.45. To test the next null hypothesis (r = 1) against the alternative hypothesis of *r* = 2, note the calculated value of λ_{max} is 9.67, whereas the critical value at 95 percent significance level is 15.28. Hence, it can be claimed that there is a single Co-integrating vector present that confirms the λ_{trace} statistic. Both test results show there is one Co-integrating vector present among the variables of interest, thus, it can be concluded there is a long-run equilibrium relationship present among the multivariate variables.

Table 3
Results of VEC Granger Causality/ Block Exogeneity Wald Tests

Null Hypothesis	**MWALD (χ^2 - Statistics)**	**p-Value**
Dependent Variable: *Return*		
Volume	13.70676a	0.0176
Volatility	3.66164	0.5991
Dependent Variable: *Volume*		
Return	12.46574a	0.0289
Volatility	50.45524a	0.0000
Dependent Variable: *Volatility*		
Return	31.26632a	0.0000
Volume	33.11865a	0.0000

Note: Figures in parenthesis are p-value. a denotes statistically significant at 1 per cent level.

The test results shown in **Table 3** suggest that we fail to reject the null hypothesis of Granger non-causality from return-to-volume and volatility, volume-to-return and volatility, and finally volatility-to-return and volume. Apart from this, the null hypothesis of Granger non-causality from volatility-to-return and volumes, were observed at 1 per cent level of significance. But, in case of return predicting on volatility was envisaged with insignificant effect. The result suggests that the BSE Sensitivity Index neither leads these three variables nor they lead the BSE Sensitivity Index. This implies that the volatility does not have any effect on return and trading volume. Therefore, the structural pattern and volatility behaviour between stock return and trading volume plays a crucial role and serves as a leading indicator to forecast the behaviour of the BSE Sensitivity Index in India.

CONCLUSION

In this paper, we examined the causal nexus between price changes, trading volume and volatility for the BSE Sensitivity Index in India, by using various econometric techniques. In addition, the relationship between the variables was examined, using the Johansen Co-integration techniques and the VEC Granger Causality/Block Exogeneity Wald tests. The study has revealed that the fluctuation in stock market is not influenced by trading volume and volatility. But the variable where the market participants, researchers and academicians should concentrate is stock return, which is the only variable having greater impact on both trading volume and volatility. So, the information based upon trading volume, and volatility are not the key determining factors for future price volatility, but the rate of information arrival proxies by trading volume and volatility are the important sources for measuring the fluctuations in future returns.

On the whole, the price volatility in the BSE Sensitivity Index was related to several factors, like increased volatility, measured by the BSE Sensitivity Index outstanding and proxies for the volume of market activity, and lower average prices tended to stabilize the market, while futures prices activity increased the volatility of prices. Finally, the results indicate that there is a significant contemporaneous and bi-directional relationship between the multivariate variables, which is consistent with the studies on other financial markets (Grammatikos and Saunders, 1986; and Karpoff, 1987). Additional research is needed, however, to estimate the relation between news, volume, and price changes on the firm and the industry levels.

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FINANCIAL PERFORMANCE OF NATIONALISED BANKS

R.C. Dangwal* and Reetu Kapoor**

Abstract

The performance of the nationalised banks in India has always been an issue of public concern. With the entry of new private-sector banks and foreign banks, the competition has grown tremendously and the profitability of the nationalised banks has been adversely affected. This paper seeks to evaluate the financial performance of the nationalised banks in India, with the basic objective of examining the growth index values of various parameters through overall profitability indices. The data for 19 nationalised banks for the post-Reforms period of 2002-2003 to 2006-2007 was taken into account for calculating the indices of spread ratios, burden ratios, and profitability ratios. It is found that while four banks have shown the 'excellent performance' level, five banks have achieved 'good performance' level, four banks have shown 'fair performance' level, and six banks have obtained the 'poor performance' level.

Key words: ***Financial performance, Nationalised banks, Profitability, Spread, Index of performance.***

INTRODUCTION

ON July 19, 1969, the Government of India promulgated the Banking Companies (Acquisition and Transfer of Undertakings) Ordinance, 1969, to acquire 14 big commercial banks, with a paid-up capital of Rs.2850 crore, deposits of Rs.2629 crore, loans of Rs.1813 crore, and 4134 branches in place, accounting for 80 per cent of all the banks' deposits, advances, and investments under the control of the Government of India. These banks were nationalised with the objective of controlling the 'commanding heights' of the economy and to meet and serve the needs of the economy in conformity with the national policy and objectives.

On 15th April, 1980, six more commercial banks were nationalised, which brought 91 per cent of the deposits and 84 per cent of the advances in the public-sector banks. Thus, there were 20 nationalised banks in all. However, in 1983, the New Bank of India merged with the Punjab National Bank, resulting in the total number of public-sector banks reduced to 19.

* Dr. R.C.Dangwal is Professor in the Department of Commerce, HNB Garhwal University, Srinagar (Uttarakhand); *e-mail: rameshdangwal@hotmail.com*

** Ms. Reetu Kapoor is Lecturer in Commerce in the Government Bikram Post-graduate College, Patiala (Punjab); *e-mail: kapoorreetu2008@yahoo.com*

CONCEPT OF PROFITABILITY

Profit is the main reason behind the existence of any commercial organisation. The rate of profitability and the volume of profits are considered as the major indicators of efficiency in the deployment of the banks' resources. Profit and profitability can be increased by two methods: (i) Increasing the income; and (ii) Decreasing the expenses.

The concept of profitability is useful in banks' decision-making. It deals with profit planning, which indicates the earning capacity, and highlights their managerial competency. It also portrays the work culture and the operating efficiency of the bank. The profitability of a bank is affected by both the endogenous and exogenous factors. Changes in policies made by the Reserve Bank of India are exogenous to the system. These include the changes in the monetary policy, changes in the quantitative credit control, like the changes in the Cash Reserve Ratio, SLR, manipulation of bank rates, qualitative credit controls, such as the selective credit control measures, cash-to-deposit ratio, region-wise guidelines on lending to the priority sector, changes in the interest rates on deposits and advances, and the levy of tax on interest income. Factors, such as careful control of expenditure and the timely recovery of loans are endogenous. The de-regulation and liberalisation policy adopted by the Reserve Bank of India and the Government of India, in recent years, have thrown many challenges before the banks. One of these challenges is to maintain the commercial viability through generation of profits.

REVIEW OF LITERATURE

The evolution of the banking system has received attention of many researchers, administrators, government departments, and review committees.

Varghese (1983) analysed the profits and profitability of commercial banks in India from 1970 to 1979, by using operating profits, operating margins, growth yield on assets, and the spread-related ratios.

Clark (1984) adopted a Generalised (translog) Cost Function Model to assess the scale economies of banking and found that business levels were preferred as better representative of the bank productivity.

Amandeep (1991) considered eleven factors, which reflected the different dimensions of the banks' operations, and, thereby, affected their profitability. According to her, the profitability of the banks was determined and affected mainly by two factors, viz., the spread and the burden.

Nayar (1992) examined the growth and trends in the performance and profitability of the nationalised commercial banks from 1970 to 1986. She suggested certain measures to improve their profitability, which included control over volume and mix of credit portfolio, acceleration of recovery process, mobilisation of deposit, and diversification of activities into non-traditional banking business, such as the mutual funds and merchant banking.

Pathrose (1998) explored the hurdles faced by the banks in their profit maximisation efforts and the various strategies for profit-planning. He stressed that for growing competition, challenges could be converted into opportunities by better credit administration, human resource management, and technology up-gradation.

The Reserve Bank India's report (2000) on "Trend and Progress of Banking in India, 1999-2000" gave critique of how de-regulation had affected the banks' performance. The RBI's study (2000) covered all categories of the banks. It was noted that the capital adequacy and asset quality had both improved over the period 1995-96 to 1999-2000.

Edirisuriya and Fang (2001) compared the performance of India's commercial banks with the banks in 12 selected OECD countries, with the main focus on the Australian banks, for the period 1991 to 1998. The study revealed that the average net profit to the total assets of the Indian banks was -0.14 per cent). The Finland Banks were the worst performer banks, which recorded -0.25 per cent average net profit on total assets.

Toor (2002) studied the emerging trends in banking, working of various committees, and examined various schemes alongwith the banking law and regulations. He also stressed that, in the era of globalisation, the banks would have to be cost-effective, customer-oriented, and technologically-upgraded.

Bisht, Mishra, and Belwal (2002) noted that despite the massive branch expansion, regional and sectoral imbalances in the banking facilities remained pronounced. But the liberalisation era witnessed a squeeze on the interest rate spreads. The authors observed that the existence of healthy banking would dwell upon the doctrine of the survival of the fittest.

Das (2002) developed a model to rank the nationalised banks during the years 1999-2001. He analysed the performance of 17 nationalised banks, and examined four aspects of the banks' performance: (a) business performance, (b) efficiency, (c) safety and soundness, and (d) labour productivity. In all, 40 indicators were used.

Qamar (2003) identified the difference in terms of the endowment factor, risk factor, revenue diversification, profitability, and the efficiency, among 100 scheduled commercial banks, for the financial year 2000-2001. It was found that the foreign and old private-sector banks were operating at a very high capitalisation ratio.

Debasish and Mishra (2005) analysed the financial performance of the nationalised banks and the State Bank of India, from 1970 to 2000. They used the correlation analysis, multiple-regression analysis, factor analysis, and the concentration indices, to study the overall profitability and productivity of the banks.

Leeladhar (2006), in his study, insisted on complying with international accounting standards and the Basel II norms to meet the global challenges. He also stressed that the banks should comply with the RBI guidelines to effectively manage the various risks arising out of outsourcing, such as the strategic risk, reputation risk, compliance risk, operational risk, and the systemic risk.

The study by Verma and Chandel (2007) revealed that in operating ratios, the intermediation cost-to-total assets had significant impact on the profitability of the banks. In the profitability ratios, variation within group banks was observed to be quite high for low profitable banks. In the efficiency ratios, the calculated values of the coefficient of variation revealed a significant difference in the performance of bank employees of each category.

Sinha (2008) found that the sample private-sector banks had a higher mean technical efficiency score across the ownership groups, as compared to their public-sector counterpart. Most of the observed commercial banks exhibited the decreasing returns-to-scale, during the period 2002 to 2005.

The study conducted by Tandon, Ahuja, and Tandon (2009) revealed that while the Punjab National Bank was 100 per cent technically-efficient, the Bank of Baroda and the Corporation Bank were 95 per cent technically efficient. In the relative inefficiency level, the Bank of Maharashtra and the Oriental Bank of Commerce came under the score of 80 per cent to 85 per cent. The merger of the Global Trust Bank with the Oriental Bank of Commerce resulted in a downward shift in its efficiency.

OBJECTIVES OF THE STUDY

The present study has the following major objectives:

1. To evaluate the financial performance of the nationalised banks in India, through the spread, burden, and the profitability ratios.
2. To appraise the profitability of these banks through the overall-profitability indices.

RESEARCH METHODOLOGY

Period of Study

The post-Reforms period of five years from 2002-2003 to 2006-2007 was taken to analyse and evaluate the performance of the nationalised banks in India.

Sample Size

The study covered all the 19 nationalised banks in India during that period.

Data Collection

The study is based on the secondary data obtained from the various sources, viz., the *IBA Bulletins* (annual issues), statistical tables relating to the banks in India, performance highlights of public-sector banks, and the RBI reports on trends and progress of banking in India.

Data-analysis Tools Used

The following statistical tools were used in the study for analysing the data:

1. Mean ($\bar{X}$) $\sum X / N$
2. Standard Deviation (σ) $\sqrt{(\sum x^2 / N)}$
3. Co-efficient of Variation (C.V.) ($\sigma / \bar{X}$) x
4. Exponential Growth Rate (E.G.R.) $Y=AB^t$

where '*Y*' is the variable for which the compound rate of growth was calculated and *t* is time. Here, *A* is the *Y* intercept, and *B* is the slope of the curve.

B=1+r

where '*r*' is the compound growth rate and the growth rate in percentage form shall be equal to:

r (%) = (B-1) x 100.

5. Trend Analysis: The annual growth rate (per cent) over the base year was calculated to analyse the trends on a year-to-year basis.

$$G.R.\ \% = \frac{V_c - V_b}{V_b} \times 100$$

where V_c = Value of the given parameter in the current year.

V_b = Value of the given parameter in the previous year.

6. Ratio Analysis: For evaluating the performance of the nationalised banks, the following ratios were computed:

Spread Ratios

a. Interest earned as a percentage of the total assets
b. Interest expenditure as a percentage of the total assets
c. Spread as a percentage of the total assets

Burden Ratios

a. Non-interest expenditure as a percentage of the total assets
b. Non-interest income as a percentage of the total assets
c. Burden as a percentage of the total assets

Profitability Ratios

a. Operating profit as a percentage of the total assets
b. Net profit as a percentage of the total assets

7. Performance Indices: For analysing the performance of 19 nationalised banks, eight profitability indices were calculated.

$$\text{Index} = \frac{\text{Average ratio for the bank concerned}}{\text{Average ratio for the aggregate of all NBs}}$$

On the basis of the above indices, the study seeks to classify the nationalised banks into four categories:

1. 'Excellent performance' category, which covers the banks lying at the top 25 per cent area of the normal distribution, where the growth index value is greater than ($\bar{X}$ + 0.6745 σ);
2. 'Good performance' category, where the growth index score lies between 50 per cent to 75 per cent area of the normal distribution, and where the growth index value is between $\bar{X}$ to ($\bar{X}$ + 0.6745 σ);

3. 'Fair performance' category, which includes those banks whose growth index score lies between 25 per cent to 50 per cent area of the normal distribution, and where the growth index value is between ($\bar{X}$ - 0.6745 σ) to $\bar{X}$; and
4. 'Poor performance' category, which includes those banks whose growth index score lies at the lowest 25 per cent area of the normal distribution, and where the growth index value lies below ($\bar{X}$ - 0.6745 σ).

ANALYSIS AND DISCUSSION

The study seeks to assess the relative performance of the various nationalised banks, with respect to the above-mentioned indicators of spread, burden, and profitability ratios. The relevant computations are shown in **Table 1** to **Table 8.**

Interest Earned as a Percentage of Total Assets

The ratio of I.E.T.A. is an indicator of the rate at which a bank earns returns by lending various funds. The ratios of I.E.T.A. for the nationalised banks, during the period 2003-2007, are shown in **Table 1**.

This ratio shows a declining trend from 8.39 per cent in 2003 to 6.89 per cent in 2007. There was a downfall of 17.88 per cent in the growth rate during the period of study. While the growth rate was the highest in Punjab and Sind Bank (-3.84 per cent), and the lowest in Syndicate Bank (-21.75 per cent), in the year 2004, it was highest in Punjab and Sind Bank (15.22 per cent) and lowest in Bank of Maharshtra (-11.98 per cent) in the year 2007. The bank-wise statistical analysis reveals that 12 banks had a higher average than the national average (7.27 per cent). E.G.R. is negative in all the banks except Indian Bank. The E.G.R. is highest in Indian Bank (1.66 per cent) and lowest in Oriental Bank of

Table 1
Interest Earned as Percentage of Total Assets by Nationalised Banks
(For the Period 2003 to 2007)

S. N.	Banks	Interest Earned as % of Total Assets					Trend Base Growth Rate (%)				Statistical and Financial Analysis (%)			
		2003	2004	2005	2006	2007	2004	2005	2006	2007	Mean	S.D.	C.V.	E.G.R.
1	ALLB	9.16	7.69	7.06	6.81	7.22	-16.06	-8.24	-3.46	5.94	7.59	0.84	11.04	-5.81
2	AB	8.89	8.25	6.94	6.58	6.97	-7.30	-15.77	-5.29	6.02	7.53	0.89	11.78	-6.88
3	BOB	7.98	7.22	6.79	6.22	6.44	-9.48	-5.94	-8.48	3.51	6.93	0.63	9.03	-5.63
4	BOI	7.77	6.83	6.35	6.26	6.48	-12.10	-7.01	-1.43	3.53	6.74	0.55	8.17	-4.40
5	BOM	8.36	6.83	7.20	7.93	6.98	-18.34	5.48	10.09	-11.98	7.46	0.59	7.88	-2.10
6	CAB	8.16	7.05	6.86	6.56	6.85	-13.50	-2.70	-4.45	4.41	7.10	0.55	7.79	-4.14
7	CBI	8.88	7.99	7.59	7.21	6.70	-10.01	-5.08	-4.96	-7.05	7.68	0.74	9.63	-6.45
8	COB	8.00	7.55	6.63	6.48	6.51	-5.69	-12.15	-2.24	0.34	7.04	0.62	8.88	-5.51
9	DB	8.79	7.83	7.18	6.63	6.74	-10.92	-8.31	-7.64	1.59	7.43	0.80	10.75	-6.74
10	IB	7.16	6.81	6.55	7.06	7.63	-4.83	-3.90	7.90	8.04	7.04	0.36	5.16	1.66
11	IOB	8.47	7.93	7.78	7.42	7.09	-6.35	-1.99	-4.53	-4.49	7.74	0.47	6.05	-4.13
12	OBC	9.72	8.05	6.61	6.99	6.99	-17.17	-17.93	5.79	-0.04	7.67	1.13	14.75	-7.70
13	PSB	8.86	8.52	7.95	6.82	7.86	-3.84	-6.74	-14.12	15.22	8.00	0.70	8.69	-4.51
14	PNB	8.68	7.60	6.70	6.60	7.10	-12.42	-11.85	-1.55	7.67	7.34	0.76	10.35	-5.28
15	SB	8.35	6.53	7.21	6.63	6.77	-21.75	10.39	-8.04	2.02	7.10	0.67	9.40	-3.97
16	UCOB	8.00	7.07	6.50	7.04	7.10	-11.64	-8.08	8.37	0.87	7.14	0.48	6.77	-2.39
17	UBI	8.43	7.74	6.86	6.58	7.19	-8.17	-11.37	-4.14	9.28	7.36	0.66	8.98	-4.71
18	UTBI	8.73	8.02	7.33	7.10	6.74	-8.13	-8.62	-3.17	-5.01	7.58	0.71	9.35	-6.19
19	VB	8.76	8.06	7.14	7.33	6.66	-8.01	-11.43	2.70	-9.09	7.59	0.74	9.72	-6.22
	Total	8.39	7.43	6.91	6.74	6.89	-11.41	-7.02	-2.50	2.22	7.27	0.61	8.34	-4.81

Commerce (-7.70 per cent). Ten of the banks had a higher E.G.R. than the national average (-4.81 per cent). The I.E.T.A., in terms of dispersion, is less consistent with the Oriental Bank of Commerce (14.75 per cent) and more consistent with Indian Bank (5.16 per cent).

Interest Expenditure as a Percentage of Total Assets

The interest paid as a percentage of the total assets is a measure of the cost of funds incurred by the bank. Lesser the ratio, greater shall be the profit margin of the bank. The ratio of the I.Ex.T.A., during 2003-2007, is shown in Table 2.

While in 2003, the I.Ex.T.A was 5.39 per cent, in 2007 it came down to 4.18 per cent. Thus, there is the negative growth rate of 22.45 per cent which shows better profitability. While this ratio was highest for Punjab and Sind Bank (6.20 per cent) in the year 2003, in 2007 it was highest for UCO Bank (4.84 per cent). The bank-wise analysis has revealed that 13 banks had higher average than the national average (4.34 per cent). The E.G.R. was negative in all the banks. Ten banks had a higher E.G.R. than the national E.G.R. (-6.22 per cent). The I.Ex.T.A., in terms of dispersion is less consistent with Punjab and Sind Bank (19.40 per cent) and more consistent with Bank of India (10.18 per cent).

Spread as a Percentage of Total Assets

Spread is the difference between the interest earned and the interest paid. The ratio of S.T.A. is the measure of operating profitability and serves as the cushion for making various administrative and management expenses. The higher the ratio, the greater shall be the profit margin for a bank.

As shown in Table 3, the S.T.A. ratio ranged between 3 per cent in 2003 to 2.71 per cent in 2007 and recorded a downfall of 9.67 per cent in the growth rate during the period of study. While the growth rate was highest in Punjab and Sind Bank (23.30 per cent) and lowest in

Table 2
Interest Expenditure as Percentage of Total Assets

S.N.	Banks	Interest Expenditure as % of Total Assets					Trend Base Growth Rate (%)				Statistical and Financial Analysis			
		2003	2004	2005	2006	2007	2004	2005	2006	2007	Mean	S.D.	C.V.	E.G.R.
1	ALLB	5.92	4.56	4.04	3.96	4.63	-22.97	-11.52	-1.87	16.92	4.62	0.70	15.22	-6.13
2	AB	5.84	4.88	3.68	3.70	3.99	-16.55	-24.56	0.67	7.79	4.42	0.83	18.88	-9.85
3	BOB	5.23	4.20	3.65	3.42	3.79	-19.62	-13.19	-6.28	10.93	4.06	0.64	15.73	-8.13
4	BOI	5.10	4.24	4.00	3.92	4.05	-16.98	-5.66	-1.99	3.48	4.26	0.43	10.18	-5.24
5	BOM	5.64	4.45	4.52	4.81	4.17	-21.20	1.65	6.55	-13.33	4.72	0.50	10.69	-5.10
6	CAB	5.39	4.35	4.01	3.86	4.42	-19.25	-7.94	-3.66	14.47	4.41	0.53	12.13	-5.04
7	CBI	5.56	4.64	4.13	4.02	4.04	-16.49	-11.17	-2.45	0.45	4.48	0.59	13.10	-7.52
8	COB	4.99	4.37	3.30	3.46	3.89	-12.43	-24.39	4.66	12.66	4.00	0.62	15.42	-7.03
9	DB	5.97	5.16	4.32	3.91	4.02	-13.63	-16.17	-9.61	2.77	4.68	0.78	16.73	-10.15
10	IB	4.84	3.96	3.57	3.89	4.30	-18.20	-9.75	8.96	10.38	4.11	0.43	10.47	-2.51
11	IOB	5.50	4.55	4.12	3.94	3.98	-17.22	-9.42	-4.46	0.92	4.42	0.58	13.19	-7.63
12	OBC	6.15	4.50	3.79	4.27	4.70	-26.81	-15.81	12.61	10.15	4.68	0.79	16.97	-5.74
13	PSB	6.20	5.23	4.30	3.51	4.37	-15.61	-17.76	-18.32	24.40	4.72	0.92	19.40	-10.38
14	PNB	5.06	4.06	3.53	3.39	3.71	-19.72	-13.13	-4.03	9.55	3.95	0.60	15.18	-7.71
15	SB	4.84	3.51	3.96	3.55	4.36	-27.47	12.95	-10.32	22.66	4.04	0.50	12.43	-1.93
16	UCOB	5.47	4.34	3.92	4.51	4.84	-20.66	-9.73	15.04	7.31	4.62	0.52	11.28	-2.06
17	UBI	5.50	4.77	4.01	3.92	4.47	-13.35	-15.84	-2.41	14.23	4.53	0.57	12.67	-5.93
18	UTBI	5.77	5.00	4.19	4.03	3.96	-13.34	-16.27	-3.75	-1.73	4.59	0.70	15.20	-9.23
19	VB	5.38	4.58	3.78	4.25	4.13	-14.98	-17.35	12.22	-2.64	4.43	0.54	12.26	-5.86
	Total	5.39	4.38	3.89	3.84	4.18	-18.72	-11.24	-1.16	8.62	4.34	0.56	12.97	-6.22

Table 3
Spread as Percentage of Total Assets

S.N.	Banks	Spread as % of Total Assets					Trend Base Growth Rate (%)				Statistical and Financial Analysis			
		2003	2004	2005	2006	2007	2004	2005	2006	2007	Mean	S.D.	C.V.	E.G.R.
1	ALLB	3.24	3.13	3.02	2.85	2.59	-3.54	-3.45	-5.58	-9.31	2.97	0.23	7.73	-5.30
2	AB	3.05	3.37	3.27	2.87	2.98	10.54	-3.16	-12.00	3.74	3.11	0.18	5.91	-2.04
3	BOB	2.75	3.02	3.15	2.80	2.64	9.82	4.13	-11.03	-5.54	2.87	0.18	6.40	-1.54
4	BOI	2.67	2.59	2.36	2.34	2.43	-2.81	-9.19	-0.47	3.62	2.48	0.13	5.26	-2.85
5	BOM	2.71	2.38	2.68	3.11	2.80	-12.28	12.64	16.05	-9.88	2.74	0.23	8.58	3.39
6	CAB	2.76	2.76	2.86	2.70	2.43	-0.18	3.55	-5.58	-10.02	2.70	0.15	5.40	-2.78
7	CBI	3.32	3.35	3.46	3.19	2.66	0.84	3.36	-7.95	-16.52	3.20	0.28	8.82	-4.82
8	COB	3.01	3.31	3.33	3.03	2.61	9.68	0.65	-9.00	-13.71	3.06	0.26	8.47	-3.67
9	DB	2.82	2.67	2.86	2.72	2.72	-5.17	7.02	-4.78	-0.10	2.76	0.07	2.51	-0.51
10	IB	2.32	2.85	2.97	3.17	3.33	23.07	4.21	6.64	5.17	2.93	0.35	11.86	8.68
11	IOB	2.97	3.38	3.65	3.48	3.11	13.89	8.09	-4.65	-10.61	3.32	0.25	7.48	1.27
12	OBC	3.57	3.55	2.82	2.72	2.29	-0.56	-20.62	-3.38	-16.00	2.99	0.50	16.69	-10.92
13	PSB	2.66	3.28	3.65	3.31	3.49	23.30	11.00	-9.17	5.47	3.28	0.33	10.20	5.65
14	PNB	3.62	3.54	3.17	3.21	3.40	-2.23	-10.40	1.21	5.69	3.39	0.18	5.21	-2.25
15	SB	3.51	3.03	3.25	3.08	2.41	-13.88	7.43	-5.27	-21.80	3.06	0.37	11.97	-7.12
16	UCOB	2.53	2.73	2.58	2.53	2.26	8.01	-5.60	-1.69	-10.60	2.53	0.15	5.93	-2.90
17	UBI	2.93	2.98	2.85	2.66	2.72	1.47	-4.20	-6.58	2.01	2.83	0.12	4.27	-2.61
18	UTBI	2.97	3.02	3.14	3.07	2.78	1.87	4.05	-2.39	-9.33	3.00	0.12	4.07	-1.12
19	VB	3.37	3.48	3.36	3.08	2.53	3.26	-3.55	-8.13	-17.96	3.17	0.34	10.84	-6.71
	Total	3.00	3.06	3.02	2.89	2.71	2.08	-1.28	-4.23	-6.28	2.94	0.13	4.27	-2.53

Syndicate Bank (-13.88 per cent) in the year 2004, in the year 2007, it was highest in Punjab National Bank (5.69 per cent) and lowest in Syndicate Bank (-21.80 per cent). The E.G.R. was highest in Indian Bank (8.68 per cent) and lowest in Oriental Bank of Commerce (-10.98 per cent). Nine banks had a higher E.G.R. than the national average (-2.53 per cent). The S.T.A., in terms of dispersion, has been less consistent with Oriental Bank of Commerce (16.69 per cent) and more consistent with Dena Bank (2.51 per cent).

Non-interest Expenditure as a Percentage of Total Assets

This ratio represents the share of manpower expenses, establishment expenses and other contingent expenses from the total assets. The N.I.Ex.T.A ratio is shown in Table 4. It shows a downfall of 28.46 per cent in the growth-rate during the period of study. A reduction in these expenditures is a better sign for the profitability of the bank.

The bank-wise analysis has revealed that 10 banks had a higher average than the national average (3.29 per cent). The N.I.Ex.T.A., in terms of dispersion, was less consistent in the case of Allahabad Bank (28.39 per cent) and more consistent in the case of State Bank of India (6.32 per cent).

Non-interest Income as a Percentage of Total Assets

This ratio represents the non-fund-based incomes, and includes commission, brokerage, service charges, and miscellaneous receipts. The computation of ratio of the N.I.I.T.A. is shown in **Table 5**.

As shown in the table, the ratio has shown a declining trend from 1.67 per cent in 2003 to 0.79 per cent in 2007. It shows a downfall of 52.69 per cent in the growth rate during the period of study. The decline of this ratio is detrimental to the profitability of the bank. The growth rate was highest in Central Bank of India (56.87 per cent)

Table 4
Non-interest Expenditure as Percentage of Total Assets

S.N.	Banks	Non-interest Expenditure as % of Total Assets					Trend Base Growth Rate (%)				Statistical and Financial Analysis			
		2003	2004	2005	2006	2007	2004	2005	2006	2007	Mean	S.D.	C.V.	E.G.R.
1	ALLB	4.52	3.95	3.24	2.45	2.04	-12.54	-18.09	-24.40	-16.88	3.24	0.92	28.39	-18.74
2	AB	3.87	4.17	3.98	2.64	2.79	7.75	-4.42	-33.60	5.56	3.49	0.64	18.33	-10.48
3	BOB	3.39	3.91	3.81	3.06	2.75	15.16	-2.44	-19.56	-10.36	3.38	0.44	12.96	-6.42
4	BOI	3.71	3.52	3.21	2.77	2.74	-5.07	-8.68	-13.66	-1.25	3.19	0.39	12.15	-8.08
5	BOM	3.27	2.89	3.31	3.12	2.79	-11.59	14.56	-5.96	-10.57	3.08	0.21	6.72	-2.43
6	CAB	3.32	3.44	3.25	2.68	2.44	3.56	-5.56	-17.65	-8.64	3.03	0.39	12.97	-8.29
7	CBI	3.76	3.90	4.28	3.55	2.64	3.72	9.93	-17.04	-25.80	3.62	0.55	15.14	-7.69
8	COB	3.46	3.23	3.81	3.10	2.67	-6.61	18.00	-18.59	-13.89	3.25	0.38	11.62	-5.41
9	DB	4.42	4.42	3.90	4.10	3.32	-0.03	-11.83	5.29	-18.96	4.03	0.41	10.07	-6.24
10	IB	3.27	3.73	3.34	3.08	3.29	14.03	-10.43	-7.61	6.58	3.34	0.21	6.32	-1.76
11	IOB	3.22	3.86	3.63	3.07	2.36	19.83	-6.06	-15.23	-23.31	3.23	0.52	16.04	-8.17
12	OBC	3.79	3.64	2.35	2.30	1.99	-4.10	-35.50	-1.99	-13.63	2.81	0.75	26.63	-16.08
13	PSB	4.75	4.94	5.73	3.37	3.54	3.82	15.99	-41.10	4.89	4.47	0.89	19.90	-9.26
14	PNB	4.10	4.28	3.38	3.10	3.09	4.56	-20.99	-8.44	-0.31	3.59	0.50	14.05	-8.50
15	SB	3.95	3.75	3.56	3.12	2.30	-5.11	-5.08	-12.32	-26.34	3.34	0.59	17.59	-11.90
16	UCOB	3.67	3.16	2.89	2.82	2.43	-14.01	-8.58	-2.42	-13.70	3.00	0.41	13.75	-8.96
17	UBI	3.46	3.18	2.92	2.46	2.56	-8.14	-8.36	-15.61	4.12	2.92	0.38	12.86	-8.24
18	UTBI	3.47	3.76	3.76	3.77	2.91	8.30	-0.03	0.32	-22.84	3.53	0.33	9.39	-3.44
19	VB	4.16	3.95	3.26	3.58	2.40	-4.88	-17.51	9.81	-33.08	3.47	0.62	17.83	-11.31
	Total	3.69	3.73	3.44	2.96	2.64	1.12	-7.87	-13.79	-10.95	3.29	0.43	12.93	-8.61

Table 5
Non-interest Income as Percentage of Total Assets

S.N.	Banks	Non-interest Income as % of Total Assets					Trend Base Growth Rate (%)				Statistical and Financial Analysis			
		2003	2004	2005	2006	2007	2004	2005	2006	2007	Mean	S.D.	C.V.	E.G.R.
1	ALLB	1.87	2.16	1.42	0.87	0.56	15.32	-34.42	-38.35	-36.25	1.37	0.60	43.45	-28.34
2	AB	2.45	2.51	2.30	0.96	0.94	2.56	-8.23	-58.21	-2.37	1.83	0.72	39.44	-24.97
3	BOB	1.65	2.02	1.38	0.99	0.82	22.41	-31.75	-27.88	-17.56	1.37	0.43	31.67	-19.01
4	BOI	2.15	2.11	1.22	1.05	1.10	-1.94	-42.41	-13.25	4.61	1.53	0.50	32.50	-18.38
5	BOM	1.45	1.46	1.17	0.17	0.68	0.94	-19.76	-85.71	305.99	0.98	0.50	50.45	-30.76
6	CAB	1.80	2.09	1.40	0.99	0.87	15.87	-32.93	-29.24	-11.73	1.43	0.46	32.38	-19.68
7	CBI	0.97	1.52	1.34	0.71	0.51	56.87	-11.87	-47.00	-28.05	1.01	0.38	37.31	-18.47
8	COB	2.02	1.77	1.66	1.17	1.07	-12.26	-6.25	-29.68	-8.20	1.54	0.36	23.53	-15.49
9	DB	2.17	2.79	1.29	1.65	1.24	28.67	-53.59	27.79	-24.73	1.83	0.58	31.81	-15.05
10	IB	1.48	1.91	1.30	0.97	1.31	28.55	-32.12	-24.91	34.28	1.39	0.31	21.95	-8.88
11	IOB	1.26	1.57	1.26	0.91	0.47	23.93	-19.57	-27.62	-48.39	1.09	0.37	34.21	-22.25
12	OBC	1.56	1.76	0.93	0.94	0.82	12.37	-46.88	0.42	-13.01	1.20	0.38	31.82	-17.56
13	PSB	2.12	1.70	1.63	0.63	1.04	-19.82	-4.12	-61.30	65.07	1.42	0.52	36.87	-21.45
14	PNB	1.45	1.82	1.33	0.88	0.64	25.85	-27.23	-33.97	-26.80	1.22	0.42	34.31	-21.04
15	SB	1.44	1.64	1.08	0.92	0.69	14.31	-34.13	-14.99	-24.71	1.16	0.34	29.80	-18.45
16	UCOB	1.74	1.43	0.94	0.60	0.59	-18.06	-33.99	-35.88	-2.25	1.06	0.46	43.02	-26.09
17	UBI	1.62	1.43	1.06	0.55	0.67	-11.70	-25.85	-47.55	20.51	1.06	0.41	38.76	-23.73
18	UTBI	1.77	1.95	1.65	1.31	0.76	10.55	-15.76	-20.16	-42.45	1.49	0.42	28.29	-18.90
19	VB	1.81	2.19	1.21	0.90	0.65	20.45	-44.78	-25.43	-27.91	1.35	0.57	42.24	-25.50
	Total	1.67	1.86	1.30	0.90	0.79	11.37	-29.98	-31.08	-12.46	1.31	0.42	32.13	-20.04

and lowest in Punjab and Sind Bank (-19.82 per cent) in the year 2004. The bank-wise comparison has revealed that 11 banks were having higher average than the national average (1.31 per cent). The E.G.R. was highest in Indian Bank (-8.88 per cent) and lowest in Bank of Maharashtra (-30.76 per cent). Ten banks had a higher E.G.R. than the national E.G.R. (-20.04 per cent). The N.I.I.T.A., in terms of dispersion, is less consistent with Bank of Maharashtra (50.45 per cent) and more consistent with Indian Bank (21.95 per cent).

Burden as a Percentage of Total Assets

This ratio is calculated by taking the difference between the two ratios computed earlier, namely, N.I.Ex.T.A and N.I.I.T.A. The lesser the ratio, the better shall be the profitability. The computation of this ratio for the various banks is shown in **Table 6.**

As shown in the table, the growth rate of the burden has decreased by 7.96 per cent during the period, which is a better indicator of the bank's profitability. The bank-wise analysis reveals that 10 banks had higher average than the national average (1.98 per cent). Eleven banks had a higher E.G.R. than the national average (-0.70 per cent). The B.T.A., in terms of dispersion, has been less consistent with Oriental Bank of Commerce (24.03 per cent) and more consistent with Union Bank of India (2.86 per cent).

Operating Profit as a Percentage of Total Assets

Operating profit denotes the operating performance and the capacity to earn the returns from the given investments. This ratio is also referred to as the 'Net Spread-to-Total Assets' ratio, and is an indicator of a bank's operational efficiency. **Table 7** presents the ratio of the O.P.T.A. for the various nationalised banks.

The growth rate was highest in Vijaya Bank (58.83 per cent) and lowest in Punjab and Sind Bank (-48.47 per cent) in 2004. In 2007, it was highest in Punjab and Sind Bank (53.08 per cent), it is lowest

Table 6
Burden as Percentage of Total Assets

S.N.	Banks	Burden as % of Total Assets					Trend Base Growth Rate (%)				Statistical and Financial Analysis			
		2003	2004	2005	2006	2007	2004	2005	2006	2007	Mean	S.D.	C.V.	E.G.R.
1	ALLB	2.65	1.80	1.82	1.58	1.48	-32.23	1.55	-13.56	-6.16	1.86	0.41	22.16	-12.16
2	AB	1.42	1.66	1.68	1.68	1.85	16.69	1.35	0.19	10.10	1.66	0.14	8.34	5.62
3	BOB	1.74	1.89	2.43	2.07	1.93	8.28	28.95	-14.85	-6.90	2.01	0.23	11.68	3.01
4	BOI	1.55	1.41	2.00	1.72	1.64	-9.41	41.95	-13.91	-4.85	1.66	0.20	11.82	3.09
5	BOM	1.83	1.43	2.14	2.95	2.11	-21.50	49.48	37.60	-28.53	2.09	0.50	23.81	10.60
6	CAB	1.52	1.35	1.85	1.69	1.57	-11.03	36.67	-8.88	-6.82	1.60	0.17	10.39	2.87
7	CBI	2.79	2.37	2.94	2.84	2.12	-14.78	23.90	-3.38	-25.24	2.61	0.31	11.93	-3.55
8	COB	1.43	1.45	2.15	1.93	1.60	1.35	47.56	-10.00	-17.34	1.71	0.28	16.37	5.09
9	DB	2.25	1.63	2.60	2.45	2.08	-27.65	59.66	-5.90	-15.06	2.20	0.34	15.27	2.50
10	IB	1.78	1.82	2.04	2.11	1.98	1.95	12.34	3.35	-6.17	1.95	0.13	6.51	3.66
11	IOB	1.96	2.29	2.37	2.16	1.89	17.18	3.16	-8.64	-12.74	2.13	0.19	8.71	-1.32
12	OBC	2.23	1.88	1.41	1.36	1.17	-15.67	-24.85	-3.58	-14.06	1.61	0.39	24.03	-14.87
13	PSB	2.64	3.24	4.10	2.74	2.50	22.82	26.55	-33.07	-8.94	3.04	0.58	19.18	-2.70
14	PNB	2.65	2.46	2.06	2.22	2.45	-7.10	-16.36	8.04	10.14	2.37	0.21	8.67	-2.55
15	SB	2.51	2.11	2.48	2.20	1.61	-16.22	17.58	-11.16	-27.03	2.18	0.33	15.00	-8.18
16	UCOB	1.93	1.73	1.95	2.21	1.84	-10.35	12.41	13.80	-16.83	1.93	0.16	8.29	1.53
17	UBI	1.85	1.76	1.86	1.91	1.89	-5.02	5.86	2.56	-0.64	1.85	0.05	2.86	1.31
18	UTBI	1.70	1.80	2.11	2.45	2.15	5.96	17.02	16.30	-12.33	2.04	0.27	13.11	8.08
19	VB	2.34	1.77	2.06	2.68	1.75	-24.49	16.15	30.50	-34.82	2.12	0.36	16.76	-1.69
	Total	2.01	1.87	2.13	2.06	1.85	-7.39	14.20	-3.20	-10.29	1.98	0.11	5.54	-0.70

Table 7
Operating Profit/Loss as Percentage of Total Assets

S.N.	Banks	Operating Profit/Loss as % of Total Assets					Trend Base Growth Rate (%)				Statistical and Financial Analysis			
		2003	2004	2005	2006	2007	2004	2005	2006	2007	Mean	S.D.	C.V.	E.G.R.
1	ALLB	1.84	2.52	2.38	1.85	1.63	37.22	-5.84	-22.07	-12.24	2.04	0.34	16.88	-5.42
2	AB	3.06	3.44	3.03	1.73	1.96	12.55	-11.89	-43.06	13.39	2.64	0.67	25.49	-14.63
3	BOB	2.25	2.92	2.43	1.69	1.69	29.96	-16.71	-30.46	-0.23	2.20	0.47	21.33	-10.59
4	BOI	2.66	2.64	1.54	1.52	1.69	-0.71	-41.82	-1.43	11.59	2.01	0.53	26.27	-13.61
5	BOM	2.09	2.10	1.66	1.17	1.57	0.31	-20.88	-29.56	34.40	1.72	0.35	20.33	-10.92
6	CAB	2.43	2.88	2.34	1.92	1.75	18.28	-18.59	-18.08	-8.59	2.27	0.40	17.54	-10.05
7	CBI	1.62	2.41	2.35	1.60	1.36	49.18	-2.82	-31.80	-14.93	1.87	0.43	22.94	-7.30
8	COB	3.25	3.11	3.12	2.35	2.16	-4.18	0.15	-24.44	-8.15	2.80	0.45	15.99	-10.34
9	DB	2.45	3.21	1.86	2.26	2.02	30.95	-42.02	21.58	-10.68	2.36	0.47	19.90	-7.09
10	IB	1.67	2.05	2.18	1.88	2.42	22.81	6.63	-14.11	28.98	2.04	0.26	12.61	6.78
11	IOB	1.93	2.80	2.63	2.27	1.90	45.13	-6.03	-13.77	-16.41	2.31	0.36	15.77	-2.42
12	OBC	3.42	3.74	2.28	1.61	1.42	9.29	-39.00	-29.62	-11.46	2.49	0.94	37.60	-22.91
13	PSB	1.94	1.00	1.64	1.41	2.15	-48.47	64.26	-14.39	53.08	1.63	0.40	24.82	5.64
14	PNB	2.69	3.05	2.14	2.01	1.99	13.49	-29.69	-6.35	-0.95	2.38	0.42	17.76	-9.69
15	SB	1.80	2.16	1.91	1.65	1.55	20.04	-11.60	-13.48	-6.17	1.81	0.21	11.69	-5.51
16	UCOB	1.79	1.82	1.50	1.23	1.26	2.07	-17.76	-17.82	2.36	1.52	0.25	16.46	-10.31
17	UBI	2.55	2.54	2.17	1.65	1.95	-0.43	-14.58	-24.26	18.44	2.17	0.35	16.09	-9.30
18	UTBI	2.29	2.37	2.37	1.94	1.70	3.54	-0.03	-18.33	-12.24	2.13	0.27	12.67	-7.69
19	VB	2.27	3.60	2.69	2.01	1.64	58.83	-25.24	-25.37	-18.14	2.44	0.67	27.52	-11.53
	Total	2.34	2.70	2.20	1.77	1.75	15.67	-18.67	-19.35	-1.17	2.15	0.36	16.66	-9.49

in Vijaya Bank (-18.14 per cent). The bank-wise comparison reveals that 10 banks had the higher average than national average (2.15 per cent). E.G.R. is highest in Indian Bank (6.78 per cent) and lowest in Oriental Bank of Commerce (-22.91 per cent). Nine banks had a higher E.G.R. than the national average (-9.49 per cent). The O.P.T.A. ratio, in terms of dispersion, is less consistent with Oriental Bank of Commerce (37.60 per cent) and more consistent with Syndicate Bank (11.69 per cent).

Net Profit as a Percentage of Total Assets

This ratio is also known as the 'return on assets' and is the indicator of an excellent utilisation of resources. **Table 8** shows N.P.T.A. ratio of all the nationalised banks, which has shown a declining trend from 0.98 per cent, in 2003, to 0.85 per cent, in 2007.

There has been a decrease of 13.27 per cent in the growth rate, during the period of study. While the growth rate was highest in Allahabad Bank (125.45 per cent), and lowest in Syndicate Bank (-8.00 per cent), in the year 2004, it has been highest in Bank of Maharashtra (328.27 per cent) and lowest in Oriental Bank of Commerce (-16.90 per cent), in 2007. The E.G.R. has been highest in Indian Bank (20.68 per cent) and lowest in Bank of Maharashtra (-20.18 per cent). Five banks had a higher E.G.R. than the national average (-6.58 per cent). The N.P.T.A., in terms of dispersion, is less consistent with Punjab and Sind Bank (207.06 per cent) and more consistent with Punjab National Bank (6.38 per cent).

Overall Profitability

The indices of selected spread, burden and profitability ratios are presented in Table 9. Moreover, the overall profitability performance levels of nationalised banks over the study period are shown in Table 10. Analysing the banks on the basis of overall profitability indices, we notice that in 'spread as percentage of total assets' ratio, five banks, namely, Punjab National Bank, Indian Overseas Bank, Punjab and Sind Bank, Central Bank of India, and Vijaya Bank, obtained the

Table 8
Net Profit/Loss as Percentage of Total Assets

S. N.	Banks	Net Profit/Loss as % of Total Assets					Trend Base Growth Rate (%)				Statistical and Financial Analysis			
		2003	*2004*	*2005*	*2006*	*2007*	*2004*	*2005*	*2006*	*2007*	*Mean*	*S.D.*	*C.V.*	*E.G.R.*
1	ALLB	0.59	1.33	1.20	1.28	1.11	125.45	-10.01	6.37	-13.19	1.10	0.27	24.16	12.88
2	AB	1.63	1.72	1.59	1.19	1.13	5.20	-7.52	-24.86	-5.22	1.45	0.24	16.62	-10.40
3	BOB	1.01	1.14	0.72	0.73	0.72	12.33	-37.06	1.98	-1.68	0.86	0.18	20.61	-10.70
4	BOI	1.12	1.19	0.36	0.62	0.79	6.49	-69.86	74.52	26.93	0.82	0.31	37.77	-12.41
5	BOM	0.89	0.95	0.54	0.16	0.70	6.22	-43.15	-69.77	328.27	0.65	0.28	43.62	-20.18
6	CAB	1.24	1.35	1.01	1.01	0.86	8.48	-25.30	0.50	-15.35	1.09	0.18	16.22	-9.79
7	CBI	0.54	0.98	0.52	0.34	0.54	82.07	-46.66	-33.77	55.34	0.58	0.21	35.96	-9.89
8	COB	1.58	1.73	1.19	1.10	1.02	9.18	-31.45	-7.40	-7.32	1.32	0.28	21.29	-12.54
9	DB	0.57	1.04	0.25	0.27	0.64	84.36	-75.65	8.31	133.08	0.56	0.29	51.81	-10.26
10	IB	0.53	1.04	0.93	1.06	1.35	94.08	-10.29	13.85	27.77	0.98	0.26	26.92	20.68
11	IOB	1.01	1.08	1.28	1.32	1.23	7.25	18.18	3.01	-7.10	1.18	0.12	9.96	6.00
12	OBC	1.34	1.67	1.41	0.95	0.79	24.46	-15.87	-32.83	-16.90	1.23	0.32	26.18	-15.17
13	PSB	0.03	0.06	-0.45	0.57	0.99	117.21	-853.40	-225.94	74.91	0.24	0.50	207.06	*
14	PNB	0.98	1.08	1.12	0.99	0.95	10.98	3.06	-11.29	-4.30	1.02	0.07	6.38	-1.47
15	SB	1.00	0.92	0.77	0.88	0.80	-8.00	-15.85	13.58	-8.69	0.87	0.08	9.29	-4.73
16	UCOB	0.59	0.99	0.63	0.32	0.42	67.52	-36.18	-49.83	32.78	0.59	0.23	39.00	-16.62
17	UBI	1.08	1.22	0.99	0.76	0.82	12.73	-18.67	-23.70	8.68	0.98	0.17	17.32	-9.75
18	UTBI	1.26	1.22	1.03	0.62	0.63	-3.01	-15.42	-40.32	2.67	0.95	0.28	29.24	-18.61
19	VB	1.03	1.71	1.30	0.40	0.78	65.30	-23.93	-69.02	94.42	1.04	0.44	42.49	-18.14
	Total	0.98	1.19	0.89	0.81	0.85	20.44	-24.83	-8.89	4.24	0.94	0.13	14.19	-6.58

Table 9
Indices of Profitability Parameters of Nationalised Banks
(For the Period 2003 to 2007)

S.N.	Banks	I.E.T.A.	I.Ex.T.A.	S.T.A.	N.I.Ex.T.A.	N.I.I.T.A.	B.T.A.	O.P.T.A.	N.P.T.A.
1	ALLB	1.03	1.048	0.999	0.961	1.034	0.918	0.951	1.198
2	AB	1.021	1.002	1.047	1.035	1.378	0.816	1.23	1.579
3	BOB	0.94	0.92	0.967	1.004	1.032	0.991	1.021	0.937
4	BOI	0.914	0.966	0.834	0.947	1.149	0.819	0.935	0.887
5	BOM	1.012	1.07	0.922	0.913	0.74	1.031	0.799	0.703
6	CAB	0.963	1	0.909	0.898	1.076	0.786	1.054	1.188
7	CBI	1.042	1.016	1.076	1.076	0.76	1.288	0.869	0.633
8	COB	0.955	0.907	1.03	0.965	1.158	0.844	1.301	1.437
9	DB	1.009	1.06	0.929	1.196	1.376	1.085	1.098	0.604
10	IB	0.955	0.932	0.986	0.991	1.047	0.959	0.948	1.068
11	IOB	1.05	1.002	1.117	0.958	0.823	1.051	1.072	1.287
12	OBC	1.041	1.061	1.007	0.834	0.904	0.793	1.16	1.338
13	PSB	1.086	1.071	1.104	1.325	1.07	1.499	0.757	0.261
14	PNB	0.996	0.895	1.141	1.065	0.92	1.166	1.105	1.112
15	SB	0.963	0.917	1.029	0.99	0.869	1.075	0.843	0.95
16	UCOB	0.969	1.047	0.85	0.889	0.799	0.952	0.708	0.644
17	UBI	0.999	1.028	0.952	0.866	0.801	0.913	1.011	1.06
18	UTBI	1.029	1.04	1.009	1.048	1.119	1.007	0.993	1.033
19	VB	1.03	1.004	1.066	1.03	1.016	1.044	1.135	1.136

Table 10
Profitability Performance Levels of Nationalised Banks
(For the Period 2003 to 2007)

Index of Performance	I.E.T.A.	I.Ex.T.A.	S.T.A.	N.I.Ex.T.A.	N.I.I.T.A.	B.T.A.	O.P.T.A.	N.P.T.A.
Excellent	PSB IOB CBI OBC ALLB VB UTBI	PNB COB SB BOB IB	PNB IOB PSB CBI VB	OBC UBI UCOB CAB BOM	AB DB COB BOI	CAB OBC AB BOI COB	COB AB OBC VB PNB	AB COB OBC IOB
Good	AB BOM DB	BOI	AB COB SB UTBI OBC ALLB	BOI IOB ALLB COB SB IB	UTBI CAB PSB IB ALLB BOB VB	UBI ALLB UCOB IB BOB	DB IOB CAB BOB UBI	ALLB CAB VB PNB IB UBI UTBI
Fair	UBI PNB	CAB AB IOB VB CBI UBI	IB BOB UBI	BOB VB AB UTBI PNB	PNB OBC	UTBI BOM VB IOB SB DB	UTBI ALLB IB BOI	SB BOB BOI
Poor	BOI BOB COB IB CAB SB UCOB	PSB BOM OBC DB ALLB UCOB UTBI	BOI UCOB CAB BOM DB	PSB DB CBI	BOM CBI UCOB UBI IOB SB	PSB CBI PNB	UCOB PSB BOM SB CBI	PSB DB CBI UCOB BOM

'excellent' level, whereas five banks, namely, Bank Of India, UCO Bank, Canara Bank, Bank of Maharashtra and Dena Bank witnessed the 'poor' performance level. Six banks come in the 'good' category and three banks under the 'fair' performance level. In the 'burden as percentage of the total assets', Canara Bank, Oriental Bank of Commerce, Andhra Bank, Bank of India and Corporation Bank obtain excellent level, whereas Punjab and Sind Bank, Central Bank of India and Punjab National Bank showed 'poor' performance level. Five banks come in 'good' category and six banks under 'fair performance' level. In the 'Operating profit as percentage of total assets', while Corporation Bank, Andhra Bank, Oriental Bank of Commerce, Vijaya Bank and Punjab National Bank obtained the 'excellent' level, UCO Bank, Punjab and Sind Bank, Bank of Maharashtra, Syndicate Bank and Central Bank of India showed 'poor' performance. Five banks come in the 'good' category and four banks under the 'fair' performance category. On the basis of the 'Net Profit as Percentage to Total Assets' basis, while Andhra Bank, Corporation Bank, Oriental Bank of Commerce and Indian Overseas Bank obtained excellent level, Punjab and Sind Bank, Dena Bank, Central Bank of India, UCO Bank and Bank of Maharashtra got 'poor' performance level. Seven banks came in the 'good' category and three banks got the 'fair' performance level.

CONCLUSION

It has been found that the ratios, like interest earned to total assets, spread to total assets, non-interest income to total assets, operating profits to total assets, and net profits to total assets, have recorded a downfall, leading to a decrease in the profitability, while decrease in the ratios, like interest expenditure to total assets, non-interest expenditure to total assets, and burden to the total assets, has led to an increase in the profitability of the nationalised banks. These banks have been classified in four categories, namely, excellent, good, fair, and poor, on the basis of overall profitability indices. This appraisal has revealed that while Punjab National Bank, Oriental Bank of Commerce, Andhra Bank, and Indian Bank showed 'excellent' performance level, Allahabad Bank, Bank of India, Bank of Baroda, Corporation Bank, and Canara Bank came in the 'good' performance level. Furthermore, while the Union Bank of India, United Bank of India, Indian Overseas Bank, and Vijaya Bank got 'fair' performance level, Syndicate Bank, Punjab and Sind Bank, Dena Bank, Bank of Maharashtra, Central Bank of India, and UCO Bank showed 'poor' performance.

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ADVANCING FRONTIERS OF INFORMATION AND COMMUNICATION TECHNOLOGY IN LOGISTICS COMPANIES

Henry Ongori*

Abstract

A lot of research has been done on the adoption of the ICT in logistics companies, However, most of it has concentrated on the importance of the ICT, with little focus on the barriers to the adoption of the ICT. This study seeks to investigate the frontiers of the ICT adoption in logistics companies, conducted through a cross-sectional survey, involving a convenience sample of 60 managers in ten logistics companies, located in the Gaborone city of Botswana. The study has revealed that the major benefits of adopting the ICT in logistics companies are to gather the relevant data faster and to improve decision-making. The findings of the study are expected to encourage the managers in logistics companies to come up with appropriate interventions to reduce the barriers to the adoption of ICT.

Key words: ***Information and Communication Technology (ICT), Logistics companies, Globalisation, Barriers to adoption.***

INTRODUCTION

THE emergence of the Information and Communication Technology (ICT) is reshaping the business models and intensely inter-linking the enterprises across their internal as well as external value chain. Business enterprises are in the process of major transformation to meet the challenges of network economy (Fink and Disterer, 2006). The ICT plays a major role in many organisations, in managing the resources and operating in international market.

The organisations which have adopted the ICT in their business processes have a major competitive advantage. The adoption of the ICT has positive impact on the operations of business firms, particularly in logistics companies, where it has significant impact on the inventory, transportation, warehousing, material management, and packaging activities. In the business world, organisations and customers need relevant information, for their buying and selling processes. Technology has also changed the mode of operations in the market place. Therefore, organisations have to adopt the ICT in their business operations in order to gain competitive advantage and to get strategically positioned in a dynamic business environment.

* Mr. Henry Ongori is Lecturer in Management in the University of Bostswana, Bostswana;
e-mail: *ongorih@mopipi.ub.bw*

In the business world, the ICT has been used to improve various business activities. It has also served as an enabling technology for logistics companies (Pokharel, 2005).

The ICT has become one of the drivers of change in logistics companies and is posing new strategic challenges. It has largely influenced the transport and logistics services and has given rise to new market strategies and organisational structure. In fact, logistics operation is one of the most developed areas, where firms use electronic data interchange (EDI) for large volumes of standardisation information, while functions with more unstructured information tend to use traditional phones and fax together with the face-to-face contact (Tilanus,1997). Buyers have no longer to travel long distances to the physical locations of the sellers to view or to buy products. With the help of the Internet, they can speedily get the necessary information. Through *e*-commerce, business-to-business (B-2-B) transactions are conducted electronically (Hugo, *et al*., 2006). This has enabled purchasing transactions within the company and between the subsidiaries and among the different departments of the same company. This is usually done by using the internal network, comprising internal document transfer, thus, eliminating the paperwork.

LITERATURE REVIEW

Although the ICT is not the panacea for all the problems faced by logistics companies, it offers enormous benefits to such companies. The recent evolution of the ICT and its fast development and widespread use has changed the way people, firms, and institutions live and act. The ICT has supported the logistics companies for many years. It grew rapidly with the introduction of microcomputers in the early 1980s. This is seen as the key factor that will affect the growth and development of logistics companies. The development of time-based strategy in the logistic companies is closely related to the information-handling. There is a crucial link between customers' responsiveness and information availability. Therefore, in the constantly-evolving complex world of domestic and global markets, appropriate use of the ICT is necessary in achieving the value and cost advantages in the supply chain.

Mortensen and Lemoine (2008) observed that the ICT plays a major role in the supply-chain management (SCM) and is a critical driving force for integration (at the supply-chain level) and innovation (at the third-party logistics industry level). As the supply-chain process and planning increasingly require real-time data availability and exchange, third-party logistics industry level (3PLIL) is forced to integrate their services. These include transportation, warehousing, and distribution, with the ability to manage information flows along the entire supply chain. Despite the traditional focus of the 3PLIL on the organisation and management of assets, such as vehicles, facilities, and inventory, the industry is moving towards a more knowledge-focussed approach, based on the collection, co-ordination, and management of information.

Consequently, value-added services and information management could be the key to differentiate businesses and improve their competitive position in the near future (Van Hoek and Chong, 2001). The use of the ICT in the logistics industry can play a crucial part in cost saving (Gourdin, 2002; Schware, 2003). Moreover, such technology is able to improve business processes and inter-connections with other trading partners operating in the supply chain and systems, allowing the data exchange in real-time, improving the ability of planning transport and logistics activities and the level of customer service (Wilding and Newton, 2007).

Quayel and Jones (2001) observed that in finding out the buying and logistics processes, the Internet and *e*-procurement played a major role in removing the lost time and errors, resulting from the exchange of paper and retyping of data. Haley and Krishnan (1995) considered the ordering process service as the nerve centre of the logistics process. As a result, quality and speed flows have a direct impact on the cost and efficiency of the entire operation. Slow and erratic communication can lead to the loss of customers or the excessive transportation, inventory, and warehousing costs, as well as the possible manufacturing loss, caused by frequent changes in the production line. Logistics companies operate in a dynamic, demand-driven environment, which requires the ICT-enabling connectivity, co-operation, and co-ordination between the players, in the industry.

The ICT in logistics companies, especially in the procurement and warehousing, results in cost-savings, improved contract compliance, time-saving, reduced administration costs, enhanced market data, and improved responsiveness to the changes in customer demand and improved collaboration with the supply chain. In addition, the ICT has played an important role in managing the operating inventory costs, on-line negotiated cost reduction, increased accuracy of production capacity, and enhanced 'skill sets' and standardised strategies (Vogt, *et al.*, 2006).

Furthermore, the ICT has made storage and retrieval of information convenient to logistics companies. Database management programme is used to store data and retrieve it, whenever needed. Information can be stored safely in abundance for a long time, and can be accessed at all times. Although a central database is extensive and contains a mass of information in numerous files, eight major data files are critical to logistics operations: the customer file, product price file, supplier file, order file, purchase order file, bill of material file, inventory file, and the history file. These files seek to ensure that correct information is readily available at all times for reference (Boxersox, *et al.*, 2007). In addition, the ICT supports the executives in the decision-making process through the use of digital support system, which is an integrative system that has the purpose of providing information to help the decision-makers in making informed decisions (Vogt, *et al*., 2006).

By adopting the ICT, especially the Internet and e-business, logistics companies are provided with a tool to satisfy the customer demand by using traditional services in conjunction with the growing information-based services (Jimmy, 2003). Today, transport and logistics service firms are in a position to provide a variety of information via the Internet and secure online transactions with the customers. Thus, through the ICT, logistics companies are in a position to serve their customers better.

A comprehensive supply-chain-information system (SCIS) initiates, monitors, assists in decision-making, and reports on activities required to complete logistical operations and planning. The major systems components include the following:

Enterprise Resource Planning (ERP)

This is the backbone of firms' logistics information system which maintains current and historical data and processes transactions to initiate and monitor performance. The ERP system facilitates integrated operations and reporting to initiate, monitor, and track, crucial activities, such as order-filling and replenishment (Shiels, *et al.*, 2003).

Information-sharing Technology

It is critical to facilitate logistical supply chain and operations. Historically, logistical co-ordination has been difficult, since the essential work is typically performed at the locations away from the information technology hardware. In the last decade, logistics companies witnessed remarkable advances in the communication systems capability, including the bar code and scanning, global data synchronisation, the Internet, extensible mark-up language, satellite technology, and the image-processing.

Execution Systems

The enterprise execution systems work in conjunction with the firm's ERP to provide specific functionality to support logistic operations. The ERP system requires logistics functionality; others lack functionality to facilitate warehouse and transportation operations. Selected execution systems modules include the transportation management system (TMS), warehouse management system (WMS), and the yard management system (YMS).

Planning Systems

Generally, the ERP systems do not evaluate the alternative strategies, or assist in decision-making. Supply-chain planning systems, often termed as advanced scheduling and planning (ASP) systems, are designed to assist in evaluating the supply-chain alternatives and to advise in supply-chain decision-making (Saura, *et al*., 2008).

Global Data Synchronisation

The phone, fax, and direct computer connections have enabled information exchange in the past. Electronic Data Interchange (EDI) is defined as direct computer-to-computer exchange of business documents in standard formats, to facilitate high-volume transactions (Boxersox, *et al*., 2007). The EDI and the Internet have become the standard for effective, accurate, low-cost information exchange. Another feature emerging alongside the ICT is the creation of new categories of service-providers, called the fourth-party logistics (4PL) service-providers. Van Hoek and Chong (2001) define the 4PL as a supply-chain integrator which assembles and manages the resources, capabilities, and technology of the organisation with the purpose of delivering a comprehensive supply-chain solution.

According to Evangelista and Sweeney (2003), the obstacles and challenges faced by companies in using and implementing the technology in their business processes involve scarce financial resources for investment, management of process changes, lack of capabilities of network parties, resistance to change, challenges in integrating inter-company information systems, lack of standards, and the absence of evidence of the use of completely new technologies. On the other hand, the key success factor for employing technology in network logistics seems to be the business process re-engineering skills, using technology to support business processes. Power needs, physical space, and connectivity issues are also the factors that add to the challenges of getting these technologies take root in developing countries.

Barriers to Adoption of ICT

Unsure of the legal position of *e*-procurement, Vehovar and Lesjak (2007) argued that the ICT improves communication in logistical operations. However, most logistics companies are not aware of the legal implications of *e*-procurement in organisations. Moreover, while the ICT leads to improved communication and reduced administration costs, the major barriers to the adoption of ICT include the security of transactions and the uncertainty surrounding the legal issues (Ongori, 2008).

Pokharel (2005) argued that traditional public procurement had many deficiencies, such as the complicated procedure and extended relationship, excessive state intervention, and the bureaucratic dysfunctional ties. The absence of a clear national information technology policy, large volume of paper work, lack of flexible centralised control, lack of information quality, and the resistance to change are some of the barriers to the ICT adoption in logistics companies. Similarly, resistance to change was found to be one of the biggest barriers to the introduction of *e*-procurement in the public-sector undertakings. Resistance to change, lack of a widely-accepted solution, and lack of leadership, which are cultural issues, were identified as barriers to the adoption of the ICT in logistics companies (Schware, 2003; Stockdale and Standing, 2004).

The three distinct barriers linked to the ICT are: First, the company does not have the technology to carry out *e*-procurement (Hawking and Stein, 2004). Second, the company may not afford the ICT. Third, it may not be able to operate the ICT.

Hashim (2008) argued that the lack of knowledge and skills in the ICT led to insufficient utilisation of the ICT tools in most of the logistics companies. Moreover, the ICT cannot have any outcome unless it is adopted and used effectively in organisations. To use the ICT, one must possess some basic ICT skills.

There are also barriers related to the personnel, such as an older generation that has not kept up to the advances in the ICT, relying heavily on traditional forms and means of procurement. Furthermore, the lack of business relationship with suppliers, showing the need for *e*-procurement-enabled supply chain, is another barrier for the implementation of *e*-procurement (Hawking and Stein, 2004; Stockdale and Standing, 2004).

Conceptual Framework

The conceptual framework for the adoption of the ICT is depicted in **Figure 1.**

The model shows that there are some triggers which prompt a logistics company to adopt the ICT in its business processes. For instance, logistics companies are compelled to adopt the ICT in their business processes, because of competition, to link to international markets, and to access information in a quicker way to enable them to make quality decisions. There are many factors which inhibit a logistics company not to adopt the ICT. These include: lack of infrastructural facilities, power cuts, lack of alternative to power supply, and lack of skilled manpower. However, if the management puts in place well-designed interventions to reduce these barriers, the logistics companies would be in a position to adopt the ICT in their business processes, tapping the benefits of the ICT. These benefits would enable the logistics companies to survive in this era of globalisation. Some of these benefits include the access into the international markets, quick access of information to make quality decisions for the organisation. This will make the logistics companies strategically competitive. Finally, logistics companies will be in a position to make profits, which will lead to their survival, growth, and development in a competitive environment.

OBJECTIVES OF THE STUDY

This study was conducted to address the following questions:

1. What is the role of the ICT in a logistics company?
2. What are the tools of the ICT used in a logistics company?
3. What are the major barriers to the adoption of the ICT in a logistics company?

RESEARCH DESIGN

The research design adopted for the study was a cross-sectional survey. The design was adopted

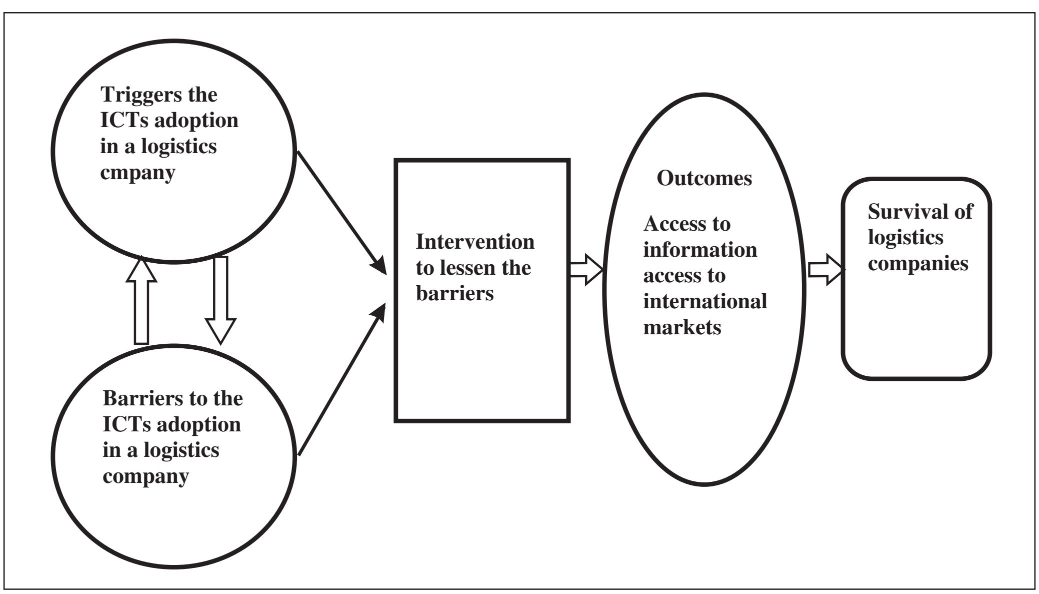

Figure 1: Conceptual Framework of ICT Adoption in an Organisation

because the data was collected at a particular time and it was economical too. The convenience sampling was used for the study.

The Sample

Out of the 80 questionnaires sent, only 60 were duly completed and returned, making the response rate to be 75 per cent. The population consisted of employees and managers of different departments of ten logistics companies in the Gaborone city of Botswana.

Demographics of Respondents

The respondents included males and females in equal number. While 25 per cent of the respondents were between 31 and 35 years of age, 23 per cent were between 26 and 30 years, and the rest were between 41 and 45 years. Going by the respondents' position in the organisation, 45 per cent of them belonged to the lower management, 33 per cent to the middle management, and the rest to the top management. While 62 per cent of the respondents had been in these companies for a period of less than five years, 20 per cent were between 6 and 10 years, and 18 per cent over 11 years. Thus, most of the respondents had been in the company for a period of more than 6 years and were, thus, well-informed about the operations of the logistics companies and the application of the ICT in their business.

The Survey Instrument

The data was collected through a questionnaire, which contained both qualitative and quantitative questions. This was employed to explore the role of the ICT in logistics companies, by getting both the pertinent and independent opinion of individuals. This was done in order to get an insight on how the ICT affects logistical activities. The data was collected during the period from August 2008 to January 2009.

The survey instrument was divided into three parts. Part 1 contained questions pertaining to demographics of the respondents. Part 2 consisted of questions related to the ICT tools used by logistics company. Part 3 comprised questions related to the benefits and challenges faced by the logistics company in adoption of the ICT. These questions were measured by a 5-point Likert's scale, where '1' indicated 'strongly disagree' and '5' 'strongly agree'. Before the final distribution and administration of the questionnaire to the sample selected for the study, the survey instrument was first pilot-tested with five managers, one ICT expert, and a scholar to eliminate irrelevant questions from the instrument. Their comments were incorporated into the questionnaire. The strategy which was adopted to collect the survey instrument was 'drop and pick later'.

The Data Analysis Tools

The data collected through the questionnaire was analysed with the help of Statistical Package for the Social Sciences (SPSS) Version 17. Simple frequency distribution tables were also prepared for interpretation of the data.

DISCUSSION AND FINDINGS

ICT Tools Used

The ICT tools used in the logistics companies in their day-to-day activities are indicated in **Figure 2.**

As shown in the figure, the major ICT tools used by the companies were: landline telephone (18 per cent), photocopying machine (17 per cent),

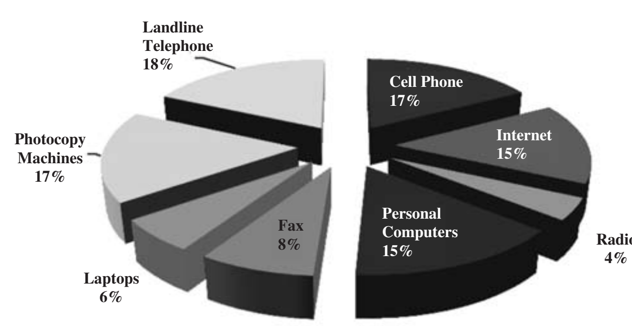

Figure 2: Information and Communication Technology Tools in Logistics Companies

cell phones (15 per cent), the Internet (15 per cent), and personal computers (15 per cent).

Respondents' Exposure to ICT Tools

The respondents were further asked as to how long they had been exposed to these ICT tools. Their responses are shown in **Table 1**.

Table 1
Respondents' Exposure to ICT Tools

Years of Experience	Frequency	Percent	Cumulative Percent
0-3 yrs	8	13	13
4-7 yrs	14	23	37
8-11 yrs	5	8	45
12-15 yrs	11	18	63
Over 15 years	22	37	100
Total	60	100	

Age categories were used to answer this question; higher-age ranges had the maximum response rate, those over 15 years dominated, with a response rate of 37 per cent. Thus, almost all the respondents had been exposed to the ICT tools.

Benefits and Barriers to Adoption of ICT

The questions were formulated for measuring the respondents' perception of the benefits and the barriers to the ICT adoption in their organisation and how the ICT tools had helped them in carrying out their day-to-day activities. The responses are summarised in **Table 2**.

Table 2
Role of ICT in Generating Data

Parameters	Frequency	Percent	Valid Percent	Cumulative Percent
'Strongly Agree'	42	70	70	70
'Agree'	17	28	28	98
'Neutral'	1	2	2	100
Total	60	100	100	

As shown in the table, 98 per cent of the respondents agreed with the suggestion that the ICT tools assisted them in generating the requisite data.

The responses to the question whether the ICT tools helped the respondents in processing the data in the logistics companies are summarised in **Table 3.**

Table 3
Role of ICT in Data Processing

Parameters (Response)	Frequency	Percent	Cumulative Percent
'Strongly Agree'	46	77	77
'Agree'	12	20	97
'Neutral'	2	3	100
Total	60	100	

As shown in the table, while a large majority (77 per cent) of the respondents 'strongly agreed' to the statement that the ICT helped them in processing the data, 20 per cent merely 'agreed' to the statement. This demonstrates that the ICT helps the logistics companies in processing the data quickly.

Role of ICT in Sourcing and Retrieving Data

This question was formulated to measure the respondents' perception on whether the ICT helped them in sourcing and retrieving the data quickly. The results indicated that a large majority of the respondents (77 per cent) were strongly in support of the statement that the ICT really played a critical role in sourcing and retrieving the data in their companies and this assisted the management in making informed decisions.

Table 4
Role of ICT in Searching Information

Parameters (Response)	Frequency	Percent
'Strongly Agree'	39	65
'Agree'	10	17
'Neutral'	9	15
Missing'	2	3
Total	58	97
	60	100

The respondents were asked to give their opinion on whether the ICT tools helped them in quickly searching for the requisite information. The results are indicated in **Table 4.**

As shown in the table, an overwhelming majority (82 per cent) of the respondents agreed that the ICT tools indeed played a major role in speedy search for information.

Processing of Variety of Information

The responses to the question whether the ICT helped them in processing a variety of information revealed that 53 per cent of the respondents agreed that the ICT tools helped them in that job.

Role of ICT in Speedy Processing of Information

A question was formulated to ascertain the perception of respondents on whether the ICT tools helped them in speedy processing of information. It was found that an overwhelming majority (92 per cent) of the respondents agreed that the ICT played a major role in the processing of information faster for quality decision-making. Quick processing of information is definitely one of the most valuable resources in the organisation.

Enhancing of Innovation

The responses to the question whether the ICT enhanced innovation in logistics companies are summarised in **Table 5.** Here also, a large majority (81 per cent) of the respondents agreed that the use of the ICT helped them in enhancing innovation in their organisation.

Table 5
Role of ICT in Enhancing Innovation

Parameters (Response)	Frequency	Percent	Valid Percent	Cumulative Percent
'Strongly Agree'	25	42	44	44
'Agree'	21	35	37	81
'Neutral'	11	18	19	100
Total	57	95	100	
Missing	3	5		
	60	100		

Barriers to the Adoption of ICT

Network Failure

The respondents were also asked to indicate their perception on whether logistics companies faced any problems in adopting the ICT in their business processes. The responses are summarised in **Table 6.**

Table 6
Problem of Network Failure

Parameters (Response)	Fre-quency	Per-cent	Valid Percent	Cumulative Percent
'Strongly Agree'	15	25	25	25
'Agree'	31	52	53	78
'Neutral'	12	20	20	98
'Disagree'	1	2	2	100
Total	59	98	100	
Missing	1	2		
	60	100		

As shown in the table, while a large majority (77 per cent) of the respondents agreed that the major problem they had faced in using the ICT tools was the network failure, 20 per cent of the respondents were undecided. Thus, the network failure is one of the problems faced by logistics companies in using the ICT tools.

Power Interruption

Here again, a sizeable majority (82 per cent) agreed that power interruptions did affect their daily activities related to the ICT tools. The frequency of power interruption affected the companies in losing the data. The responses to the question, whether lack of alternative power supply was a barrier to the ICT adoption in logistics companies are summarised in **Table 7**.

As shown in the table, nearly two-thirds (67 per cent) of the respondents agreed that this was a major challenge to the ICT adoption in logistics companies. Moreover, this has adversely affected their daily activities in terms of not serving their customers better.

Table 7
Lack of Alternative Power Supply

Parameters	Frequency	Percent	Valid Percent	Cumulative Percent
'Strongly Agree'	19	32	33	33
'Agree'	20	33	34	67
'Neutral'	14	23	24	91
'Disagree'	3	5	5	97
'Strongly Disagree'	2	3	3	100
Total	58	97	100	
Missing	2	3		
	60	100		

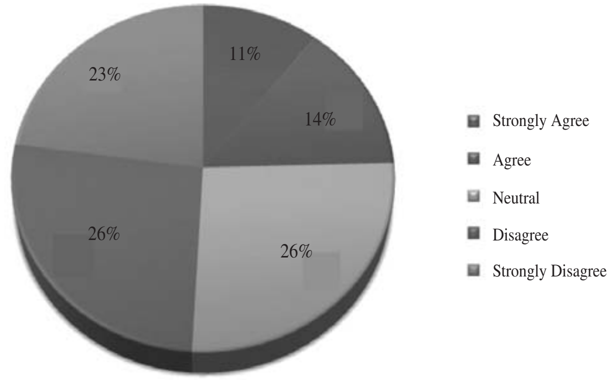

Figure 5: Lack of Skills and Knowledge

Lack of Skills and Knowledge

The responses to the question whether the lack of knowledge was a barrier to the ICT adoption in logistics companies are shown in **Figure 5.**

As shown in the figure, a majority of respondents (56 per cent) disagreed that the lack of skills and knowledge was not a major barrier in the ICT adoption. This finding is consistent with the findings of Stockdale and Standing (2004), Pokharel (2005), and Fink and Disterer (2006).

Major Problems Faced in Adopting ICT

The respondents indicated that during the use of the ICT in their work, they experienced a number of problems that hindered the optimum use of the ICT. The major problems that were pointed out by the respondents are shown in **Figure 6**.

Thus, the numerous problems faced by the users are caused by the introduction of the ICT in logistics companies. However, some of the respondents (20 per cent) agreed that the loss of data due to virus was a major threat to their business operations.

Measures for Making Optimal Use of ICT

The respondents supported that employees' education and training could be a better intervention in understanding the efficient support of the ICT tools in logistics companies. The majority of the respondents felt that the lack of skills and knowledge about the use of the ICT tools by workers led to under-utilisation of such tools in these companies. The respondents were further asked whether speed improvement in the ICT will make them more efficient in carrying out the company's activities. The respondents felt that there was a need for speed improvement in the ICT tools, for alternative power supply, and an alternative system in place in situations where there was a power/system failure. The alternative power supply would ensure continuous usage of the ICT tools in the organisation without losing the data.

FINDINGS

The study revealed valuable information that would help logistics companies to make sound decisions. The barriers faced by logistics companies in adopting the ICT in their business processes can be reduced by management through appropriate interventions.

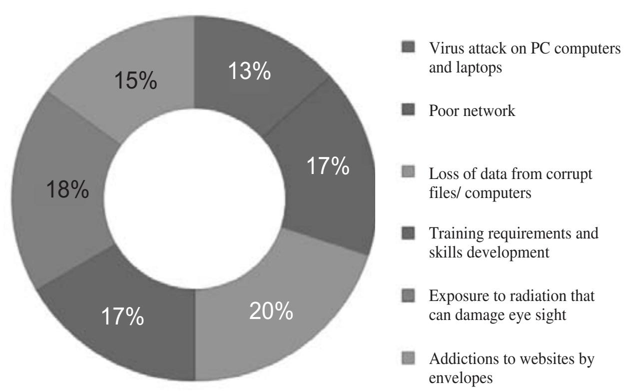

Figure 6: Major Problems Faced by Companies in Adopting ICT

Demographics and Familiarity of ICT Tools

The respondents from all age groups and both males and females were familiar with the ICT tools. It can be further deduced from this information that most of the logistics companies had in place such tools and the employees also were well aware about the ICT. This finding is consistent with that of Jimmy (2003), purporting that one of the first visible effects made by logistics operators is the integration of traditional services with 'information technology-based services'. The results also indicated that the majority of employees in logistics companies are young people and that the sizeable chunk of such employees was in the lower management. Moreover, in most of the logistics companies, the employees were familiar with the ICT tools.

Major Benefits of ICT

It was also admitted that the ICT tools were undoubtedly beneficial to logistics companies and played a significant role in their operations. Various respondents admitted that the ICT had made communication easier in their organisation and that with the introduction of the ICT tools in their work, they were able to source a lot of relevant information. This finding is consistent with that of Pokharel (2005), who argued that the ICT tools helped logistics companies in increasing efficiency of the company by communicating faster. The failure to get the right information might lead to poor service delivery in the organisation. This is supported by the views from some other authors, who pointed out that logistics operation was a dynamic and demand-driven environment that required the ICT-enabling connectivity, co-operation, and co-ordination between the players in the same industry and across the industries, so as to minimise the mistakes on orders, cut off geographical constraints, and speed up communication (Mutula and Brakel, 2006).

Most of the respondents agreed that the ICT played a significant role in their job and aided logistical operations in generating large volume of data and provided large data storage for documentation and future reference. The ICT tools maintained current and historical data and processes transactions to initiate and monitor performance in organisation. Similarly, the ICT facilitates and integrates the operations and reporting system in the organisation. In addition, the ICT helped in monitoring and tracking activities of logistics companies. Furthermore, the ICT tools have also made storage and retrieval of information quite convenient. Boxersox, Closs, and Copper (2007) have supported the finding that database management programme was used to store and retrieve it when it is needed. Information can be stored safely, for a long time, and can be accessed whenever needed for making informed decisions.

Furthermore, by allowing easy and quick search for information in an organisation and facilitating quick processing of a variety of information, the ICT in logistics companies provide quick and convenient communication process. Quayel and Jones (2001) noted that the buying in logistics companies is considerably changed with the introduction of the Internet, especially in *e*-procurement, by minimising lost time and errors resulting from the exchange of paper and re-typing of data.

The ICT tools are of great importance in reducing inefficiency and administrative cost in logistics companies. A vast variety of information is readily made available to various stakeholders and can be accessed at any time. According to Gourdin (2002), the application of the ICT in the logistics industry can be of crucial importance in cost-saving. The ICT is used to improve business processes and interconnections with other trading partners, operating in the supply chain. These systems allow data exchange, which in the long-run, improves planning of transport and logistics activities, and of the customer services.

The ICT play a major role in logistical operations and it is a driving force for integration (at supply-chain level) and innovation (at 3PL industry level). Supply-chain processes and planning increasingly require real-time data availability and exchange logistics companies are compelled to integrate their services. The literature supports the findings that most respondents felt that the ICT enhances innovation in logistical operations. It also goes beyond transaction processing and making information available for customers at all times and this sustains the executive's decision-making process (Mortensen and Lemoine, 2008).

Major Barriers to Adoption of ICT

The study has revealed that even though the ICT has made great contribution to the efficiency in logistics companies, there are barriers to their adoption which inhibit full integration of traditional service with the information technology-based service. These barriers include frequent power interruptions, which negatively affect the use of the ICT in logistics companies. However, most of the respondents disagreed when it came to the lack of skills and knowledge to operate the ICT tools in logistics companies. This could be true because most of the respondents had adequate exposure to the ICT tools.

Recommendations

Based on the foregoing findings and discussion, it appears that for logistics companies to tap the benefits of the ICT, the management needs to note the following:

1. The ICT is critical to the survival, growth, and development of logistics companies. As such, there is a need for regular maintenance of the ICT tools in order to avoid system down-falls as well as the loss of data due to corrupt files in the system.
2. Continuous training and development of manpower in the ICT is a crucial aspect in every walk of life. Given the fact that the systems and technologies are continuously changing, management should put a mechanism in place to continuously train and develop their human resources and improve their skills in the usage of the ICT tools. Since the logistics companies operate in a dynamic business environment and contribute a lot to the economy, they need special attention.
3. In case there is any problem with the ICT in operation, there should be an alternative system in place to curb the losses which might arise from not completing the work done by using the ICT tools. Thus, there is a need for an organisation to use both the ICT and the manual system.
4. The use of the ICT tools can be improved by embarking on information updates to the current systems in order to make them more compatible with the need of the organisation.
5. Despite the challenges faced by logistics companies in adopting the ICT in their business processes, management should put in place various interventions to reduce the barriers and enhance the degree of adoption. Employees can be trained to cope with the technological changes.

CONCLUSION

The usage of the ICT in logistics companies has diversified the quality and quantity of information available in such operations, through information generation and sourcing. It is now possible to get relevant information in the shortest possible time to make an informed decision. It is noted that logistical operations predominantly use the ICT, such as personal computers, the Internet, photocopying machine, and cell phone. This is due to the fact that logistics operations are mostly geographically dispersed, and connectivity between them is of high magnitude.

The ICT in logistics companies has supported executives in decision-making through the use of the digital support system and has enhanced innovation in logistical operations, like the creation of a new category of service-providers, called the fourth party logistics (4PL) service-providers. Although the ICT adoption in logistics companies is useful, there are some drawbacks too. One of the major drawbacks is the lack of the back-up system that can be used in times of system failure. Furthermore, the ICT may have an adverse effect on the health and social life of the workers, which may affect their job performance.

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MANAGEMENT STYLES IN RELATION TO JOB INVOLVEMENT
A Study in Selected Public-sector Organisations

Surekha Rana* and Nirupama**

Abstract

For the success of any organisation, management styles and job involvement are of vital importance. The present study was conducted on 200 managers for examining the relationship between management styles and job involvement, with special reference to public-sector organisations. Out of the two organisations, selected for the purpose of data collection, one was a manufacturing unit and the other a corporate office. The data was collected through a structured questionnaire, consisting of two parts; (1) twelve management styles, measuring 'supportive', 'rescuing', 'normative', 'prescriptive', 'problem-solving', 'task-obsessive', innovative', 'bohemian', 'confronting', 'aggressive', 'resilient', and 'sulking', and (2) job involvement, measuring 'true key' and 'false key'. The study has revealed a significant correlation between the twelve management styles, with 'true key' of job involvement. The 'false key' dimension of job involvement showed significant negative relationship with the twelve management styles. A significant positive correlation was seen between management styles and job involvement.

Key words: ***Management styles, Job involovement, Public-sector organisations, Managers***

CONCEPTUAL FRAMEWORK

THE management of an organisation is a complex process. A wide range of expertise needs to be tapped by the management to be able to take reasonably good decisions. Inevitably, management becomes a group effort. This generates its own dynamics within the rank of management, such as differences of opinion, selective perception, and struggle for power and communication difficulties. These dynamics, along with the objectives of the organisation, the operating contexts, and the key choices in the past, give to the organisation a distinct management culture. Such a distinctive management culture is the style of management. The organisation theory attempts to explain the style of managers and groups within the organisation, and the aggregate behaviour of the organisations, with respect to their environment. For the success of any organisation, job involvement is of vital importance. Job involvement indicates an individual's work commitment. A job-involved

* Dr. Surekha Rana is Associate Professor in the Department of Management Studies, Kanya Gurukul (Campus II, Gurukul Kangri Vishwavidyalaya, Haridwar), Dehradun (Uttarakhand); e-mail: *surekharana@rediffmail.com*

** Dr. Nirupama is Assistant Professor in the Department of Management Studies, Kanya Gurukul (Campus II, Gurukul Kangri Vishwavidyalaya, Haridwar), Dehradun (Uttarakhand); e-mail: *neeru_2910@rediffmail.com*

person is highly motivated and feels a sense of pride in his work. While the workers who are involved in their work are the biggest assets to an organisation, the workers who are not involved in their work act as the biggest liability. The organisation cannot achieve its goals and targets, unless its workforce is willing to work. Thus, the management style and the employees' job involvement play an important role in the success of any organisation.

Management Styles

In the organisations, there are as many different management styles as there are managers. There are the autocratic managers who dictate instructions to employees without any consultation or discussion. While some managers are easy-going and are more hand-off and trust their employees to self-motivate, others are team-oriented and welcome suggestions and help in the decision-making. Chalking out the management style that is right for a manager requires some research, observation, and self-examination, but when the manager finds a style that works both the manager and his staff stand to benefit. In every company, no matter how big or small, there are managers who excel and managers who have room for improvement. According to a dictum, "Leaders do the right thing; managers do things right." A more moderate definition would be something like this: "Manager works toward the organisation's goals, using its resources in an effective and efficient manner".

A managerial style is the pattern of behaviour (Fenwick and Murlies, 1994), which a manager, or a head of a school, adopts, in order to plan, organise, motivate, and control; it relates to the extent to which she/ he: (1) listens; (2) sets goals and standards; (3) develops action plans (short and long term); (4) directs others clearly; (5) gives feedback; (6) rewards and punishes; (7) develops teachers/ other colleagues; and (8) establishes personal relationships with colleagues.

The term 'inter-personal relations' was introduced by Sullivan (1953). Heider (1958) defined it as denoting relationship between 'a few', usually 'two'. In organisational psychology, it stands for 'person-to-person' relationships in a group (friendly as well as unfriendly relations). A manager's consistent way of interacting with people and situations is called his/her style. Akella (2006) portrays the managers as skilled communicators, coaches, guides, designers, and leaders and as individuals who possess critical, reflective, and communication skills to fulfill their functions effectively. Rana and Verma (2000) portray leaders as charismatic, inspirational, idealised, and intellectual, and those who give rewards.

The managerial styles, as defined by Avary (1980), are briefly described below. In the 'supportive' management style, managerial leaders encourage their subordinates and provide the necessary conditions for continuous improvement. The 'rescuing' style indicates a dependency relationship in which the managerial leader perceives his/her main role as rescuing the subordinate, who is seen as being incapable of taking care of himself/herself. In the 'normative' style, the leader is interested in developing proper norms of behaviour for his subordinates and in helping them understand why some norms are more important than the others. In the 'prescriptive' style, the leader is critical of others; he develops rules and regulations and impose them on others. The managerial leader using this style makes quick judgment and insists that all the subordinates follow certain norms. In the 'problem-solving' style, a managerial leader is concerned with solving the subordinates' problems but does not see them as being merely confined to the task. For such persons, the problems have various dimensions. The locus of the leader is dealing with and finding out solutions to problems.

The 'task-obsessive' style is more concerned with the task. The matters not directly related to the task are ignored. In the 'innovative' style, the innovators are enthusiastic about new ideas and approaches and enthuse others too. The 'bohemian' style has lots of ideas and is impatient with the current practices. The person is less concerned with how the new ideas work, than with the ideas themselves. Such people are non-conformists and enjoy experimenting with new approaches, primarily for fun. In the 'confronting' style, the managerial leader is concerned with the exploration of a problem. In fact, managers are more concerned with confronting problems than with confronting other persons for the sake of confrontation. The 'aggressive' leaders fight for their subordinates, clients or participants, or for their ideas and suggestions, hoping that this will help them to achieve the desired results. In the 'resilient' style, the managerial leaders show creative adaptability and learning from others, accepting other ideas, and changing their approach when required. In the 'sulking' style, the manager keeps negative feelings to himself and finds it difficult to share them, and avoid meeting people if they have not been able to fulfill their part of the contract.

The management styles have come a long way during the last decade, the command and control style of management behaviour remains a common practice in many companies. This management approach basically means that the employees are told exactly what to do, when to do it, and even how it should be done. The manager is in charge, has all the answers, and fixes all the problems. It is no surprise that plenty of people find this approach de-motivating and that the workplace with a command-control style is rated as pretty unsatisfying. In this system, none of the managers really enjoys being told exactly what to do and neither does it for employees. When people feel as though they have no say, and are given no opportunity to contribute outside their work tasks, they switch off and become 'disengaged'. The command and control approach is being phased out for a more collaborative and engaging style - a 'coach' approach, or being a 'manager-coach'. This is a positive shift - as long as it supports the manager in understanding what on earth is meant by a 'coach approach', and how expectations from them are changing.

Job Involvement

Job involvement plays a vital role in the modern era of employment crisis, disappointment, dissatisfaction, and stress. In fact, job involvement is a widely-studied aspect of organisational psychology. It is necessary to understand the human relations in industry because they explain why one man works harder than another, why one group of workers restricts its output and another works energetically, why one group goes on strike, whereas the other does not. The concept of job involvement has been considered to be one of the central measures by which the quality of work-life can be assessed. The job required a high degree of involvement by which employees can satisfy their need for growth, especially in the area of competence, achievement and self-actualisation. Involvement is the process of granting authority and responsibility to employees at lower levels in the organisational hierarchy. To achieve job involvement, management must make sure that the employees at the lowest hierarchical level have the access for certain information, knowledge, power and rewards to work autonomously or independently of the management control and direction. The advantages of job involvement may include better-quality products and services, less absenteeism, higher employee loyalty, lower turnover, better problem-solving, which, in turn, result in greater organisational efficiency.

Job involvement refers to the degree to which a person's work performance affects his self-esteem. Lodhal and Kejner (1965) considered job involvement as the degree to which a person is identified psychologically with his work or the importance of his work in his total 'self-image'. Job involvement has been defined in the two keys. First, 'true key' is the positive feeling about the job, where the employees and managers are totally engrossed in their jobs; if the assigned work is not completed within the prescribed time-limit, then they invariably reduce their lunch time or provide extra time for that. Moreover, the employees get the maximum satisfaction in life by doing their work and feel happy on the completion of the task. Second, 'false key' of job involvement is the sum of negative feelings related to their job. Employees and managers think of other tasks except their job work. Employees keep looking at the watch frequently while at work, to ensure if it is nearing the closing time and feel bored at the job time, they simply work for money and keep a lookout on other alternatives of job for extra earnings.

LITERATURE REVIEW

Bell, Halpin, and Neill (1996) found that autonomous primary schools were characterised with collective decision-making and high job satisfaction levels. The study further revealed that the management styles of private-sector school heads permitted less staff involvement.

Hoff (1998) examined the characteristics, job involvement, and career stage differences among 294 physician-executives, working in managed care-setting and found that the younger individuals' involvement in management work was more than the older individuals' involvement, which appeared to depend upon the surrounding work climate within the organisation.

Somani (2004) analysed the relationship between the charismatic leadership, job involvement, and corporate image-building in the context of a service organisation, using a sample of 70 employees of a multinational bank operating in India. The study revealed that job involvement fully mediated the relationship between the charismatic leadership and the customer-focussed image-building.

Suri, Tewari, and Chaturvedi (2006) examined the airmen and the officers' commitment towards the organisation under nurturing-task and participative leaders. The results showed that the leaders of airmen had a predominantly authoritarian style and the leaders of officers had a nurturing-task style. Regarding the work behaviour, the officers were more committed and satisfied with the job than the airmen.

Moynihan and Pandey (2007) drew a sample of state government health and human service managers. Their study revealed that the managers' influencing style had the greatest impact on job satisfaction and the least on job involvement. Atwater and Carmeli (2009) examined the leaders' impetus for creativity at work. SEM and regression analyses showed that LMX was positively related to the employees' feelings of energy, which, in turn, were related to a high level of involvement in the creative work.

The research studies conducted so far are vibrant in nature and their findings corroborate with the respective situation. The nurturing management style resulted in high job involvement and satisfaction. The leadership style of the Government health managers depicted low job involvement. Moreover, private school heads had low job involvement of the staff. High job involvement of the staff was linked with high creativity of the leader.

The Present Study

A review of literature revealed that though the studies have been conducted on knowledge, skills and competencies for various levels of management, there has been a comparatively negligible amount of work conducted in the area of management styles, and their relation with reference to job involvement, in public-sector organisations. The present study seeks to address this important aspect of understanding management styles and job involvement of public-sector organisations. Here, both the organisations studied pertained to the public sector. While the one was a manufacturing unit, the other had a corporate administrative set-up. Although the key issue was the ownership and the structure, the management levels were the same, the working environment was different.

OBJECTIVE OF THE STUDY

The main objective of the present study was to examine the relationship between the management styles and the employees' job involvement, with special reference to the public sector.

RESEARCH METHODOLOGY

According to Phophalia (2010), research is a systematic and objective analysis and recording of controlled observations that may lead to the development of generalisations, principles, or theories, resulting in prediction and possibly ultimate control of events.

The Sample

The sample forms the basis of a good research. The sample for the present study comprised 200 managers from two public-sector organisations, one a manufacturing unit and the other corporate office. In each unit, 100 managers (including Deputy Managers, Managers, Senior Managers, and Additional General Managers) were contacted for the study. Efforts were made to cover every department of the selected organisation. Organisation I was a manufacturing unit of one public-sector organisation and Organisation II was a corporate office of another public-sector undertaking. The rationale behind the selection of the two organisations in the public sector was that the management style and job involvement were different because of the different nature of the two organisations.

The Measures Used

Two standardised questionnaires were used for collecting the data. These were: (1) Managerial Style Spiro-M (Avary, 1980); and (2) Job Involvement Scale (Ashok Pratap Singh, 1998). These questionnaires were administered personally to respondents in individual capacity as well as in group-settings. The Managerial Style Spiro-M contained 36 items covering twelve styles: 'supportive', 'rescuing', 'normative', 'prescriptive', 'problem-solving', 'task-obsessive', 'innovative', 'bohemian', 'confronting', 'aggressive', 'resilient', and 'sulking' styles. Each style of the questionnaire contained 3 items. The score ranged from 0 and 5, 0 indicating 'rarely or never behaved' and 5 showed 'almost always behaved this way'.

The 'job involvement scale' contained 54 items, each covering 2 keys of involvement, namely, 'true key' and 'false key'. Score 4 was allotted on 'strongly agree' response of the respondent and score 1 on 'strongly disagree' response for 'true key' and 'false key', respectively.

RESULTS AND ANALYSIS

A correlation analysis was done to study the extent of relationship explained by the management style and job involvement variables in each organisation and the total group. The study revealed that there was significant relationship between management style and job involvement. The management styles were: 'supportive', 'rescuing', 'normative', 'prescriptive', 'problem-solving', 'task-obsessive', 'innovative', 'bohemian', 'confronting', 'aggressive', 'resilient', and 'sulking'. These showed significant relationship with 'true key' and 'false key', dimensions of job involvement.

Relationship of Management Style with Job Involvement in Organisation I

The matrix of correlation between management styles and job involvement, in Organisation I, is shown in **Table 1.**

As shown in the table, the 'rescuing' (r = 0.4775), 'normative' (r = 0.5741), 'prescriptive' (r = 0.5875), 'task-obsessive' (r = 0.4085), 'innovative' (r = 0.4354), 'bohemian' (r = 0.3913), 'confronting' (r = 0.398), 'aggressive' (r = 0.5603), 'resilient' (r = 0.2951), and 'sulking' (r = 0.6025) management styles had a positive relationship with the 'true key' of job involvement. Moreover, the 'false key' of job involvement depicted a negative relationship with the 'supportive' (r = -0.2647), 'rescuing' (r = -0.6616), 'normative' (r = -0.3724), 'prescriptive' (r = -0.5974), 'task-obsessive' (r = -0.5218), 'innovative' (r = -0.3326), 'confronting' (r = -0.5335), 'aggressive' (r = -0.3426), 'resilient' (r = -0.341), and the 'sulking' (r = -0.4445) management style.

Relationship of Management Style with Job Involvement in Organisation II

The correlation matrix of management styles and job involvement, in Organisation II, is shown in **Table 2.**

Table 1
Correlation Matrix of Management Styles and Job Involvement: Organisation I

		Job Involvement (n=100)	
SN	**Management Style**	**True Key**	**False Key**
1	Supportive	0.1521	-0.2647**
2	Rescuing	0.4775**	-0.6616**
3	Normative	0.5741**	-0.3724**
4	Prescriptive	0.5875**	-0.5974**
5	Problem-solving	0.1642	0.0558
6	Task-obsessive	0.4085**	-0.5218**
7	Innovative	0.4354**	-0.3326**
8	Bohemian	0.3913**	0.0252
9	Confronting	0.398**	-0.5335**
10	Aggressive	0.5603**	-0.3426**
11	Resilient	0.2951**	-0.341**
12	Sulking	0.6025**	-0.4445**

Note: * Significant at the level of 0.05 per cent
** Significant at the level of 0.01 per cent

Table 2
Correlation Matrix of Management Styles and Job Involvement: Organisation II

		Job Involvement (N=100)	
SN	**Management Style**	**True Key**	**False Key**
1	Supportive	0.1719	0.2066*
2	Rescuing	-0.1631	-0.2974**
3	Normative	0.1031	0.2114*
4	Prescriptive	0.058	-0.1665
5	Problem-solving	.1624	.1415
6	Task-obsessive	0.0033	-0.2739**
7	Innovative	-0.0459	-0.1583
8	Bohemian	0.0643	0.0951
9	Confronting	-0.2087*	-0.2569**
10	Aggressive	-0.0411	0.0037
11	Resilient	-0.0841	-0.2616**
12	Sulking	-0.2616**	0.138

Note: * Significant at the level of 0.05 per cent
** Significant at the level of 0.01 per cent

As shown in the table, the '*confronting*' (r = -0.2087) and the 'sulking' management *style*(r = -0.2616) have a negative relationship with the 'true key' of job involvement. The 'false key' of job involvement showed a positive relationship with the 'supportive' (r = 0.2066) and 'normative' (r = 0.2114) management styles, and negative relationship with the 'rescuing' (r = -0.2974), 'task-obsessive' (r = -0.2739), 'confronting' (r = -0.2569), and 'resilient' (r = -0.2616) management style.

Relationship of Management Styles with Job Involvement in Both the Organisations

The correlation matrix of management styles and job involvement, in respect of both the organisations, is depicted in **Table 3.**

As shown in the table, certain management styles, namely, 'supportive' (r = 0.1679), 'rescuing' (r = 0.2836), 'normative' (r = 0.4153), 'prescriptive' (r = 0.4094), 'problem-solving' (r = 0.1671), 'task-obsessive' (r = 0.2608), 'innovative' (r = 0.2694), 'bohemian' (r = 0.2362), 'confronting' (r = 0.1754),

Table 3
Correlation Matrix of Management Styles and Job Involvement f*or Both the* Organisations

		Job Involvement (n=200)	
SN	Management Style	True Key	False Key
1	Supportive	0.1679**	-0.1257
2	Rescuing	0.2836**	-0.62**
3	Normative	0.4153**	-0.2096**
4	Prescriptive	0.4094**	-0.4847**
5	Problem-solving	0.1671**	0.0502
6	Task-obsessive	0.2608**	-0.4686**
7	Innovative	0.2694**	-0.2334**
8	Bohemian	0.2362**	0.0624
9	Confronting	0.1754**	-0.4552**
10	Aggressive	0.3065**	-0.2682**
11	Resilient	0.1601*	-0.3375**
12	Sulking	0.4174**	-0.2695**

Note: * Significant at the level of 0.05 per cent
** Significant at the level of 0.01 per cent

'aggressive' (r = 0.3065), 'resilient' (r = 0.1601), and 'sulking' (r = 0.4174) were found to have a positive relationship with the 'true key' of job involvement. Furthermore, the 'false key' of job involvement showed a negative relationship with the 'rescuing' (r = -0.62), 'normative' (r = -0.2096), 'prescriptive' (r = -0.4847), 'task-obsessive' (r = -0.4686), 'innovative' (r = -0.2334), 'confronting' (r = -0.4552), 'aggressive' (r = -0.2682), 'resilient' (r = -0.3375), and 'sulking' (r = -0.2695) management style.

DISCUSSION

A significant positive relationship of various management styles, namely, 'rescuing', 'normative', 'prescriptive', 'task-obsessive', 'innovative', 'bohemian', 'confronting', 'aggressive', 'resilient', and 'sulking', was observed with the 'true key' of job involvement. Moreover, a significant negative relationship of 'false key' was found with certain management styles, namely, 'supportive', 'rescuing', 'normative', 'prescriptive', 'task-obsessive', 'innovative', 'confronting', 'aggressive', 'resilient', and 'sulking'. These findings suggest that in the manufacturing unit, the managerial styles had influence on the job involvement for achieving the organisational objectives (Table 1). These findings are similar to those based on the research conducted by Suri, Tewari, and Chaturvedi (2006).

A significant negative relationship of 'confronting' and 'sulking' styles was seen with the 'true key' of job involvement. The 'false key' showed a significant negative relationship with 'rescuing', 'task-obsessive', 'confronting', and 'resilient' management styles and a positive relationship with 'supportive' and 'normative' styles for the corporate office. It indicated that the office employees/managers were less concerned with the job in the backdrop of the corporate office environment (Table 2). These findings are clearly in line with the previous studies on the relationship of management style with job involvement (e.g., Bell, Halpin, and Neill, 1996).

A significant positive relationship of the 'supportive', 'rescuing', 'normative', 'prescriptive', 'problem-solving', 'task-obsessive', 'innovative', 'bohemian', 'confronting', 'aggressive', 'resilient', and the 'sulking' managerial style was found with the 'true key' of job involvement. The 'false key' of job involvement showed a significant negative relationship with the 'rescuing', 'normative', 'prescriptive', 'task-obsessive', 'innovative', 'confronting', 'aggressive', 'resilient', and 'sulking' dimensions of management style (Table 3). In a study of Somani (2004), a significant relationship was seen between the charismatic leadership and job involvement.

CONCLUSION AND IMPLICATIONS

One of a significant achievement of the study is that it has provided some insights into the relationship of managerial styles with job involvement. In the overall sample, all the twelve management styles have shown positive relationship with the 'true key' of job involvement. The significant positive relationship of the 'supportive', 'rescuing', 'normative', 'prescriptive', 'problem-solving', 'task-obsessive', 'innovative', 'bohemian', 'confronting', 'aggressive', 'resilient', and the 'sulking' styles was found with the 'true key' of job involvement. The 'false key' of job involvement showed significant negative relationship with the 'rescuing', 'normative', 'prescriptive', 'task-obsessive', 'innovative', 'confronting', 'aggressive', 'resilient', and the 'sulking' management styles. Leaders and managers have found the real style of managing the organisations. They are innovative, aggressive, creative, and adaptive. The study has revealed that in a manufacturing unit, the manager's styles had affect on job involvement, for achieving the organisational objectives. In the corporate office, the management style had less concern with the job involvement. Thus, the study is expected to add something of value to the body of the existing knowledge on the subject of management styles and job involvement. It is hoped that the results of this study would be of interest to HRD officers and employees. Moreover, the study has shown that the styles of managers can define the positive job involvement of employees in organisations. Furthermore, it is noted that there is a correlation between management styles and employees' job involvement. The managers of the two organisations ought to create a better managerial style, and, thereby, inspire people to involve themselves in their job, and to evolve a proper management style that would result in improved employee performance.

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BOOK REVIEWS

Parag Parikh, ***Value Investing and Behavioural Finance: Insights into Indian Stock Market Realities*** **(New Delhi: Tata McGraw-Hill Education Private Limited, 2009), Pages: 328, Hardbound, Price: not mentioned**

In this excellent book on value investing in the Indian stock market, the author, Parag Parikh, backed by decades of experience in the Indian stock market, behavioural finance, and value investing, provides valuable insights into the realities of investing in the stock market. He validates the presence of common pitfalls and 'traps' that befall unwary investors around the world and the successful application of the principles of value investing to ward these off and create wealth.

The author argues that the Indian stock market and investor behaviour is no different here than elsewhere in the world and what works well for value investors around the world should work equally well for the Indian investors. From a behavioural finance perspective, the book dwells upon the psychological aspects of equity investing, that is, how the investors mind works, their impact on investment decisions and the consequent investment performance.

The book is divided into twelve chapters. Chapter 1 is about success and failure in the stock market. It lays the basis for preparing the reader to better understand the concept of behavioural finance. Our success in life depends on our self-awareness. The more we understand ourselves the more we are able to achieve personal growth. All the problems in life, and with money, start from the basic human tendency to have instant gratification. The author finds that this is true of the stock market too.

Chapter 2 is on understanding the behavioural trends. The investors find the equity class dangerous due to its wild fluctuations. Many people shun equities as there are examples of investors and corporations having gone bankrupt by investing in equity capital. What makes equity investment so risky? The author tries to answer this question, using the conclusions of his earlier study on the BSE Sensex ("Making Sense out of the Sensex"), which highlights the fact that it is not the inconsistent performance of the companies constituting the basis of computing the Sensex, rather the follies of the crowd behaviour that make investing risky. Therefore, understanding the behaviour of stock market participants is central to designing of a successful investment strategy.

In Chapter 3, the author discusses the behavioural obstacles to value investing, and seeks to help the reader to understand the characteristics and traits of a successful investor. The author tries to answer questions, such as the following: Which investment style has historically outperformed other styles? What are the traits that distinguish a successful investor from others? What role does emotional discipline play in successfully implementing an investment strategy?, and, What are the behavioural traits that act as impediments to achieving investing success?

Chapter 4 is on contrarian investing: the psychology of going against the crowd. Here, the author discusses in detail the impediments faced by human beings in developing contrarian thinking. The approach is discussed with the help of the author's empirical study, titled "Conventional and Contrarian Portfolio", which establishes the reason behind superior results expected from a contrarian portfolio. Further, the author illustrates the concept by suggesting a worthy contrarian pick and the corresponding justification behind it with the help of a case study, titled "VST Industries: A Blossom in the Desert".

In Chapter 5, the author discusses the 'growth trap' – the act of chasing growth stocks, which results in sub-optimal returns, using an extensive study, covering the stock performance from the year 1979 to 2005. The growth trap theory is supported with examples from Indian companies, ACC and Infosys. The author then illustrates the distinction between a good investment and a good business, by taking the cases of Hindustan Lever Ltd. and Larson and Toubro. The lessons from these cases have special significance in achieving success by an investor in the long run.

Chapter 6 is on commodity investing where the author suggests the right way to go about investing in commodity manufacturing companies and argues that empirical studies support a counter-intuitive method that seems to work better than the conventional approach used by the vast majority of investors.

Chapter 7 is about the public sector units and why their stocks deserve better attention from long-term investors. The author tries to find answers to questions, such as: Do public sector units have the autonomy to look after the interests of the stakeholders, and create value for the shareholders? What lesson does the historical performance of PSUs since the liberalisation in 1991 hold?, and, Should an equity investor look for potential bargains in this space or should he overlook this area? The author notes that the slow pace of reforms in the liberalised environment has enabled the public sector undertakings (PSUs) to meet the challenges of the competitive market. Those investors who followed the contrarian approach and thought of the long term have done exceedingly well. Therefore, a wise long-term investor cannot ignore the PSU stocks.

Chapter 8 is on sector investing. Here the author discusses the performance of major sectoral indices since their inception. He emphasizes that human behaviour plays an important role in an investor taking fancy to an industry sector or ignoring it. Sector 'bubbles' are formed when investors get very excited about the fortunes of a particular sector due to the change in the economic conditions and government policies. The author conducted a study of certain sectors (automobile, banking, capital goods, fast moving consumer goods, health care, information technology, oil and gas, power and real estate) in the Indian market in the last decade. He throws light on the irrational investor expectations which give rise to sector bubbles.

Chapter 9 is on initial public offerings and whether it makes sense to subscribe to the flood of capital offerings that come up during the bull market. The author concludes that the IPOs, which seem like a good investment vehicle, are, in reality, not so. In fact, an IPO is a product which is against the investor interest, as it is mostly offered to investors when they are willing to pay a higher and outrageous valuation in boom times!

In Chapter 10, the author discusses the index investing. He defines index funds and index investing, and discusses the characteristics of a stock that guarantees it a place in the stock index, reasons for popularity of index funds, de-indexing, and so on. The author's research on the two major Indian stock market indices, e.g., the BSE Sensex and the NSE Nifty, highlights the major drawbacks of 'passive investing'. The author concludes that the Index investing is in no way better than the active investing.

Chapter 11 is about the 'bubble trap'. The author provides insights into the crowd behaviour and how the stock price bubbles are formed. He explains how excesses are committed during the bull/bear market transitions, leading to mass folly, which eventually leads to bubbles. The author illustrates the application of his insights to identify the bubble in the history of the Indian stock market.

Finally, in Chapter 12, the author discusses the interesting subject of investor behaviour-based finance and explains how important it is for a corporate client to study the investor behaviour. Although the same investors might happen to be the owners, but, being transient investors, their behaviour is often guided by greed and fear and not necessarily in line with the company's outlook.

This book is a must-read for all the Indian stock market investors, whether they are contemplating an entry, re-entry, or are simply too scared to enter it. The author draws upon his body of empirical research on the Indian stock market and insights drawn from his own vast market experience and his personal interaction with many international experts to drive home the point that there is indeed a method to the madness. The investors can create lasting wealth via value investing and avoiding typical investing traps and pitfalls.

Dr. Harvinder Kaur
Reader in Department of Commerce
Sri Guru Gobind Singh College of Commerce
(University of Delhi)
Delhi

Rajendra Nargundkar, *Services Marketing: Text and Cases*, 3rd ed. (New Delhi: Tata McGraw-Hill, 2010), Pages: 469, Paperback, Price: not mentioned

Marketing of services has been often written about, both in research papers and in a book form, due to its unique components that differentiate it from marketing of products. However, the advent of globalisation, with its focus on relationship marketing and technology imperatives, faded the demarcation line between the marketing of services and the marketing of products. Today, as we are a witness, with the US industry having been there and back, the marketer as well as the consumer is 'product-oriented' with the definition of 'product' being a grey area. From EQ to SoulQ to metaphors, everything has been deployed and explored to simplify the metaphorical meanings in the consumer's mind-these meanings have been rationalised parallel for the product and service industry. Thus, the services and the product arena in marketing are slowly converging as consumers' relationship and their mind become the focal area.

India is still in an evolutionary stage in services marketing. This book is completely focussed on simplifying the concepts and fundamentals of services marketing, with India and Indian companies as the theme of the book. From the IIM caselet in the product P to the *e-chaupal* case study in the place P, from the Kerala tourism caselet in the promotion P to India's IT sector caselet in the pricing P, from the Skyway airlines caselet in the people P to Delhi Metro Rail case study in the physical evidence P, and throughout the rest of the chapters, the book is a collection of the Indian service endeavours.

The book is an oversimplified version of the fundamental concepts of services marketing. It delineates the basic components of services marketing very neatly into seven Ps, from Chapters 1 through 8. These concepts have the backing of caselets and case studies that are mainly secondary data-based. Although these cases do augment the explanation of the fundamental concepts, it would have been helpful to have updated data and examples so as to understand the evolutionary process of services marketing in India. Some of the cases date back to 2003 and might have been inserted to explain the concepts than to show the evolution.

Chapter 4, on the Promotion P, has been made interesting by inserting some colourful advertisement clippings. It does lend an 'international' appearance to the book. However, the pictures on the pages, named as Plate 1-8, have neither been indexed anywhere nor have been talked about in the chapter. As there are no linkages to these colourful advertisements in the text, the assumption would be that these have been inserted just to show advertisement samples to the readers and to lend a colourful appeal to the book.

Chapter 9 focusses on the integrated service strategy. It exemplifies the concept through examples of service quality measurement scales in different areas, including employee and customer satisfaction measurement. The chapter has an annexure of case studies, all, barring two, of the companies operating in India. The case studies are a good afterthought to the chapter but again are dated and contain old data.

The disjointed factor that is rather unclear is the linkage of customer satisfaction measurement with integrated service strategy. The placement of the customer satisfaction topic *per se* in the chosen chapter is rather out of place. It might have been a better fit in the last chapter (on CRM) as customer satisfaction is integrally related to CRM.

Chapters 10, 11, and 12 are disjointed additions. The purpose might have been to talk of globalisation and then focus on advent of retailing sector and CRM in India – which definitely are the major events that shook the Indian service industry after globalisation. These merge with the theme of the entire book- services marketing in the Indian context.

Chapter 11 is definitely a well-planned addition. It is quite comprehensive in its coverage ranging from a reproduced reading in Managerial and Policy Perspectives in retailing sector to write-ups reproduced from press publications to a discussion on shopping malls.

The book will surely be helpful as a textbook to students aspiring to understand the fundamentals of services marketing, particularly in the Indian context. The basic concepts have been well explained in a simplistic manner, enabling the raw students to grasp the fundamentals. However, it leaves a lot to be desired as a guide to services marketers and entrepreneurs.

Dr. Gunjeet Kaur
Director
Institute of Integrated Marketing
Communication and Management
New Delhi

J.K. Thukral, *Business Statistics* (New Delhi: Taxmann Publications, 2010) Pages: 764, Paperback, Price: Rs. 375

Statistical thinking enhances the understanding of the problems of business and helps the managers in making better decisions. The book under review is a recent addition to the vast literature on the subject already available in the market. It is designed for undergraduate students of commerce and business. The book is divided into fourteen chapters. The treatment of the subject is simple and lucid. The statistical theory and the derivation of formulae have been omitted. The objective behind writing this book seems to encourage the students without mathematical background to understand statistical techniques instead of getting intimidated by long derivations.

Chapter 1 of the book gives an overview of the subject of statistics. It includes the definition, uses, and the limitations of statistics. The chapter also brings out the applications and usefulness of statistics.

The various methods of collection, classification, and presentation of data are given in Chapter 2. The techniques of organising the data into tabular and graphical forms, so as to enhance data analysis and interpretation have been described in sufficient details.

Chapter 3 describes the several numerical methods related to the measures of central tendency. For the benefit of the students, various types of application exercises are given at the end of the chapter. These exercises include both the theoretical questions and the numerical problems.

The concept of variability and various measures of dispersion, including range, quartile deviation, mean deviation, standard deviation, and variance are explained in Chapter 4. Besides measuring the extent of variation, it is also important to measure the direction of variation. This is included in Chapter 5 which contains various measures of skewness, moments, and kurtosis.

Chapters 6 and 7 describe the analysis of data concerning two or more quantitative variables, through correlation and regression analysis. Chapter 8 explains index numbers, computations of indexes, base-shifting, splicing, and deflating. Chapter 9 deals with the analysis of time-series and gives a general understanding of time-series forecasting techniques, along with the decomposition of time-series data into various components.

Chapters 10 to 14 deal with probability and probability distributions. Chapter 10 introduces the basic concept of probability in simple terms. Various approaches and theorems have been lucidly described. It also contains a number of solved exercises so that the students can practise and gain confidence in solving tricky probability problems. The next chapter introduces the concept of binomial distribution. Another discrete probability distribution, i.e., the Poisson distribution has been described in detail in Chapter 12. The normal distribution and its properties, and standard normal curve are described in Chapter 13. Solved examples make the chapter useful in understanding the concept. The chapter further includes normal approximation of the Binomial and the Poisson distributions.

The statistical decision theory is explained in Chapter 14, which describes the various types of decision problems, decision-making under uncertainty, and non-probabilistic decision-making criteria.

All in all, the book is written in a simple language, so that an undergraduate student can easily learn the basic and core concepts of statistics. Each chapter starts with learning objectives. All the chapters are comprehensive and contain the necessary theory and methods of carrying out the various techniques and analysis. The emphasis of the author is on motivating students to apply statistical techniques to the real life data and draw statistical inferences through practice. For that purpose, numerous solved exercises are included.

The author has, thus, provided a useful text book for undergraduate students of business which have the potential to enhance their statistical learning.

Prof. Bhagirath Singh
Vice-Chancellor
Maharshi Dayanand Saraswati University
Ajmer (Rajasthan)

Allen L. Webster, *Applied Statistics for Business and Economics: An Essential Version* (New Delhi: Tata McGraw-Hill Publishing Company Private Ltd., 2010), Softbound, Price: not mentioned

Statistical methods help business managers in obtaining the solution of their problems. The third edition of the book by Allen L. Webster, *Applied Statistics for Business and Economics: An Essential Version,* provides additional features, such as 'Section Exercises', 'Setting the Stage', 'Curtain Call', and 'From Stage to Real Life', for refining the statistical skills of the readers. Students can benefit by such additional facility, available in each chapter of the book, for further statistical analysis in their business studies.

The book under review offers a fundamental knowledge of statistical tools during the decision-making process. It is valuable for both business and economic analysis. It includes flow-charts, list of formulae, solved problems, section and chapter-wise exercise, case studies and examples, and websites to access additional computer-based data-sets. The text of the book provides sufficient knowledge about the application of statistical tools for solving the business problems. Solution of the problems is also obtained using computer packages: Minitab, Excel, and ASCII formats. The new addition of this book should be useful to the MBA students in applying the major statistical techniques to business problems.

The Preface gives a brief description of the features, contained in the previous edition, and the new features added in the current edition. The book is divided into 15 chapters, besides three appendices, which include business report writing, answer to the chapter-wise unsolved problems, statistical tables, and a comprehensible subject-index.

The first two chapters of the book introduce the basic concepts, functions of statistics, its importance and methods of organising the data-sets. The role of statistics in business studies is introduced in Chapter 1, which emphasises the importance of exposing the students to the application of statistical analysis in their field of specialisation. Chapter 2 illustrates the method of organising various types of data and the method of their presentation. The provision of diagrammatic and graphical presentation of data, based on industrial and business problems, given in this chapter, may be further helpful in better understanding of the frequency distribution pattern. The solved examples provided at the end of each section shall also be beneficial to the students for better understanding of the statistical procedure adopted for solving such problems.

The author discusses the importance of the major concepts of central tendency and dispersion in Chapter 3. The concepts of quartiles, deciles, and percentiles are also introduced in the section of other measures of dispersions. Addition of the concept of moments in this chapter may further help the students in differentiating the data sets.

In Chapter 4, the principles of probability are explained through relative frequency approach, subjective approach and the classical approach for its application in business and economics studies. The probability section has an easy-to-follow introduction to the set theory, with a number of examples. The solved problems are based on the basic probabilities, using Bayes' Theorem and other applications which would help the students of professional courses also. Some emphasis could be placed on generalisation of the Multiplication rule and the Addition rule, otherwise the students might get the impression from a casual reading that it is always applicable to probability of two events only. Introducing the concept of '*a priori*' and 'posterior' probabilities before explaining the Bayes' theorem may further help the students for better understanding the concept.

Chapter 5 examines how the discrete and continuous probability distributions can be used to solve many common business problems. There is also an excellent explanation of business application of Uniform, Poisson and Normal distributions in the '*Setting the Stage*' portion of this chapter. The important feature of this chapter is to provide the business-based solved problems on each probability distribution. In the end of the chapter the '*Curtain Call*' refers the students back to '*Setting the Stage*' portion after going through the entire chapter.

Chapter 6 deals with sampling distributions for population mean and population proportions. The author briefly explains the sampling techniques used for selecting a sample from the population, especially for business studies. The main omission in this chapter is that no mention has been made about the principle of point estimation of the population parameters, using different sampling methods.

The principles of confidence interval of population mean for large and small samples, with the help of numerical examples are discussed in Chapter 7. The determination of the proper sample size under various conditions is explained in the next section of this chapter. Finally, the properties of a good estimator, alongwith certain solved problems, a set of formulae and chapter exercise are given in the last section of the chapter.

Chapter 8 explains the procedure of testing the hypothesis for drawing the conclusion about the population parametric value. The terms used in testing of hypothesis, such as level of significance, critical regions, Type I and Type II errors, one-tail and two-tails test and interpretation of the p-value, etc., are explained with the help of numerical examples. One sample Z-test and *t*-test are discussed in the last section of the chapter. Two sample t-test for testing the mean of two populations and two sample Z-test for testing the difference between two proportions, paired *t*-test, are explained with the help of solved examples in Chapter 9.The concept of analysis of variance was introduced in Chapter 10 and the one-way and two-way analyses of variance along with completely randomised design, randomised block design, factorial Analysis and Latin Square Design are discussed in this chapter.

Chapter 11 deals with the general theory of simple regression and correlation analysis, including the tests for population correlation and regression coefficients. The determination of simple linear regression model is explained with the help of relevant numerical examples.

Method of obtaining least squared solution through numerical methods is discussed in details. This is followed by the discussion to detect auto-correlation based on the Durbin-Watson statistic.

Chapter 12 deals with multiple correlation and regression analysis. The use of multiple regressions to forecast the value of dependent variable is also explained. Partial correlation and regression coefficients, along with the concept of multi-co linearity and step-wise regression analysis are also introduced. Moreover, the curvilinear models are discussed using polynomial functions of the general form.

Time-series analysis and index numbers are discussed in Chapter 13 through graphs showing actual and forecasted values of business activities. Secular trend, seasonal fluctuations, cyclical variations and irregular fluctuations in time-series business data is explained. Time-series model and trend analysis is discussed with the help of numerical examples. The index number theory is also highlighted in this chapter where the simple and composite price indexes are presented. The introduction of Laspeyre's index, Paasche's index, and Fisher's Ideal Method in this chapter has further extended the use of weighted composite price indexes. The uses and importance of composite price indexes are also presented at the end of the chapter.

The Chi-square test and non-parametric tests are presented in Chapter 14. Chi-square goodness-of-fit tests and the test of independence are explained through business management problems, using the Minitab software. Sign test, Run test, Mann-Whitney U test and Kruskal-Wallis test are applied in quality control problems. The concept of Spearman's Rank Correlation is also given in one of the sections of this chapter.

Chapter 15 describes the quality control techniques by introducing their brief history. The role of statistics in quality management, with respect to controlling and improving the quality of industrial products, is discussed through control charts of variables. Acceptance sampling plan is also provided for the benefit of the users in addition to the concept of operating characteristic curves. Business report writing, answer to problems, and important statistical tables are given at the end of the book as appendices.

Readers would have been further benefited if the discussion contained under the 'Additional Features', given in each chapter, was simplified. There is a wide coverage of the standard business statistics topics, such as descriptive and inferential statistics, index numbers, time-series analysis, and quality control techniques, with a lot of worked-out examples. The book will be useful to the under-graduate and post-graduate students and the teachers of business.

Prof. J.B. Singh
Senior Professor of Statistics
School of Basic and Applied Sciences
Shobhit University
Meerut

Kevin Gallagher, *Skills Development for Business and Management Students* (Oxford University Press, 2010), Pages: 268, Price: Rs. 310

Kevin Gallangher has provided a structured framework for trainers, trainees, and students who want to evolve as successful managers, irrespective of the company, economic environment, and the group dynamics prevailing in the age of competition. As a soft skills trainer for corporate employees as well as the students of business and management, I find the coverage of the subject quite exhaustive and akin to the concept of multiple intelligences that is being advocated for competitive advantage. By using simple language, engaging writing style, user-friendly design and layout, extravagant examples, self-help exercises, suggestive Internet sites and hands-on activities, it provides a practically meaningful insight into both the concept and the application of soft skills. Learning objectives are set out at the beginning of each chapter and discussion questions provide a review with a practical orientation. Support is available for instructors through listing of the

Internet on-line resources, in addition to the on-line resource centre (ORC: *www.oxfordtextbooks.co.uk/orc/gallagher*), which I found very useful. Such listing of references should be a major attraction for any trainer in soft skills. The exercises and cases are interesting and of practical use; some of them even having relevance in our personal life as well. The worksheet to support and enhance quantitative skills is innovative and would be the most attractive feature for the students having no mathematical background.

A tripartite framework integrating (i) workplace skills, (ii) academic skills, and (iii) personal skills, has been used in the designing of the chapters. Workplace skills include hard skills, like IT, commercial, writing, and presentation; and soft skills, like communication, inter-personal relationship, team-working, cultural awareness, leadership, and emotional intelligence. Academic skills are related to the learning process of the individual in terms of acquisition, assimilation, application, and internalisation of the knowledge acquired through the academic accreditation. Personal skills deal with both the inter-personal and intra-personal issues, and focus on emotional competencies. The concept of emotional intelligence (EI) has been covered in detail under the various heads: self-awareness, self-management, social awareness, and relationship management.

The book starts with a conceptual understanding of knowledge, skills and behaviour that is part of the competency framework in the selection of candidates for a job as well as their up-gradation. To begin with the learning process, the author suggests a personal development plan, based on the importance of self-reflection in Chapter 2. This is a good starting point for all users as it makes the book more self-directed and less prescriptive. The use of 'learning journals' is advocated and a *critical incident sheet* suggested that initiates one to the voyage of self-discovery. Development of self-efficacy *is* explained through the process of conscious and unconscious competence.

Personal development in action at the workplace begins with Chapter 3, which focusses on time management tools and techniques, including the checklist and the GANTT charts. Chapter 4 takes the readers to the basic requirements to develop communication and persuasion skills. The use of logic, emotions, and ethical arguments are explained in detail. Barriers to communication, like semantics, culture, hierarchy, IT, and emotions, have been briefly covered.

The development of communication skills has been integrated with reading, writing, and presentation skills, dealt with in Chapters 4, 5, and 6. The key feature of the chapter covering reading skills is the discussion on note taking, which is a primary activity required at the workplace. The chapter on writing skills is more of a preview on report writing and e-mail writing skills. Chapter 6 adequately covers the organisation of contents as well as slide appearances while using the power-point presentations. The communication impact is completed through Chapter 7, giving tips on building confidence while delivering presentations, which include both the use of equipment as well as non-verbal communication.

Chapters 8 and 9 deal with the research skills and their application, in detail. The use of excel sheets, listing of references and bibliography, presentation of tables and graphs is explained with exercises, which can enhance the user's ability to use research literature and results for decision-making. While Chapter 8 discusses the use of presenting quantitative data, Chapter 9 provides useful tips to enhance search and reference skills. A unique feature of this chapter is a discussion on plagiarism which is rarely covered in any textbooks, despite being an important topic, these days.

Workplace skills which give a competitive advantage to individuals in being considered for higher positions are team working skills and innovation and creativity. This has been covered in Chapters 10 and 11. A discussion on Belbin's team roles, conflict resolution techniques in team functioning gives the reader a clear understanding of the concept of 'group versus individual'. The employers' perspective of creativity and innovation has been explained through interesting examples. Techniques of improving personal creativity, like mind-mapping, attribute-listing, use of metaphors, and brainstorming have been explained through simple examples.

The last chapter focusses on the need to carry the personal development learning process forward through a self-directed learning at the workplace. The emphasis, here, is on the self-directed learning at the workplace rather than wait for a career development to take a planned course. This allows the learner to adapt to unpredictable environmental issues. The skills identified are networking, reading and writing, presentation, critical research and creativity as the corner stone for success. Team building and development enhances leadership skills.

This book is more than a textbook since it provides a functional and practical understanding of soft skills and initiates one to personal development plan to enhance one's competence. It enables the readers to see how self-management affects the quality of work-life and, through it, impacts personal happiness. This book has a unique orientation to real-world application. Practical tips and suggestions provide effective ways of dealing with problems in communication, team dynamics, leadership, and control of emotions. It is a must-read for all the students of business and management and professionals, who believe in developing self-competence through soft-skills development.

Dr. Brinda Balakrishnan
Management Consultant and Visiting Faculty
Birla Institute of Management Technology
Greater Noida (UP)

K. Aswathappa, *Human Resource Management: Text and Cases*, 6th ed. (New Delhi: Tata McGraw-Hill, 2010), Pages: 829, Soft bound, Price: not mentioned

Human resource management has the intrinsic potential to grab the readers' interest, because of its relevance to their everyday life. The students of human resource management find themselves uncomfortable with the plethora of books and core studies written by foreign authors. As a result, the answers appear more like opinions and a report. The present book is an attempt to fill this gap by introducing Indianised material. The text is replete with illustrations and examples drawn from the Indian business.

The book organised into 29 chapters, grouped into seven parts. These parts are: (1) Nature of HRM, (2) Employee hiring, (3) Employee and executive recommendations, (4) Employee motivation, (5) Employee maintenance, (6) Industrial relations, and (7) Contemporary issues in HRM. Each chapter contains one case, which is an on-going story. It is carried throughout the book. However, the student can skip a chapter case and resume it in another chapter, without losing the learning experience. In addition, each chapter contains an independent care application that deals specifically with the topic.

Part I consists of three chapters. Chapter 1, titled 'Nature and Scope of HRM"' emphasises the role of HRM is the strategic management process. Extensive analyses of HR issues have been identified in various business units, such as Reva, Siyaram Industries, and Poddar Industries. The environment HRM is described in Chapter 2, titled 'Context of HRM'. The chapter also discusses the ways the managers use knowledge of environmental factors to influence the employee performance. Chapter 3, titled 'Integrating HR strategy with Business Strategy', describes the linkages between the employer-employee relationship and necessary collaboration between managers and the HR department.

Part II includes five chapters. Chapter 4, titled 'Human Resource Planning', emphasises the important role of planning in an organisation's overall HR strategy, with special emphasis on down-sizing and succession planning. The topics on work analysis and jobs designing are discussed and critiqued in Chapter 5. More and more organisations are now getting de-jobbed. Jobs are becoming amorphous and difficult to define. Firms are restoring to competency-based job analysis. Jobs are designed to fir the physical abilities and characteristics of individuals, so that they can perform their jobs of individuals, so that they can perform their jobs effectively. Numerous approaches to recruitment as well as currently popular alternatives to recruitment are presented in Chapter 6, titled 'Recruiting Human Resources'.

One such popular alternative to recruitment is to hire 'stars', 'star begets star' is the common belief, since people are drawn by the reputation and creditability of such stars. In chapter 7, titled 'Selecting Human Resources', the major steps involved in the selection process are describes. How organisations can induct and place new employees effectively in the organisations are explained in Chapter 8, titled 'Inducting and Placing New Employees'.

Part III is devoted to the issues on compensation and includes 6 chapters (9 to 14). Chapter 9 is on training, development, and career management focusses on improving employee's abilities and skills. The need for training and types of training for international assignments are reviewed. Examples from Fed Ex, LG, and HUL, give a thoroughly updated treatment of the topic. Chapter 10 deals with performance appraising. The author explains the performance appraisal systems operating at Philips and Larsen and Toubro.

The concept of remuneration is introduced in Chapter 11, which discusses the potential impact of pay on the employees, determination of pay level, theories of remuneration, and the factors influencing the level of remuneration. Chapter 12 deals with the incentives and performance-based payments. It focuses on the types of incentives schemes; steps involved in formulating an incentive plan and implementation of incentive schemes in Siemens (India) are thoroughly discussed. In order to attract and retain people, organisations provide indirect benefits to its employees. "Management of employee benefits and services is discussed in Chapter 13. It includes latest types of benefits that employers provide to its employees. Relevant issues relating to managerial remunerations are addressed in Chapter 17. The remuneration of managerial personnel is expected to be guided by job description and job evaluation. However, in practice, an exorbitant amount is paid to most of the CEO's. The author gives a list of companies that have offered ESOP's recently, and examples of companies, such as Asian Paints, Lupin, Bajaj, and Rico Auto have been cited. These companies have constituted remuneration committee for resolving the issues relating to remuneration of top executives.

Part IV examines the major issues pertaining to employee motivation (chapters 15 to 18). Chapter 15 explores several tested and trusted approaches to employee motivation. Major approaches adopted by HR managers to motivate employees are presented in Chapter 16. These approaches include rewards, job design, participative management, and better quality of work-life. Chapter 17 discusses the examples of employee empowerment and suggestion schemes in a number of Indian companies, such as Toyota, British Airways, Satyam, and Ashok Leyland. Chapter 18 is on employee communication. It examines the ways how managers and the HR department can improve the problem of communication within the organisation. The chapter also contained a comprehensive discussion of the concept of communication, its dimensions, problems in communication, communication and IT, communication technology, and communication policies.

Part V deals with the employee welfare schemes and the accessibility of providing safe and healthy environment to human resources. Chapter 19 includes a completely updated information on the unique welfare activities provided by the best Indian employers to work for the safety and health issues that managers needs to be aware about are provided in Chapter 20, titled 'A Safe and Healthy Environment'. It also explains the regulations that govern health and safety in the workplace. It gives information about strategies for reducing repetitive stress injuries and dealing with alcohol, drugs, and violence at the work place. In addition, relevant examples and cases from various countries stimulate an interesting discussion. Chapter 21, titled 'Managing Separation and Right Sizing', examines the situations necessitating voluntary and involuntary employee separations.

Part VI is devoted to the need to maintain industrial harmony in organisations. Chapter 22 (Industrial Relations), Chapter 23 (Trade Unions), and Chapter 24 (Resolving Disputes), focuses used in bargaining with management positive discipline and punishment are examined in terms of where, when, and why, each of them may be appropriate. It also provides updated information on grievance-redress mechanism, and the tactics used in negotiations with the employees.

Part VII serves as a capstan for the book. Chapter 25, on management of ethical issues in HRM, identifies the need for ethical decisions in organisations. Treatment of privacy, ethical issues, AIDS, drug testing and Tata Motors, whistle-blowing policy have been addressed. Chapter 26 identifies the approaches to evaluate the effectiveness of HRM. The treatment of international issues has been presented in Chapters 27 and 28. These chapters reflect on international dimensions of HRM, challenges and the role of culture plays in determining the effective use of HRM practices in a global organisation. It explores critical HR issues faced by global organisations in international recruitment, staffing, training, and repatriation. Domestic HR issues in a global context are analysed in depth. Finally, Chapter 29, titled 'The e-HR', highlights how e-commerce and technology are influencing the HR management practices. e-Recruitment, e-selection, e-performance, e-learning, and e-communication have been discussed in brief.

At the end of the book, there are appendices including a bibliography and a list of web-resources. The latest available references are incorporated. *HRM*: *Text and Cases* is a modest attempt to present a comprehensive treatment of the concepts and techniques of HRM in the context of modern organisations. However, the book suffers from some weaknesses. The sequencing of chapters needs a re-look.

Chapter 6, 'Recruiting Human Resources' and Chapter 7, 'Selecting Human Resources', could have been clubbed together. Similarly, the focus of Chapter 19 (Managing Betterment work) and Chapter 13 (Managing Employee Benefits), relates to the same aspect of employee remuneration. Chapter 21 (Managing Separation and Right-Sizing) could have been integrated with Chapter 8 (Inducting and Planning New Hires) become the mobility of personnel taken place only after induction.

The issues and anecdotes given at the beginning of each chapter are interesting, but an undergraduate student will find it burdensome. The author could have raised there issues as case studies at the end of each chapter.

Nevertheless, the book provides a refreshing and rewarding insight into all that a reader wants to know about management of human resource. Students may learn a lot and generate their own ideas after reading the book.

Dr. Kamlesh Jain
Associate Professor
Mata Sundri , College for Women
(University of Delhi)
Delhi

G.K. Kapoor, *Lectures on Corporate and Allied Laws*, 2nd ed. (New Delhi: Sultan Chand & Sons, 2010), Pages: 504, Paperback, Price: Rs. 300

Writers are the children of their times, cradled by the defining spirit or mood of a particular period of history. They are buffetted by the currents in vogue and the victims to the passions of the times. The writers in the field of business education are no exception to it.

Business education in India became popular during the last three decades, with the emergence and spate of economic liberalisation and globalisation in the last decade of the twentieth century in the business world. A large number of educational institutions have offered business courses to the students aspiring for a degree or diploma to secure a job offering handsome salary. Even the students from the science stream jumped over to commerce and business stream. To meet the inflated needs of the students so that they could easily pass their examinations with high marks, text books were written on different subjects in easy language by Indian authors. Moreover, to earn money, the Indian publishers started bringing out guide books in the question-answer form. Bookshops were flooded with such books. Text books containing serious subject matter and deep analysis and interpretation, incorporating new research works, were rarely brought out because the students had no inclination to read such books and their examination papers too did not require answers based on the knowledge ingrained in these high-standard text books.

The book under review is a blend of a textbook and a question-answer help book and contains about 200 practical problems along with detailed suggested answers.

This book is written keeping in view the needs of the chartered accountancy (CA) students. The author has been associated with the teaching of B.Com. and C.A. students and has also served as Deputy Director (Studies) in the Institute of Chartered Accountants of India.

The second edition of the book has been brought out with authentic and updated material on the subject in easily comprehensible form and will be helpful to the students pursuing the C.A. course. The book is enriched with the deep knowledge of the author gained through teaching the subject.

The book is divided into two parts, titled "Corporate Laws" and "Allied Laws". Corporate laws are discussed in 19 chapters: (1) Dividends, (2) Meetings of the Board of Directors, (3) Directors, (4) Inter-Company Loans and Investments, (5) Sole-selling Agents, (6) The Majority Rule, (7) Prevention of Oppression and Mismanagement, (8) Accounts and Audit, (9) Inspection and Investigation, (10) Compromise, Arrangements, Amalgamation, Re-construction, etc., (11) Winding up, (12) Government Company, Foreign Company, and Producer Companies, (13) Miscellaneous Provisions, (14) Secretarial Practice, (15) Foreign Exchange Management Act, 1991, (16) SEBI Act, 1992, (17) The SEBI (Issue of Capital and Disclosure requirements) Regulations, 2009, (18) The Securities Contracts (Regulations) Act, 1956, (19) The Competition Act, 2002.

Allied laws are dealt with in six chapters which cover: the Banking Regulation Act, 1949; the Securitisation and Reconstruction of Financial Assets and Enforcement of Securities Interest Act, 2002; the Insurance Act, 1938; the Insurance Regulatory and Development Authority Act, 1999; the Prevention of Money Laundering Act, 2002; and the Interpretation of Statutes.

The first thirteen chapters included in the first part are on the Companies Act, 1956 alone. Out of them, Chapter 2 deals with the rules relating to the meetings of the board of directors, and Chapter 3 with the rules relating to directors. These two chapters contain detailed discussion as they are more important from the point of view of the C.A. (final year) examination. The two chapters contain as many as 28 case laws, 90 practical problems along with long suggested answers, about 46 unsolved questions, and 70 objective-type questions, along with their answers, under the title 'Check Your Progress'.

Chapters 4, 5, and 6 are given normal treatment, with about three law-cases and 13 practical problems and their answers. Chapter 7 includes 24 decided cases for reference and 9 practical problems, followed by detailed suggested answers. Chapter 8 incorporates five case-laws for reference and 16 practical problems along with suggested answers. In Chapter 9, the author has discussed in depth the differences between inspection and investigation.

The subject matter in Chapters 10 and 11 is also treated comprehensively. While the former contains as many as 33 case-laws and eight practical problems, with suggested answers, the latter has 40 case-laws and seven practical problems with suggested answers. In Chapter 12, other related matters are discussed at length. It contains seven case-laws and 10 suggested answers to respective practical problems. Chapter

13 deals with miscellaneous provisions relating to 'ultra vires' borrowings, public interest, wrongful withholding of a company's property, seizure of documents by the Registrar of Companies, computerised environment – e-governance, Directors Identification Number (DIN), etc. These topics are discussed at good length. This chapter also contains a long table, reproducing various new e-forms.

Chapter 14, dealing with secretarial practice, contains 17 specimens of notice, agenda and various types of resolutions, etc., passed in the meetings of the board of directors and the general body of the company. In Chapter 15, the Foreign Exchange Management Act, 1999, is comprehensively treated, through twenty practical problems and suggested answers. However, no case-law is incorporated in this chapter.

Chapters 16 and 17, relating to the SEBI Act, 1992, and the SEBI Regulations, 2009, respectively, are comprehensively treated in 53 pages and no case-law is incorporated. Chapter 18, dealing with the Securities Contracts (Regulation) Act, 1956, occupies 30 pages of the book, alongwith 4 practical problems and their suggested answers. But no case-law is given. Chapter 19 is devoted to the Competition Act, 2002. The related provisions of the Act are treated at length. It contains six practical problems, with detailed suggested answers. However, it contains no case law.

Of the 'Allied Laws', the Banking Regulation Act, 1949, is dealt with in Chapter 20. The Act which contains its provisions in 36 sections and 4 schedules is not given a comprehensive treatment. It contains no case-laws or practical problems and suggested answers. In Chapter 21, the Securitisation and Reconstruction of Financial Assets and Enforcement of Securities Interest Act, 2002, is given similar treatment as the Banking Regulation Act, 1948. The reason appears to be the low weightage of marks given to these Acts in the C.A. examination.

In Chapter 22 (The Insurance Act, 1938) and Chapter 23 (The Insurance Regulatory and Development Authority Act, 1999) too, the important subjects are not given adequate treatment. In Chapter 24, the provisions of the Money Laundering Act, 2002, have received comprehensive exposition. However, neither any case-law nor any practical problem alongwith suggested answer is incorporated. At the end, Chapter 25 deals with the interpretations of statutes. Here, the topic has received good treatment. The subject matter is discussed with the help of 20 case-law. This subject is taught in the LL.B courses of many universities. It is equally useful for the C.A. students as it makes them acquainted with the basic concepts and principles of interpretation of statutes.

A large number of case-laws (about 200) have been cited in different chapters to substantiate the relevant legal provisions. However, only a few of them have been discussed with facts. The book also does not have a list of case-laws before proper chapterisation which a standard text book on law should have.

The author has taken pains in providing a large number of practical problems with long suggested answers, with a view to facilitating the task of the students to write correct answers in the examinations. But the font size used is too small, which causes visual strain on the reader. Providing the students with such a large number of suggested answers, no doubt, shows the generosity of the author. However, for the students pursuing such prestigious courses, like C.A., providing ready-made answers is not a good device as it is likely to hamper their intellectual exercise to prepare correct answers by delving into relevant portions of the text books, reference books, and journals.

Another shortcoming of the book is that it does not containing a list of the books, journals, etc., consulted by the author. It also lacks an index of the topics. Moreover, it does not have a 'Preface'.

The front cover-page gives the portrait of the author, with his name printed below it. This is something unusual to find in a standard text book. A passport-size photo could have been printed with a brief introduction of the author, and his works, either inside the book or on the last cover page. A book written by an author itself is the mirror in which the real picture of the author gets reflected.

On the whole, the book evinces a lot of sincere and painstaking work of the author. The students of business-related courses, like C.A., MBA and B.Com. are expected to find the book immensely helpful.

H.C. Joshi
Reader in Management
Delhi College of Advanced Studies
(G.G.S.I.P. University)
New Delhi

Harvard Business School, *Sparking Innovation: Straight Talk from the World's Top Business Leaders* (Boston: Harvard Business School Press, 2008), Pages: 96, Price: Rs. 195

What is innovation? What does it mean to spark innovation? What is the role of business leaders in furthering innovation? These are the questions that are addressed in this series of interviews with top business leaders. But a meta-question that can be asked about the book as a whole, in addition to these opening questions, is this: What 'more' can be *said* about innovation? In fact, it is a good idea to address these four questions in tandem, since an important challenge in this series of interviews is to find something interesting to say about what a particular firm or set of firms are doing. The special problem for the contributors to this volume is that innovation, as a topic, has generated a huge literature; it is, therefore, difficult to say anything that in itself is innovative about innovation.

It is also important to remember that of late the literature on innovation has been subsumed by strategic theory under the aegis of 'strategy as innovation'. How, then, are we to think about innovation? To what extent are the business leaders in this series aware of this problem? What more is the difference between innovating in firms and innovating within the domain of strategic management?

While neither the top business leaders interviewed here nor the reviewer is in a position to answer all these questions; it is, nonetheless, a good idea to start with an exhaustive set of questions so that the reader is clear as to what is at stake in doing, thinking, talking, and theorizing about innovation irrespective of whether the speaker is in the locus of an academic or a businessman.

While a brief volume like this cannot hope to cover the ground in its entirety, it works quite well by adopting the strategy of getting business leaders to share their experiences of innovation with a set of takeaways at the end of every interview. The reader, however, must remember to contextualise these takeaways by situating them with the actual comments made in the interview, along with some understanding of the firms and industries in which specific instances and practices of innovation originated.

In the absence of such a contextualised understanding, the takeaways included here can lead to a serious misunderstanding on the nature, scale, and scope of innovation in contemporary business since the learning from these instances cannot be converted into scientific formulae. The reader, therefore, must have the patience to read and understand the significance of these examples on a case-by-case basis.

Academics who are working their way through several volumes of interviews with business leaders in this series must also remember that it is important to cross-index the comments made by these leaders since some of them have been interviewed more than once, and a number of them have commented on the same topic albeit in different volumes.

The title given to any of these volumes, therefore, does not exhaust a particular topic that is being discussed but must be understood in its moment of continuity across the volumes in this series. There is also an interesting spill-over effect on how a particular topic plays-out when addressed by different businessmen that I find quite interesting as a reviewer of several volumes in this series from Harvard Business School Press.

My advice to readers is to start with the notes on contributors before reading the interviews or the take aways if they want to actually appreciate what is going on in this series. Most readers, however, will be tempted to make the obvious mistake of going for the take aways, flipping through the interviews, and ignoring the notes on contributors, their firms, and the industries in which they developed the learning that they are trying to share in the first place. This is the mistake that, if avoided, will not only make it worth the reader's investment in this series worthwhile, but internalize the ethics of contextual interpretation of such takeaways from empirical sources, such as the interviews of those in the know in business.

The domains of innovation collected for discussion here include product and service development, consumer psychology, modalities of market research, customer inputs into research and development, the role of disruptive technology, the constraints imposed by legacy systems in firms, the need to incorporate self-organising systems in place of the usual top-down model, encouraging innovation within the firm itself, rather having it outsourced, learning to innovate in firms that are risk-averse, understanding the trade-off between routine work and creative work, and the role of change in doing so, and, finally, in learning to think about the future in a non-linear way. The industries within which these domains emerge include aviation, beverage companies, business academics, global brand development, management consultancy, marketing, telecommunications, etc.

It must be obvious from such a heterogeneous list that it is not easy to work out a theory of innovation that can subsume the demands of innovation across sectors; hence, the need to be mindful of the sectoral context of these interviews.

Shiva Kumar Srinivasan
Visiting Assistant Professor
Managerial Communications
IIM-Kozhikode
Kozhikode

Modern liberal political and economic institutions not only
coexist with religion and other traditional elements of culture,
but many actually work better in conjunction with them.

Francis Fukuyama, *Trust*

If new ideas are the lifeblood of any thriving organization…
managers must learn to revere, not merely tolerate, the people who come up with the ideas.

Mark McCormack, *McCormack on Managing*

Management is doing things right;
leadership is doing the right things.

Peter F. Drucker (1909 - 2005)
Austrian-born U.S. management consultant.

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