Handbook of Research on

Strategic Business Infrastructure Development and Contemporary Issues in Finance

Nilanjan Ray and Kaushik Chakraborty

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Handbook of Research on Strategic Business Infrastructure Development and Contemporary Issues in Finance

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"Thank you for your unconditional and endless support, inspiration and encouragement with my studies and works. I am honoured to have you as my parents. Thank you for giving me a chance to prove and improve myself through all walks of my life."

This edited volume is dedicated to my beloved parents,
father Sri Nirmalendu Ray and mother Smt Rina Ray.
Nilanjan Ray
Royal Thimphu College, Bhutan

This edited volume is dedicated to my beloved parents,
father Sri Sunil Baran Chakraborty and mother Smt Monika Chakraborty.
Dr. Kaushik Chakraborty
Netaji Mahavidyalaya, India

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fortable to the people in the underdeveloped areas. Thus, a huge fund in India is caught in the web of informal banking streams. This chapter seeks to understand how far and to what extent these changes have occurred in India. First, the authors consider a case study from rural India that depicts disparate banking behavior of rural populace. Next, they use district level data on banking habits across all the states of India. The authors first note the pattern and distribution of banking habits of people across the subcontinent. They then try to assess the reasons behind such discrepancy.

The strength of the companies is sustained in the resources that it owns that can be considered like a barrier to the entrance for other companies. The case of the banking sector of these resources was affected by the crisis of 1994, devastated with the anti-crisis measures and the entrance of foreign competitors at the end of the 1990s. Under this environment, this chapter analyzes the acceleration of the concentration at the Mexican banking system based on the resource-based theory. To have competitive advantages in resources and a solid global expansion strategy, foreign banks were able to climb to a position in the Mexican banking system, with the subsequent generation of barriers to entry to maintain its leadership.10.4018/978-1-4666-5154-8.ch003

Dividend decision involves the portion of a firm's net earnings that are paid out to the shareholders, and the remaining is ploughed back in the company for its growth purpose. Despite comprehensive theoretical and empirical explanations, dividend policy and its determinants are a puzzle to be fixed in corporate finance. This chapter is an attempt to assess the dynamics and determinants of dividend-payout policy using a factor analytical tool and a multiple regression analysis as a supportive tool. The authors take into account the sample of ten automobile companies based on Market Capitalization listed on the Bombay Stock Exchange (BSE) for a period of 10 years from 2002-2003 to 2012-2013. The results of the factor analysis show that six factors, current ratio, cash flow, retained earnings per share, earnings per share, equity dividend, and corporate dividend tax, are identified as the most critical factors determining dividend payout in Indian automobile companies. However, regression results depict only three factors (i.e. cash flow, equity dividend, and corporate dividend tax) have been found statistically significant in determining dividend payout policy.

The collapse of Enron, WorldCom, etc. made the importance of corporate governance clear to the Indian industry, the polity, and the public. In the pursuit of better corporate governance, a whistle-blowing mechanism is considered to be highly desirable. The chapter highlights whistle-blowing in corporate governance with the help of the Satyam episode.

This chapter introduces the framework and causal model of leadership style, organizational culture, performance management practices, and organizational performance. It argues that dimensions of leadership style, organizational culture, and performance management practices have mediated positive effect on organizational performance. Performance management practices positively mediate the relationships between leadership style and organizational performance and between organizational culture and organizational performance. Leadership style is positively correlated with organizational culture. Understanding the theoretical learning is positively beneficial for organizations aiming to increase organizational performance and achieve business goals.

In India, tourism plays an important role in economic development and creation of jobs. The Approach Paper of the 12th Five Year Plan prepared by the Planning Commission highlights the need to adopt "pro-poor tourism" for increasing net benefits to the poor and ensuring that tourism growth contributes to poverty eradication. Tourism plays a key role in socio-economic progress through creation of jobs, enterprise, infrastructure, and revenue earnings. The Planning Commission has identified tourism as the second largest sector in the country in providing employment opportunities for low-skilled workers. Odisha has a large tribal population: out of India's 427 Scheduled Tribes, Odisha accounts for 62 tribal communities who constitute 27.08 percent of the state's population (2001). Of the 62 Scheduled Tribes, the state has declared 11 tribal communities as Primitive Tribal Groups. Each of these tribal communities is rich in social institutions and poor in economy. Achieving poverty eradication requires actions on a variety of complementary fronts and scales, but a prerequisite of significant progress is pro-poor growth – growth that benefits the poor tribal community. This chapter explores these.

In recent years, rural villages of India have found a place on the tourist map of the world. Not only does rural tourism provide an additional source of income to the villagers but it also helps showcase the rural life and culture of the people, such as art, crafts, and heritage, etc., of the village and community. At present, most of the states of India are facing many challenges for the implementation of rural tourism projects, which stands against achieving the objective of the project set-up by the Ministry of Tourism, Govt. of India. Some of the problems are very grave and need immediate attention of the administration. The Department of Tourism, Govt. of Odisha, has identified eight villages in the state for implementation of the Rural Tourism project. Padmanavapur, a village in South Odisha is one of them. The author has taken this village to study the impact of rural tourism on the socio-cultural life of the local community. The chapter indicates that the village has a high potential for tourists, but due to the delay in implementation and completion of the project, the stakeholders are not getting the desired benefits.

The rating agency Standard and Poor's recently warned that India could become the first of the BRIC economies to lose its investment-grade status because of the slowing down of growth prospect in the face of bad loans. Against the backdrop of the loan defaults in the real estate and infrastructure sectors leading to the slackening of economic growth, which caused downgradation of India's international credit rating, this chapter aims to inquire into the modus operandi of credit rating by banks and rating agencies, the impact of economic downturn on the behaviors of borrowers as well as lenders, mode of calculation of default probability, and the unaddressed needs of academic and professional research.

NPA is a "termite" for the banking sector. It affects liquidity and profitability of the bank to a great extent; in addition, it also poses a threat to the quality of asset and survival of banks. The post-reform era has changed the whole structure of the banking sector of India. Now, the economy is not confined to the domestic boundary of the country. The core intention of economic reforms in India was to attract foreign investments and create a sound banking system. This chapter provides an empirical approach to the analysis of profitability indicators with a focal point on Non-Performing Assets (NPAs) of commercial banks in the Indian context. The chapter discusses NPA, factors contributing to NPA, magnitude, and consequences. By using an analytical perspective, the chapter observes that NPAs affected significantly the performance of the banks in the present scenario. On the other hand, factors like better credit culture, managing the risk, and business conditions led to lowering of NPAs. The empirical findings using observation method and statistical tools like correlation, regression, and data representation techniques identify that there is a negative relationship between profitability measure and NPAs.

In the modern state of affairs, people are stressed due to insignificant effects in life, whether it is at work or at home. Many studies have been conducted on stress over hundreds of years. Stress can be alleviated by engaging in different activities, which are of one's interest. This chapter, therefore, tries to address many questions related to stress in the workplace (in educational institutions in Jabalpur District). It also analyzes the stress levels with the help of percentage among the teaching faculty in professional and degree colleges through data collection and feedback. This chapter shows the reason behind the conception of stress amongst the teaching faculties of technical and non-technical teaching institutes in Jabalpur district, along with the remedies in dealing with stress and managing it to be successful. It enhances the confidence level by recommending the stress relieving activities. This chapter explores the meaning, causes, and a literature review of stress and techniques to handle it. This chapter also includes primary data collected from 6 different colleges (3 technical and 3 non-technical) of 150 teachers, which is further analyzed and discussed along with the recommendations to relieve stress.

It is expected that proper management of working capital contributes positively to the value of the firm, and liquidity of the firm negatively affects the profitability of the company. The purpose of the chapter is to analyze the composition and changes of the working capital and to find the impact of liquidity and efficiency of working capital management on profitability. For this purpose, this study is conducted on Cipla Ltd. for the period 2001-2009. From the study, it is found that there is a significant negative relationship between liquidity and profitability. It also reveals that managers can create value for the firm by reducing the holding period in inventories and receivable.

This chapter aims to examine the existence of dynamic linkages among the major emerging stock markets, namely Brazil, Hungary, China, Taiwan, Poland, and Turkey, as well as developed markets, particularly the US, the UK, and Germany during the period 2004-2013. Potential dynamic long-run interdependencies are investigated using Johansen and Juselius (1990) multivariate cointegration test and causal relationship through the Vector Error Correction Model (VECM). Moreover, to capture the impact of the recent global crisis on the cointegrating relationship among the developed and emerging markets, the sample period is divided into pre- and post-crisis sub periods. The empirical findings show that, after the crisis period, the direction of the long-run relationship varies, and furthermore, the stock market interdependence increases, supporting herding behavior of investors during the stock market crash period. Therefore, the increasing dynamic co-movements in the period after the crisis provide direct implications for the international investors due to potential limitation in the international risk diversification and the achievement of greater portfolio returns through global investment.

Risk management as a very rapid emerging subject has been affected by several happenings in the world. There are many studies covering risk definition, risk types, and risk management, plus there are many contemporary approaches in order to calculate the risk incurred by the companies due to their transactions. In the modern business life, since the transactions have become very fast and their risk exposure increases, the companies, especially the financial institutions, started to use new techniques to measure the probable effects of the risks that they have taken while undertaking the transactions. In this chapter, the authors show two techniques as the contemporary approaches to risk management. These are operations research and statistics. They know that these two concepts are very detailed and sophisticated tools, which require software for better results. The banks have been investing in these solutions, and they are designing new organizations to handle these issues. Thus, the authors introduce these techniques very briefly with using some banking practices for better understanding.

This chapter empirically investigates the relationship between the efficiency of asset management and profitability of the Indian pharmaceutical industry during the period 2002-03 to 2011-12. The chapter also tries to make a comparison, in respect of the efficiency of assets management, between multinational and domestic companies in the Indian pharmaceutical industry during the same period. The sample size of the study consists of 20 pharmaceutical companies by taking 10 multinational and 10 domestic companies from the Indian pharmaceutical industry. The issues analyzed in this study have been tackled using relevant statistical tools and techniques.

This chapter examines the closeness between the optimum portfolio and portfolio selected by an investor who follows a heuristic approach. There may be basically two ways of arriving at an optimum portfolio – one by minimizing the risk and the other by maximizing the return. In this chapter, the authors propose to strike a balance between these two. The optimum portfolio has been obtained through a mathematical programming framework so as to minimize the portfolio risk subject to return constraint expressed in terms of coefficient of optimism (α), where α varies between 0 to 1. Simultaneously, the authors propose to develop four heuristic portfolios for the optimistic and pessimistic investors, risk planners, and random selectors. Given the optimum portfolio and a heuristic portfolio, City Block Distance has been calculated to measure the departure of the heuristic solution from the optimum solution. Based on daily security wise data of ten companies listed in Nifty for the years 2004 to 2008, the authors have obtained that when the value of α lies between 0 to 0.5, the pessimistic investor's decision is mostly closest to the optimum solution, and when the value of α is greater than 0.5, the optimistic investor's decision is mostly near to the optimum decision. Near the point $\alpha = 0.5$, the random selectors and risk planners' solutions come closer to the optimum decision. This study may help the investors to take heuristic investment decision and, based on his/her value system, reach near to the optimum solution.

This chapter provides a clear conceptual discussion on the recent developments in the Financial Statement Analysis (FSA). It presents how IFRSs changed the outlook of the financial reporting and the analysis and explains the key points that should be considered in FSA. Using a case study on the financial reports of Turkcell, a communication and technology company listed both on the New York Stock Exchange (NYSE) and the Borsa Istanbul (BIST), the differences between IFRSs and U.S. GAAP accounting standards in the measurement of overall financial performance and position are documented. Overall findings show that IFRSs change the appearance of financial statements significantly. While IFRS reporting extenuates "the bottom line" it accentuates total assets with higher shareholder equity compared to U.S. GAAP. This chapter might be a practical guide for users, preparers, and regulators to understand the cosmetic impact of IFRSs on financial statements.

In the post-reform era, quality delivery of the services has acquired centre point of the service industry around the globe. The banking sector being purely a service-related industry has been influenced more by the issue of providing quality service. With the entry of private banks, the banking sector has gone through many transformations including the way services are extended. In a backward state like Assam, this has arrived a little late, but the changes are gradually visible. The chapter captures the service quality standard of the Scheduled Commercial Banks (SCBs) and also for the different bank groups in order to make a comparison. The SERVPERF scale is used to study the replies of the customers in two cities, Guwahati and Tezpur, and some econometric tools are used to analyse the data. The study reveals that the private sector banks are far ahead of the public sector banks in terms of quality of service. The private banks influence the service quality of the SCBs the most among all the bank groups. Overall, the public sector banks, which are the dominant market players, will have to work hard to catch the level of the private banks.

A food tour of any country is not generated overnight. It is the result of increasing taste of tourists while visiting any destination. No one carries food for the longer tour to any destination. On the spot encounters with foods of the region makes a tourist remember and pass on the information to his acquaintances. Thus, food tourism develops, and the stakeholder becomes proud of their regional foods. It exists in all the places of India, which is varied with vast variety. Culture of a particular region is maintained due to the prevailing food, which reflects in terms of other social activities. This chapter is an attempt to focus food as a destination development in India. Various Indian foods by different communities are an attraction for food lovers and connoisseurs.

The ideological aspects relating to the social framework of the Indian society have a tremendous appeal for the majority of the people. Some modifications occasionally have been the cause of unequal and uneven distribution of social causes, natural resources, national scopes, benefits, and opportunities. The population demography has a mixed nature of composition consisting of weaker to stronger in respect of education, affluence, cast construct, political and social status, etc., and consequently, it created two groups of people in the society – a group under the umbrella of exploitation, poverty, and insecurity, and the other being the reverse. This weaker section lying under the envelope of poverty developed because of this inequality, and it has been a permanent cause of adversities in Human Resource prospects in India. Human Resource is not an ordinary resource like money or material, but a resource to make all other resources usefully usable. This Human Resource needs to come through suitable scopes and opportunities so that they can develop themselves as required in the process of Human Resource planning. This chapter is an attempt to identify the real-life situation in this respect in India during the last three decades.

The mutual relationship between employer and employee develops at the workplace on the premise of reciprocity of expectations from each other. Fulfilment of these expectations is the perception of either of the two. When an employee perceives prevalence of justice in the organization, he correlates the perception with all organisational stimuli. This chapter shows that work attitude varies in employees as a result of the difference in perceived justice in the organization. It also hypothesizes the relationship among justice perception, responses to organisational facilities, and interpersonal interactional opportunities. The chapter is a correlation analysis of variables through a self-administered questionnaire consisting of responses in Likert's scale. Some of the responses and attitudes in the study significantly correlated with the perceived level of a component of organisational justice. The study re-establishes significance of non-pecuniary means in determining work attitudes.

The purpose of this chapter is to evaluate the effectiveness of marketing communications in promoting tourism on the Greek island of Myconos. The research evaluates the effectiveness of the marketing communications used by public bodies to promote Myconos in Europe. The research location was the airport at Myconos. The researchers used a probability sampling technique in the form of stratified random sampling, since the population used for the research was multinational. Four-hundred questionnaires were gathered from a research population of 8000. The percentage of arrivals pertinent to each subset (tourist population divided by nationality) was compared with the total number of tourists who arrived on Myconos from the countries constituting the sampling frame, and the number of questionnaires to be given to each of the subsets was calculated. The study shows that marketing communications had a positive effect on the overall business performance and improved it noticeably. Marketing communications used by public bodies to promote Myconos were effective as they increased tourism arrivals and influenced the majority of the tourists to visit it. In addition to this, the study shows that there are factors such as tourists' origin, age, and annual income that affect the effectiveness of marketing communications. It also identified that tourists value a marketing strategy that involves analytical information about the tourism destination, as they stated that brochures, guidebooks, and the Internet influenced them to a great extent.

The rural tourism concept has become one of the vital issues of economic and social benefits to the society. This study identifies the problems and prospects of rural tourism in the state of West Bengal. The primary objectives of this study include an exploration of the development and emergence of rural tourism in the state of West Bengal, analysis of the tourism gap at Bishnupur, examination of the existing as well as future requirement of tourism infrastructure of Bishnupur, and the promotion and marketing of Bishnupur as an important rural tourism destination in Indian Scenario. For the fulfillment of the basic objectives, data for the study were collected through field survey. Information about the profile

Clearing is the process of realization of proceeds of cheques drawn on other banks through intermediary RBI/SBI or any other bank that acts as a Clearing House. A clearing house established in any location helps in faster and efficient collection of the cheques. A few private banks have been authorized to run the clearing houses at few locations. HDFC Bank Ltd. is one such privileged private sector bank. The chapter analyzes the process set for clearing services in the HDFC and SBI. The study employs primary data collected through observation by spending time and watching people in the organization, though it has been supplemented by the secondary data as well. The results indicate the various types of clearing process present in HDFC Bank and SBI for providing better and fast services to their customers and set higher standards for performance. The bank is committed to increased use of technology to provide quick collection services to its customers. The banking sector, whether it is private or public sector banks, has immensely benefited from the implementation of superior technology during the recent past, which has given new shape to the nature of the services provided to customers. This chapter also compares the clearing-related banking services provided by HDFC and SBI on the basis of primary data collected through the questionnaire to provide the different aspects and drawbacks of services of the public sector bank (SBI) and private sector bank (HDFC).

India became a prominent destination for outsourcing in the services sector in the 1990s. Outsourcing to India started with the IT industry, which has responded to the changing market requirements by increasing the scale of operations and capability to handle complexity. Business Process Outsourcing (BPO) in India has grown rapidly as compared to software services as the advantages offered by the country (low cost and abundant talent pool) were well known and tested in IT outsourcing. Most of the infrastructure required was already in place, and companies needed to set the processes right to get BPO going in India. Funding is the essence of any corporate growth story, and the Indian corporate are spreading around the globe with some remarkable takeovers. Coupled with the fact that India has highly skilled manpower with leading global tech, companies are setting their ventures, research and developmental activities in India with the help of venture capital avenues. This chapter highlights some of the venture capital avenues and government policies that have proven very beneficial in the growth of the IT/BPO industry. These favorable government policies have gone a long way in making India an outsourcing/IT hub. Finally, this chapter conceptualizes the implementation of venture capital avenues and application in IT/BPO industry. The major limitation of this chapter is conceptual in nature, which will definitely form a base to test empirically.

Labour and management conflict in numerous ways in the course of their day. The interests of the two are in many ways opposed to each other. Conflicts are inevitable in the course of interactions, and the labour management relationship is also not accepted. We cannot eradicate conflicts, as they are inherent in the system of industrial life. Marx considered industry conflict as a part of the broader social

Foreword

Infrastructure development is fundamental and crucial for any growing economy. This is particularly the case with the developing countries that the entire South Asian nations belong to. Furthermore, the developing nations are also affected by issues like governance flaws, incompetency, and complacency in the financial management.

While the quality assurance mechanisms and the compliance rates in building and manufacturing are at far from desirable levels in these countries, the ensuing depreciation in the infrastructure is yet another drawback and often nightmares for the insurance companies. The international financial institutions and the prospective foreign direct investors fear to make investments owing to poor infra-structure, corrupt practices, and poor financial management. All these lead to slow economic growth and upheavals in our economies. The sky rocketing inflation, regular currency devaluation, drop in the stock market, unemployment, etc. are often the symptoms of poor financial management prevalent in our region.

This book is a compilation of various research papers based largely in India and also from some parts in Europe (Turkey) and Latin America (Mexico). The themes and the issues are of wide representation, ranging from managing customer knowledge to infrastructure requirements for tourism development and from stress management in educational institutions to work attitude. Similarly, the topics of age old labour management conflicts in industry to mutual fund and investor's perceptions are of critical importance in understanding and intervening in the financial crisis that is hitting all of us . The promise of rural tourism, venture capital avenues, performance management, banking issues, asset management efficiency, and profitability are some other topics of discussion in the book. I sincerely think that these issues are of paramount importance and have been pretty well researched and commented in the form of research papers in the book. At the same time, the authors also seek for greater analysis and further study in all these areas of infrastructure development and building of a more vibrant, viable, sustainable, and stable economy in all the growing economies of the world.

I congratulate the editors and the contributors who had put in a lot of effort and time in bringing out this book to address many vital concerns for a better understanding of the issues surrounding our economy.

Shivaraj Bhattarai
Royal Thimphu College, India

Shivaraj Bhattarai *is from Dorokha in Southern Bhutan and has an MSc in Bio-Science and a PhD in Limnology (freshwater ecology). He taught at Sherubtse College (the lone premier university college in Bhutan till recent times) for over 17 years before joining Royal Thimphu College in 2008. He has several research publications to his credit; he has travelled to and received short-term trainings from universities outside of Bhutan and has acquired several years of experience in curriculum development and higher education planning, management, and administration.*

Preface

High economic growth is the principal objective of the developed world. The major precondition for attaining this goal is the availability of infrastructure in a country, both in quantity and quality. Infrastructure is considered key for economic development. The lack of infrastructure not only affects economic growth but also creates other socioeconomic problems like unemployment and poor quality of life. There is no doubt that economic growth is one of the principal objectives of the developing world. The major precondition for attaining this goal, however, is the availability of create adequate infrastructural facilities in the economy. Infrastructure is considered the wheel, if not the engine, of development. The deficiency of infrastructure will certainly hamper not only economic growth but also affect different facets of development like a country's economy, social security as a whole, and sustainable economic growth, as well as business environments. In most developing countries (including India), the status of infrastructure (in all respects like market condition, banking, agriculture, power sectors, roads, service sectors, etc.) is low as compared to the needs of the respective countries. While the demand of infrastructure is growing at a much faster rate, supply is more or less stagnant. This is mostly due to the rapid urbanization and globalization taking place across the world. The major reason for this gap is the non-availability of finance or a proper method of sanctioning project layout for proper business infrastructure. Many projects are either in the stage of work in progress or in the queue. In this context, the private sector is expected to provide the necessary investment through privatization and PPP schemes. Sustainable economic growth also depends on the maximum utilization of scarce resources in an efficient way. Capital is one of the scarcest resources that aid the sustainable economic growth of any country. Recent developments in finance help in various ways to keep the progress of economic growth of a country. Besides this, modern financial management plays a significant role in financial decision-making and policy to enhance the economic prosperity of a country. In fact, for any developing country, the question of proper allocation of capital and the matter of designing appropriate strategies for improving overall welfare of the economy is of utmost importance.

The subject area covered in this volume is a combination of infrastructural development in different areas like banking service infrastructure specially on clearance service, portfolio, risk management techniques, socio-economic aspects through tourism infrastructure, human resource, industrial disputes-related aspects and service sector rural tourism, venture capital avenues, performance management, banking issues, relationship between efficiency in asset management and profitability, and so on. In fact, the themes and the issues of the volume are wide, ranging from managing customer knowledge management to infrastructure requirement for tourism development and from stress management in educational institutions to work attitude.

This book is also a combination of contemporary aspects of strategic financial management, which is of utmost importance in accomplishing the objective of wealth maximization in today's challenging and competitive environment. Some of the most recent developments in the field of finance have found their place in this volume. Different aspects of finance like financial performance analysis, working capital management, corporate governance, asset management, liquidity management, banking sector management, stock market, etc. have been included in depth in this volume.

ORGANIZATION OF THE BOOK

The book is organized into 29 chapters. A brief description of each of the chapters follows:

Chapter 1 seeks to analyze the working capital management of 10 selected companies in the Indian pharmacetical industry during the period 1996-97 to 2010-11. While satisfying the objective of the study, relevant statistical tools and techniques have been applied at appropriate places.

Chapter 2 considers the banking behavior of people in an under-developed economy like India. In the age of financial inclusion, a huge section of the populace is still outside the formal banking system. Unlike the common concept, poverty is not always the main reason behind this disparate saving behavior. Various types of informal outlets provide easy and cheap access to loan and savings. They are flexible and provide on the door services. It is often difficult for the formal sector to compete with this. Unless intelligent uses of banking instruments are facilitated, it might become impossible for the formal sector to tap these sources, and a huge wastage of internal cannot be prevented. Instead of being locked in the informal cupboards, informal savings should be diverted to the investible activities of the land. Only then can the tall talks of financial inclusion be fruitful.

Chapter 3 evaluates the acceleration of the concentration at the Mexican banking system based on the resource-based theory. To have competitive advantage in resources and a solid global expansion strategy, foreign banks were able to climb to a position in the Mexican banking system, with the subsequent generation of barriers to entry to maintain its leadership. The chapter concludes that the banking system is the core financial intermediary in the Mexican economy, but to be more competitive, it needs to diversify in other segments of the financial market to eliminate the risks of banking concentration.

Dividend decision involves the portion of a firm's net earnings, which are paid out to the shareholders while the remaining is ploughed back into the company for its growth. Despite comprehensive theoretical and empirical explanations, dividend policy and its determinants are a puzzle to be fixed in corporate finance. Chapter 4 is an attempt to assess the dynamics and determinants of dividend-payout policy using factor analytical tools and multiple regression analysis as a supportive tool.

Chapter 5 highlights whistle-blowing in corporate governance with the help of the Satyam episode. The collapse of Enron, WorldCom, etc. made the importance of corporate governance clear to the Indian industry, the polity, and the public. In the pursuit of better corporate governance, a whistle-blowing mechanism is considered to be highly desirable.

Chapter 6 introduces the framework and causal model of leadership style, organizational culture, performance management practices, and organizational performance. It argues that dimensions of leadership style, organizational culture, and performance management practices have mediated positive effects on organizational performance. Performance management practices positively mediate the relationships between leadership style and organizational performance and between organizational culture and organizational performance.

Chapter 7 examines the economy and sustainable development in the tribal community of Odisha. This chapter begins with the meaning and importance of pro-poor tourism for the socio-economic development of the indigenous groups in the state. Sustainable socio-economic development in the tribal regions is the central idea of this chapter. The key issue of this chapter is to find the way for economic development of this indigenous people followed by the social development to fight against the biggest internal security threat from Maoists in India.

Chapter 8 determines the impact and challenges of rural tourism in the study village. This empirical study reveals that the socio-economic impact of rural tourism on Padmanavpur textile village has many positive indications for improving the livelihood of the villagers. If sustained effort is made to address the said parameters, there can be significant improvement of socio-economic level of the villagers. Rural tourism is considered one of the multi-dimensional activities essential to the local area, not only rural villages in Odisha but all the nations of the world.

Chapter 9 observes that many of infrastructure projects are being reported to be hit in their project completion deadlines from the next fiscal year onwards, which is when they will need to start making the loan repayments; while outstanding bank loans to infrastructure firms rose to Rs.6.9 trillion as of 31 December 2012 from Rs.5.96 trillion a year ago, growth of such credit slowed to 16% in the 12 months that ended in December 2012 from 20.5%. Again, many retailers on the supply side are reportedly slowing their expansion plans, and many real estate developers are falling behind schedules in their shopping mall projects considering the credit crunch, because the economic slowdown has deeply affected the Indian organized retail sector in terms of deceleration in retail sales growth, footfalls, store expansions, employment rates, and most importantly, profitability. The negative outlook continued from 2010-2011 when the Reserve Bank of India hiked the risk weight on commercial real estate project loans to 1 percent from 0.4 percent and also cited more than 40 percent increase in loans to commercial real estate and added a note of caution on the fact that nearly 14 percent of commercial realty assets were restructured by banks.

Chapter 10, NPA (Non Performing Assets) is broadly defined as non-repayment of interest and installment of principal amount. Amongst the various desirable characteristics of a well-functioning financial system, the maintenance of the non-performing assets is an important one. The assessment would help to improve the asset quality of banks, so that provisioning requirement would automatically come down, and it adds to the profits directly, which leads to increase in the overall performance of the banks. It is important to manage the level of NPAs for Owners and Depositors, as they can face many problems due to augmented non-performing assets; even they cannot receive their appropriate return on their capital. NPA may spill over the banking system and contract the money stock, which may lead to economic contraction and affect its liquidity and profitability. Though total elimination of NPAs is not possible in banking, business as elements of risk is an inseparable ingredient, but by effective management, it can be minimized.

Stress is a physiological retort of the body to life situations, including both happy and unhappy events. Anytime a demand is made to a person to make some sort of adjustment, it can lead to increased stress. A lot of research studies have been conducted on stress over the last hundred years. Stress can be alleviated by engaging in different activities, which are of interest. Chapter 11, therefore, tries to address to certain questions while studying human behavior at work. What is stress? Where does stress come from? What are the causes of stress? How can stress be managed? The study identifies the problems and causes of the stress in educational institution in Jabalpur District.

Chapter 12 analyses the composition and changes of the working capital and discovers the impact of liquidity and efficiency of working capital management on profitability. For this purpose, this study was conducted on Cipla Ltd. for the period 2001-2009. From the study, it is found that there is a significant negative relationship between liquidity and profitability. It also reveals that managers can create value for the firm by reducing the holding period on inventories and receivables.

Chapter 13 aims to examine the existence of dynamic linkages among the major emerging stock markets, namely Brazil, Hungary, China, Taiwan, Poland, and Turkey, as well as developed markets, particularly the US, the UK, and Germany, during the period 2004-2013. Potential dynamic long-run interdependencies are investigated by using Johansen and Juselius multivariate cointegration test and causal relationship through the Vector Error Correction Model (VECM). Moreover, to capture the impact of the recent global crisis on the co-integrating relationship among the developed and emerging markets under study, the sample period is divided into two sub-periods: before crisis and after crisis. The empirical findings show that, after the crisis period, the direction of the long-run relationship varies, and furthermore, the stock market interdependence increases, supporting herding behavior of investors during the stock market crash period. Therefore, the increasing dynamic co-movements in the period after the crisis provide direct implications for the international investors as the international risk diversification and achievement of greater portfolio returns by investing globally may be potentially limited.

Chapter 14 shows techniques for risk management and how these techniques can be used by the banks. However, before going forward, the author demonstrates what risk is and how risk management should be defined in the banking sector, as different patterns of risks will be purchasing power risk, interest rate risk, market risk, politic risk, FX risk, liquidity risk, credit risk, operational risk, financial risk, management risk, and company and industry risk. In order to manage risk by mitigating it, there would be several business tools relying on operations research and statistics.

Chapter 15 empirically investigates the relationship between the efficiency of asset management and profitability of the Indian pharmaceutical industry during the period 2002-03 to 2011-12. The chapter also makes a comparison, in respect of the efficiency of assets management, between multinational and domestic companies in the Indian pharmaceutical industry during the same period. The sample size of the study consists of 20 pharmaceutical companies by taking 10 multinational and 10 domestic companies from the Indian pharmaceutical industry. The issues analyzed in this study have been tackled using relevant statistical tools and techniques.

Chapter 16 shows a comparison between Sharpe's cut off principle portfolio and proposed near optimum portfolio with that of optimum portfolio under Sharpe's Single Index Model, and the suitability of near optimum portfolio over Sharpe's cut off principle portfolio is examined. The main finding of the study is that with a moderate value and very high value of coefficient of optimism, near optimum portfolio shows a better result. However, for moderate to high value of coefficient of optimism, the cut off principle portfolio shows a closer result. This put forward the admissibility of the near optimum portfolio.

Chapter 17 provides a clear conceptual discussion on the recent developments in the Financial Statement Analysis (FSA). It presents how IFRSs changed the outlook of the financial reporting and the analysis and explains the key points that should be considered in FSA. Using a case study on the financial reports of Turkcell, a communication and technology company listed both on the New York Stock Exchange (NYSE) and the Borsa Istanbul (BIST), the differences between IFRSs and U.S. GAAP accounting standards in the measurement of overall financial performance and position were documented.

Overall findings show that IFRSs change the appearance of financial statements significantly. While IFRS reporting extenuates "the bottom line," it accentuates total assets with higher shareholders equity compared to U.S. GAAP. This chapter might be a practical guide for users, preparers, and regulators to understand the cosmetic impact of IFRSs on financial statements.

Chapter 18 demonstrates that the private sector banks' service quality is relatively better than that of public sector banks. The private sector banks have a higher index for all the five service quality measuring dimensions as well as in the overall service quality index or MSP value. The government and the concern authorities should take note of this as the sector is overwhelmingly dominated by the public sector banks in the state, but in terms of service quality, they are behind their counterparts in the private sector. While studying the mean difference of the reliability dimension, one important finding has appeared. It is found that the customers think that their money is safe irrespective of the ownership types of the bank. This is certainly against the popular belief of the general public that money is relatively safer in the public sector banks compared to private sector banks. This can be considered a big achievement of the private banks as they have been able to generate trust.

Chapter 19 is an attempt to focus on food as a destination development in a country. Various Indian foods by different communities are an attraction for food lovers and connoisseurs. The present food of the country has been refined to this stage due to the influences of alignment.

Chapter 20 argues that society, as in India in last three decades, as discussed here still is not free from the hazards which different social scientists have pointed out. The outcome of these adversities is deprivation, exploitation, hunger, malnutrition, and mountainous want of basic needs of live. All these are the causes of hindrances towards growth of human resources, which can adequately contribute towards the cause of country, nation, and its all around development.

In Chapter 21, the mutual relationship between employer and employee develops at the workplace on the premise of reciprocity of expectations from each other. Fulfilment of these expectations is the perception of either of the two. When an employee perceives prevalence of justice in the organization, he correlates the perception with all organisational stimuli. This chapter shows that work attitude varies in employees as a result of the difference in perceived justice in the organization. It also hypothesizes the relationship among justice perception, responses to organisational facilities, and interpersonal interactional opportunities. The chapter is a correlation analysis of variables through a self-administered questionnaire consisting of responses in Likert's scale. Some of the responses and attitudes in the study significantly correlated with the perceived level of a component of organisational justice. The study reestablishes significance of non-pecuniary means in determining work attitudes.

Chapter 22 evaluates the effectiveness of marketing communications in promoting tourism on the Greek island of Myconos. The research evaluates the effectiveness of the marketing communications used by public bodies to promote Myconos in Europe. The research location was the airport at Myconos.

The rural tourism concept has become one of the vital issues of economic and social benefits to the society. Chapter 23 identifies the problems and prospects of rural tourism in the state of West Bengal. The primary objectives of this study include the development and emergence of rural tourism in the state of West Bengal, analyze the tourism gap at Bishnupur, examine the existing as well as future requirement of tourism infrastructure of Bishnupur, and lastly, promote and market Bishnupur as an important rural tourism destination in Indian Scenario.

Chapter 24 focuses on the Indian mutual fund industry, which is playing a significant role in the development of capital market and in the growth of the Indian economy. It is considered to be a better opportunity where savings are collected from investors and diverted to the capital market to generate better returns for them with lower risk and volatility. Hence, it is of utmost significance to understand the mutual fund industry in India. As such, this chapter makes an attempt to review the various literatures available in regard to mutual funds to evaluate the performance of various mutual fund schemes and to study the investor's perception in selection of a mutual fund. The study shows that mutual funds have failed to offer the advantages of diversification and professionalism to the investors and, hence, could not fulfill their scheme's objectives. It is also found that retail investors are still confused about mutual funds as an investment avenue.

Chapter 25 studies the efficiency of working capital in maintaining liquidity of the Indian tyre industry during the period 1998-99 to 2007-08. The data for the period from 1998-99 to 2007-08 used in this study have been collected from the Capitaline Corporate Database, the official of Capital Market Publishers (India) Ltd., Mumbai. While carrying out this study, suitable measures relating to financial statement analysis as well as relevant statistical tools and techniques have been applied at appropriate places. The overall findings of the study indicate that there was no proper trade-off between liquidity and profitability in the selected tyre companies during the study period.

Chapter 26 analyzes the process set for clearing services in the HDFC and SBI. The study employs primary data collected through observation by spending time and watching people in the organization though it has been supplemented by the secondary data as well. The results indicate the various types of clearing process present in HDFC Bank and SBI for providing better and fast services to their customers and setting higher standards for performance. The bank is committed to increased use of technology to provide quick collection services to its customers. The banking sector, whether private or public sector banks, has immensely benefited from the implementation of superior technology during the recent past, which has given new shape to the nature of the services provided to customers.

Chapter 27 highlights some of the venture capital avenues and government policies that have proved very beneficial in the growth of the IT/BPO industry. These favorable government policies have gone a long way in making India an Outsourcing/IT hub. This chapter conceptualizes the implementation of venture capital avenues and application in the IT/BPO industry. The major limitation of this chapter is conceptual in nature, which will definitely form a base to test empirically.

Chapter 28 focuses on Industrial Dispute in Sugar Industry. It also studies the methods adopted in settling the industrial disputes in the industry and time taken in conciliation, reference to adjudication by the Labour Department, Government of Uttar Pradesh, and in the process of adjudication.

Chapter 29 presents a conceptual differentiation between KM, CRM, and CKM by analyzing and comparing the various components of the terms. The effort has been made in the chapter to map CKM practices in the Indian service market by presenting case studies of two Indian commercial banks. The authors also made an attempt to propose a conceptual framework of CKM that can be applied in service firms to successfully implement CKM practices in their organizations

The goal of this book is to be an international platform to bring together academics, researchers, lecturers, decision makers, policy makers, and practitioners to share new theories, research findings, and case studies in order to enhance understanding and collaboration in issues of infrastructure and finance.

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Chapter 1
Working Capital Management in Select Indian Pharmaceutical Companies:
A Cross-Sectional Analysis

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ABSTRACT

The Indian pharmaceutical industry is the fifth largest pharmaceutical industry in the world in terms of volume and the fourteenth largest in value terms. There have been sevaral notable changes in the scenario of Indian pharmaceutical industry after the signing of GATT (now WTO). The mergers, acquisitions, and takeovers at both national and international levels have become a common phenomenon in this industry. In today's challenging and competitive environment, efficient management of working capital is an integral component of the overall strategy to create shareholders' wealth. So, the task of designing appropriate strategies for managing working capital in accomplishing the objective of maximizing shareholders' wealth of companies in the Indian pharmaceutical industry is of prime importance. In this backdrop, the chapter seeks to analyze the working capital management of ten selected companies in the Indian pharmaceutical industry during the period 1996-97 to 2010-11. While satisfying the objective of the study, relevant statistical tools and techniques have been applied at appropriate places.

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1. INTRODUCTION

The arena of financial management is purely concerned with the procurement of fund and its effective utilization to achieve the fundamental objective of wealth maximization. Working capital is considered as the life blood of an organization. Effective management of short term assets and liabilities have direct impact on the earning capability of the firm. Thus the finance managers in the corporate world make relentless effort to ensure efficiency in working capital management so as to amplify the profitability with adequate liquidity. The history of finance shows several incidences where firms became bankrupt due to mismanagement of working capital. Recently a lot of changes have been taken place in the working capital management (WCM)practices in the corporate sector across the globe. Due to the abundant supply of short term credit facilities from banks and other financial institutions, a good number of well known business houses are maintaining zero working capital and moving towards JIT purchase approach which has a considerable positive impact on the profitability of the firm. There has been a sharp decline in the strength of Indian currency as compared to other important currencies of the globe. It has a significant impact on the receivables and payables of the companies having overseas operation such as IT companies, pharmaceutical companies etc. Hence the finance managers in the corporate sector have been facing a real challenge at the time of managing the components of working capital prudently. In this backdrop, a modest effort has been made to carry out a comprehensive empirical assessment of WCM of the ten selected companies in Indian Pharmaceutical industry during the period 1996-97 to 2010-11.

2. REVIEW OF EXISTING LITERATURE

Over a long period of time many research scholars have made significant contribution in the literature of finance by conducting unique and fruitful empirical research studies on WCM at both national and international levels. Some notable studies were reviewed in the following paragraphs for the purpose of identifying the research gap.

The findings of the empirical investigation conducted by Carpenter and Johnson (1983) showed that no linear relationship between the revenue systematic risk of US firms and level of current assets was present; rather they found non-linear relationship which was not observed to be statistically significant.

Lyroudi and Lazaridis, (2000) carried out an analysis of the Greek Food Industry to establish the relationship between the Cash Conversion Cycle and the traditional liquidity indicators. The results revealed a significant and positive linkage between the modern and traditional liquidity indicators. The Cash Conversion Cycle was also seen to be positively related with the Return on Assets.

The study undertaken by Eljelly (2004) on a sample of 929 joint stock companies in Saudi Arabia also showed that there was a significant negative relationship between the firm's profitability and its liquidity.

The study conducted by Ghosh and Maji (2004) for analyzing the relationship between working capital management and profitability of the Indian cement industry observed significant association between the earning capacity and outstanding use of current assets. Mohamad and Saad (2010) got similar inputs from their study of working capital management and market valuation of 172 Malaysian firms for the period 2003 to 2007.

Mallik et al. (2005) conducted their study on working capital management of Indian pharmaceutical industry and found no significant relationship between working capital and profitability.

The study conducted by Filbeck and Krueger (2005) emphasized the significance of efficient working capital management by assessing the working capital management policies of 32 US non-financial companies. The study revealed a significant difference in the working capital financing policies adopted by the companies over the time. The findings were further reinforced by the results of the similar studies conducted by Gombola and Ketz (1983), Maxwell et al. (1998), and Long et al. (1993).

The study conducted by Padachi (2006) observed that firms having huge investment in inventories and receivables yielded lower profitability. The study was based on return on total assets as a measure of profitability for a sample of 58 small manufacturing firms operating in Mauritius for the period 1998 to 2003.

Gill et al. (2010), in their study, found a negative relationship between profitability and average days of accounts receivable and a positive relationship between cash conversion cycle and profitability. The similar result was obtained in the study conducted by Teruel and Solano (2007).

Another study was conducted by Chakraborty (2008) on the relationship between working capital management and profitability in Indian Pharmaceutical industry by taking 25 selected firms for the period 1996-97 to 2007-08 .The study observed working capital management had a significant impact on profitability .

Another study exploring the relationship between different measures of efficiency of working capital management and overall profitability was conducted by Chakraborty (2012) taking into account different domestic and multinational pharmaceutical companies operating in India for the period 1998-99 to 2009-10. The results of the study showed that inventory management, receivables management and cash management made notable contribution towards enhancing overall capability in most of the domestic and multinational pharmaceutical companies under study.

Hussain et al. (2012) in their study showed that lesser investment in current assets and lower current liability financing enhanced the profitability of the selected firms. The study also observed that company size, sale growth and leverage ratio notably affected the profitability of the firms.

A large number of studies on working capital management have been carried out in India and abroad during the last four decades. A considerable number of studies on this issue covering almost all the major industries have also been conducted in India during post-liberalization period. But a very few studies on the working capital management of the pharmaceutical sector have been made during the post-liberalization era although the pharmaceutical industry in India has been playing a vital role in developing its economy not only by producing a large number of medicines as well as other life-saving articles necessary for maintaining overall health of the general people but also by generating a considerable amount of employment in India. The companies belonging to the pharmaceutical industry have also changed their business policies to face the different challenges emanated from the liberalization measures taken by the Government of India. It leads to notable changes in the WCM in Indian pharmaceutical companies. By a careful inspection of the studies of WCM in Indian corporate sector it can be inferred that adequate number of studies on the WCM of the pharmaceutical sector in India considering the effects of the above mentioned changes in Indian business environment have not been made. Moreover, the outcomes derived from the studies on WCM of the Indian pharmaceutical industry so far made are conflicting in nature and therefore, the studies have not been able to establish any definite conclusion. It is therefore, high time to analyze the WCM of the pharmaceutical sector in India during the post liberalization period.

3. OBJECTIVES OF THE STUDY

The present study has the following objectives:

1. To analyze the liquidity of the selected companies using some selected ratios.
2. To ascertain the actual status of the selected companies in respect of their liquidity using comprehensive rank approach.
3. To assess the degree of relationship between liquidity and profitability of the companies under study.

4. DATA AND METHODOLOGY OF THE STUDY

The present study is based on ten selected pharmaceutical companies in India. The selection was made following purposive sampling procedure. The data relating to the selected companies for the period 1996-97 to 2010-11 used in this study were collected from secondary source i.e. Capitaline Corporate Database. For analyzing the data, the technique of ratio analysis, comprehensive ranking tools, simple statistical tools like mean, statistical techniques like analysis of trend movement, analysis of Pearson's simple correlation, Spearman's rank correlation analysis were used. The t test was used at appropriate places.

5. EMPIRICAL ANALYSIS AND DISCUSSIONS

1. **Current Ratio (CR):** It is basic measure of liquidity. The higher the value of CR, the higher is the liquidity. Table 1 shows that out of the ten companies under study only three companies, namely Cipla, Novartis and Pfizer showed positive growth rate in CR which was found to be statistically significant at 5% level while Lupin was the only company which depicted negative as well as significant growth rate in CR during the study period. This table also discloses that out of the ten selected companies two companies namely Ipca and Lupin maintained considerably lower mean CR as compared to the industry average and two companies, namely Cipla and AstraZeneca kept their mean slightly lower than the industry average during the study period while the mean of CR of the remaining companies was significantly higher as compared to the industry mean during the same period. Dr. Reddys, JB Chemicals, Novartis, Weyth and Glenmark maintained their C.V. of CR at a level above the industry standard during the study period.
2. **Quick Ratio (QR):** This ratio is stricter test of liquidity than CR as it gives no consideration to inventory which may be slow moving. It places more emphasis on immediate conversion of assets into cash than the CR does. The higher the QR, the higher is the immediate debt paying capability of the company (Sur, 2012). Table 1 shows that out of the ten selected companies six companies namely Cipla, JB Chemicals, Novartis, Weyth, Pfizer and Glenmark maintained positive as well as significant growth rate in QR during the study period while the growth rate in QR was negative as well as significant only in Lupin during the same period. The table also reveals that only Dr. Reddys, JB Chemicals and Glenmark were able to keep their mean QR at a level above the industry average during the study period whereas the seven companies failed to do so during the same period. The C.V. of QR in Novartis, Weyth and Glenmark was much higher as compared to the industry average of C.V. of QR during the study period.

3. **Inventory Turnover Ratio (ITR):** It measures the efficiency of inventory management of the company. In general, a high ITR is good from the liquidity point of view and implies sound inventory management whereas a low ratio signifies excessive inventory levels than warranted by the volume of operation indicating poor liquidity as well as inefficiency in the inventory management (Sur, 2012). Table 1 discloses that the positive growth rate in ITR was found to be significant only in Novartis and Weyth whereas the growth rate of ITR in Cipla, Lupin and Glenmark was negative as well as significant during the study period. This table also shows that Astrazeneca, JB Chemical, Lupin, Novartis, Weyth and Glenmark maintained higher mean ITR as compared to the industry average whereas in respect of the mean ITR Cipla, Dr. Reddys, Ipca and Pfizer failed to reach the industry average during the study period. Astrazeneca, Lupin, Novartis, Pfizer and Glenmark failed to keep their C.V. of ITR at a level below the industry standard.
4. **Debtors Turnover Ratio (DTR):** It measures the efficiency of debtors management of the company. The quality of debtors is also indicated by this ratio. The higher the ratio, the shorter is the average collection period, the greater is the degree of efficiency in credit management and the better is the liquidity of debtors. Table 1 shows that the growth rate of DTR maintained by Lupin, Novartis and Weyth was positive and found to be statistically significant while the growth rate of DTR kept by Cipla, Ipca, JB Chemicals and Glenmark was negative as well as significant during the study period. Astrazeneca, Novartis, Weyth and Pfizer maintained their mean DTR at a level above the industry average while the other six companies failed to do so during the study period. Cipla, Astrazeneca, Lupin, Novartis, Pfizer and Glenmark kept their C.V. of DTR at a level above the industry standard during the period under study.
5. **Cash Turnover Ratio (CTR):** It measures the efficiency of cash management of the company. The higher the CTR, the higher is the efficiency of cash management. Table 1 shows that the growth rate of CTR kept by Lupin, Ipca and Glenmark was positive as well as significant while the growth rate of CTR was negative as well as significant in Astrazeneca, Novartis, Weyth and Pfizer during the period under study. Cipla, Ipca and Lupin maintained their mean CTR at a level above the industry average while Dr. Reddys, Novartis, Weyth and Pfizer failed to maintain their C.V. of CTR at a level below the industry standard.
6. In Table 2, an attempt was made to ascertain the liquidity status based on the composite scores which were determined using mean values of the selected liquidity ratios. In each case, a high value indicates relatively favorable liquidity position and ranking was done in that order. Ultimate liquidity ranking was done on the basis of the principle that the lower the composite score, the more favorable is the liquidity position and vice versa. Table 2 discloses that JB Chemicals and Novartis jointly captured the top most position and they were followed by Glenmark, Weyth, Pfizer, Lupin, Dr. Reddys, Astrazeneca, Ipca and Cipla respectively in that order.
7. In Table 3 it was attempted to measure the liquidity status based on the composite ranks which were ascertained using C.V. values of the selected liquidity ratios. While making such analysis, in each case, a low value indicates relatively favorable liquidity position and ranking was done in that order. Ultimate ranking was done using the same principle as followed in Table 2. This table shows that in respect of consistency in liquidity Ipca

Table 1. Analysis of selected ratios relating to working capital management of select companies in indian pharmaceutical industry

Company	CR			ITR		
	Mean	CV	Growth Rate	Mean	CV	Growth Rate
Cipla	2.095	12.77	0.031**	3.843	9.45	-0.042**
AstraZeneca	2.323	9.88	-0.004	9.136	32.32	0.152
Dr. Reddy's	2.635	32.52	-0.020)	6.588	20.71	-0.222
Ipca	1.581	7.24	-0.012*	4.646	5.75	0.017
JB Chemicals	2.799	29.13	-0.048	9.857	15.32	0.037
Lupin	1.633	20.94	-0.061***	7.623	39.93	-0.572***
Novartis	2.670	47.37	0.260***	7.977	32.96	0.534***
Weyth	2.582	51.74	-0.004	7.615	11.29	0.333***
Pfizer	2.797	14.11	0.258***	5.621	31.54	-0.010
Glenmark	2.422	35.67	-0.065	8.390	45.79	-0.650***
Industry Average	2.354	26.14		7.13	24.506	

Source: Compiled and computed from 'Capitaline Corporate Database' of Capital Market Publishers (I) Ltd., Mumbai.
* Significant at 10% level,**Significant at 5% level, *** Significant at 1% level

Company	DTR		
	Mean	CV	Growth Rate
Cipla	6.547	54.72	-0.737***
AstraZeneca	7.847	30.70	0.125
Dr. Reddy's	3.778	16.17	0.050
Ipca	5.079	10.34	-0.069**
JB Chemicals	2.294	19.33	-0.081***
Lupin	3.851	33.59	0.184***
Novartis	9.740	34.97	0.702***
Weyth	10.449	18.23	0.998***
Pfizer	13.116	35.73	0.062
Glenmark	4.183	42.38	-0.321***
Industry Average	6.688	29.616	

Source: Compiled and computed from 'Capitaline Corporate Database' of Capital Market Publishers (I) Ltd., Mumbai.
* Significant at 10% level,**Significant at 5% level, *** Significant at 1% level

Company	QR			CTR		
	Mean	CV	Growth Rate	Mean	CV	Growth Rate
Cipla	1.596	30.43	0.091***	123.681	55.33	-7.034*
AstraZeneca	1.808	20.15	0.012	7.086	80.99	-0.901***
Dr. Reddy's	3.173	28.90	-0.095	19.319	120.94	-0.500
Ipca	2.163	18.09	-0.015	153.003	34.00	8.276***
JB Chemicals	4.429	20.07	0.108***	29.478	42.42	-1.081
Lupin	2.548	30.96	-0.122***	60.568	21.64	5.946***
Novartis	2.360	54.92	0.267***	47.203	144.99	-7.694***
Weyth	2.224	61.70	0.099***	43.017	293.56	-1.966***

continued on following page

Table 1. Continued

Company	CR			ITR		
	Mean	CV	Growth Rate	Mean	CV	Growth Rate
Pfizer	2.089	27.55	0.268***	9.018	121.23	-14.418***
Glenmark	4.244	56.63	0.419***	54.239	95.81	6.356***
Industry Average	2.663	34.94		54.66	101.04	

Source: Compiled and computed from 'Capitaline Corporate Database' of Capital Market Publishers (I) Ltd., Mumbai.
* Significant at 10% level,**Significant at 5% level, *** Significant at 1% level

Table 2. Liquidity ranks of the selected companies in indian pharmaceutical industry (based on average)

Company	CR Rank	ITR Rank	DTR Rank	QR Rank	CTR Rank	Sum of Rank	Ultimate Rank
Cipla	8	10	5	10	2	35	10
AstraZeneca	7	2	4	9	10	32	8
Dr. Reddy's	4	7	9	3	8	31	7
Ipca	10	9	6	7	1	33	9
JB Chemicals	1	1	10	1	7	20	1.5
Lupin	9	5	8	4	3	29	6
Novartis	3	4	3	5	5	20	1.5
Weyth	5	6	2	6	6	25	4
Pfizer	2	8	1	8	9	28	5
Glenmark	6	3	7	2	4	22	3

Source: Compiled and computed from 'Capitaline Corporate Database' of Capital Market Publishers (I) Ltd., Mumbai

Table 3. Liquidity ranks of the selected companies in indian pharmaceutical industry (based on consistency)

Company	CR Rank	ITR Rank	DTR Rank	QR Rank	CTR Rank	Sum of Rank	Ultimate Rank
Cipla	3	2	10	6	4	25	4
AstraZeneca	2	7	5	3	5	22	3
Dr. Reddy's	7	5	2	5	7	26	5
Ipca	1	1	1	1	2	6	1
JB Chemicals	6	4	4	2	3	19	2
Lupin	5	9	6	7	1	28	6
Novartis	9	8	7	8	9	41	9
Weyth	10	3	3	10	10	36	8
Pfizer	4	6	8	4	8	30	7
Glenmark	8	10	9	9	6	42	10

Source: Compiled and computed from 'Capitaline Corporate Database' of Capital Market Publishers (I) Ltd., Mumbai occupied the topmost position and it was followed by JB Chemicals, Astrazeneca, Cipla, Dr. Reddys, Lupin, Pfizer, Weyth, Novartis and Glenmark respectively in that order.

8. In Table 4 the liquidity status was ascertained more precisely using composite ranks based on the combination of average (mean) and consistency (C.V.) aspects of the selected liquidity signifiers. Ultimate ranking was done applying the same principle as adopted in Table 2 and Table 3. Table 4 discloses that JB Chemicals captured the top-most position and it was followed by Ipca, Novartis, Astrazeneca, Dr. Reddy's, Lupin, Weyth and Pfizer respectively. The ninth and tenth ranks were occupied by Glenmark and Cipla. However, Dr. Reddy's, Lupin, Weyth and Pfizer stood on the same point.
9. In Table 5 for examining the relationship between liquidity and profitability of the selected companies Spearman's rank correlation analysis was made. In this analysis the composite liquidity ranks (as ascertained in Table 4) and the profitability ranks (determined on the basis of return on capital employed) were used. In order to examine whether the computed values of Spearman's rank correlation coefficients were statistically significant or not, t-test was used. Table 5 shows that in seven out of the ten selected companies the correlation coefficients were positive while in the remaining three companies the correlation coefficients were negative. But all these correlation coefficients were not found to be statistically significant even at 5% level.

6. CONCLUDING OBSERVATIONS

1. Pfizer maintained higher average as well as consistency as compared to the industry status and positive as well as significant growth rate in respect of CR during the study period. Thus Pfizer was considered as the best performer in respect of short term debt paying capability during the period under study.
2. JB Chemicals was the only company among the selected ones which kept its average and consistency above the industry standards and

Table 4. Overall liquidity ranks of the selected companies in indian pharmaceutical industry (based on average-consistency blend)

Company	Ultimate Rank on the Basis of Mean	Ultimate Rank on the Basis of CV	Sum of Rank	Ultimate Rank
Cipla	10	4	14	10
AstraZeneca	8	3	11	4
Dr. Reddy's	7	5	12	6.5
Ipca	9	1	10	2
JB Chemicals	1.5	2	3.5	1
Lupin	6	6	12	6.5
Novartis	1.5	9	10.5	3
Weyth	4	8	12	6.5
Pfizer	5	7	12	6.5
Glenmark	3	10	13	9

Source: Compiled and computed from 'Capitaline Corporate Database' of Capital Market Publishers (I) Ltd., Mumbai.

Table 5. Analysis of spearman's rank correlation between overall liquidity and profitability of the selected companies in the indian pharmaceutical industry

Company	Rank Correlation
Cipla	0.457*
AstraZeneca	0.401
Dr. Reddy's	-0.433
Ipca	0.154
JB Chemicals	0.167
Lupin	-0.351
Novartis	0.266
Weyth	0.175
Pfizer	-0.456*
Glenmark	0.280

* Significant at 10% level Source: Compiled and computed from 'Capitaline Corporate Database' of Capital Market Publishers (I) Ltd., Mumbai.

positive as well as significant growth rate in respect of QR during the study period. It reflects that JB Chemicals proved itself as the best performer in respect of immediate debt paying capability during the period under study.

3. The growth rate in ITR of Novartis and Weyth were positive as well as significant and their mean ITR values were higher as compared to the industry average. However, in respect of consistency in ITR, Novartis and Weyth failed to keep their CV of ITR at a level below the industry standard. It indicates that although the growth rate in the efficiency of inventory management of Novartis and Wyeth was notable, the consistency in respect of the performance of their inventory management was not at all satisfactory during the study period.
4. Weyth, the only company among the companies found place in the sample, maintaining positive as well as significant growth rate in DTR, was able to maintain a higher mean DTR as compared to the industry standard and also kept a lower CV of DTR during the study period. It reveals that Weyth proved itself as the best performer in respect of credit management during the period under study.
5. Lupin and Ipca maintained positive growth rate in CTR which was found to be statistically significant. They also kept higher mean CTR as compared to the industry average but failed to maintain lower CV of CTR during the period under study. It indicates that although Lupin and Ipca failed to reach industry standard in respect of consistency in the efficiency of their cash management, the overall performance of the cash management of these companies was quite satisfactory during the study period.
6. Based on the composite scores ascertained by using mean values of the selected liquidity ratios, JB Chemicals and Novartis jointly captured the topmost position and Ipca and Cipla occupied the last two ranks whereas based on the consistency of the selected liquidity ratios, Ipca and JB Chemicals occupied the first two ranks and Novartis and Glenmark were placed in the last two positions. Based on the composite scores determined by considering the combination of average and consistency aspects of the selected liquidity ratios, JB Chemicals proved itself as the best performer in respect of liquidity management followed by Ipca and Novartis respectively while the poorest performance of the liquidity management was shown by Cipla and Glenmark during the study period.
7. No strong evidence of positive or negative relationship between liquidity and profitability in the selected companies during the study period was observed.

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KEY TERMS AND DEFINITIONS

Cash Turnover Ratio (CTR): A measure of the efficiency of cash management of the company. The higher the CTR, the higher is the efficiency of cash management.

Current Ratio (CR): The basic measure of liquidity. The higher the value of CR, the higher the liquidity.

Debtors Turnover Ratio (DTR): A measure of the efficiency of debtors management of the company. The quality of debtors is also indicated by this ratio.

Inventory Turnover Ratio (ITR): A measure of the efficiency of inventory management of the company. In general, a high ITR is good from the liquidity point of view and implies sound inventory management, whereas a low ratio signifies excessive inventory levels than warranted by the volume of operation indicating poor liquidity as well as inefficiency in the inventory management.

Quick Ratio (QR): This ratio is a stricter test of liquidity than CR, as it gives no consideration to inventory, which may be slow moving. It places more emphasis on immediate conversion of assets into cash than the CR does.

Chapter 2
Banks and People in the Development Process:
A District-Level Analysis of the Banking Habits in India

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ABSTRACT

Economic development is crucially an end product of mobilizing dormant savings into the fragrance of a new life – what is commonly called as investment. Banks play a crucial role in this channelization. In an underdeveloped economy like India, there are many traditional avenues of savings (such as gold, land, livestock, real estate, and so on). There may be many motives why people opt for traditional avenues rather than formal banking. The traditional avenues are believed to be more trustworthy and down to earth. The strict rules and stereotyped functioning of the formal banks can make them uncomfortable to the people in the underdeveloped areas. Thus, a huge fund in India is caught in the web of informal banking streams. This chapter seeks to understand how far and to what extent these changes have occurred in India. First, the authors consider a case study from rural India that depicts disparate banking behavior of rural populace. Next, they use district level data on banking habits across all the states of India. The authors first note the pattern and distribution of banking habits of people across the subcontinent. They then try to assess the reasons behind such discrepancy.

INTRODUCTION

Traditional macro economic theory asserts that the key to economic development is the availability of savings. An improvement in savings would release funds that can be invested. In all our standard theories, the synchronization between saving and investment is automatic. In the neo-classical approach, the problem of investible fund is not put forth. In the Keynesian model, the matching between saving and investment is essential. But, this is only in the aggregative sense. Keynesian

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equilibrium is determined when demand for investible funds matches the supply, i.e. saving. What these models safely assume is the working of a well-structured banking system, wherein the supply of investible funds is automatically directed towards its demand.

In the modern economy households save while companies invest. It is certainly important that the aggregate saving equates aggregate investment as argued by the Keynesians. But this is half the story. Successful investment requires the collection of disparate savings of the families and its channelization to the investors. In modern parlance, we can designate it as a co-ordination problem. Text book macroeconomics does away with this co-ordination problem by assuming the functioning of a well-established banking system.

The problem became serious when the economists began to study the underdeveloped world. There, more often than not, savings are scattered and often in various static or 'unusable' forms (such as gold, properties of the religious institutions, land etc). This view of co-ordination failure is not new to the thinkers outside the hallowed boundary of economics. Francois Bernier was a French traveler who visited India during the reign of the Mughal emperor Aurangazeb. He was of the view that average Indians were very rich. Even a peasant woman used to wear earrings. But, there were little investing activities. People used to burry their valuable treasures under the earth. Thus they lost any chance of being invested and creating income and wealth.

This problem is still prevalent in the current Indian milieu. Lack of or absence of formal saving practices is still there in the country. Huge amount of money are still being saved informally. This huge informal saving is actually belittling the opportunity of capital and wealth creation. It is in turn hampering economic development in the country. In order to spread the banking services to the hitherto uncharted territories as well as to channelize the informal and unused savings in the country to the formal routes, the RBI is now vociferously preaching for 'financial inclusion'.

In our paper we will try to decipher the reasons behind the lack of co-ordination in the country between savings and investment. In other words, we will try to find out the reasons behind lack of or absence of formal saving or institutional savings habits in the country. We will attempt to unravel the micro level indicators that have any bearing on the formal saving habits or the banking habits of the people in the country.

The paper is divided into 4 sections. Section 2 discusses a case study of disparate banking behavior. Next we consider the basic data that is used in the study as well as the methodology in section 3. The next section takes account of the analytics of disparate savings behavior. In section 5 we conclude.

2. CASE STUDY

In line with our scheme of things, here we incorporate a case study. The case study is based on a socio-economic study conducted by the Post Graduate students of the University of Burdwan in a cultivable area in Bolpur in Birbhum district during February 2013. The study is based on the data collected from 306 households coming from different villages within the Sian Muluk of Bolpur, Srineketan block.

The villagers in this are engaged in various types of semi-skilled and unskilled jobs. This includes working in agriculture, unskilled non-farm labor service, various types of petty businesses, services and others. Among the women there are many who remain as housewives. These people are not all of homogeneous categories. Out of the families surveyed, about 39% are above the official poverty line while 61% are below the poverty line.

However, once we come to their source of loans, 16.81% depend on banks. This means about 83% of the total sampled households depend on

Table 1. Economic profile of the households surveyed

	No of Households	Percentage of Households
APL	119	38.89
BPL	187	61.11
Total	306	100

Source: A socio-economic survey conducted by the Department of Economics, Burdwan University

various sources of non-bank credit. Among these sources, 0.88% comes from post office and 4.42% from panchayat. This roughly amounts to 5.3% from official sources. Among the remaining 78%, roughly 30% depends on moneylenders, 30% on chit funds and micro-finance and 7% from other sources.

Chit funds are unofficial loaning and depositing agencies in rural and semi-urban West Bengal. Originally, the word chit comes from 'sheet of paper'. These are formed by an agreement between individuals who form Rotating Savings and Credit Institutions (ROSCAs).[1] Each individual saves a fixed amount in the common pool during each month or at some common interval of time. A lottery is made at each meeting to decide who will receive the entire pooled amount as loan for a certain specified period. The person is liable to pay the money back and the pot is again distributed.

However, the chit funds have expanded its role beyond the legal limits of ROSCAs, as specified by the SEBI. In rural Bengal, these unauthorized chit funds play a substantial role in the informal market. They attract huge deposits by alluring a high rate of interest. They also charge a high rate on interest on the loan given by them.

The question arises as to why the residents in rural and semi-urban areas depend so heavily on non-bank institutions. In our case study we found at least three main reasons for this.

The first reason is the easy accessibility of these loans. Most of the loans are so small that commercial bankers would not feel profitable to release them. Our data shows that about 97% of the loans are of less than or equal to Rs 50,000 only. Again, 52% of the loans amounts to less than or equal to Rs 10,000. There are loans even below Rs 1000 (about 8%). It is clear that no commercial bank would offer this small amount of loan. Added with this, is the fact that a huge amount of loan is disbursed without any collateral (63.16%).

Personal acquaintance, informal bonding etc. are more important to obtain a loan than collateral. In the rural and semi-urban areas, even the middle and rich families might not be able to procure collateral in the appropriate form as required by the formal loaning agency.

The third important aspect of informal loan is its flexibility. In many cases, the purpose for which the loan is taken and its actual use are in complete contrast with one another. For example, though only 4.23% of the borrowers state agriculture as the purpose of taking out the loan, the actual utilization of the loan for agricultural purpose is roughly 39%. Similarly, the amorphous other categories (that mostly includes expenditures on societal duties such as marriage of sisters, daughters etc.)

Table 2. Source of loans

Money Lenders	Chit Funds	Panchayat	Self-Help Group	Post Office	Bank	Relatives	Land Lords
30.08%	30.08%	4.42%	10.61%	0.88%	16.81%	6.19%	0.88%

Source: A socio-economic survey conducted by the Department of Economics, Burdwan University

Table 3. Amount of loans

Amount of Loans	Percentage of Households
Rs 0 – Rs 1000	7.64
Rs 1001- Rs 5000	19.50
Rs 5001 – Rs 10,000	32.20
Rs 10001-Rs 50,000	37.28
Rs 50,001-Rs 4.50 lakh	3.38

Source: A socio-economic survey conducted by the Department of Economics, Burdwan University

Table 4. Loan with Collateral / no Collateral

Loan with Collateral	Loan with no Collateral
36.84%	63.16%

Source: A socio-economic survey conducted by the Department of Economics, Burdwan University

accounts to only 7.62% as the declared purpose for loans, which actualizes to 24%. Faced with uncertainties, the rural and semi-urban families often have to re-orient their expenditure plans. Such re-orientation requires flexibility in loan use that is not possible in the formal sector.

Thus our case study reveals that it is not merely income that determines the use of formal banking. There are many advantages in the use of informal sources. These sources are flexible, easily accessible and somewhat non-structured. In many cases, when there is an urgent need of loans, the households have to depend on the informal sources for their only avenue. Many of these informal sources are a part and parcel of their lives. They meet these agents in their day to day activities of life. They believe them and depend upon them. Sometimes, they form social ties with the informal lenders. Formal loans, on the other hand, are a world apart. Unless the formal sector finds some innovative ways to attract the borrowers and the savers, the hope of financial inclusion will remain a distant dream.

Table 5. Purpose of loan

Agriculture	Livestock Purchase	Durable Asset Creation	Education	Medical Purposes	Trade	Other Activities
4.23%	16.94%	24.57%	12.75%	25.42%	8.47%	7.62%

Source: A socio-economic survey conducted by the Department of Economics, Burdwan University

Table 6. Actual utilization of the loans

Agriculture	Livestock Purchase	Durable Asset Creation	Education	Medical Purposes	Trade	Other Activities
39.08%	6.89%	1.15%	3.45%	16.09%	9.19%	24.15%

Source: A socio-economic survey conducted by the Department of Economics, Burdwan University

3. SOME SALIENT FEATURES OF THE DATA USED AND METHODOLOGY

The empirical analysis requires data on various aspects of the saving behavior of people. Some of these can be gathered from the amenities data of the Indian census 2001. Another and more important source is the District Level Household and Facility Survey data of 2007-08 (DLHS 3). Both these data give the district level features. These two sets of data are combined together for our purpose.

From census 2001, we gather data on the total number of households availing banking services for 581 districts in India, coming from 34 states and union territories. We find out the proportion of households availing banking services in each of the 581 districts that we selected. In our study, we refer the proportion of households availing banking services as the dependent variable and we refer it as 'bank' in our study. We try to find out how 'bank' depends upon various other factors. From the census data, we get number of households according to the usage of various durable goods such as radio, transistor; television; telephone; bicycle; scooter, motor cycle, moped; car, jeep, van; and none of the specified assets. Finding the proportion of households who hold none of the specified assets and subtracting the proportion from one for each district, we derive an estimate of 'assets'. It is anticipated that 'assets' and 'bank' are positively correlated. In other words, increased asset holding should require higher banking practices by the people.

We have also used the District Level Household and Facility data of 2007-08 (DLHS 3) for our study. DLHS is a wonderful effort by the Ministry of Health and Family Welfare and the survey was conducted by the International Institute of Population Sciences. For this survey data was collected from over 0.72 million households cutting across 28 states and 6 union territories. The survey was conducted on the basis of 17 parameters that include education, living standard and health. In our study, we have used data on 9 parameters. The parameters that are used in our study are presented in Table 7 .

A careful look at the table brings out some important features of the data. For two variables – 'pov' and 'marr', the variability is more than 70%. Higher CV in the variable 'pov' implies widespread disparity in income of the people in the country. Higher variation in 'marr' implies a wide asymmetry in the development of social consciousness among the women.

In all other variables – 'lit', 'bo2', 'mod', 'antl', 'inst', 'immun', 'breast' – the variability is below 50%. Lowest variability is observed in the variable 'lit'. It means that there have not been any significant fluctuations in the literacy level across different areas in the country. In 'bo2' also, there has not been any significant variation. A moderately higher degree of variation has been observed in the variables – 'mod', 'antl', 'inst', 'immun' and 'breast'.

Since the variable 'bank' is truncated at zero, the ordinary least squares will yield inconsistent results. For this we have to resort to the Tobit analysis. The variable 'bank' is a censored variable. This is not observable for families with no banking habits. The Tobit methodology is useful here.

However, before the Tobit regression, we used step regression technique to identify factors that are most relevant for the analysis. The step regression technique is a useful tool to combat the problem of multi-collinearity so common in the cross-sectional analysis. The variables are selected according to the improvement in the F- value. The set of independent variables may change from one regression to another depending upon the criteria of rejection by the step technique.

Table 7. Survey parameters in DLHS 3

Sl. No	Variables/ Components	Classification	Notation in our study	Mean	Coefficient of variation	Max. Value	Min Value
1	Percent total literate population (Lit)	Education	lit	71.02	15.6	97.5	31.5
2	Lowest wealth quantile (%)	Standard of living	pov	18.90	94.5	85.0	0.0
3	Percentage of girl's marrying before completing 18 years	Social	marr	22.48	71.4	82.5	0.0
4	Percentage of births of order 2 and above	Health	bo2	62.57	16.8	83.3	12.1
5	Any modern method (%)	Health	mod	48.02	33.6	79.1	6.5
6	Mothers who had at least 3 ante-natal care visits during the last pregnancy (%)	Health	antl	53.52	47.8	99.7	7.7
7	Institutional births (%)	Health	inst	49.55	48.7	100.0	5.9
8	Children (12-23 months) fully immunized (BCG, 3 doses each of DPT, polio and measles (%)	Health	immun	56.75	38.4	98.0	3.8
9	Children breastfed within one hour of birth (%)	Health	breast	44.65	46.6	91.7	4.1

4. EMPIRICAL ANALYTICS OF THE DISPARATE SAVINGS BEHAVIOR

The variable that we identify as constituting the formal saving propensity is the 'bank'. It is noted that there are a number of factors on which 'bank' depends. Firstly, 'bank' has correlation with the earning and wealth profile of families. Wealthier the family, higher should be the formal saving propensity. However, this text-bookish relationship between the earning capacity and the dependent variable 'bank' needs to be taken with a pinch of salt. Improvement of the family earning propensity increases the capacity to use formal banking system. However, there is no guarantee that the formal system will be used.

In a traditional society, there are numerous avenues of savings, most of them are informal in character. A potential saver has the option to choose between these various available avenues. In many cases, the potential savers may have an inherent distrust for the formal bankers. This distrust may be due to part-fear or due to part-bad experience in the past. The inflexibility of the formal banking system and its various requirements makes it less lucrative. For example, in order to save in the formal system, a potential saver has to devote both time and money. Informal options are available at his doorstep. Normally, formal banking system operates within a stipulated time. Most of its activities are limited within that time. On the contrary, informal sectors are more flexible. If I want to deposit money at the stroke of midnight, it is almost impossible to avail a formal bank. However, it is far easier if I approach an informal bank. Loan disbursement policies of the formal banks are more structured and generalized. On the other hand, informal loans are tailor-made to the recipient's demand. Added to this, is the personal ties with the informal bankers that makes it seem more reliable[2]

Thus the relationship between the saving propensity in the formal sector has to be mediated through a number of variables. Many of them reflect the quality of life and awareness towards the modern system. We have considered 8 such variables ('lit', 'marr', 'bo2', 'mod', 'antl', 'inst', 'immun', 'breast'). Two other important variables are 'assets' and 'pov'. In order to find out the relationship, we have considered 3 types of regression. These regressions are based on the distinction between the variables 'pov' and 'assets'. 'Pov' measures the percentage of families who are below the destitute levels. 'Assets' on the other hand refers to the measure of durable goods purchased by the households (such as bi-cycle, scooter, TV etc). These two variables should have different levels of influence. The variable 'assets' is directly related to 'bank' because of loan requirement for building up assets. 'Pov' on the other hand, relates to 'bank' through an improvement in the saving capacity of the families. We have considered 3 types of regression. In the first regression, both 'pov' and 'assets' are used allowing the step to choose among them. In the second regression, we used only 'pov'. In the third regression, we used only 'assets'.

The first regression retains both 'pov' and 'assets' within the regression. Both of them have the required signs (positive for 'assets' and negative for 'pov') and are significantly related to 'bank'. This implies that both these variables are important in explaining the formal saving propensity of the families. Among the lifestyle variables, all are significant and have the required signs. 'Lit' is positively related to 'bank', implying a beneficial effect of awareness. More aware a family is of the formal saving avenues, the greater will be the willingness to save in formal avenues. 'Mod' has a positive relation with 'bank', implying a general improvement in awareness and the intensity to formal savings. However, 'bo2' has a positive sign. Here, the third factor of wealth may be very vital. Given the literacy level, richer families have larger number of children and higher propensity to save in the formal sector. Relationship between 'breast' and formal saving propensity is similarly explained. In the so-called rich families, there is a negative tendency towards breast feeding the child.

In all, our first Tobit regression has satisfied more or less all the anticipated relationships that we have hoped it to confer to us. Now we look to our next regression. Here the regression has been done by omitting the variable 'assets'. Here the additional variables that have entered in our Tobit regression are 'marr', 'inst' and 'immun'. The variable that has not come into the analysis is 'pov'. Other variables ('lit', 'bo2', 'mod', 'breast') that came in explaining the relationship remained same with same signs. The variable 'marr' reflects the percentage of girl's marrying before entering the adulthood. Higher value of this variable 'marr', symbolizes social stigma and prevalence of male dominance. This actually stems from lack of literacy, mainly lack of female literacy and lack of social awareness. So, it is quite likely that higher the value of 'marr', lower will be the inclination towards formal banking activities. The variable 'inst' is positively related to 'bank'. Higher percentage of institutional birth implies more awareness towards health as well as faith towards institutional set up. Availability of institutional health facilities in nearby area is also very important in determining the percentage of institutional birth. It is needless to say, an area with higher institutional birth, should also show same kind of institutional affinity in regard to savings behavior also. This unquestionably explains the positive relationship between 'inst' and formal saving behavior. 'Immun' has also quite evidently positive relationship with formal banking habits. Higher percentage of children having immunization indicates higher health and social awareness among the parents. They are also likely to be more conscious and aware of the formal banking system. So, in the second Tobit regression analysis also, all the anticipated relationships have been supported. Now we enter into the third Tobit regression where we omitted the variable 'pov'.

If we omit the variable 'pov', then the variables that come in explaining the relationship with formal saving behavior with various factors are 'marr', 'bo2', 'inst', 'immun' and 'breast'. The direction of relationship with bank and these variables does not show any peculiarity. The same kind of

Table 8. a) OLS Results of Determinants of 'bank' when both 'pov' and 'assets' are included

Variable Name	Estimated Co-Efficient	T-Ratio
ST	-0.14716E-02	-2.526
LIT	0.16627	3.226
POV	-0.92075E-01	-2.584
BO2	0.15096	2.852
MOD	0.27003	7.707
BREAST	-0.98238E-01	-3.563
ASSETS	0.47740	14.28
CONSTANT	-0.21607	-3.492

Table 8. b) Tobit Result of Determinants of 'bank' when both 'pov' and 'assets' are included

Variable Name	Normalized Co-Efficient	T-Ratio
ST	-0.12942E-01	-2.3563
LIT	1.4423	2.9555
POV	-0.85170	-2.5363
BO2	1.3573	2.7210
MOD	2.6073	7.7114
BREAST	-0.94660	-3.6331
ASSETS	4.5548	13.325
CONSTANT	-2.0253	-3.4682
BANK	9.3230	33.670

Table 9. a) OLS Results of Determinants of 'bank' when the variable 'assets' is omitted

Variable Name	Estimated Co-Efficient	T-Ratio
ST	-0.55108E-02	-7.452
DT	0.11654E-02	2.882
LIT	0.23048	3.965
MARR	-0.13547	-3.065
BO2	0.16747	2.786
MOD	0.20028	4.889
INST	0.16360	4.418
IMMUN	0.10579	3.373
BREAST	-0.21486	-6.925
CONSTANT	0.36704E-01	0.6126

relationships (negative for 'marr' & 'breast' and positive for 'bo2', 'inst' and 'immun') appear in this Tobit regression also. The same explanations that we gave earlier for these variables hold here too.

5. CONCLUSION

The chapter considers the banking behavior of people in an under developed economy like India. In the age of financial inclusion, a huge section

Table 9. b) Tobit Results of Determinants of 'bank' when the variable 'assets' is omitted

Variable Name	Normalized Co-Efficient	T-Ratio
ST	-0.46654E-01	-7.3117
LIT	1.8766	3.7866
MARR	-1.0632	-2.8229
BO2	1.7671	3.4757
MOD	1.6967	4.8523
INST	1.4921	4.7649
IMMUN	0.80005	3.0380
BREAST	-1.9117	-7.2195
CONSTANT	0.30659	0.58749
BANK	8.4304	34.082

Table 10. a) OLS Results of Determinants of 'bank' when the variable 'pov' is omitted

Variable Name	Estimated Co-Efficient	T-Ratio
ST	-0.63073E-02	-5.698
MARR	-0.19985	-3.274
BO2	0.23925	2.535
INST	0.27551	5.390
IMMUN	0.12754	2.816
BREAST	-0.18645	-3.944
CONSTANT	0.22075	2.781

Table 10. b) Tobit Results of Determinants of 'bank' when the variable 'pov' is omitted

Variable Name	Normalized Co-efficient	T-Ratio
ST	-0.33104	-1.3619
LIT	2.6003	-0.29403
BO2	-0.20116	-0.29403
MOD	2.3425	5.2435
BREAST	-1.6029	-4.3349
ASSETS	0.30461	1.2534
CONSTANT	0.85285	1.2346
BANK	7.3620	23.694

of the populace is still outside the formal banking system. Unlike the common concept, poverty is not always the main reason behind this disparate saving behavior. Various types of informal outlets provide easy and cheap access to loan and savings. They are flexible and provide on the door services. It is often difficult for the formal sector to compete with this. Unless intelligent uses of banking instruments are facilitated, it might become impossible for the formal sector to tap these sources and a huge wastage of internal savings can't be prevented. Instead of being locked in the informal cup-boards, informal savings should be diverted to the investible activities of the land. Only then the tall talks of financial inclusion can be fruitful.

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ENDNOTES

1. Besley & Loury, (1993) have given a detailed analysis regarding the economics of ROSCAs.
2. A similar analysis has been made by Banerjee & Duflo, (2001), Poor Economics: A Radical Rethinking of the Way to Fight Global Poverty with regard to the informal health sector in Rajasthan. In spite of the competence, people opt for informal health services even when the formal health services facilities are cheap and standardized. Patients feel easy with the informal doctors with whom they can communicate more easily. To them, formal doctors are a world apart, who does not understand their language, tend to undermine them and live in a superior complex.

Chapter 3
A Resource-Based Approach to Mergers and Concentration of the Banking System in Mexico post Crisis 1994

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ABSTRACT

The strength of the companies is sustained in the resources that it owns that can be considered like a barrier to the entrance for other companies. The case of the banking sector of these resources was affected by the crisis of 1994, devastated with the anti-crisis measures and the entrance of foreign competitors at the end of the 1990s. Under this environment, this chapter analyzes the acceleration of the concentration at the Mexican banking system based on the resource-based theory. To have competitive advantages in resources and a solid global expansion strategy, foreign banks were able to climb to a position in the Mexican banking system, with the subsequent generation of barriers to entry to maintain its leadership.

1. INTRODUCTION

High levels of market concentration are endogenous to Mexico's authoritarian political and economic institutions (Haber, 2006; Haber & Musacchio, 2006; Haber, Klein, Maurer, & Middlebrook, 2007). The Mexican banking market has been highly concentrated for the past 120 years where a small number of banks have dominated the banking system with the four-firm ratio hovering in the area of 60 to 70 percent (Haber, 2005, 2006). The analysis of the banking system concentration and interaction with the Bank of Mexico from 1910 to 2008 shows a concentration process which accelerated after the 1994 crisis and the bank expropriation.

Concentration in banking industry in an emerging economy plays a complex role (Mohanty, Schnabel, & Garcia-Luna, 2006). Concentration of industry, and more specifically in the banking sector, is not necessarily good indicator for the level of competitive behavior (Claessens & Laeven, 2004). More than a banking concentration problem in many of the emerging economies, instead the problem is the fragmentation of the banking systems. Contrary to what some experts

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have argued (Sokoler, 2006), concerns of excessive banking concentration have already arisen in emerging market banking industries resulting from foreign bank mergers and local banks, sufficient to raise concern on market competition.

Banking concentration in local markets is more a pervasive weaknesses of the structure of financial system than a strategy, characterized by some dysfunctions of the legal, regulatory, institutional and economic environment. In some countries have emerged concerns about commercial banking concentration and concentration of non-bank financial services. There are fears that banking and financial concentration through multinational foreign banks may hamper the effectiveness and competition of banking and financial market affecting the economic development of the country.

The Mexican banking industry has experienced some important changes in the last two decades. In 1982 Mexico faced fiscal deficit to meet its foreign debt and had difficulties in accessing foreign financing. The option was to nationalize the local banking industry and forced the new nationalized banks to concentrate their business in investing and lending to the public sector. The expropriation of Mexican private banks in September of 1982 was taken on the grounds that had excessive profits, concentrated banking operations and created monopolistic practices and markets and facilitated capital flight (Unal & Navarro1999). In the context of a major macroeconomic and financial crisis, after a large period of relative stability and growth, the Mexican commercial banks were nationalized and subject to strict regulations and government controls.

Commercial banks were nationalized and subject to strict state controls in 1982 in the context of a macroeconomic crisis. Nationalized banks concentrated on investments in the public sector.

58 of 60 Mexican banks were nationalized and reorganized in 1982 merging and concentrating the commercial banking system into just 18 commercial state-owned banks. This banking concentration was significant in the three largest Mexican banks accounting for nearly 60 percent of total assets (Gruben & McComb, 1997). Banking concentrations and returns were considered the evidence that competition had been abridged, although the statistical delineation of competitive returns was difficult to estimate (Gilbert, 1984).

One of the problems that are faced by the Mexican economic development today is the concentration of the banking and financial system. According to antitrust laws, mergers leading to the formation of monopolies are forbidden by the Mexican Federal Constitution to prevent fair competition. The Federal Competition Bureau (CFC) can object to mergers and acquisitions and impose restrictions and divestitures among banks and financial institutions when the level of concentration may be harmful to the economy. The CFC evaluates any merger and acquisition using the Herfindahl-Hirschman index (HHI).

Mergers and acquisitions have to be authorized by the Ministry of Economy after considering the opinions of the Banco de México (Banxico), the central bank and the Banking Commission (Yacamán, 2001). Some economic policies limit the concentration in the banking industry. The factors to evaluate the potential impact of a merger or acquisition are the institutional soundness, industrial structure and performance of authorities. Institutional soundness is related to solvency and economic viability of the merger. The identification of markets impaired by the merger and its potential impact on competitiveness is relevant to assess the structure of industry. Mergers may hinder the abilities of financial institutions affecting supervision of the financial system, conduct monetary policy and regulation of the payment system.

This chapter is based on an index to obtain more precise information in order to determine the effects in the structure of banking sector, after the process of mergers and acquisitions. Bank mergers are considered a vehicle for improving the financial structure and efficiency of the banking industry.

2. BACKGROUND OF THE PROBLEM

Empirical studies on foreign banks entry, mergers and acquisitions in the banking industry are more concentrated on the developed and emerging economies where that there has been an upsurge of this strategies. Results of cross-country studies conclude that foreign bank entry varies with the level of the host economic development (Lensink and Hermes 2004).

Studies exploring foreign bank entry conclude that it increases competitiveness of markets, reduces administrative costs, lowers net interest margins (Berger & Humphrey 1997; Demirgüç-Kunt & Huizinga 1998; Denizer 1999; Clark, Cull, D'Amato, & Molinari 1999, 2003; Barth, Caprio, & Levine 2000; Berger, DeYoung, Genay, & Udell 2000; Barajas, Steiner, & Salazar 2000; Berger, Klapper, & Udell, 2001; Claessens, Demirguç-Kunt, & Huizinga, 2001; Levine, 2002; Mian 2003; Clark, Cull, Martinez Peria, & Sánchez 2000, 2003, 2004; Lensink & Hermes 2004; Demirgüç-Kunt, Laeven, & Levine 2004; Martinez Peria & Mody 2004; Sturm & Williams, 2004; Haber & Musacchio 2005).

Bank mergers increase systemic risk and banking concentration. Subsidiaries of merged banks may end up with a greater concentration of systemic risks. Bank mergers have been refused in some countries such as Canada on the grounds that the unacceptable concentration of economic power (Marcus, 2001). The state has some difficulties to regulate through specific mechanisms with larger bank mergers or acquisitions and deal with issues related to solvency of investors, market competition and concentration, etc. Registration of mergers and acquisitions in the banking and financial institutions required by the State and monetary and financial authorities consider, among others, organization criteria to assess the impact on concentration and competition.

Higher bank concentration is reflected by greater penetration of foreign banks and stiffer competition in local market. Mergers between parent banks in developed countries may result in an increase in banking concentration in host countries. Several types of companies are concentrating on the banking, the securities business and the insurance business such as the bank holding or non-holding companies and the affiliated or individual companies.

Competition of the banking and financial industry is dependent of factors such as the regulatory framework, economic and financial openness and stability, degree of concentration, etc. Bank consolidation involving mergers between multinational large banks and local larger banks are associated with high bank concentration in local market. Bank consolidation is not necessarily associated with banking concentration when the mergers involve smaller foreign banks and smaller local banks (CGFS, 2004, 2005; Domanski, 2005). Under a process of rise in concentration, more efficient banks in local markets have larger market share and earn higher profits (Group of Ten, 2001; Burdisso & D.Amato, 1999).

The increase in banking concentration has effects on higher systemic and transition risks depending of its characteristics and monetary policy management. Higher degree of banking concentration is related to a higher degree of systemic risk. Systemic risk increases with higher levels of concentration. Lower integration of the local market to the international market is related to stronger effects of banking concentration on systemic risk. Banking concentration is related to the complexity and difficulties for a monetary policy management. Reducing the risks of banking concentration relates to the monetary policy addressing issues of the exchange rate, final market development and international integration. International economic and financial integration reduces the effects of banking concentration in the local market (Ahumada & Marshall, 2001).

High concentration ratios of the banking industry are observed encouraged by the incentives of diversification led by market forces. The driving forces that increase concentration are the internal economic growth reflected in the creation of competitive advantages and the moves of the external economic environment. Both forces have an impact on changes of bank ownership such as mergers and acquisitions that create benefits through economies of scale. Stiroh and Poole (2000) assume that mergers and acquisitions driven by external financial forces, large-scale deregulation and technological innovation in distribution channels and networks explain the process of bank consolidation and concentration.

The relation between inefficient banking structures in developed and emerging economies and the potential for mergers have been studied. Bank mergers have different motivations, modalities and potential in the emerging economies. Survival is one important motive that banks have to merge, in part because float rates of inflation eliminate a major source of revenue. Bank mergers have been in emerging economies for the most part considered as a state-led process, motivated by the need to recapitalizing and providing financial viability, consolidation and rationalization of local banks.

Sometimes foreign banks acquiring local banks expand their financial and banking activities as merged banks into other financial services such as insurance, investments and portfolio management. Mergers involving overlapping banking activities and financial operations have been painful. However, other studies conducted by the Group of Ten (2001) conclude that small banks become more efficient from an increase of size not necessarily by merger while outsourcing some functions.

Local banks have been under pressure and states have tried to provide some incentives and offering tax concessions to persuade larger banking and financial institutions to merge voluntarily. Local banks may be strengthening by mergers promoted by the state. Mergers between parent banks in wealthy well developed and emerging economies are a factor behind bank mergers in developing and less developed countries. However, other studies report cases where because the state had forced bank mergers, it has ended up in court or banks undermine the government efforts when promoting mergers. Governments have ended up in courts in cases either where they forced banks to merge or in other countries where did not allow mergers to take place.

The high degree of concentration in the Mexican banking system is related to the oligopoly power in the provision of bank services and indicative of anti-competitive market power (Gavito, Sánchez, & Trigueros, 1992; Gavito & Trigueros, 1993; Mansell & Carstens, 1993; Bazdresch & Elizondo, 1993, Gruben, Welch, & Gunther, 1994; Lopez-de-Silanes & Zamarripa, 1995; Gruben & Welch, 1996; Del Angel-Morarak, 2002, 2005; Del Angel Mobarak, Bazdresch Parada, & Suárez Dávila, 2005; Del Angel-Mobarak, Haber, & Musacchio, 2006). Concentration by itself of Mexico's privatized banking does not imply uncompetitive behavior, although it may be able to attenuate competition under certain conditions. Banking concentration and non-competitive behavior are positive and significantly related under regimes of high entry restrictiveness (Clark & Speaker, 1992).

3. STRUCTURAL WEAKNESSES OF THE MEXICAN BANKING SYSTEM

This article analyzes the Mexican banking system under the resource-based theory. The aim of this paper is to understand the dynamics after the financial crisis of a national system weakened, the anti-crisis policies aggravated the problem. In post-crisis times, there have been considerable merger and take over activities on the Mexican banking and financial sector.

In the late 1980s and early 1990s, Mexican government promoted a financial liberalization and deregulation process of the banking industry and passed new laws to privatize the nationalized banks and to facilitate the creation and operation of new commercial banks and financial holding companies. However, foreign capital was allowed to participate after far-reaching economic structural reforms (Yacamán, 2001).

During the 1990s there was an upsurge of acquisitions and mergers of banks in the emerging economies (Berger, Demetz, & Strahan, 1999). The structural weaknesses of the Mexican banking system in the 1990s brought about by a destabilized economic and financial system together with high costs and inefficiencies. The evolution of the Mexican banking system went through processes of privatization of state-owned banks, multinational foreign banks entry, international integration through mergers and acquisitions, increase of foreign ownership, trends toward larger local market shares and higher concentration. Increased concentration of banking industry started as early as the late 1990s, following a trend in other South American countries like Chile (Ahumada & Marshall, 2001).

Both changes, privatization of state-owned banks together with mergers and acquisitions increased the presence of foreign banks. Also these factors provide motivations and incentives for privatization of state-owned banks. One of the objectives designed to guide the bank privatization is the one related to avoid ownership concentration in the structure of the banking system, ensuring to be controlled by Mexicans and include foreign involvement (Barnes, 1992; Hovey, 1994). Banking and financial holding companies wanting to participate in the auctions to acquire the government's equity interest in each bank (Ortíz Martínez, 1994) had to present a business plan including integration and participation of foreign institutions and banking activities to be concentrated, among other requirements. The privatization of Mexican banks intended transformation of the economic environment to concentrate in other economic priorities.

Bank consolidation was driven by the privatization of state-owned banks. However, bank privatizations led to concerns of excessive concentration of banks ownership because the misalignment of public interests and private economic incentives. It can be argued that local banking was already concentrated since three national large banks dominated the banking market in México.

Privatization of the Mexican commercial banking system of 1991-1992 only replaced a government monopoly controlling 18 state owned banks by a private sector oligopoly owned by financial groups and organizations already in the securities industry (Hanson, 1994). Immediately after privatization, banks were widely held allowing a person to own less than 10 percent of shares and foreign participation was limited to 30 percent. However, changes to the regulations in 1992 allowed more foreign participation. Schranz (1993) found that banks in a state where the takeover is less restricted concentrate equity ownership and management ownership as corporate control mechanisms that have an effect on profitability.

Mexican authorities decided to open the sector to foreign investment at levels above the levels negotiated in the Free Trade Agreement (NAFTA). The North American Free Trade Agreement was expected to bring greater competitive pressures in Mexico by decreasing restrictions on starting new banks (Gavito & Trigueros, 1993, Gruben, Koo, & Moore, 1999; Gruben & McComb, 2003; Murillo, 2005). After the North American Free Trade Agreement (NAFTA), wholly owned foreign banking subsidiaries were allowed, limited to non-systemic banks with a limited aggregate share in the banking system to 8 percent.

The entry of international competitors from developed countries further weakened the system as well as the interaction between tangible and intangible resources and their status through the period that as analyzed. This period starts with the analysis of the 1994 economic crisis, (and) how it affected the banking structure was examined under the framework of the five force models developed by Porter (1980).

In emerging economies where the role of the state and government has an orientation towards intervention in economic development, mergers have resulted from the efforts aimed to restructure financial and banking systems that had become inefficient following banking crisis. The participation of foreign banks in 1994 in Central Europe is notorious and currently controls the banking market. In Latin America; Brazil, Argentina and Chile are notable because they are the largest economies in the region. In an environment where Mexican banks are charged for doubtful accounts, de-capitalized, with loss of trust, reputation in tatters and even some of them were intervened. This situation gives the entry of American, Canadian and Spanish banks, who bought cheap to expand territory and profits rapidly.

The process of denationalization of Mexico is not isolated; it can be viewed as an expansion strategy of large international banks. The denationalization process toward foreign ownership modified the structure of the banking system for 1999. The structure of the banking industry in Mexico after the crisis was considered inefficient, justifying merging with foreign banks and financial institutions. In 1999, under the framework of free trade agreements, foreign ownership restrictions were removed. Under the new Banking Law, there are no ownership restrictions for foreign or national individuals.

The financial and banking crisis in Mexico has had some important consequences on changes in the structure of bank ownership. After the Mexican crisis some restrictions for banking ownership were lifted in order to recapitalize banks although foreign majority ownership was not allowed for the largest Mexican banks. Mexican banks were encouraged to merge because the crisis left the weak including the deposit insurance system.

The economic performance of Mexico since the midst 1995 has been sluggish because of the lack of availability of credit, a problem that has been related to the inefficiencies of bank concentration since then (González 2003; Tornell, Westermann, & Martínez 2004, Haber & Musacchio, 2005). In an economic context of high inflation and subsidized credit, the banking industry concentrated most of its voluntary credits limiting long-term financing. As in any emerging economy, Mexican commercial banks retain a dominant role in providing credits (Mohanty, Schnabel, & Garcia-Luna, 2006). Banking concentration has some effects on competition, systemic risk, financial and economic growth and stability, and monetary policy management.

4. ANALYSIS OF MEXICAN BANKING SYSTEM: A RESOURCE-BASED THEORETICAL APPROACH

In this chapter, it is also considered the implications of resource-based theory of the acceleration in the process of concentration and the hierarchy of the banking system in Mexico. In the context of this theory, it is understood that the resource is thought of as a strength or weakness of the firm. Most mergers have taken place between foreign and local banks having complementary strengths. More formally, the resources of the firm are defined as those tangible and intangible assets which are tied semi-permanently to the firm (Wernerfelt, 1984).

The framework of the resource-based theory focuses on the five competitive forces by Michael Porter developed in 1980, which form the backbone of the vision based on the industry. These five forces are: 1) The intensity of rivalry among competitors, 2) The threat of potential entry. 3) The bargaining power of competitors, 4) The bargaining power of buyers and 5) The threat of substitutes. The performance of a firm depends on the degree of competitiveness of the five forces. If these are highly competitive, the focal firm will not receive earnings above the average (Peng, 2010).

Speaking of the five forces, it moves from the theoretical approach to a real context, to begin an analysis of the 1994 financial crisis in Mexico.

Given the magnitude of the crisis, it is supposed a destruction of the competition dynamics of industry. Bank resources were limited, as bad loans were granted; the reputation of institutions and agents' confidence fades in that period.

Under this situation, an analysis of each of Porter's five forces: First, the rivalry between competitors is limited to the bankruptcies, the loss of liquidity to the bad debts of credit, policies anti-crisis of the federal government based on contraction of economic activity to generate surplus, strongly affected the recovery of the banking sector. Second, the threat of potential entry into a broken market was impossible at first, however there was a process of bank mergers and acquisitions made from 1995 to date. Haber and Musacchio (2005) recognize three stages of foreign banks entry into the Mexican market.

The first one, before 1995 there was in México only subsidiaries and representations of foreign banks coded by Martinez Peria and Mody (2004) as "Foreign de Novo" mostly operating in corporate investments and lending. The economic instability and the insolvency of Mexican banks in 1995 had increased debtor defaults. After 1995 many local banks merged or were acquired by other foreign financial groups and new institutions entered the market. In the case of Mexico, mergers allowed local banks to have supply of the needed capital after the 1995 banking crisis. Financial authorities have clearly considered mergers and the entry of foreign banks as something inevitable but desirable to achieve scale economies, cost benefits, risk management and diversification. After 1995, foreign banks purchased some local banks and continue operating in the same local market.

However there was a macroeconomic instability during 1995-96 and Mexican government had to intervene some banks. Development banks were sharply curtailed and increasingly concentrated on the provision of funds to commercial banks after the bailout in 1996. Before December 1996, mergers between foreign banks and Mexican banks had a limited impact such as the merger of a small foreign bank with a larger Mexican bank. The insolvency of some Mexican banks motivated the Mexican state to carry out reforms in bank accounting standards implemented in the second half of 1997 (Del Angel-Mobarak, Haber, & Musacchio 2004).

Mexican state provided large injections of capital from public funds to support operations of private banks and mergers were deemed to justify taking over inefficient banks. Local banks were looking for a faster and cheaper expansion by takeovers of the weaker in a first wave of changes.

Later, in a second wave of expansion the local banks including the three largest ones were purchased or merged with larger multinational foreign banks. Facing the inability of domestic banks to improve the financial condition, capitalization levels and efficiency due to policies were implemented by the government. Mexican government authorized the "strategic alliance" between domestic banks and foreign banks.

Before 1997, foreign ownership was prohibited and subject to strict restrictions and limits (Maurer 2002; Del Angel Mobarak 2002; Murillo 2002). Multinational foreign banks were allowed in 1997 unrestricted entry to the Mexican market to merge and acquire the larger Mexican banks. Changes in rules governing foreign entry and ownership after the Mexican bank system emerged from a taxpayer financed bailout, produced competitive pressures to achieve efficiency and become more profitable.

Mexican banks had been subject to mergers and acquisitions, both by other local and foreign banks. Among these mergers and acquisitions include Nova Scotia Bank with Inverlat, Union sold its Promex branches, and after that Inverlat was later bought by Bancomer. Bank Confía merged with City Bank; Cremi sells branches to Banco Bilvao Vizcaya (BBV) and Banco Obrero did the same with Afirme, Santander acquired Banco Mexicano, Bital, Atlantic y Sureste Merged (Huerta, 1998).

In late 1998, the Mexican Congress approved the Law on Protection of Bank Savings (Ley de Protección al Ahorro Bancario) leading to the complete liberalization of the banking system and stock market to foreign capital, thereby eliminating the constraints for the three largest foreign banking groups (Santander, Citibank and BBVA) to merge completely. This type of mergers has been dubbed as "strategic alliances" to restore the functioning of the Mexican banking sector. Mergers between foreign banks and local banks are not free of challenges to overcome poor management and unprofitable activities, and to find the right organizational structure because of the family ownership structure.

In 1998 there were 54 banks in Mexico, out of which 49 had foreign ownership and control 70 percent of the market. Estimations made by Goldberg, Dages and Kinney (2000) calculated by 1998 that foreign bank activity remained 93.6 percent concentrated in the consumer, government and interbank market. Banks with no foreign participation were five in 1998: Banamex, Bancrecer (who in turn sought foreign partner), Banorte, and Interacciones e industrias (Industry interactions) (CNBV data) (Huerta, 1998: 73).

Citibank acquired Banco Confía in 1998. Banco de Bilbao Vizcaya (BBVA) acquired Bancomer and Scotiabank purchased Inverlat in 2000. The ownership concentration of the banking sector is lower when there are the presences of market-based corporate control mechanisms fail to operate and become subject to intervention by regulators. Corporate governance determines objectives and decisions in banking and financial institutions aligned with interest of shareholders, stakeholders, regulators, etc. In México, where bank ownership is highly concentrated, reforms in the Banking Law in 2001 centered on bank ownership and financial stability to ensure a proper operation of payment system.

Competitive and efficiency issues emerged recently in the Mexican banking system during the merger of two largest financial groups. Grupo Financiero Bancomer preferred to merge with Spanish BBV instead with Grupo Financiero Banamex-Accival. Before the merge, BBVA had a relative small presence in Mexico to become the largest one. HSBC acquired Banco Bital and Banamex was purchased by Citibank in 2002. Few years later, only Banorte remained operating with local investors and without foreign investment (Martinez Peria & Mody, 2004).

Mexican government carried out changes and reforms in banking regulations and bank accounting standards from 1997 to 2005 that allowed large foreign banks to entry to the Mexican market merging and acquiring Mexican largest banks (Del Angel-Mobarak, Haber, & Musacchio 2004). The Mexican banking sector was concentrated in a small number of banks of moderate size available for mergers or acquisitions to multinational foreign banks. Mexican government promoted foreign takeover using regulatory enforcement and debt guarantees.

Despite that banks were losing money in1997, Haber and Musacchio (2005) found an increase in profitability related to foreign bank entry. Mergers and sales of low performing Mexican banks to foreign banks spurred due to the new macroeconomic environment. Mexican banks have merged or been acquired by foreign banks and financial groups following a Mexican governmental strategy targeted to either liquidating inefficient banks or facilitating their absorption by foreign solvent banks, depending of what was considered less costly.

Among other incentives for banks to merge with other local and foreign financial institutions and banks, are the diversification of credit risks and economies of scales. However, banks becoming large and big through mergers generate moral hazard behavior and have some difficulties to discipline by it. Despite that banking mergers may strengthen the capital base and improve the capacity to adopt new technology, the state may be reluctant to provide incentives because further mergers may pose a threat to a more competitive economy.

The Mexican banking sector highly increased concentration between 1997 and 2004 through a process of FDI-driven consolidation (Schulz, 2006). This fact has been proved to be related with increased bank administrative efficiency, improvements in screening borrowers, charging lower interest margins and producing welfare gains to consumers. Foreign banks investing in Mexican banking sector increased their share and target acquisitions in a few local banks. Multinational foreign banks dominated the Mexican market quickly and completely, increasing their share from 11 percent in 1997 to 83 percent in 2004 (Haber and Musshacchio, 2005).

The third force is the bargaining power of competitors at the start of the crisis when the power was eroded by a concern for stabilizing the situation and avoiding losses. Fourth, the bargaining power of buyers was very poor due to the conditions of crisis and high interest rates, either the brake of the devaluation and soaring interest rates, or the support to cover the debts of short term dollar banking was enough to halt the growth of nonperforming loans and destabilization of the domestic banking system (Huerta, 1998).

Finally, the fifth force is the threat of substitutes. In this case there is no substitute for money, or the volatility of interest rates, inflation and devaluations. The agents simply could not meet their debt and preferred to go to loans.

This is where the problem focuses on Resource-Based Theory to frame the analysis of a national banking environment in a deplorable situation in terms of tangible and intangible resources and the entry of international competitors eager to expand, with solid structures and abundant resources. Many of the resources required for the positioning of a firm are not sold or bought in the market, as the case of corporate reputation, customer confidence, etc. (Barney, 1986, Dierickx & Cool, 1989). These resources should be developed by the firm to generate conditions that result positioning as barriers to entry.

From this perspective of resource advantage, firms from developed economies who entered an emerging economy in a crisis situation, create an appetite for knowledge and competence in a new market. The challenge for multinationals is to develop a strategy that works (Wright, Filatotchey, Hoskisson, & Peng, 2005). Under these assumptions, the strategy for foreign firms may be to enter into a weak competitive environment and great business opportunities for higher returns. The "strategic alliance" demanded a national banking strategy to face new competitors from developed countries. The implementation of a strategy requires assets that were destroyed in the process of crisis, such as reputation, loyalty and confidence of consumers, brand positioning, among many others.

A firm that owns non-marketable assets which are necessary to implement the strategy of the product market is required to "build" assets (Dierickx & Cool, 1989). However, the construction of these assets requires a long period of time and constant investment. The national banking system was at a distinct disadvantage compared to the powerful international institutions, which had the flag of the recent globalization, success stories in their countries of origin, reputation and other assets that are difficult to imitate. It is possible to understand the evolution of the banking structure in Mexico as a Darwinian selection process in which the strongest layer survives, speaking of resources and expertise.

The six largest banks (Table 1) held the 72.44 percent of total assets of the Mexican banking system. As the Herfindal-Hirshman index is 0.11. This indicates a low concentration. It is noteworthy that this year the banking situation was uncertain, the entry of powerful new competitors devolved the Mexican banking system.

In Table 1 Banamex, Bancomer, and Serfin were at the top of the list of banks with higher

Table 1. Relative participation of Mexican banking system in 1999

According to Total Managed Assets			
Penetration in the Market			
(Billions of Thousands of Millions of Pesos)			
	Banks	Percentage	Accumulated
1	Banamex	19.35	19.35
2	Bancomer	19.31	38.66
3	Serfin	11.26	49.92
4	Bital	8.84	58.76
5	Mercantil del Norte	7.37	66.13
6	Bilbao Vizcaya	6.31	72.44
7	Santander Mexicano	5.09	77.53
8	Inbursa	3.13	80.66
9	Banpaís		80.66
10	Centro	1.73	82.39
11	Interacciones	0.62	83.01
12	Afirme	0.44	83.45
13	Ixe	0.36	83.81
14	Del Bajio	0.27	84.08
15	Mifel	0.24	84.32
16	Quádrum	0.21	84.53
17	Banregio	0.18	84.71
18	Invex		84.71
19	Bansi	0.11	84.82
	Total, 19 banks	85	85
	Rest of the banks, 16	15	15
	Total System	100	100
	Source: Muller, 2006, 89.		

relative market share with 49.92 percent of total banking assets. An important fact is how Santander and Bilbao Vizcaya banks were in positions six and seven of the list, taking into consideration that these banks were part of the strategic partnership which had a significant participation by highlighting the fact that they were new in Mexico.

The effects on financial indicators are mixed up and confusing (Table 2), because of the recent process of denationalization, the output of the 1995 crisis and the losses and bailouts Fobaproa indicators are unstable and not very useful for analysis. The following section will focus on strategies for mergers and the new structure of Mexican banking system for 2008, to observe the effects of the strategic partnership.

Table 2. Relevant financial index for banking in 1999

(Percentages)				
	Banks	**Capital Equity***	**Capital Index****	**Benefit/Asset*****
1	Banamex	20.80	14.40	3.00
2	Bancomer	11.20	9.00	1.00
3	Serfin	0.00	4.90	0.00
4	Bital	6.60	5.90	0.39
5	Mercantil del Norte	13.90	5.30	0.74
6	Bilbao Viscaya	7.90	6.70	0.54
7	Santander Méxicano	0.00	8.50	0.00
8	Inbursa	18.30	39.00	7.00
9	Banpaís	s.i.	s.i.	s.i.
10	Centro	s.i.	8.30	s.i.
11	Interacciones	7.30	8.00	0.56
12	Afirme	s.i.	10.80	s.i.
13	Ixe	0.00	12.50	0.00
14	Del Bajio	4.20	15.80	0.54
15	Mifel	2.00	12.80	0.25
16	Quádrum	0.00	17.20	0.00
17	Banregio	8.40	36.20	2.80
18	Invex	s.i.	s.i.	s.i.
19	Bansi	26.60	35.00	6.00
	Total System	13.30	10.10	1.30
	* Gross profit on stockholders' equity			
	** Equity over total assets			
	***Gross benefit			

Source: Muller, 2006, 92

5. METHODS

A measure of concentration used is the Herfindahl-Hirschman index (HH). Herfindahl-Hirschman Index (HHI) is a statistical technique to measure the market concentration and accordingly the degree of monopoly power. This index measures the market concentration in relation to the relative size of the companies (Parkin, 1995, p. 367).

Market concentration is an indicator of competition studied by industrial organization. The Herfindahl-Hirschman Index (HHI) is used to determine the competitive structure and market concentration of the local commercial banking industry as the result of favoring mergers and acquisitions. According to Yacamán (2001, p. 108), a merger or acquisition does "not alter the competition structure of a market when at least one of the following results is observed: the Herfindahl-Hirschman index (HHI) is less than 2,000 points; the increase in the HHI is less than 75 points; the Dominance index decreases or its value is less than 2,500 points."

It is used by the government to assess monopoly situations, purchases and mergers. A concentrated market affects competition and market efficiency. The formulation HH index is the sum of the squares of the proportions that have the companies in the market:

$$H = \sum_{i=1}^{k} p_i^2$$

where pi is the market share of firm i, and k is the number of firms (Rodríguez, 2009: 3).

The accepted interpretation for values is HH: <.10 indicates market de-concentration of .10-.18 indicates a moderate concentration, and >.18 shows high concentration approaches the monopoly.

The index HH has three theoretical drawbacks that focus on the following points:

1. **Geographical Extent of the Market:** The HH index measurement requires a national approach in the case of the Mexican Commercial Banking most competitors have a national participation.
2. **Barriers to Entry and Rotation:** The concentration ratio indicates no barriers to entry. En the case of the Mexican banking sector barriers to entry the government imposed the same but it was renovated in 2008. One of the main barriers is the concentration that hinders the entry of new competitors and limits the merely existing.
3. **Market and Industry:** The classification is simple spoken Mexican banking sector (Parkin, 1995, p. 368).

6. BANK STRUCTURE AFTER CONCENTRATION

This analysis delineates the two largest banks, due to the size of these institutions, which in 1999 boasted 38.99 percent of total bank assets, so they have a favorable structure relative to other banks. The analysis begins with Banamex which was bought by Citigroup in 2004 which was the largest financial group in the world. In the same year, Citigroup obtained a net income amounted to 17 billion dollars. This amount is equivalent to what the Mexican government receives from export oil annually (EFECOM, 2005). The two institutions' joint assets amount to about 41,900 billion of USA dollars, with almost 5 million bank accounts, 1, 549 branches and a staff of 31, 404 employees.

It is important to note that Citigroup leaves the name of Banco Nacional de Mexico (Banamex) that was founded on June 2, 1884, because of the reputation and history of the institution as this is the oldest bank in Mexico that exists today. This brand is an important intangible resource for the institution, expressing nationalism, confidence and solidity. The name change to Citibank would have meant the loss of some important resources for the development of the institution, because of the association of this mark with the United States.

Banks are under pressure to merge or build strategic alliances with other local or foreign-owned banks and technology firms in order to maintain access to information and share the costs to exploit new IT applications. On the ongoing emergence of digital banking technologies, Banamex, owned by Citigroup has a joint venture with Commerce One to facilitate access to banking services and to develop a B2B project.

Second is Bancomer which literally means trade bank, was founded on October 15, 1932. Bancomer merged with Banco Bilbao Vizcaya Argentaria (BBVA). BBVA is one of the largest banks in Spain. From 1995, BBVA is developing and implementing a strategy of international expansion that leads it to build a great franchise in Latin America, making a significant investment in capital, technology and human resources (bbv.com, 2012). For July 2000, BBVA Bancomer capitalizes million in 1400 and born on Grupo Financiero BBVA Bancomer, in the year 2000 had total assets of 36 billion dollars, a loan portfolio of 25 billion dollars and customer deposits of 26 billion dollars. They assumed that the entity is controlling 26 percent of the Mexican market, with 1.994 branches and 32 000 employees (The country, 2000).

In August 2000, the Group acquired Promex banking, a bank with strong presence in central and west parts of Mexico. In June 2002, the financial group BBVA Bancomer becomes controlled society by the subsidiary company of Banco Bilbao Vizcaya Argentina, which came to hold more than 51% of the shares of the Group. In February 2004, BBVA launches a tender offer for the remaining shareholding held by BBVA Bancomer minority investors, and managed to close at the 98.88% of total holdings (bancomer.com).

In this case, Bancomer maintains its name, it loses the yellow green color which characterized the bank by the current blue and added the letters BBVA. In this case, the strategy was to maintain the national identity of the Bank of Commerce, not to influence or create ideas that the bank is Spanish-owned as this creates problems of identity issues that prevailed in colonial Mexico.

These two cases are the evidences how the two largest banks were not able to face competition and competitive advantages, due to disadvantages and because of the situation. The most profitable option was to merge and then sell and integrate fully to foreign banks. This reinforces the resources of foreign institutions to acquire goods and the reputation of an about a century, the national identity of these banks and the structure of branches and employees. This reinforces the barriers to entry for access to the upper strata of the banking system.

Returning to the five competitive forces by Porter (1980) now in the context of the entry of foreign competitors:

1. **The intensity of rivalry exists among competitors:** In this case was fierce rivalry with the entry of foreign institutions with expansive strategies, and a struggle of the weak against the stronger, so the rivalry resulted in the merger and acquisition of domestic banks.
2. **The threat of potential entry:** This threat became a reality with the law reform of 1998 and the entry of foreign institutions with the freedom to expand.
3. **The bargaining power of competitors:** It is clear that the bargaining power of competitors was so great that it generated the procurement process of the largest banks and the expansion thereof.
4. **The bargaining power of buyers:** This feature is characterized by the accumulation of small capitals to form large aggregates in banking institutions in terms of consumers and their bargaining power. In the same way by knowing the current account, the credit bureau status in among other information pertaining to the bank, this will generate an advantage to the consumer. In this way, banks concentrated monetary resources, and collected economic information of the agents. These resources are very essential and valuable to the institution for reducing the risk of default. As for the appearance of substitutes fifth force is suppressed because they are not considered substitutes for money and appropriations in this analysis.

To support the structure of the Mexican banking system and the effects of the strategic alliance in industry structure, the calculation of the Herfindahl-Hirschman was performed.) The sum of the squares of the participation of 39 banks for the first quarter of 2008 is in 0.136 (Appendix Table 6). This result indicates a moderate concentration, but this index does not clarify the structure of the banking system.

The information from the National Banking and Securities was drawn in Table 3 which shows the six largest banks (taken from the annex, Table 6).

The list is headed by BBVA Bancomer with 23.71 percent of total assets followed by Banamex

Table 3. Relative participation of the banking system in 2008

According to the Amount of Managed Assets			
Market Penetration			
(Billions of Pesos)			
	Banks	Percentage	Accumulated
1	BBVA Bancomer	23.712	23.712
2	Banamex	18.864	42.577
3	Santander	13.678	56.255
4	HSBC	11.373	67.628
5	Mercantil del Norte	8.734	76.362
6	Scotiabank Inverlat	4.432	80.794

Source: Data from CNBV

which is 18.86 percent. Another advantage in relation to resources by those who hold the banks is 42.57 percent of total bank assets, thereby creating a barrier to entry to the top of the banking sector.

In this case there is no talk of a commodity derived from a production process, if the input of the bank is money issued by the Central Bank and the savings of the population among other liabilities, their product are assets that are issued by the bank in form of loans, and profit of the bank is the financial margin as a net interest income plus the fees charged.

A critique of the accommodative monetary policy stance is the liquidity auction mechanism. This mechanism) which favors the concentration, to exert more power in the banking market. The six major banks have a competitive advantage over other banks in a mechanism auction. This provides the resources to large banks to continue their operations and increase its size.

Regarding the use of the window, as shown in Table 4, of the six largest banks absorb 87.42 percent of total liquidity auctioned by the Central Bank through the window.

Medium and small banks have the 6.99 percent of the distribution of the use of window; BARC (banks associated with retail chains) has 4.23 percent and the small branches of foreign subsidiaries 1.36 percent. In a concentrated structure, it generates a hierarchy in terms of market participants; this translates into bargaining power of competitors, which is diminished as there are two entities that control more than forty percent of bank assets. Under this information about liquidity auctions and the concentration of resources, if the production of a resource is controlled by a group (in this case, the appropriation of the resource by auction), returns available may decrease to the users of the resources, or if the resulting product comes from the use of a resource that can only be sold in concentrated markets. The existence of substitutes has to depress the returns of the holders of resources (Wernerfelt, 1984). In this case one can speak of substitute of money or credits which complicates the situation of clients.

The concentrated structure of the banking system can create barriers to entry between the same competitors because of the position of its resources; it generated and established an advantage over a resource (money). The barriers of the resource position indicate a potential for high returns. It is possible to replace the traditional concept of resource base for a barrier to entry. What a firm wants to create is a situation where its resource position directly or indirectly makes

Table 4. Distribution of the use of window

Banks	%	Distribution of the Use of Window
6 banks	27.32	87.42%
Medium and small	2.184	6.99%
BARC	1.321	4.23%
Foreign subsidiaries	0.426	1.36%
Total	31.251	100.00%

Source: CNBV

Table 5. Multiple bank

Market Share March 2008 (Millions of Pesos and Percentages)											
		Asset		Total Portfolio		Liabilities		Total Uptake		Net Profits	
Banks		Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Total banking system		3,126,119.8	100.00	1,745,222.2	100.00	2,694,305.7	100.00	2,062,766.8	100.00	22,180.3	100.00
1	BBVA Bancomer	741,276.0	23.7	477,974.8	27.4	653,083.4	24.2	521,474.2	25.3	7,631.9	34.4
2	Banamex	589,718.5	18.9	264,855.4	15.2	481,521.5	17.9	339,170.9	16.4	3,931.9	17.7
3	Santander	427,597.7	13.7	232,060.4	13.3	361,111.6	13.4	261,803.7	12.7	4,528.9	20.4
4	HSBC	355,525.7	11.4	201,923.8	11.6	324,875.7	12.1	273,384.8	13.3	1,874.2	8.4
5	Mercantil del Norte	273,048.7	8.7	187,655.1	10.8	241,683.7	9.0	222,941.9	10.8	1,804.4	8.1
6	Scotiabank Inverlat	138,559.9	4.4	90,199.9	5.2	115,236.4	4.3	104,425.2	5.1	960.7	4.3
	Total	2,525,726.4	80.8	1,454,669.5	83.4	2,177,512.3	80.8	1,723,200.7	83.5	20,732.1	93.5

Source: CNBV

it more difficult for others to attain it (Wernerfelt, 1984). In Table 5 can be viewed how Bancomer gets a percentage value of benefits exceeding their percentage share in the market does not present, probably because of financial problems in the U.S. and its relationship with Citigroup and scandals around. It is noteworthy that the installed capacity including all branches, ATMs, etc. gives an advantage to the uptake of resources that are coming from the people.

Bancomer and Banamex, being the largest banking institutions have the highest uptake, reputation, customer loyalty, capacity, etc., which generate economies of scale in the use of resources. These advantages are the first example of barriers to entry of the product because of the represented costs, in the case of tangible resources, and the difficulty of obtaining them, in the case of intangible attributes. These features move from a resource position barrier (Wernerfelt, 1984).

For the purpose of this paper, it is clear that the importance of maintain an advantage in a market. In this case, international institutions took advantage of the weak position of the Mexican banking system to access it and conquer it. It can be understood as a war strategy to expect that opponent becomes weak to attack and ensure success. The process of expansion with the acquisition of the largest banks, strengthen the barriers to entry to the upper strata of the banking system. This creates large institutions to capture and hoard liquidity auctions and give them a "property right "on the key input of banking, the money. So institutions reinforce and maintain their leading position in the market.

7. ANALYSIS OF RESULTS

Banks operating in México are achieving more efficiency and higher rates of return by establishing relationships with corporate customers, lowering operation costs and concentrating on core activities. In this remarkable work is the interaction of resources (tangible or intangible) in the positioning of the firms, the opening to the entrance of foreign competition in a context of crisis and bank restructuring. This process generated that the domestic banks compete with global institutions with superior advantages due to structural issues inherent in a developing economy and reinforced by the prevailing crisis.

The entry of global competitors from developed countries accelerated the process of concentration of banking assets. Excessive concentration of banking and financial operations may threaten economic growth and stability from the rising risks of exerting market power, higher interest margins and fees for services, etc. The increase in concentration due to mergers and acquisitions of multinational foreign parent banks is a related issue of concern for the national economic development and growth. In the banking context the ultimate resource for business is money. The public money up taking and auctions of Central Bank liquidity are essentially raw material for banking institutions. It becomes evidence by the larger institutions that have a "property right" over these resources to catch them and handle them.

The dimensions they manage, the number of branches, staff, ATMs, etc., will generate economies of scale over competitors, this reinforces its position, the size of these banks reinforced their reputation and the loyalty of its competitors, in the same so their bargaining power with customers, suppliers (customers and Central Bank) and competitors to create a bank hierarchy. Foreign bank lending to larger enterprises is concentrated through non-bank specialized institutions.

8. CONCLUSION AND RECOMMENDATIONS

A crisis can be understood as the destruction of assets essential to maintain the position of the firm. In the case of Mexico the destruction or weakening of intangible assets made it possible for the international competitors to increase their power and expand quickly. It reinforces the idea that a firm from a developed country has certain competitive advantages, and how its strategy is suited to enter a developing economy. New entries have been increased the competition in the Mexican banking and financial sector.

A privileged position in a resource base of production, strengthens the power of the firm, as it is in the case of money, having the big banks more installed capacity to get the resources by capturing and auctions, which strengthens their position as leaders. Another advantage of foreign institutions was the experience in international markets, designing strategies based on the globalization strategies that did not exist in the Mexican case to predict the effects of the entry of larger and stronger competitors.

Under the perspective of Porter's five forces, these are interpreted as weaknesses in the case of the 1994 crisis and this conception of weakness is reinforced by the entry of international competitors. One of the biggest mistakes by Mexican authorities was to free the entire banking sector to foreign investment. Without taking the risk of delivering the largest institutions and the financial sector being one of the pillars of growth of a country.

When considering the magnitude of changes in the last decades, banking concentration is one of the characteristics of banking industry restructuring in México directly related to the international integration and expansion in the local market. Since 1997, concentration ratios of banking remain relatively high. Liberalization of foreign direct investment (FDI) in 1998 has had an impact on the efficiency of the banking industry related to the ownership concentration ratios, one of the highest among OECD countries.

The Mexican banking system is highly concentrated and operating in an oligopoly market. These ownership concentration ratios have increased from 75 per cent in 1998 to 85 per cent in September 2001for the six largest banks operating in México. The top five banks operating in Mexico, which control around 80% of total banking assets, may continue forming and creating new strategic alliances, mergers and joint ventures to meet the domestic market. However, further mergers of banks may threaten competition and become a problem for the state and society.

The economic power hold by a highly concentrated banking and financial industry may resist any economic policy dictated by the monetary, economic and regulatory authorities, and thus the effectiveness of moral suasion is reduced. It is considered in the case of Mexico that foreign large bank mergers with local banks increased market concentration but not enough to pose a threat to the overall competition levels because the market share remains dispersed.

The banking system is the core financial intermediary in the Mexican economy, but to be more competitive it requires to diversify in other segments of the financial market to eliminate the risks of banking concentration.

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KEY TERMS AND DEFINITIONS

Concentration: The quantity of a substance dissolved in, or mixed with, per unit quantity of another substance. Concentration is expressed usually as per unit-volume (such as milliliters per liter), per unit weight (such as milligrams per kilogram), parts per million (PPM) or parts per billion (PPB) (Business Dictionary, 2013).

Resource Based View: A management device used to assess the available amount of a business' strategic assets. In essence, the resource-based view is based on the idea that the effective and efficient application of all useful resources that the company can muster helps determine its competitive advantage (Business Dictionary, 2013).

Strategic Alliance: An agreement for cooperation among two or more independent firms to work together toward common objectives. Unlike in a joint venture, firms in a strategic alliance do not form a new entity to further their aims but collaborate while remaining apart and distinct (Business Dictionary, 2013).

Mexican Crisis: Refers to the economic and financial crisis that began in late 1994 when the Mexican peso devalued, causing disruption in the Mexican economy that then spread through other countries of Latin America.Peso crisis (Dictionary Central, 2013).

APPENDIX

Table 6. Index Herfindal-Hirshman, Multiple Banking first trimester 2008

	Assets		
Banking	**Amount**	**%**	**Squares of %**
BBVA Bancomer	741,276.0	0.2371	0.05621641
Banamex	589,718.5	0.1886	0.03556996
Santander	427,597.7	0.1368	0.01871424
HSBC	355,525.7	0.1137	0.01292769
Mercantil del Norte	273,048.7	0.0873	0.00762129
Scotiabank Inverlat	138,559.9	0.0443	0.00196249
Inbursa	131,820.2	0.044323291	0.001964554
ING Bank	68,724.5	0.042167348	0.001778085
Del Bajío	54,516.1	0.02198396	0.000483294
Azteca	53,182.9	0.01743889	0.000304115
Bank of America	32,321.5	0.017012426	0.000289423
Interacciones	34,675.6	0.010339188	0.000106899
IXE	28,726.4	0.011092213	0.000123037
American Express	15,467.8	0.009189154	8.4441E-05
Banregio	15,684.6	0.004947935	2.44821E-05
Afirme	12,891.7	0.005017274	2.5173E-05
ABN AMRO Bank	13,429.2	0.004123874	1.70063E-05
J. P. Morgan	31,727.0	0.004295804	1.84539E-05
Invex	12,109.6	0.010149005	0.000103002
Mifel	10,412.3	0.00387369	1.50055E-05
Barclays Bank	6,721.0	0.003330737	1.10938E-05
GE Money	8,693.5	0.00214994	4.62224E-06
Ve por Más	8,389.2	0.002780935	7.7336E-06
BBVA Bancomer Servicios	7,727.7	0.002683578	7.20159E-06
Monex	8,528.2	0.002471994	6.11076E-06
Deutsche Bank	17,407.6	0.002728053	7.44227E-06
Compartamos	4,743.7	0.005568437	3.10075E-05
Bansi	4,517.5	0.001517427	2.30258E-06
Credit Suisse	6,411.0	0.001445089	2.08828E-06
Tokio-Mitsubishi UFJ	2,737.4	0.002050789	4.20574E-06
Multiva	2,402.6	0.000875664	7.66787E-07
Autofín	933.8	0.000768555	5.90676E-07
Fácil	845.2	0.0002987	8.92218E-08
Amigo	774.7	0.000270381	7.3106E-08
Ahorro Famsa	959.7	0.000247825	6.14171E-08
Bancoppel	1,200.8	0.00030698	9.42365E-08

continued on following page

Table 6. Continued

	Assets		
Banking	**Amount**	**%**	**Squares of %**
Prudential	528.2	0.000384117	1.47546E-07
Regional	438.5	0.000168959	2.85471E-08
Wal-Mart	395.7	0.000140272	1.96762E-08
UBS Bank	348.0	0.000126564	1.60185E-08
Total	**3,126,119.8**	**100.00**	**0.1384**

Sources: Data from CNBV first trimester figures 2008

Chapter 4
A Diagnosis of the Determinants of Dividend Payout Policy in India:
A Factor Analytical Approach

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ABSTRACT

Dividend decision involves the portion of a firm's net earnings that are paid out to the shareholders, and the remaining is ploughed back in the company for its growth purpose. Despite comprehensive theoretical and empirical explanations, dividend policy and its determinants are a puzzle to be fixed in corporate finance. This chapter is an attempt to assess the dynamics and determinants of dividend-payout policy using a factor analytical tool and a multiple regression analysis as a supportive tool. The authors take into account the sample of ten automobile companies based on Market Capitalization listed on the Bombay Stock Exchange (BSE) for a period of 10 years from 2002-2003 to 2012-2013. The results of the factor analysis show that six factors, current ratio, cash flow, retained earnings per share, earnings per share, equity dividend, and corporate dividend tax, are identified as the most critical factors determining dividend payout in Indian automobile companies. However, regression results depict only three factors (i.e. cash flow, equity dividend, and corporate dividend tax) have been found statistically significant in determining dividend payout policy.

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1. INTRODUCTION

Dividend policy decision is an integral part of a company's financial decision making as it is explicitly related to the other two major decisions-investment and financing decision. Management should develop such a dividend policy, which divides the net earnings into dividends and retained earnings in an optimum way to achieve the objective of maximizing the wealth of shareholders. It refers to the practice that corporate management follows in taking dividend payout-decisions (Lease et al., 2000).

The development of such policy will be greatly influenced by investment opportunities available to the firm and the value of dividends as against capital gains to the shareholders. Since the dividend policy determines whether distribute the earnings to shareholders or self-finance through retained earnings, so it is an important issue that receives more attention these days from financial analysts, academics and practitioners. The corporate dividend policy contributes not only at the micro level but also to the analysis of several macroeconomic issues, as cash dividends constitute a part of national income and any variation in corporate dividend payouts may affect the corporate propensity to save and reinvest. Therefore, it is of great importance not only for the corporation itself but also for the economy as whole.

The study of dividend policy has captured the attention of finance scholars since the middle of the last century. The roots of the literature of determinants of dividend policy and dynamics relates to Lintner's classic study (1956), Darling (1957), Brittain (1966), and Fama and Babiak (1968). They have attempted to solve several issues pertaining to dividends and formulate theories and models to explain corporate dividend behavior. However, empirical evidences many times provide inconclusive results as to what determines the optimal dividend policy. Almost three decades ago Black (1976) epitomizes the lack of consensus by stating "The harder we look at the dividend picture, the more it seems like a puzzle, with pieces that just don't fit together." Corporate dividend policy is not an easy, straight forward and simple aspect of finance as many people conceive it (Hackett, 1981). It has long been regarded as an unresolved economic puzzle, which require rational resolution if the prevailing economic paradigm of corporate finance is to continue (Miller, 1986). Despite many studies conducted by financial economists, the issue of dividend policy determinants still remains debatable.

2. REVIEW OF LITERATURE

Lintner (1956) conducted a classic study on how U.S. managers make dividend decisions, which is focused in the behavioral aspect of dividend policy and concluded that managers only increase dividends when they believe that the level of the firm's earning has permanently increased.

Miller and Modigliani (1961) argued that in a perfect market dividend policy has no effect on either the price of a firm's stock or its cost of capital, shareholders wealth is not affected by the dividend decision and therefore, they would be indifferent between dividends and capital gains.

Friend and Puckett (1964) concluded that in growth industries retained earnings are more important than the dividends in determining share price. While, in case of non- growth industries, dividends seem to be more important than retained earnings.

Brittain (1966) indicated that the capacity of a firm to pay dividends has been better explained in terms of cash flows as a variable, i.e., profits after taxes plus depreciation as against the Lintner's profits net of taxes, as it reflected true earnings.

Farrar and Selwyn (1967) viewed that investors would normally prefer low dividends as the dividends are subject to higher tax rate than that of capital gains resulting out of earnings capitalization.

Fama and Babiak (1968) concluded that net income seems to provide a better measure of dividend than either cash flows or net income and depreciation included as separate variables in the model.

Van Horne and McDonald (1971) found that the payment of dividends through excessive equity financing reduced share prices. While new equity financing and value of share was not found significant in electronics and electric components industry.

Bhole (1980) found that Lintner's model of stable and active dividend policy did not perform well on Indian data over the study period.

Chawla and Srinivasan (1987) stressed that the impact of dividend was more pronounced than that of the retained earnings but the market started shifting more weight for retained earnings.

Bhat and Pandey (1994) supported the Lintner's findings and revealed that Indian managers maintained an uninterrupted record of dividend payments and also try to avoid sudden changes in their dividend policies.

Mishra and Narender (1996) examined the dividend behavior pattern of State Owned Enterprise (SOEs) in India by applying Lintner's model. The study concluded that the number of dividend paying SOEs in India is comparatively small compared to the total number of profit sharing SOEs. In majority of the SOEs, the DPS has remained stagnant irrespective of the continuous increase in the EPS.

Pradhan (2003) found that dividend payment was more important as compared to retained earnings in Nepal. The market price of share would decline if company retained more its earnings.

Eriotis (2005) suggested that distributed earnings and size of firms has been significant impact on dividend payment in Greek market.

Husam et al.(2007) suggested that the proportion of stocks held by insiders and state ownership significantly affected the amount of dividends paid. Size, age, and profitability of the firm seemed to be determinant factors of corporate dividend policy in Jordan.

Kapoor (2008) concluded that existing literature did not explain the dividend payment pattern of IT sector. Only liquidity and beta (year to year variability in earnings) was found to be a noteworthy determinant.

Chen, Huang and Cheng (2009) found that Cash Dividend has significantly positive effect on the Stock Prices. When Cash Dividend increases, Stock Prices also increase and When the Cash Dividend decreases, Share Prices decreases.

Okpara and Godwin Chigozie (2010) showed that three factors-earnings, current ratio and last year's dividends impact significantly on the dividend payout and dividend yield in Nigeria.

Asif, Rasool, and Kamal (2011) showed the negative relationship between dividend payout and financial leverage while dividend yield showed the positive relationship between dividend yield and dividend per share.

Summinder and Prabhjot (2012) concluded that Lintner's model and Dobrovolsky's model has been best fit in the present scenario in case of Indian Manufacturing MSMEs as per cross-sectional regression results.

3. STATEMENT OF THE PROBLEM

The study of dividend policy has captured the attention of finance scholars since the middle of the last century. Existing literature on dividend policy and its determinants provides an insight into the dynamics of corporate dividend policies and their implications. However, empirical evidence many a times provides inconclusive results as to what determine the optimal dividend policy. Starting from Lintner (1956) and Miller and Modigliani (1961) irrelevance proposition to date, innumerable theories and empirical findings have been presented but still dividend policy is one of the most important unresolved issues in modern corporate finance.

The capacity of a firm to pay dividends has been better explained in terms of cash flows (Brittain, 1966). Major changes in earnings were the most important determinants of an enterprise's dividend decisions (Lintner, 1956). DeAngelo et al. (1992) argued that an annual loss is essentially a necessary, but not sufficient condition for dividend reductions in enterprises with established earnings and dividend records. Empirical evidence suggests that profitability, investment opportunities, and size are the important factors determining dividends (Fama and French, 2001). The distributed earnings and size of firms has been significant impact on dividend payment (Eriotis, 2005). Size, age, and profitability of the firm seem to be determinant factors of corporate dividend policy (Husam et al., 2007). Though there are these findings on determinants of dividend policy mainly in developed countries, they are not yet clearly known in India. Therefore, this study attempts to explore the determinants of dividend payout in Indian scenario.

4. OBJECTIVE

The major objective of this study is to identify and analyze the various determinants of dividend payout and dividend yield of Indian companies.

5. DATA AND METHODOLOGY

5.1. Research Design

For the purpose of this study, "Descriptive Research Design" has been employed to deal with the issues prevailing in the research area.

5.2. Data and Study Period

This study is an empirical in nature and makes use of secondary data. The study period for this study is of ten years i.e., from 2003-2004 to 2012-2013.

5.3. Sampling Technique

In order to select the samples more representative of the population "*convenience sampling technique*" will be used. For a company to be included in the sample should meet the following criteria:

- Companies were listed at Bombay Stock Exchange (BSE) during study period.
- The necessary financial data for calculating the measures of dependent and independent variables pertaining to the years 2003-2004 to 2012-2013 are available.
- The companies did not skip dividend for any two successive years between 2003-2012.
- Further, only those companies whose price data is available are retained in the sample size.

5.4. Selection of Companies

This study takes into account only top 10 automobiles companies listed at BSE based on market capitalization. The Market Capitalization as on *29 April 2013* was used as *sorting criteria*.

5.5 Methods of Analysis

Factor Analysis

In analyzing the determinant of dividend payout in Indian automobile companies, we employed factor analytical tool and also used regression analysis as a supportive tool. Factor analysis is often used in data reduction to identify a small number of factors that explain most of the variance observed in a much larger number of manifest variables.

The factors used as explanatory variables for the determination of dividend payout ratio are outlined below:

X_1=Natural logarithm of total assets of company 'i' during period 't' (in Rs crore), X_2=Amount of depreciation(in Rs. crore) of company 'i' during period 't', X_3=Net profit after taxes of company 'i' during period 't' (in Rs crore), X_4= Cash flows of company 'i' during period 't'(in Rs. crore), X_5= Current year equity dividend, X_6=Lagged equity dividend of company 'i' during period 't-1' (Rs.

crore), X_7 = Corporate dividend tax of company 'i' during period 't-1' (Rs. crore), X_8 = Earnings per share of company 'i' during period 't-1' (Rs. crore), X_9=Book value per share of company 'i' during period 't-1' (Rs. crore), X_{10}=Dividend per share of company 'i' during period 't-1' (Rs. crore),, X_{11}=Retained earnings per share of company 'i' during period 't-1' (Rs. crore), X_{12}=Return on net worth, X_{13}= Return on assets, X_{14}=Total debt to owners fund, X_{15}= Fixed charges coverage ratio, X_{16}= Current ratio, X_{17}=Quick ratio, and X_{18}= Price earnings ratio.

The statistical techniques of *Principal Component Factor analysis* and *regression analysis* have been used to explain the relationship between these variables. Since the variables identified as per the available literature were not on same scale. Therefore, they were standardized and converted into the same scale.

6. EMPIRICAL RESULTS AND DISCUSSIONS

Factor Analysis

The estimates of the extent each factor impacts on dividend payout as analyzed based on maximum communalities likelihood extraction analysis are presented in Table 1. The communalities table shows how much of the variance in the variables has been accounted for by the extracted factors. The results of the communalities in Table 2 show that all the variables are well and completely fit with the factor solution and none could be possibly dropped from the analysis. In view of this, we employed the principal component analysis of the extraction method presented in Table 3. The results showed that six (6) components were extracted less than 1.069 eigenvalue. The clustering of decision factors affecting dividend payout within the six components generated normalized cumulative sums of squared loading of 86.25 percent. This showed that the six decision variables depict about 86.25 percent of the characteristics of the eighteen (18) isolated factors. In other words, 86.25 percent of the total variation in the level of dividend determination in explained by

Table 1. List of automobile sample companies

Automobile Sector		Market Capitalization Rs Crore
1.	Tata Motors	95, 017.60
2.	Mahindra and Mahindra Ltd	55, 331.95
3.	Bajaj Auto Ltd.	55, 130.20
4.	Maruti Suzuki	50, 898.98
5.	Hero Motorcorp	33, 195.05
6.	Eicher Motors Ltd.	7, 911.29
7.	Ashok Leyland Ltd.	5, 999.83
8.	TVS Motor	1, 848.09
9.	Force Motors	503.33
10.	Maharastra Schooters	430.29

Table 2. Communalities

	Initial	Extraction
Natural logarithm of Total Asset	1.000	.777
Depreciation Charges	1.000	.820
Net Profit After Tax	1.000	.898
Cash Flows	1.000	.960
Equity Dividend	1.000	.925
Lag Equity Dividend	1.000	.718
Corporate Dividend Tax	1.000	.915
Earnings Per Share	1.000	.933
Book Value Per Share	1.000	.750
Dividend Per Share	1.000	.840
Retained Earnings Per Share	1.000	.939
Return on Net Worth	1.000	.786
Return on Assets	1.000	.864
Total Debt to Owners Funds	1.000	.708
Fixed Charges Coverage Ratio	1.000	.880
Current Ratio	1.000	.971
Quick Ratio	1.000	.971
Price Earnings Ratio	1.000	.870

Extraction Method: Principal Component Analysis.

Table 3. Total variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.396	35.536	35.536	6.396	35.536	35.536
2	3.230	17.945	53.480	3.230	17.945	53.480
3	2.313	12.848	66.329	2.313	12.848	66.329
4	1.336	7.423	73.752	1.336	7.423	73.752
5	1.181	6.560	80.312	1.181	6.560	80.312
6	1.069	5.938	86.250	1.069	5.938	86.250
7	.932	5.178	91.428			
8	.430	2.386	93.814			
9	.364	2.023	95.837			
10	.308	1.711	97.548			
11	.173	.960	98.509			
12	.114	.633	99.142			
13	.069	.385	99.527			
14	.052	.289	99.815			
15	.032	.177	99.993			
16	.001	.007	100.000			
17	-1.52E-016	-8.43E-016	100.000			
18	-3.56E-016	-1.98E-015	100.000			

Extraction Method: Principal Component Analysis.

cumulative effect of the six components extracted. The six components were indicative in the Scree plot. To identify the variables that form the six components, the component matrix was presented in Table 4. The table showing the loading of the factors into the six principal components indicated that the variables (factors), current ratio, cash flow, retained earnings per share, earnings per share, equity dividend and corporate dividend tax were identified as the most critical factors determining dividend payout in automobile companies.

Correlation Matrix

The correlation matrix (Table 5) provides a summary of extracted variables used in the study and matrix of multiple correlations of regression variables. This table displays Pearson correlation coefficients of variables. It depicts that the dividend payout ratio (DPRt) is positively related to equity dividend and corporate dividend tax and negatively related to CRt, CFt, REPSt and EPSt.

Regression Analysis

The alternative econometric method using the multiple regression equations on the six factors identified, are presented below:

$$DPR_t = \beta_0 + \beta_1 CR_t + \beta_2 CF_t + \beta_3 REPS_t + \beta_3 EPS_t + \beta_4 ED_t + \beta_3 CDT_t + U_t. \quad (1)$$

where, DPR_t = Dividend payout ratio in period ‘t’; CR_t = Current ratio in period’t’ CF_t = Cash flow in period ‘t’; $REPS_t$ = Retained earnings per share in period ‘t’; EPSt = Earnings per share in period ‘t’;

Table 4. Component matrix (a)

	Component					
	1	2	3	4	5	6
Natural logarithm of Total Asset	.652		.533			
Depreciation Charges			.643			
Net Profit After Tax	.890					
Cash Flows	.790		.509			
Equity Dividend	.873					
Lag Equity Dividend	.777					
Corporate Dividend Tax	.863					
Earnings Per Share	.514	.764				
Book Value Per Share		.666				
Dividend Per Share	.752					
Retained Earnings Per Share		.840				
Return on Net Worth	.681					
Return on Assets	.711					
Total Debt to Owners Funds					-.613	
Fixed Charges Coverage Ratio						.683
Current Ratio		.617		.536		
Quick Ratio		.561		.541		
Price Earnings Ratio					.559	-.730

Extraction Method: Principal Component Analysis.
a 6 components extracted.

Figure 1. Screen plot of total variance explained

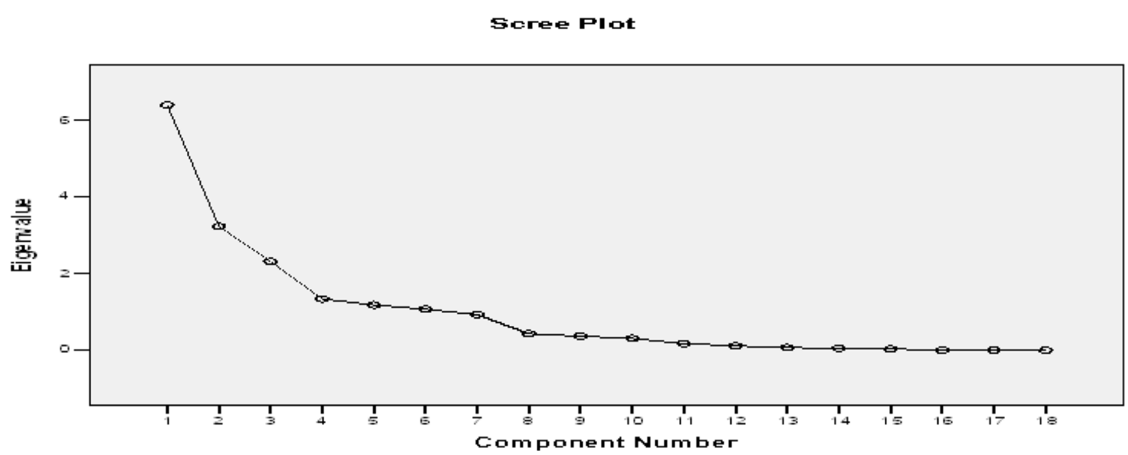

Table 5. Correlation matrix

	DPR_t	CR_t	CF_t	$REPS_t$	EPS_t	ED_t	CDT_t
DPR_t	1	-0.203 (0.051)	-0.030 (0.774)	**-0.231*** (0.026)	-0.126 (0.231)	**0.368**** (0.000)	**0.366**** (0.000)
CR_t		1	-0.086 (0.415)	0.295** (0.004)	0.219* (0.039)	-0.287** (0.005)	-0.276** (0.007)
CF_t			1	0.148 (0.157)	0.227* (0.029)	0.627** (0.000)	0.592** (0.000)
$REPS_t$				1	0.968** (0.000)	-0.006 (0.956)	-0.002 (0.986)
EPS_t					1	0.205* (0.049)	0.214
ED_t						1	0.996** (0.000)
CDT_t							1

The figures in parentheses are p-value. The asterisk (*) shows that the correlation is significant at the 0.05 level. While the asterisk (**) shows that the correlation is significant at the 0.01 level.

EDt = Total equity dividend in period't'; CDTt = Corporate dividend tax in period't', and U_t = Error term

The results from the regression analysis for the sample observations are presented in Table 6, which shows that $CR_{t,}$ EPS_t and ED_t positively affected DPR_t since their coefficients were positive. While the coefficients of CFt, REPSt and CDTt were negative which showed that they negatively affect DPRt. The adjusted R squared value is 26.5 percent. It indicated that all explanatory variables explain on average 26.5 percent of the variation in DPR_t. The p-value of $CF_{t,}$ EDt, and CDTt were 0.001, 0.013 and 0.036. It showed that only CFt, EDt and CDTt were significant at 5 percent level of significance. Further, the regression equation was found significant as calculated F = 6.51 > F = 2.17 at 5 percent level of significance for 6, 86 degree of freedom. The value of the Durbin-Watson test statistic ranges from 0 to 4. As a general rule of thumb, the residuals are uncorrelated if the Durbin-Watson statistic is approximately 2. In this study, we found the value of Durbin-Watson statistic is 1.52, which indicated no serial correlation. Thus, only three factors (CFt, EDt, and CDTt) out of six factors (extracted from factor analysis) had been found statistically significant using multiple regression analysis.

7. SUMMARY AND CONCLUSION

The behavior of dividend policy is the most debatable issue in the corporate finance literature and still keeps its prominent place in developed and emerging markets. This study is an attempt to

Table 6. Regression results of dividend payout ratio (dpr) and the identified variables

M	C	CR_t	CF_t	$REPS_t$	EPS_t	ED_t	CDT_t	R^2	$\bar{R}^2$	F	DW
1	3.71 (0.000) (1.000)	0.033 (0.329) (.743)	-0.477* (-3.38) (.001)	-1.02 (-1.23) (.222)	0.90 (1.06) (.291)	3.27* (2.54) (.013)	-2.79* (-2.12) (.036)	.313	.265	6.51	1.52

Note: The figures in parentheses in first row are t-value and second row are p-value. The asterisk (*) sign indicates that the coefficient is significant at 5 percent level of significance.

explore the factors determining dividend-payout policy using factor analysis and regression analysis statistical tools. The results of factor analysis showed that six factors, current ratio, cash flow, retained earnings per share, earnings per share, equity dividend and corporate dividend tax were identified as the most critical factors determining dividend payout in Indian automobile companies. However, regression results depicted that only three factors i.e. cash flow, equity dividend and corporate dividend tax have been found statistically significant. The regression results show that current ratio, earnings per share, and equity dividend positively affect dividend payout ratio. While cash flow, retained earnings per share, and corporate dividend tax negatively affect dividend payout. The explanatory variables explain on average 26.5 percent of the variation in DPR_t. Only cash flow, equity dividend, and corporate dividend tax had been found statistically significant using multiple regression analysis.

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KEY TERMS AND DEFINITIONS

Dividend Puzzle: A concept in finance in which companies that pay dividends are rewarded by investors with higher valuations, even though, according to many economists, it should not matter to investors whether a firm pays dividends or not. The reasoning goes that dividends, from the investor's point of view, should have no effect on the process of valuing equity because the investor already owns the firm and, thus, he/she should be indifferent to either getting the dividends or having them re-invested in the firm.

Payout Policy: Dividend policy decision is an integral part of a company's financial decision making, as it is explicitly related to the other two major decisions—investment and financing decision. Management should develop such a dividend policy, which divides the net earnings into dividends and retained earnings in an optimum way to achieve the objective of maximizing the wealth of shareholders.

Shareholders' Wealth: Maximisation of shareholders' purchasing power. It is any attempt made by a shareholder to accumulate as much wealth as possible, by whatever means possible. Wealth maximisation is a long term objective, although in some instances a short term effort may be carried out to provide shareholders with wealth.

Chapter 5
Whistle-Blower Mechanism at Corporate Governance:
A Study Based on Satyam

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ABSTRACT

The collapse of Enron, WorldCom, etc. made the importance of corporate governance clear to the Indian industry, the polity, and the public. In the pursuit of better corporate governance, a whistle-blowing mechanism is considered to be highly desirable. The chapter highlights whistle-blowing in corporate governance with the help of the Satyam episode.

1. INTRODUCTION

The collapse of Enron, WorldCom, Global Crossing, Tyco GITIC etc. made the importance of corporate governance clear to be Indian industry, the polity and the public. It had an impact on governance strategies. The latest casualty of poor governance due to lack of self regulation has been our own Satyam Computers, which was not only regulated by the clause 49 guidelines but also by the supposed to be more stringent SOX Act of the US. In India, it was expected that Indian companies would get a good lesson from the incidence of Enron and WorldCom but unfortunately Satyam has proved it totally wrong. The episode of Satyam has brought corporate governance at central stage and redefined its significance like never before. So the occurrence of such corporate crises has reinforced the need to follow more appropriate governance practices by the corporate in India.

According to Kumar (2012) Corporate governance is the system of structural, procedural and cultural safeguard designed to ensure that a corporation is run in the "best" long-term interests of its shareholders as well as other stakeholders. Corporate governance it about commitment to values and ethical business conduct. Another study of Sarkar et al. (2012), Business is a form of economic activities, which is governed by the principle of input and output. Ethics on the other hand is concerned with moral behaviour of an individual and clarifies what can be described as right or wrong behaviour, what needs to be done and what not. One important item of good corporate

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governance is transparency. In the pursuit of good corporate governance system a whistle-blowing mechanism is considered to be highly desirable.

With this in the backdrop the present article makes an attempt to highlight whistle blowing at corporate governance with the help of Satyam episode. The article is divided into six sections. The first section deals with introduction which has already been discussed. Section two relates to methodology whereas section three discusses different mechanisms which are very much essential to ensure good corporate governance. Section four gives an idea regarding Whistle blowing mechanism. Section five discusses the rise and fall of Satyam. The last section offers conclusion.

2. METHODOLOGY

The main objective of this article is to focus on the Whistle blowing at corporate governance with the help of Satyam episode. It tries to discuss the failure of corporate governance at Satyam. The study is mainly based on secondary data and the secondary data source is different books, journals, newspapers, magazines, internet etc. Compilation of data has been done in case of need.

3. MECHANISM OF CORPORATE GOVERNANCE

To ensure good corporate governance certain important mechanisms are followed. These are:

1. **The Board of Directors**: The board of directors is the ultimate responsible body for the governance of a firm. The fiduciary responsibility to act on behalf and in the interest of the shareholders rests with the board of directors. A thoughtful and committed board of directors sit at the heart of the organization. According to Dash (2007) A board is to maintain a balance between the external and internal pressures of the organisation in order to ensure its survival. The board of director should comprise of executive directors and non executive directors. Executive directors are in full-time employment of the corporate and are expected to devote their energy and efforts to the company full-time. Managing Directors and other whole-time directors belong to this category. Non-executive directors on the other hand are not in full-time employment with the company. They devote only part of their time for the company. Non-executive directors may be promoter nominee directors, institutional nominees, independent directors and lead independent director. While the class of independent directors is a new addition, the concept of independence and independent judgement of directors was in existence even in earlier.
2. **The Ownership Structure:** The ownership structure of a publicly held corporation is one of the internal mechanisms of corporate governance that has been exclusively studied in the developed countries and very recently been the subject of much research in emerging economics. The importance of ownership as a mitigating mechanism first came into focus in the context of agency costs arising from separation from control and ownership in widely held firms. The ownership structure of the firm has an impact on Corporate governance.
3. **The Audit Committee:** Audit Committee is mandatory under almost all regulatory frameworks. While SEC (Securities Exchange Commission) insists that committee be formed only from Independent Directors, clause 49 of the SEBI, guidelines for listing agreement stipulates that minimum number shall be three and majority shall be independent directors.

According to Mohan (2009), The audit committee is one of the most important governance mechanisms that is designed to ensure that a company produces relevant, adequate and credible information that investors as well as independent observers can use to assess the performance of the company. The basic functions of audit committee are:

a. Appraising and advising the board on various systems of internal controls and matters of internal audit.
b. Liaising with independent auditors and reporting to the board on different audit matters and process.
c. Advising the board regarding the accountability of the board.
d. Reviewing the financial information for the sake of stakeholders.

4. **The Auditor:** In case of auditing system, auditors are the lead actors. They provide independent oversight to the financial reporting by the companies. Auditors verify and scrutinise the accounts and certify that the financial statements are prepared in accordance with the prescribed principles and that the accounts are free from material misstatements and provide a true and fair view of the financial statements of the company. According to Dutta (2012), The auditors should verify and certify that the financial statements have been prepared in accordance with various disclosure norms, accounting and auditing assurance standards and the country's legal framework. In respect of audit functioning they should be independent and straight forward.

4. WHISTLE-BLOWING MECHANISM

Whistle Blowing is a protection process. Company encourages and provides protection to those employees who are willing to report wrong doing by their colleagues. In US, courts have awarded million of dollars to whistle blowers. It is obvious that many a corporate fraud and consequent failures causing miseries to stakeholders could have been avoided if the system of whistle blowing can be followed in place and institutionalized.

Whistle-blowing mechanism is considered as a laudable policy but intricacies involved in institutionalizing the system pose great challenges to corporate governance. In case of Enron, Sherron Watkins tried to act as a whistle blower when she observed that Andrew Fastow, CFO was doing everything for shake of his own interest at the cost of the company. Sherron informed the matter to Kenneth Law, the Chairman and CEO of Enron through mail but unfortunately nothing was happened. Kenneth Law ignored the matter and failed to make any investigation on the allegations made by Sherron. Similarly Cynthia Cooper, an insider of WorldCom tried to act as a Whistle blower but nothing was happened. So whistle blowing is really a very difficult task. In fully or partly government owned companies, the system of whistle blowing can be institutionalized to some extent because there is an scope of nominating somebody at a higher level of organizational hierarchy who will have the responsibility of the oversight of vigil and report to an outside agency rather than the top executive cadre of the company. In India, public sector organisations have a policy of appointing a chief Vigilance Officer in the category of general manager or above who oversees the vigilance function of the company and reports to a Chief Vigilance Commissioner appointed by the government. Naturally whistle blowing system can be initiated in case of public sector but in case of private sector, implementation of such system is a challenging task.

In India, SEBI has put the policy of whistle blower under the non-mandatory requirements under clause 49. Companies have to present the whistle –blowing mechanism installed in their annual report.

For a Whistle-blowing mechanism to work, certain pre-requisites are essential. These are:

1. The corporate governance must become a culture within the entire organization.
2. The system of Whistle blowing must start from the top of the organization. All employees must have access to not only the audit committee members but also to the non-executives and independent directors.
3. SEBI should encourage investors to act as Whistle –blowers.
4. SEBI should invite researchers to corporate governance.

5. RISE AND FALL OF SATYAM COMPUTER SERVICES LTD.

In Sanskrit and many Indian languages, 'Satyam' means 'Truth'. The recent unfolding events at Satyam computer Services Ltd. is a story of how truth was distorted by the untruthful conduct of the promoters who were in the management of the company.

In 1987, B Ramalinga Raju, Founder Chairman started Satyam with only 20 employees. In 1992, Satyam become public, IPO oversubscribed by 17 times, and got first offshore contract. In 2000, World Economic Forum identified Satyam as one of the 100 leading pioneering technology companies in the world. Satyam was listed on the New York Stock Exchange in 2001 and during the same year it became world's first ISO 9001:2000 certified IT company. It started to provide IT services to World Bank since 2003. In 2006, total revenue of Satyam exceeded $1 billion and it started the first 'Global Innovation Hub' in Singapore and operations in China. So it was a remarkable achievement of Satyam.

In 2008, revenue of Satyam crossed $2 Billion and it won the Golden Peacock award for excellence in Corporate governance. On 16th December 2008, Satyam announced that the twenty years old company would 'de-risk' itself by diversifying into the infrastructure and realty business by acquiring two family-run firms (i) a listed Maytas Infra Ltd where the Raju had a stake of 35 percent and (ii) an unlisted Maytas Properties Ltd where The family ownership was around 36 percent, using the $1.6 billion, cash revenue of Satyam. In case of Maytas Infra, Raju's elder son was the Vice-Chairman of the board and in case of Maytas Properties, Raju's younger son was the Chairman. These arrangements have the flavour of a managing agency- a family controlling a clutch of companies by means of financial engineering(Business world, 5 January, 2009). Twelve hours later the deal was killed and the share price plunged 55 percent. Again on 23rd December, 2008 Satyam barred from business with World Bank for 8 years for providing bank staff with improper benefits. Share price again declined another 14 percent to the lowest in over four years.

On 26th December 2008, Mangalam Srinivasan, the loan independent director since 1991 resigned from the Board of the company. Again on 29th December 2008, 3 more directors resigned and finally on 7th January 2009, Chairman Ramalinga Raju admitted to fraud and resigned. Raju inflated income, revenue, profits, cash reserves and employees. He diluted his holding from 25,6 percent in 2001 to a mere 5.13 percent in January, 2009. That a minority shareholder can wreak such havoc is in itself a testimonial to the pathetic state of corporate governance. Promoter holdings in Satyam can be depicted under Table 1.

When Raju confessed that the company had been falsifying its accounts for years, at that time Satyam had 53000 employees but out of that, 13000 employees that is about 25 percent were ghost employees on the rolls. Fixed Deposits worth Rs. 3300 crore were fictitious. There were almost 400 benami transactions. In the event, the company had a huge hole in its balance sheet, consisting of non-existent assets and cash reserves that had been recorded and liabilities that had unrecorded. The balance sheet shortfall was more than Rs. 7000 crore. It was shocked that the money

Table 1. Promoter holding in Satyam

Period Ended	Holding (%)
March 2001	25.60 %
March 2002	22.26 %
March 2003	20.74 %
March 2004	17.35 %
March 2005	15.67 %
March 2006	14.02 %
March 2007	8.80 %
March 2008	8.74 %
January 2009	5.13 %

Source: "The writing on the wall" Business world, 12 January, 2009 and CMIE database.

had been recorded in Satyam's balance sheet and books of accounts had been audited by the internationally reputed audit firm-Price Waterhouse Coopers. How Raju fooled one of the most reputed audit firm in the world is still to be unravelled.

Between 2001 and September 2008, cash balance in the company increased from Rs. 840 crore to Rs. 5312 crore. The fraud amounted to Rs. 7136 crore which was a little less than the total assets of Rs. 7281 crore reported by the company in its March 2008 balance sheet. The net profit of the company was actually Rs. 61 crore but was declared as Rs. 649 crore, a gap of Rs 588 crore .Artificial interest had been considered for Rs.376 crore . Liabilities aggregating to Rs. 1230 crore were understated and the position of debtors was overstated. Raju said that Rs. 5040 crore from the total cash reserves of Rs. 5312 crore on the books do not exist. He also said that the company had sundry debtors of only Rs. 490 crore as on 30th September,2008 while Satyam's books showed Rs. 2651 crore. It means around Rs. 2161 crore were totally false. The revenues for the quarter ending September, 2008 were actually Rs. 2112 crore but were inflated to Rs. 2700 crore. It means a false revenue of Rs. 588 crore was also created in the books of accounts. To create false revenues, the finance department of the company had to create fictitious customers and showed fictitious services rendered to them and in turn get fictitious receivables from them. These fictitious receivables were included in the sundry debtors. Since entire books of accounts were audited by the statutory auditor Price Waterhouse Coopers, the role of auditors was doubtful and questionable.

Another ironic feature was that a good number of independent directors with excellent credentials, including the Dean of a top business school and Professor of Harvard Business School were involved in the Board of Satyam. But unfortunately none of the independent directors have raised any question regarding the misdeeds of Chairman. Even some of them were very much loyal to the Chairman. Theoretically they were independent but in practice they were very closed to the Chairman. Naturally whistle-blowing mechanism was totally failed in Satyam. None of the directors did not think of the importance of this whistle-blowing system. If any of the directors tried to initiate the process, we believe that the scam could be prevented to some extent. Some analysts say that the market watch dog SEBI lacks the teeth for ensuring compliance with standards of corporate governance while others say that its rules and regulations do not go far enough. After Satyam, investors' confidence had been badly shaken.

6. CONCLUSION

Corporate governance assumes a great deal of importance in the business life of Satyam. Belief in people, entrepreneurship, customer orientation and the pursuit of excellence were the driven force of corporate governance at Satyam and these were the core values of corporate governance. The goal of Satyam was to find creative and productive ways of delighting its stakeholders. But due to misgovernance corporate fraud took place. Whistle-blowing mechanism was not in place. So to ensure the good corporate governance non-executive directors and especially independent directors should blow the whistle the moment they find that something is not in line. The role of CEO and Chairman of board should be segregated. The massage of corporate governance should reach everyone, especially to those who are not convinced about its benefits.

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Chapter 6
The Role of Performance Management Practices on Organizational Performance:
A Functional Framework

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ABSTRACT

This chapter introduces the framework and causal model of leadership style, organizational culture, performance management practices, and organizational performance. It argues that dimensions of leadership style, organizational culture, and performance management practices have mediated positive effect on organizational performance. Performance management practices positively mediate the relationships between leadership style and organizational performance and between organizational culture and organizational performance. Leadership style is positively correlated with organizational culture. Understanding the theoretical learning is positively beneficial for organizations aiming to increase organizational performance and achieve business goals.

INTRODUCTION

A global business environment is constantly dynamic and evolving (Shirokova et al., 2013). Hence, knowing how to adapt a changing environment has become the critical challenges for organizations (Shirokova et al., 2013). Organizations quickly move to create new leadership environments in which people are learning, growing, innovating and finding themselves engaged in their organization's mission, vision, and values (Graen & Schiemann, 2013). In addition, organizations operate in a competitive global environment along with the focus on employing knowledge workers as the valuable assets (Drucker, 1993). Performance management is achieved by each individual being accountable for his or her own actions contributing to the objectives, tasks, standards, and performance measures, monitoring progress and developing organizational performance (Armstrong, 2000). Leadership has a major influence on the performance of organizations, managers, and employees (Wang et al., 2005). The leader must develop an organizational culture

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that enables individuals to coalesce around the shared purpose of the enterprise (Allio, 2013). Early theories tried to define effective leadership styles (i.e., democratic, autocratic, socially oriented, and target oriented) and to relate them with various aspects of organizational outcomes (Blake & Mouton, 1964). Lester (2007) indicated that leadership style plays a key role in the level of success of any endeavor especially for activities involving emergency response. Organizations strive for improving organizational performance; an organizational culture has recognized as one of the important drivers of better organizational performance (Morone, 1989; Porter, 1985; Stace & Ashton, 1990). Organizational culture refers to a set of shared values, belief, assumptions, and practices that shape and guide employees' attitude and behavior in the organization (O'Reilly & Chatman, 1996; Wilson, 2001). Managing performance involves a cycle of clarifying business goals and agreeing individual objectives and standards of performance (Macaulay & Cook, 1994). Research objective was to construct a functional framework and a causal model of leadership style, organizational culture, performance management practices, and organizational performance of plastic plant employees in Thailand.

BACKGROUND

The details of constructs such as leadership style, organizational culture, performance management practices, and organizational performance related to this chapter are shown as follows

Leadership Style

Northouse (2007) stated that leadership is a process related to the interaction between leaders and followers in order to achieve a common goal. Leaders need to evaluate their practices, asking questions of themselves and look at making more long-term plans (Denton, 2013). Perceived leadership effectiveness depends upon fit to followers' expectations (Bildstein et al., 2013). Accordingly, being able to step back and to reflect on the appropriateness of one's leadership behavior is the key element of a globally successful leader (Bildstein et al., 2013). Schein (2009) stated that organizational culture and leadership are two sides of the same coin and one cannot understand one without the others. Furthermore, Schein (2010) stated that leadership is gaining ground as a distributed function. Landy and Conte (2013) indicated that every employee in the twenty-first century will be called upon to display leadership behavior at some point in time. Leadership in organization increases innovation and response to changes, thus sustaining high performance (Amagoh, 2009). Leadership involving inspiration, support, empowerment, and positive role modeling has linked to need satisfaction (Hetland et al., 2011). Managers should have a set of guidelines and questions that help them scrutinize their leadership performance in accordance with published leadership literature (Armandi et al., 2003).

Hassan et al. (2013) stated that managers can learn to use the ethical leadership behaviors (i.e., communicating relevant values and ethical guidelines, modeling ethical behavior, encouraging ethical practices, holding subordinates accountable for ethical practices, and opposing unethical practices). Leadership in a formal organization is not about possessing special traits, but rather it is about acting (Andersen, 2006). In a competitive and changing business environment, the effective leadership becomes one of the most critical needs and requirements (Bass, 1985; Pierce & Newstrom, 1995). When the unpredictable change occurs in an environment, it requires much more innovation, creativity, and individual thought and initiative. Kotter (1990) suggested that the leaders may need to hold visions, values, assumptions and paradigms that are in agreement with having a team-oriented, empowered workforce in order to be successful. Transformational and transactional leadership theory was first introduced by Burns

(1978), and expanded upon by Bass (1985), who proposed a theory of transformational leadership. House and Aditya (1997) provided a historical review of the scientific study of leadership and the prevailing theories of leadership.

Organizational leadership is the first and foremost ability to influence people to perform tasks over a period of time using motivational methods rather than power or authority (Kotter, 1996; Yammarino et al., 1994). This aspect emphasizes the subordinate's choice to perform a task of his or her own free will and largely rejects the use of power, force, or coercive actions by managers, who are considered leaders (Kotter, 1996; Yammarino et al., 1994). When people act out of obedience to authority, it is difficult to decide whether they are acting of their own free will or out of fear of punishment by their superior (Wang et al., 2005). Thus, modern theories on leadership are much more interested in transformational leadership than in any other types of leadership styles (Wang et al., 2005). The theory of leadership focuses on transformational leadership and transactional leadership as the core concepts in the field (Burns, 1978). These leadership concepts were first introduced by Burns (1978) and developed by Bass and Avolio to encompass the full range model of leadership (Avolio & Bass, 1991; Bass, 1985; Bass & Avolio, 1993).

Burns (1978) stated that employees will function in accordance with the leader's wishes because they believe that they will benefit by such actions. The approach of the leader is an emotional excitement, which Burns (1978) called transformational or charismatic leadership. This leadership style is based on a relationship between the leader and the employees; the leadership style breaks the cycle of subordinates' basic expectations (Burns, 1978). This leadership style can captivate employees and urge them to make the new and challenging objectives (Burns, 1978). In addition, transformational leadership raises the employees' awareness of their need to grow, validates their self-expression, and motivates them to perform at the new and higher levels (Burns, 1978). A transformational leader influences the expectations of his or her subordinates, changes their beliefs and values, and raises them in the hierarchy of needs (Burns, 1978). According to Burns (1978), the hierarchy of needs is the foundation of the transformational process. Furthermore, Burns (1978) suggested that the outcome of transformational leadership is a relationship of mutual stimulus transforming the leaders into the moral agents. Transformational leadership is a result of the leader's character, the strength of his or her belief, and his or her ability to express a compelling vision (Burns, 1978). According to Bass (1985), transformational leadership and transactional leadership styles are reflected by distinct, although not mutually exclusive, processes. This means that the same leader may use both types of processes at different times in distinct situations (Bass, 1985).

In addition, Bass (1985) introduced his full range model of leadership and initially identified seven dimensions in order to describe the existent leadership styles. These leadership variables are: charisma, inspirational leadership, intellectual stimulation, individualized consideration, contingent reward, management-by-exception, and laissez-faire (Bass, 1985). Furthermore, Bass (1985) used the multifactor leadership questionnaire (MLQ) which is a questionnaire to be answered by the leader's subordinates. The three main leadership styles are the transformational leadership style, transactional leadership style, and laissez-faire leadership style. According to Bass (1985), a leader will exhibit each of these three main styles in combination. Bass and Avolio (1995) developed an instrument measuring a broader range of leadership factors, thus representing more consistently the full range of leadership styles. Together, the nine leadership variables included in the version of the multifactor leadership questionnaire are: idealized influence (attribute), idealized influence (behavior), inspirational motivation, intellectual stimulation, individualized consideration, contingent reward, management-by-exception (active), management-by-exception (passive), and laissez-faire. This ability to quantify the leadership style has significantly refined the leadership research and has provided a number of important observations regarding leadership studies (Yukl, 2006).

Organizational Culture

According to Ravasi and Schultz (2006), organizational culture is a set of shared mental assumptions that guide interpretation and action in organizations by defining appropriate behavior for various situations. Deal and Kennedy (1982) defined organizational culture as the way things get done around here. Schein (1992) stated that organizational culture is the most difficult organizational attribute to change, outlasting organizational products, services, founders and leadership and all other physical attributes of the organization. People are raised in specific and particular cultures that affect them physically and mentally that they become fundamentally accustomed to (Singer & Millage, 2013). Denison (1990) defined artifacts as the tangible aspects of organizational culture shared by members of an organization. Verbal, behavioral and physical artifacts are the surface manifestations of organizational culture. Furthermore, Schein (1992) indicated that the two main reasons why organizational cultures develop in organizations are due to external adaptation and internal integration. External adaptation reflects an approach to organizational culture and suggests that organizational cultures develop and persist because they help an organization to survive and flourish (Schein, 1992). If the organizational culture is valuable, then it holds the potential for generating sustained competitive advantages (Schein, 1992). Additionally, internal integration is an important function since social structures are required for organizations to exist (Schein, 1992).

Organizational practices are learned through socialization at the workplace. Work environments reinforce the organizational culture on a daily basis by encouraging employees to exercise cultural values (Schein, 1992). Furthermore, innovativeness, productivity through people, and the other cultural factors have positive economic consequences (Peters & Waterman, 1982). Organizational culture is a critical factor for organization's continued operations, since it drives the organization and its actions (Chang & Lin, 2007). Lundy and Cowling (1996) stated that organizational culture represents the type of activities naturally occurring in the organization. Furthermore, the specification of this perspective from studies in organizational behavior, sociology, and anthropology describes organizational culture as the shared values and beliefs which provide both insights for organizational functioning as well as norms for behaviors (Deshpande & Webster, 1989). Martins and Terblanche (2003) stated that organizational culture is the sum of the main assumptions which are adopted by employees of the organization. These assumptions worked well in the organizations' past, spread among people via human interaction and are adopted and considered valid in the whole organization (Martins & Terblanche, 2003). Organizational culture is ultimately important because it is an important driver of critical outcomes of an organization's functioning such as innovation, productivity, and financial performance.

The essence of culture is that the organization's employees can find solutions to problems about internal integration, adaptation to environment, and coordination through shared cultural values (Blackwell, 2006; Furnham & Gunter, 1993). Deshpande et al. (1993) indicated that the organizational culture type which has the most powerful effect on organizational performance is a market culture and the least one is the culture of hierarchy. Accordingly, there are several other classifications of an organizational culture including Quinn and Spreitzer's (1991) four cultures: group culture, developmental culture, hierarchical culture, and rational culture; Chang and Lin's (2007) four constructs: cooperativeness, innovativeness, consistency, and effectiveness while Wallach (1983) categorized organizational culture as the bureaucratic culture, innovative culture, and supportive culture. According to Denison et al. (2004), organizational culture contributes to the success of the organization, but not all dimensions contribute the same. The study on organizational culture can take on a multitude of aspects, including levels (visible, expressed values, and underlying assumptions), strength (strong or weak), and adaptiveness (adaptive or unadaptive). Organizational cultures can be assessed along with many dimensions, resulting in conceptually different, but fundamentally similar, models and theories. For example, organizational culture can be categorized as an adaptability, achievement, clan, and bureaucratic system (Daft, 2005), as clan, adhocracy, hierarchy, and market (Cameron & Freeman, 1991; Quinn & Cameron, 1983).

According to Wallach (1983), an organizational culture can be a combination of three categories (i.e., bureaucratic culture, innovative culture, and supportive culture). Wallach (1983) indicated that the organizational culture index (OCI) profiles the culture on the three stereotypical dimensions, and the flavor of an organization can be derived from the combination of these three dimensions. A bureaucratic culture is hierarchical, compartmentalized, organized, systematic, and has clear lines of responsibility and authority (Wallach, 1983). An innovative culture refers to a creative, results-oriented, challenging work environment (Wallach, 1983). A supportive culture exhibits teamwork and a people-oriented, encouraging, trusting work environment (Wallach, 1983). An employee can be more effective in his or her current job, and realize his or her best potentials, when there is a match between the individual's motivation and the organizational culture (Wallach, 1983). This aspect has significant implications in recruitment, management, motivation, development, and retention of employees (Shadur et al., 1999). Organizational culture consists of some combination of artifacts (also called practices, expressive symbols or forms), values and beliefs and underlying assumptions that organizational employees share about appropriate behavior (Gordon & DiTomaso, 1992; Schein, 1992).

Organizational culture involves beliefs and behavior, exists at various levels, and manifests itself in a wide range of features of organizational life (Hofstede et al., 1990). The organizational culture may be invisible, but it exerts a powerful force on how they respond to change (Lakos & Phipps, 2004). A cultural idea must be learned and shared in the organizations (Titiev, 1959). Pettigrew (1979) indicated that organizational cultures explain how employees think and make decision. Furthermore, Pettigrew (1979) stated that different level of culture based on the multifaceted set of beliefs, values and assumptions determines ways for organizations to conduct the business. According to Tichy (1982), organizational culture is known as the normative glue to hold the overall organization together. The concept of organizational culture also makes a base for differentiation surviving the organizations that are doing business in the same national culture (Schein, 1990). The concept of organizational culture is generally used in the concept of organizations (Kotter & Heskett, 1992). Organizational culture could be built up by two essentials factors of social group; structural stability of a group and integration of single item in superior standard (Schein, 1995). Hodgetts and Luthans (2003) explained about the different characteristics associated with the culture of organization. Robbins and Sanghi (2007) defined organizational culture as system of common values which can be estimated that people describe the similar organizational culture even with different background at different levels within the organization. Ferraro (1998) defined organizational culture as everything that people have, think, and do as the members of their society. Organizational cultures represent the character of an organization, which directs its employees' day-to-day working relationships and guides them on how to behave and communicate within the organization, as well as guiding how the organizational hierarchy is built (Ribiere & Sitar, 2003). Every individual is unique and is equipped with different characteristics and behavioral styles (Chang & Lee, 2007). This aspect is also true for business organizations, which have unique organizational cultures that influence the organizational operations (Chang & Lee, 2007). Organizational culture comprises the acknowledged practices, rules, and principles of conduct based on certain circumstances that are the general rationales and beliefs (Bailey, 1995).

Performance Management Practices

Employee performance management can be described as a continuous process of identifying, measuring, and developing the performance of individuals and teams and aligning performance with the strategic goals of the organization (Aguinis & Pierce, 2008). Scholars usually describe employee performance management to explain how employee performance management leads to performance improvement (Den Hartog et al., 2004; Purcell & Kinnie, 2007). A fundamental characteristic of employee performance management is that it is meant to be owned and driven by line management (Den Hartog et al., 2004; Purcell & Kinnie, 2007). Furthermore, employee performance management systems are the human resource management systems that lead to human resource management outcomes (i.e., employee satisfaction, employee motivation, and employee retention) and ultimately, to higher performance (Boselie et al., 2005). Accordingly, proponents of employee performance management assume that this strategic and integrated approach is necessary to achieve sustained organizational success and to develop the capabilities of individuals and wider teams (Aguinis & Pierce, 2008). This evolution of employee performance management reflects the broader trends in human resource management (Bach, 2005). In addition, goal-setting, monitoring and evaluation are to be incorporated into a unified and coherent framework meant to align the individual employee performance goals with the organization's wider objectives (Aguinis & Pierce, 2008; Williams, 2002).

The type of performance management alignment indicates the presence of an internally consistent employee performance management system (Aguinis & Pierce, 2008). In addition, human resource management and performance management are the result of market mechanisms (Paauwe, 2004). Furthermore, establishing a balance through human resource management and performance management could be the key to long-term organizational success (Paauwe, 2004). Performance management is an identifiable subject for academic study and research (Kaplan & Norton, 1992; Thorpe, 2004). Performance management is defined as the use of performance measurement information to affect the positive change in organizational culture, systems and processes, by helping to set the agreed-upon performance goals, allocating and prioritizing resources, informing managers to either confirm or change current policy or program directions to meet those goals, and sharing results of performance in pursuing those goals (Amaratunga & Baldry, 2002). The supporting performance management system would include the following key elements: a structured methodology to design the performance measurement system; a structured management-process for using performance measurement information to help make decisions, set performance goals, allocate resources, inform management, and report success (Amaratunga & Baldry, 2002); a set of the required specifications of the necessary electronic tools for the data gathering, processing and analysis (Waggoner et al., 1999); the theoretical guidelines on how to manage through measures; and a review process to ensure that measures are constantly updated to reflect changes in strategy and market conditions (Waggoner et al., 1999).

In addition, management team knows which and how many advantages are to be expected as a direct result of a specific reason for use; management team can check whether full benefit has achieved from using performance management and measurement (De Waal & Kourtit, 2013). Furthermore, the improved organizational performance and the increased productivity would be achieved by adopting an integrative approach to project-based interventions (Parker et al., 2013). Performance management and measurement techniques and tools have attracted much interest from both the academic and business communities (Chau, 2008; Franco-Santos et al., 2012; Thorpe & Beasley, 2004). Performance management and measurement is defined as the process in which steering of the organization takes place through the systematic definition of mission, strategy and objectives of the organization, making these aspects measurable through critical success factors (CSFs) and key performance indicators (KPIs) in order to be able to take corrective actions to keep the organization on track (De Waal, 2007). The effectiveness of the ongoing process means the achievement of financial target and nonfinancial target, the development of skills and competencies and the improvement of customer care and process quality (De Waal, 2007). Accordingly, performance management and measurement is considered as a method to gain competitive advantage and to continuously react and adapt to external changes (Chau, 2008; Cocca & Alberti, 2010). Evans (2004) and De Waal et al. (2009) stated that a positive relation between the maturity of performance management and measurement systems and organizational results. Mausolff and Spence (2008) found that there is a strong correlation between the quality of performance management and measurement and program performance in human services.

Organizational Performance

According to Richard et al. (2009), organizational performance encompasses three specific areas of organizational outcomes: (a) financial performance (i.e., profits, return on assets, and return on investment); (b) product market performance (i.e., sales and market share); and (c) shareholder return (i.e., total shareholder return and economic value added). Organizational performance can be measured as an overall outcome of the strategy implemented by the firm for a product or an industry (Neely, 2007). Organizational performance refers to the degree of achievement of the mission at the work place that builds up an employee job (Cascio, 2006). Different researchers have different thoughts about performance. Researchers use the term performance to express the range of measurements of transactional efficiency and input-and -output efficiency (Stannack, 1996). According to Barney (1991), organizational performance is a continuous process to controversial issue between organizational researchers. Organizational performance does not only mean to define problem but it also for solution of problem (Heffernan & Flood, 2000). Daft (2000) stated that organizational performance is the organization's capability to accomplish its goals effectively and efficiently using resources. Ricardo and Wade (2001) explained that achieving organizational goals and objectives is known as organizational performance. Furthermore, Ricardo and Wade (2001) suggested that organizational success shows high return on equity and this point become possible due to the establishment of good employee performance management system.

MAIN FOCUS OF THE CHAPTER

This chapter focuses on constructing a functional framework and a causal model of leadership style, organizational culture, performance management practices, and organizational performance of plastic plant employees in Thailand.

Relationship with Variables

Performance management is achieved by each individual being accountable for his or her own actions contributing to the objectives, tasks, standards, and performance measures, monitoring progress and developing performance (Armstrong, 2000). Agency relations as the aspects of performance management practices in most organizations are viewed as the simply legal fictions which serve as a nexus for a set of contracting relationships among individuals, that is, the employer and employee (Jensen & Meckling, 1976). According to Jensen and Meckling (1976), the agency theory is concerned with exchanges in which one employer provides responsibility for a specific set of actions to another employee. Regarding an agency theory, a human being by nature is self-interested and so the agents and principals will most probably have differences in interests and attitudes toward risk and consequently have divergent decision-making preferences (Boxall & Gilbert, 2007). Concerning the resource-based view (Barney, 1991) of the firm, Ackoff (1999) stated that the more unpredictable and uncertain the global environment, the more organizations must rely on their employees as a vital resource with the intellectual capital to create the desired future. Gallego and Rodriguez (2005) asserted that intellectual capital comprises of three components generally recognized: human capital, relational capital, and structural capital.

Human capital is the individual abilities, knowledge, know-how, talent, and experience of both employees and managers of an organization (Green & Ryan, 2005). Relational capital is the resource involved in the relationships between the organization and its stakeholders and all knowledge embedded in these external relationships (Green & Ryan, 2005). Structural capital refers to the internal structure of the organization, to the processes and procedures formed by the intellectual input of the employees (Carson et al., 2004). This aspect includes patents, organizational processes, strategies in place, as well as the organization's administrative and technological organization (Egbu, 2004). Furthermore, the resource-based view perspective holds that an organizational resource drives its performance in a dynamic competitive environment. Concerning the goal-setting theory, specific difficult goals at micro and macro levels have been shown to increase organizational performance (Punnett et al., 2007). In addition, Bititci et al. (2000) indicated that performance management practices in organizations should be in term of being sensitive to the changes in the internal and external environment of the organization, reviewing internal objectives when the changes are significant enough. Deploying changes to internal objectives and priorities to critical parts of the organization to ensure alignment at all times, and confirming that the gains achieving through improvement programs are maintained (Bititci et al., 2000).

Leadership style is a leader's combination of attitude and behavior, which leads to certain regularity and predictability in dealing with group members (Dubrin, 2004). A leader may have knowledge and skills to act in one situation but may not emerge as effective in a different situation (Rad & Yarmohammadian, 2006). Maheshwari (1980) indicated that style of making decision in an organization is the result of a complex interaction of several factors, including the context and characteristics of the organization. Yukl (2006) defined leadership as the process of influencing others to understand and agree about what needs to be accomplished. According to Wallach (1983), organizational culture, comprising three categories, namely bureaucratic, innovative, and supportive culture, is generally seen as a set of key values, assumptions, understandings, and norms shared by members of an organization. Organizational culture involves the formal entities operating in the same industry may exhibit the similar values because of similar environmental factors (Jennifer & Jehn, 1994). Various organizations have their own predefined cultures elaborating their values to impact the organizational operations (Chang & Lee, 2007). Bass (1985) stated that transactional leaders operate in a boundary of existing culture, while transformational leaders operate to align the organizational culture with organizational vision. In addition, transformational and transactional leadership have positive relationship with organizational culture (Jogulu & Wood, 2006; Schimmoeller, 2010).

Riaz and Haider (2010) concluded that transformational and transactional leadership positively correlate with job success and job satisfaction. A number of comparative studies on the culture-performance link showed that certain organizational culture orientations are conducive to performance (Denison & Mishra, 1995; Smart & St. John, 1996). As far as transformational leadership is concerned, Bass (1985) suggested that transformational qualities lead to organizational performance beyond expectations in organizational settings; research has empirically demonstrated that there is a relationship between transformational attributes and organizational measures of effectiveness (Lowe et al., 1996; Waldman et al., 2001). Denison et al. (2004) developed a theory of organizational culture and effectiveness that identifies four cultural traits that are positively related to organizational performance, namely involvement and participation, consistency and normative integration, adaptability, and mission. Marcoulides and Heck (1993) indicated that organizational culture has a positive direct effect on organizational performance. Petty et al. (1995) found that a cultural emphasis on cooperation and teamwork are conducive to organizational effectiveness. Similarly, Smart and St. John (1996) explained that organizational support, innovation, and goal orientations are related to higher performance in American colleges and universities in comparison to bureaucratic orientation.

Bass and Avolio (1993) indicated that leadership and organizational culture are interconnected that it is possible to describe an organizational culture characterized by transformational qualities. According to Bass (1985), transformational leaders do work within the organizational culture as it exists but are primarily concerned with changing organizational culture. Bass (1985) proposed that transformational leadership promotes a working environment characterized by the achievement of high goals, self-actualization, and personal development. In addition, Bass and Avolio (1993) suggested that transformational leaders move their organizations in the direction of more transformational qualities in their organizational cultures (i.e., accomplishment, intellectual stimulation, and individual consideration) so that transformational leadership has a direct effect on organizational culture. Block (2003) found that employees who rate their immediate supervisor high in transformational leadership are more likely to perceive the organizational culture of their organization as adaptive, involving, integrating, and having a clear mission. Pillai and Meindl (1998) stated that charismatic leadership is associated with the presence of collectivistic values in work groups and a heightened sense of community. Moreover, Waldman and Yammarino (1999) proposed that there is a reciprocal causation between charismatic leadership in senior managers and adaptive organizational cultures; a charismatic leader is in a position to have an impact on organizational culture and adaptive cultures tend to precede or allow for the emergence of charismatic leaders.

Ogbonna and Harris (2000) stated that the supportive and participative leaderships are positively linked to organizational performance via the innovative culture, whereas instrumental (task oriented) leadership has an indirect negative effect on organizational performance. When

Bass's (1985) multifactor leadership questionnaire is used, a high correlation is found between the leader's transformational leadership style and the organizational performance level. This correlation is consistently higher than the positive correlation between the leader's transactional leadership style and the organizational performance. In addition, a negative correlation is usually found between the transactional leadership style and organizational performance (Geyer & Steyrer, 1998; Lowe et al., 1996; MacKenzie et al., 2001; Parry, 2003). According to Bass (1985), employees choose to perform tasks out of identification with the leader and the organization. This relationship results in the employees' basic agreement with the norms to which they are required to perform. Bass (1985) suggested that transformational leadership can create identification with and internalization of desirable values, as opposed to the limited goal of transactional leadership to create a compliant workforce. Parry (2003) specifically examined leadership styles in public sector organizations and found that a transformational leadership style has a positive effect on the organizational innovation and organizational effectiveness.

Wang et al. (2005) suggested the leader member exchange theory (Graen, 1976) as a good explanation for a mediating role between leadership styles and organizational performance as well as organizational citizenship behavior. The leader member exchange theory is in line with Vroom's (1964) expectancy theory and Blau's (1964) exchange theory that call for a stronger balance between managers and employees. Wang et al. (2005) stated that subordinates have the role expectations of their leaders and that they are not the passive role recipients, as they may reject, embrace, or renegotiate roles prescribed by their leaders. A reciprocal process is based on fairness and equity of exchange and expectations, and is developed over time (Wang et al., 2005). Organizational culture is tightly connected to a certain group of people working together for a considerable period of time (Linn, 2008). Hence, organizational culture is the most critical factor that shapes behavior (Linn, 2008). Hooijberg and Petrock (1993) stated that organizational culture contributes to the improved organizational performance and supports self-managing work teams. Furthermore, Jones et al. (2006) indicated that organizational culture can be considered as a knowledge resource because it allows the employees to create, acquire, share, and manage knowledge within an organizational context.

Material and Methods

Data for this study were collected from 625 operational employees out of 69,102 operational employees working in the 157 plastic plants in Thailand by using Yamane's formula (Yamane, 1970) for a 96% confidence level with a 4% margin of error by the proportional random sampling method. Data were analyzed with descriptive statistics using SPSS (version 20) and assessed with confirmatory factor analysis (CFA) to confirm the heterogeneity of all constructs and path analysis (Joreskog & Sorborn, 1993) to detect the cause-effect relationships among various dimensions of main constructs of the study using LISREL (version 8.8) on a structured questionnaire containing standard scales of leadership style, organizational culture, performance management practices, and organizational performance, besides some demographic details like age, education, and tenure with the organization. This chapter has a research question: what are a framework and a causal model of leadership style, organizational culture, performance management practices, and organizational performance?

Leadership style was measured using the Multifactor Leadership Questionnaire (MLQ 5X-short) (Bass & Avolio, 2000) consisting of 45 items concerning transformational, transactional, laissez-faire, and outcomes on a five-point Likert scale ranging from 1 (not at all) to 5 (frequently). Organizational culture was measured using the 24-item Organizational Culture Questionnaire

(OCQ) developed by Wallach (1983) to assess three cultural facets of bureaucratic culture, innovative culture, and supportive culture using a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Performance management practices were based on agency relations, relevant resources, dynamic capability, and goal setting. These variables of performance management practices were measured with the instruments on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Agency relations, part of performance management practices, were measured using seven items adopted from an instrument developed by Martinez and Kennerley (2005). The respondents were asked to indicate his or her opinions on items such as ''Managers focus their attention on key objectives set by shareholders''.

Relevant resources, part of performance management practices, were assessed using 18 items adopted from an instrument developed by Isobe et al. (2000). The respondents were asked to report their responses on items such as: ''This organization has the provisions for developing its employees''. Dynamic capability, part of performance management practices, was measured using 19 items adopted from an instrument developed by Choo and Johnson (2004). The respondents were asked to indicate their opinions on items such as: ''In this organization, there is the sharing of new knowledge in decision making''. Goal-setting, part of performance management practices, was measured using 11 items adopted from an instrument developed by Van de Walle (1997). The respondents were asked to indicate their opinions on items such as: ''I often prepare a work plan for an effective performance''. Organizational performance was assessed using the questionnaire developed by Delaney and Huselid (1996) using a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) with 25 items of measuring seven elements of product or service quality, product or service innovation, employee attraction, employee retention, customer satisfaction, management and employee relations, and employee relations.

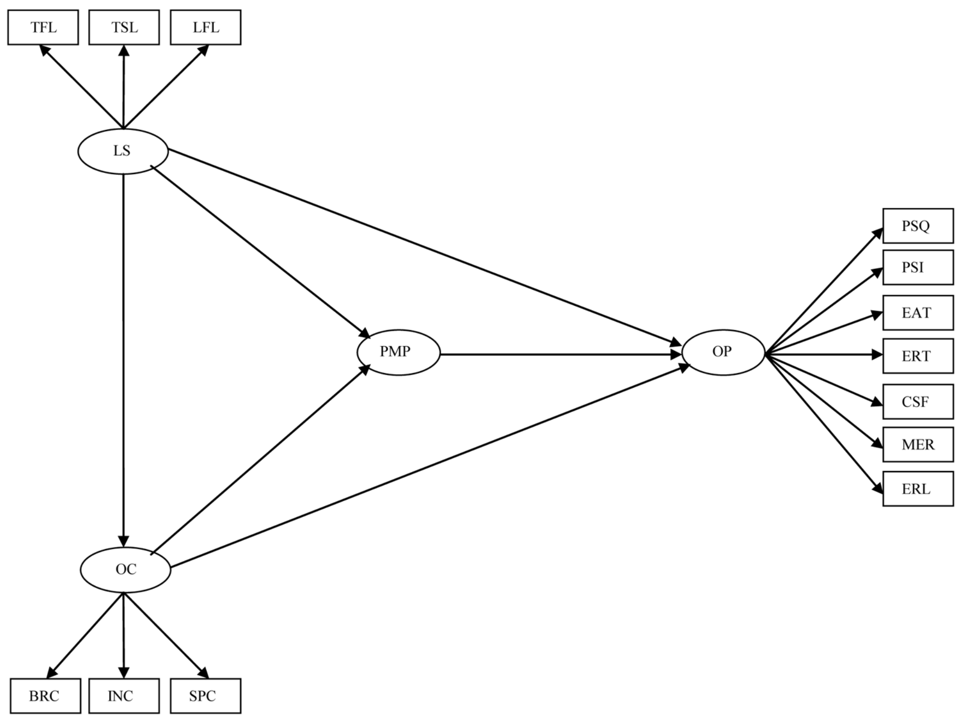
SOLUTIONS AND RECOMMENDATIONS

A functional framework and a causal model are constructed shown in figure 1. Research findings indicate that dimensions of leadership style, organizational culture, and performance management practices have mediated positive effect on organizational performance. Leadership style and organizational culture are positively linked to performance management practices. Performance management practices positively mediate the relationships between leadership style and organizational performance and between organizational culture and organizational performance. Furthermore, leadership style is positively related to organizational culture. Regarding the functional framework, there are lots of researchers studying about the relationships of leadership style, organizational culture, performance management practices, and organizational performance in a wide variety of fields. The functional framework is positively compatible with the following research findings. Leadership style, organizational culture, and performance management practices are positively linked to organizational performance. Therefore, organizations should take consideration of their leadership style and organizational culture in the transition process of performance management practices to increase organizational performance. According to the result, organizational culture and performance management practices act as the intervening variables between leadership style and organizational performance.

When organizations adopt performance management practices to promote organizational

Figure 1. Functional framework and causal model

Key: *LS = Leadership Style, TFL = Transformational Leadership, TSL = Transactional Leadership, LFL = Laissez-Faire Leadership, OC = Organizational Culture, BRC = Bureaucratic Culture, INC = Innovative Culture, SPC = Supportive Culture, PMP = Performance Management Practices, OP = Organizational Performance, PSQ = Product or Service Quality, PSI = Product or Service Innovation, EAT = Employee Attraction, ERT = Employee Retention, CSF = Customer Satisfaction, MER = Management and Employee Relations, ERL = Employee Relations*



performance, the role of leadership style and organizational culture becomes more evident and critical. Therefore, the strength of performance management practices affecting organizational performance will be influenced by what kinds of leadership style and organizational culture that organizations adopted. These finding show that leadership style and organizational culture can promote a higher degree of performance management practices and organizational performance within organizations. In addition, the present results are also quite instructive in helping to explain the effects of leadership style and organizational culture on performance management practices and organizational performance. Organizations should carefully design and nurture appropriate leadership style and organizational culture to facilitate performance management practices and organizational performance. Organizations need to cultivate the leadership style and organizational culture to enhance performance management practices. The appropriate leadership style and organizational culture would result in a more satisfied level of performance management practices and organizational performance within organizations. It is important that the other organizations implementing large-scale manufacturing reformations need to pay great attention to leadership style, organizational culture, performance management practices, and organizational performance in order to effectively achieve business success.

FUTURE RESEARCH DIRECTIONS

The author indicates some limitations in this study and suggests possible directions for future research. This study is based on self-report data that may have the possibility of common method variance. Future research is suggested to benefit from using objective measures for organizational performance that can be independently verified. The low return rate of the survey is still noted as a potential limitation in this study. Future research can benefit from a larger sample to bring more statistical power and a higher degree of representation. This study was done by empirically investigating Thai firms. Potential cultural limitation should be noted and it is suggested that future research be done in different cultural contexts to generalize or modify the concepts. Furthermore, this study mainly concerns the effects of leadership style and organizational culture on performance management practices and organizational performance. Other variables (i.e., perceived organizational support, organizational trust, organizational commitment, organizational justice, job characteristics, and job involvement) may potentially affect performance management practices and organizational performance as well. Future research may work on examining their impacts on performance management practices and organizational performance.

CONCLUSION

The purpose of this study was to construct a functional framework and a causal model of leadership style, organizational culture, performance management practices, and organizational performance for plastic plant employees in Thailand. The findings show that the leadership style, organizational culture, and performance management practices have strengths to mediate positive effects on organizational performance. In relation to the functional framework, that is the extent to which leadership style, organizational culture, and performance management practices have mediated positive effect on organizational performance. Given the need for performance management practices and organizational performance as a solution to the complex challenges, firms need to be aware of the implications of leadership style and organizational culture that may affect performance management practices and organizational performance. Organizations should recognize the importance of performance management practices and need to put more efforts in building up the effective performance management mechanisms to promote their organizational performance. Organizations should pay special attentions to leadership style and organizational culture in which performance management practices are most likely to enhance organizational performance, and those in which such enhancement is less likely to occur. Organizations may create the leadership style and organizational culture to encourage employees not only behave in interactive ways, but are also stimulated to improve performance management practices and to manifest creative and innovative behaviors of employees. In addition, organizations should recognize and shape leadership style and organizational culture favorable to performance management practices and organizational performance. Finally, organizations aiming to increase organizational performance and achieve business goals should focus on developing leadership style, organizational culture, and performance management practices.

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KEY TERMS AND DEFINITIONS

Agency Relation: The practice of creating and maintaining goodwill of an organization's various substitutes.

Dynamic Capability: The measure of the ability of an organization to achieve its objectives.

Goal Setting: The determination of an observable and measurable end result having objectives to be achieved within a fixed timeframe.

Framework: Broad overview, outline, or skeleton of interlinked items which support a particular approach to a specific objective of the study.

Leadership Style: The activity pattern of leading a group of people or an organization.

Organizational Culture: The values and behaviors that contribute to the unique social and psychological environment of an organization.

Organizational Performance: The work related activities expected of an employee and an organization and how well those activities were executed.

Performance Management Practices: A process by which organizations align their resources, systems, and employees to strategic objectives and priorities.

Relevant Resource: An economic factor required to achieve the desired outcomes.

Chapter 7
Pro-Poor Development through Tourism in Economically Backward Tribal Region of Odisha, India

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ABSTRACT

In India, tourism plays an important role in economic development and creation of jobs. The Approach Paper of the 12th Five Year Plan prepared by the Planning Commission highlights the need to adopt "pro-poor tourism" for increasing net benefits to the poor and ensuring that tourism growth contributes to poverty eradication. Tourism plays a key role in socio-economic progress through creation of jobs, enterprise, infrastructure, and revenue earnings. The Planning Commission has identified tourism as the second largest sector in the country in providing employment opportunities for low-skilled workers. Odisha has a large tribal population: out of India's 427 Scheduled Tribes, Odisha accounts for 62 tribal communities who constitute 27.08 percent of the state's population (2001). Of the 62 Scheduled Tribes, the state has declared 11 tribal communities as Primitive Tribal Groups. Each of these tribal communities is rich in social institutions and poor in economy. Achieving poverty eradication requires actions on a variety of complementary fronts and scales, but a prerequisite of significant progress is pro-poor growth – growth that benefits the poor tribal community. This chapter explores these.

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EXECUTIVE SUMMARY

Attempts have been made in this study to examine the economy and sustainable development to the poorest of the poor tribal community of Odisha. This article begins with the meaning, and importance of Pro-poor Tourism for the socio-economic development of the indigenous groups in the state. Sustainable Socio-economic development in the tribal regions is the central idea of this article. Key issue of this paper is to find out the way for economic development of this indigenous people followed by the social development to fight against the biggest internal security threat from Maoist in India.

Tourism in recent years has developed into one of the world's largest industries and a major engine for economic growth. Globally, tourism is a 3 billion dollar a day business that all countries at all levels can potentially benefit from. The sector is one of the world's biggest sources of jobs and export earnings, and it can be a primary vehicle for job creation, enhanced development, trade promotion, economic recovery and the transformation towards a greener economy.

According to UNWTO, inbound tourism has become one of the world's major trade categories, as an internationally traded service. The overall export income generated by inbound tourism, including passenger transport, exceeded US$ 1.2 trillion in 2011, or US$ 3.4 billion a day on average. Tourism exports account for as much as 30% of the world's exports of commercial services and 6% of overall exports of goods and services. Globally, as an export category, tourism ranks fourth after fuels, chemicals and food. For many developing countries it is one of the main sources of foreign exchange income and the number one export category, creating much needed employment and opportunities for development.

Tourism has great significance to developing countries. But is it important in those countries with the highest proportion of poor people? Analysis of tourism data shows that in most countries with high levels of poverty, tourism is significant or growing. Tourism is therefore a fact of life for many of the world's poor people. A reduction in world poverty is an internationally agreed priority and targets have been set to halve poverty by the year 2015.

In India, Tourism plays an important role in economic development and creation of jobs. The Approach Paper of the 12th Five Year Plan prepared by the Planning Commission highlights the need to adopt *"pro-poor tourism"* for increasing net benefits to the poor and ensuring that tourism growth contributes to poverty reduction. According to Biswas (2012), Tourism plays a key role in socio-economic progress through creation of jobs, enterprise, infrastructure and revenue earnings. The Planning Commission has identified tourism as the second largest sector in the country in providing employment opportunities for low-skilled workers.

The term 'tribe' originated from the Latin word 'tribus', which means a particular kind of social and political organisation existing in traditional societies of Africa, America, Oceania and Asia. The word 'tribe' was used by the Europeans who in their view led a primitive way of life. In India in the colonial period, British people were used this term for their 'divide and rule' policy. Because the tribes were not having developed language, religion or social organisation and so they were different people.

In India especially in Odishan context the word 'tribe' has several usages. Here the word 'Jana' was used for these tribal people. These so called '*Janas*' or pre-Aryan people were said to inhabit the plains and river valleys of the main land and in course of time, due to the pressure of the outsiders or superior societies, were compelled to move to inaccessible areas. As a result of this perhaps, the tribes have been physically and emotionally associated with such remote and inaccessible areas at present. Besides the term '*Janas*', there are other term like '*Adivasi*' (original settlers), '*Girijana*' (hill-dwellers), '*Vanyajati*' (forest castes), '*Adim-*

jati' (Primitive casts), '*Janajati*' (folk communities), '*Anusuchit Janajati*' (Scheduled tribes) etc. usually used for the tribes in Indian context. In Odisha, the term '*Adivasi*' is mostly used for them (Pati & Dash, 2002).

Odisha has a large tribal population: out of India's 427 Scheduled Tribes, Odisha accounts for 62 tribal communities who constitute 22.1 percent of State's population (2011). The tribal communities living in the State range from small communities like Chenchu, Bonda, Juanga, Didayi, to large communities like Munda, Santalas, Kondh, Oraon, Saora and Bhuyan. Almost 44.21 percent of the total land area of the State has been constitutionally declared as a Scheduled Area, which covers most of the districts except the coastal and few in-land areas. The districts largely dominated by Scheduled Tribes are Malkangiri (58.51%), Mayurbhanja (57.87%), Nawarangpur (55.26%), Rayagada (54.99%), Sundargarh (50.74%), Koraput (50.67%), Kandhamala (50.13%), Keonjhar (44.62%), Gajapati (47.88%), and Jharsuguda (33.31%).

Odisha has declared 11 tribal communities as Primitive Tribal Groups of the total 62 Scheduled Tribes. These communities are: Bonda Paraja, Chuktia Bhunjia, Didayi, Dongaria Kondha, Juanga, Kutia Kondh, Lanjia Saora, Lodha, Paudi Bhuiyan and Saora. Each of these tribal communities is rich in social resources and poor in economy. Achieving poverty reduction requires actions on a variety of complementary schemes, but a prerequisite of significant progress is pro-poor growth – growth which benefits the poor tribal community.

OBJECTIVES

1. To understand the importance of sustainable economic development of Tribal Community of Odisha.
2. To analyze the Significance of *pro-poor tourism* to Local Economy.
3. To find out the role of Tribal tourism as a vehicle for job creation, poverty alleviation, economic growth and development of remote underdeveloped tribal areas of Odisha.
4. To suggest some important measures for the promotion of tribal handicrafts in Orissa for socio-economic development.

METHODS

To gain insights into the general structure and some of the issues of *pro-poor tourism*, extended conversations were held with the tribal communities, guides and tourists. These types of experiences were chosen because they represent a diversity of issues and attractions, ranging from events that last for a week once a year in the tribal fare to tribal museum that have been in operation for decades. This study was conducted using self-administered questionnaires. For collecting the data from the primary sources, two sets of structured questionnaire made both for tourists and communities. Apart from that observation, schedules and interview methods are also followed for the above said purpose.

SCHEDULED TRIBES OF INDIA

The term 'Scheduled tribe' is not clearly defined by Indian Constitution. Whereas, Article 366(25) of the Constitution states that, 'scheduled tribes' are those communities who are scheduled in accordance with Article 342. According to Article 342 of the Constitution, the Scheduled Tribes are the tribes or tribal communities or part of groups within these tribes and tribal communities which have been declared as such by the President through a public notification. In India, Scheduled Tribes are spread across mainly in remote areas like: forest and hilly regions. The main features of this community are primitive behavior, unique culture, geographical isolation, timidity of community contact, and economically backwardness.

India has 427 scheduled tribes (STs) speaking in different languages, with each tribe having its own ethnic and cultural identity.

TRIBAL POPULATION OF INDIA (STATE WISE PERCENTAGE)

Odisha, situated in the eastern region of India, has a large tribal population. Out of India's 427 Scheduled Tribes, Orissa accounts for 62 tribal communities who constitute 22.1 percent of State's population (2011). The tribal communities living in the State range from small communities like Chenchu, Bonda, Juanga, Didayi, to large communities like Munda, Santalas, Kondh, Oraon, Saora and Bhuyan (Figure 1).

Almost 44.21 percent of the total land area of the State has been constitutionally declared as a Scheduled Area, which covers most of the districts except the coastal and few in-land areas. The districts largely dominated by Scheduled Tribes are Malkangiri (58.51%), Mayurbhanja (57.87%), Nawarangpur (55.26%), Rayagada (54.99%), Sun-

Figure 1. Tribal communities of Odisha
Source: Ministry of Tribal Affairs, Govt. of India

dargarh (50.74%), Koraput (50.67%), Kandhamala (50.13%), Keonjhar (44.62%), Gajapati (47.88%), and Jharsuguda (33.31%). The tribal communities of the State can be categorized as hunter-gatherer-nomads; hunter-gatherer and shifting cultivators; simple artisans; settled agriculturists; industrial and urban unskilled and semi-skilled workers.

Out of these 62 Scheduled tribes, 13 communities, namely the Lodha, Kharia, Mankirdia, Juang, Pauri Bhuiyan, Bonda, Dongria Kondha, Kutia Kondha, Lanjia Saora, Saora, Didayi, Birhor and Chukia Bhunjia have been identified as primitive. There are also some advanced tribal communities in the state, such as the Santhal, Ho, Munda, Bhumij, Kondha,, Bhuiyan, Bathudi, Oraon, Kisan and Gond.

SCHEDULED AREAS IN ORISSA

The Scheduled area in the State of Orissa was originally specified by the Scheduled Areas (Part A States) Order, 1950 (Constitution Order, 9) dated 23.1.1950 and the Scheduled Areas (Part B States) Order, 1950, (Constitution Order, 26) dated 7.12.1950 and has been re-specified as above by the Scheduled Areas (States of Bihar Gujarat, Madhya Pradesh and Orissa) Order, 1977, (Constitution Order, 109) dated 31.12.1977 after rescinding the Orders cited earlier in so far as they related to the State of Orissa. Scheduled tribe areas of Odisha are:

1. Mayurbhanj district.
2. Sundargarh district.
3. Koraput district.
4. Kuchinda tahsil in Sambalpur district.
5. Keonjhar and Telkoi tahsils of keonjhar sub-division, and Champua and Barbil tahsils of Champua sub-division in Keonjhar district.
6. Khondmals tahsil of Khondmals sub-division, and Balliguda and G. Udayagiri tahsils of Balliguda sub-division in Boudh-khondmals district.
7. Udayagiri tahsil, and Guma and Rayagada Blocks of Parlakhemundi Tahsil of Parlakhemundi sub-division, and Surada tahsil, exlcluding Gazalbadi and Gocha Gram Panchayats of Ghumsur sub-division, in Ganjam district.
8. Thuamul Rampur Block of Kalahandi Tahsil, and Lanjigarh Block, falling in Lanjigarh and Kalahandi tahsils, in Bhawanipatna sub-division in Kalahandi district.
9. Nilgiri Community Development Block of Nilgiri tahsil in Nilgiri Sub-division in Balasore district.

SCHEDULED TRIBES OF ORISSA

Major Tribes of Odisha and Their Area

Linguistically, Indian scheduled tribes are mainly classified into four categories. These are: 1) Indo-Aryan speakers, 2) Dravidian speakers, 3) Tibeto-Burmese speakers, and 4) Austric speakers. In Odisha, tribes belong to three language families, except Tibeto-Burmese speakers. The Indo-Aryan language family in Odisha includes Dhelki-Oriya, Matia, Haleba, Jharia, Saunti, Laria and Oriya spoken by Bathudi and the acculturated sections of Bhuyans, Juang, Kondh, Savara, Raj Gond etc. The Austric language family includes eighteen tribal languages namely, Birija, Parenga, Kisan, Bhumiji, Koda, Mahili Bhumiji, Mirdha-Kharia, Ollar Gadaba, Juang, Bondo, Didayee, Karmali, Kharia, Munda, Ho, Mundari and Savara. And within the Dravidian language family there are nine languages in Odisha, namely, Pengo, Gondi, Kisan, Konda, Koya. Parji, Kui, Kuvi and Kurukh.

Habitat: A major portion of the tribal habitat is hilly and forested area. Tribal villages are generally found in areas away from the alluvial plains and close to rivers.

Economy: Economy of Tribal Community is mainly based on forest and its products. Cultivation, food gathering, hunting and fishing are the backbone of tribal economy. Tribes like Santhal, Munda, Oraon and Gond are settled agriculturists. Tribes like Juanga, Bhuyan, Saura, Dharua and Bonda practice shifting cultivation. Among the tribes Koyas are cattle-breeders. Tribes like Mohali & Lohars practice crafts of basket-weaving and tool making.

Tribal Culture: Culture of Odisha tribes is indigenous in nature. Their lifestyles are deeply related with nature. They are usually superstitious people. Each tribal village manages its internal affairs very smoothly through the village council of elders and the youth dormitory. In their culture the Ojha or doctor who prescribes medicines for the sick and evil spirits, occupies a position of honour. The tribes of Odisha observe ethnic festivals related to family like birth, death or a daughter attaining puberty. At the time of harvest festival, the entire community gets involved. In this occasion, main attractions are *mohua* liquor, roasted game on the fire and a night of song, dance and celebrations.

Types: Taking into consideration the general features of their eco-system, traditional economy, supernatural beliefs and practices, and recent 'impacts of modernization', the tribes of Odisha can be classified into six types, such as: (1) Hunting, collecting and gathering type, (2) Cattle- breeder type, (3) Simple artisan type, (4) Hill and shifting cultivation type, (5) Settled agriculture type and (6) Industrial urban worker type according to Bailey (1960).

1. **Hunting, Collecting and Gathering Type:** This type of Tribes like, Kharia, Mankidia and Birhor, live in the forests of Mayurbhanj, Keonjhar and Sundargarh districts of Odisha. They mainly depend on forest resources for their livelihood by practicing hunting, gathering and collecting. They live in small temporary huts made out of the materials found in the forest.
2. **Cattle- Breeder Type:** The tribal community, 'Koya' which belongs to the Dravidian linguistic group inhabits in Malkangiri district is the lone cattle-breeder tribal community of Odisha.
3. **Simple Artisan Type:** These types of Tribes like Mahali and Kol-Lohara practise crafts like basketry and black-smithy respectively In Odisha. The Loharas with their traditional skill and primitive tools manufacture iron and wooden tools for other neighbouring tribes. Similarly the Mahalis manufacture for other communities.
4. **Hill and Shifting Cultivation Type:** This type of Tribes practices hill and shifting cultivation. In northern Odisha the Juang and Bhuyan, and in southern Odisha the Kondh, Saora, Koya, Parenga, Didayi, Dharua and Bondo practise shifting cultivation. Shifting cultivation is a regulated sequence of procedure designed to open up and bring under cultivation patches of forest lands, mainly on hill slopes.
5. **Settled Agriculture Type:** The tribal community of Santal, Munda, Ho, Bhumij, Oraon, Gond, Mirdha, Savara etc. are settled agriculturists, though they supplement their economy with hunting, gathering and collecting. In general, they raise only one crop during the monsoon, and therefore have to supplement their economy by other types of subsidiary economic activities.
6. **Industrial Urban Worker Type:** A part of various advanced tribal communities like Santal, Munda, Ho, Oraon, Kisan, Gond etc have moved to mining, industrial and urban areas for earning a secured living through daily wage-labour. In the tribal belt of Odisha during the past three decades the

Table 1.

Sl No	List of Scheduled Tribes notified (after addition/deletion) as per the Scheduled Castes and Scheduled Tribes Order, 1950 as amended by Modification Order, 1956, Amendment Act, 1976 and The Scheduled Castes and Scheduled Tribes Order (Amendment) Act 2002 No. 10 dated 8.1.2003 of Ministry of Law & Justice republished by the Notification No. 7799/ L dated 7.6.2003 of Law Deptt, Govt. of Orissa.
1	Balata, Bhakta
2	Baiga
3.	Banjara, Banjari
4.	Bathudi, Bathuri
5.	Bhottada, Dhotada, Bhotra, Bhatra, Bhattara, Bhotora, Bhatara
6.	Bhuiya, Bhuyan
7.	Bhumia
8.	Bhumij, Teli Bhumij, Haladipokhria Bhumij, Haladi Pokharia Bhumija, Desi Bhumij, Desia Bhumij, Tamaria Bhumij
9.	Bhunjia
10.	Binjhal, Binjhwar
11.	Binjhia, Binjhoa
12.	Birhor
13.	Bondo Poraja, Bonda Paroja, Banda Paroja
14.	Chenchu
15.	Dal
16.	Desua Bhumij
17.	Dharua, Dhuruba, Dhurva
18.	Didayi, Didai Paroja, Didai
19.	Gadaba, Bodo Gadaba, Gutob Gadaba, Kapu Gadaba, Ollara Gadaba, Parenga Gadaba, Sano Gadaba
20.	Gandia
21.	Ghara
22.	Gond, Gondo, Rajgond, Maria Gond, Dhur Gond
23.	Ho
24.	Holva
25.	Jatapu
26.	Juang
27.	Kandha Gauda
28.	Kawar, Kanwar
29.	Kharia, Kharian, Berga Kharia, Dhelki Kharia, Dudh Kharia, Erenga Kharia, Munda Kharia, Oraon Kharia, Khadia, Pahari Kharia
30.	Kharwar
31.	Khond, Kond, Kandha, Nanguli Kandha, Sitha Kandha, Kondh, Kui, Buda Kondh, Bura Kandha, Desia Kandha, Dungaria Kondh, Kutia Kandha, Kandha Gauda, Muli Kondh, Malua Kondh, Pengo Kandha, Raja Kondh, Raj Khond
32.	Kissan, Nagesar, Nagesia
33.	Kol
34.	Kolah, Loharas, Kol Loharas
35.	Kolha
36.	Koli Malhar

continued on following page

Table 1. Continued

37.	Kondadora
38.	Kora, Khaira, Khayara
39.	Korua
40.	Kotia
41.	Koya, Gumba Koya, Koitur Koya, Kamar Koya, Musara Koya
42.	Kulis
43.	Lodha, Nodh, Nodha, Lodh
44.	Madia
45.	Mahali
46.	Mankidi
47.	Mankirdia, Mankria, Mankidi
48.	Matya, Matia
49.	Mirdhas, Kuda, Koda
50.	Munda, Munda Lohara, Munda Mahalis, Nagabanshi Munda, Oriya Munda
51.	Mundari
52.	Omanatya, Omanatyo, Amanatya
53.	Oraon, Dhangar, Uran
54.	Parenga
55.	Paroja, Parja, Bodo paroja, Barong Jhodia Paroja, Chhelia Paroja, Jhodia Paroja, Konda Paroja, Paraja, Ponga Paroja, Sodia Paroja, Sano Paroja, Solia Paroja
56.	Pentia
57.	Rajuar
58.	Santal
59.	Saora, Savar, Saura, Sahara, Arsi Saora, Based Saora, Bhima Saora, Bhimma Saora, Chumura Saora, Jara Savar, Jadu Saora, Jati Saora, Juari Saora, Kampu Saora, Kampa Soura, Kapo Saora, Kindal Saora, Kumbi Kancher Saora, Kalapithia Saora, Kirat Saora, Lanjia Saora, Lamba Lanjia Saora, Luara Saora, Luar Saora, Laria Savar, Malia Saora, Malla Saora, Uriya Saora, Raika Saora, Sudda Saora, Sarda Saora, Tankala Saora, Patro Saora, Vesu Saora
60.	Shabar Lodha
61.	Sounti
62.	Tharua, Tharua Bindhani

(Names in 'bold' indicate that they were enlisted/ modified subsequently)
(Source: Ministry of SC, ST development, Odisha)

process of industrial urbanization has been accelerated through the operation of mines and establishment of industries and these types of tribes are having good contribution on it.

TRIBAL TOURISM

Tribal tourism = culture tourism + ethnic tourism + nature tourism + support to tribal community.

Tribal tourism means promoting tourism in tribal areas to ensure tribal's in these areas shall be benefited in different ways like:

1. Utilize available natural resources for tourism.
2. Establish income generation techniques within community.
3. Ensure tribal will be benefited from tourism in tribal area instead of other utilizing tribal areas for their individual benefit.

For promoting tribal areas for tourism, engaging tribal's for tourism related business activities following things will help to tribal community:

1. Income to local tribal's in sustainable manner.
2. Financial support for students for their future.
3. Interactions & communication will improve the confidence & skill of local tribals.
4. Local tribal community can experience various peoples, so they can find correct way of development from them.
5. The economy of local tribal's will be improve in long run.

TRIBAL ECONOMY

Historically, the economy of indigenous tribes was agriculture, hunting, collecting and gathering of natural food. At present also a large number of tribal populations in rural and remote areas are still depend upon on forests for their livelihood. Belsky & Jill (1999), in the forest based tribal economy, provisions for basic necessities like food, fuel, housing material, etc. are made from the forest products. In India, more than 60 percent of the tribal population resides within 5 km distance from the forest. A large percentage of tribals that live close to forest areas comprise the most disadvantaged section of society based on per capita income, literacy rate, health status and basic amenities.

Another study of Behura & Mohanty (2006), The fact is that this tribal region, despite being resource rich, inhabits the poorest people who have not been benefited from social and economic development of the region and in many cases have been harmed from displacement and growth entails. The Odisha along with other tribal states of Chhattisgarh and Jharkhand are the most mineral bearing states of the country who together account for 70 per cent of India's coal, 80 percent of high grade iron ore, 60 percent of bauxite and nearly all of the chromites reserves. The forest cover in this region is also much higher than the National average. As an example: In the tribal district of Keonjhar of Odisha, which produces maximum quantity of Iron ore and 39 percent of this area has forest but 60 percent of its population is living below poverty line and the child mortality is 20 percent higher than the state average. The major consideration is that poverty and underdevelopment of this tribal region is not an inherent phenomenon but is an induced one. Though the mineral wealth did not mean much to them, water, forest and land (jal, langal, jameen) was the pivot around which the entire self sufficient tribal economy revolves.

According to Dube (1977), In democratic country like India, poverty alleviation has been one of the guiding principles of the planning process. The various dimensions of poverty relating to food, health, education and other basic services have been gradually initiated in the planning process. A number of antipoverty programmes have been launched from time to time to reduce the incidence of poverty in the country. Still majority of these poor Tribal communities are struggling for their survival.

FINDINGS

1. In Odisha, the economy of the tribal's in many parts is still based on survival compulsions. The ratio of families living below poverty line is very high and a significant area is in the grasp of chronic poverty.

Table 2.

Number of Districts in States/ UTs with more than 50% of ST Population	
State/UT	**No. of Districts**
NE States	41
Orissa	7
Chhattisgarh	5
Madhya Pradesh	5
Gujarat	4
Jharkhand	3
Himachal Pradesh	2
Jammu & Kashmir	2
Rajasthan	2
Andaman & Nicobar	1
Dadra & Nagar Haveli	1
Lakshadweep	1
Maharashtra	1
All-India	75

Source:Census of India 2001

2. The contribution of the forests in their household economy has drastically reduced.
3. There are high rate of illiteracy especially among female population and primitive tribal groups of Odisha.
4. Heavy dropout rate of nearly 80% in the primary education.
5. Lack of suitable infrastructure facilities for upgrading their economy and lifestyles.
6. Lack of suitable self-employment opportunities to the educated youth and dropouts.
7. The artisans and craftsmen belonging to tribal community are experiencing difficulties in collecting the raw material.
8. Lack of proper medical facilities and balanced diet to the tribal people of Odisha.
9. Inadequate awareness of availability of abundant medicinal plants and aromatic plants in Tribal Areas.
10. Non-availability of appropriate and suitable technology for processing cottage and small scale industries to supplement income.
11. In tribal area, there are low-levels of agricultural yields due to non-adoption of improved agricultural methods.
12. Poor marketing infrastructure for selling tribal artifacts reflecting in low-income levels to Odisha tribes.
13. Supply of poor quality of seeds, pesticides and raw materials for agriculture to tribal beneficiaries.
14. Lacks of proper documentation of culture specially their art and craft of various tribal communities of Odisha.
15. Lack of appreciation and encouragement to traditional tribal dance, music etc. from the local bodies.
16. Inadequate information and data on tribal artisans and artists.
17. Corruption and red-tapism.

RECOMMENDATIONS

1. Local Community must be involved for policy framing for development and educational activities.
2. Need for proper orientation of teachers and other administrators, about tribal life and culture and their sustainability.
3. As each region of tribal areas follow their own ritual and agricultural calendar, the concerned tribal research institutes have to prepare these calendars either region-wise or tribe-wise and furnish the same to the education department for taking necessary action.
4. The concerned state governments should provide the necessary infrastructural facilities such as permanent buildings; play grounds, suitable audio-video aids including Television, Radio, Tape-recorders etc.
5. The Medical officer in-charge of the Primary Health Centers or Mobile Medical Units has to visit each tribal village.

6. Locally available medicinal plants, food material, culinary habits of the local tribal's have to be considered.
7. In order to promote literacy and education to boys and girls they have to be provided additional incentives like clothes, school bag, chappals and transport. The concerned Integrated Tribal Development Agency must take up the responsibility and the Government of India, Ministry of Tribal Affairs have to provide the required funds to all the concerned states and Union Territories.
8. The tribal artisans wherever they are living in the forest should be given permits for collecting reasonable amounts of raw-material so as to facilitate them to pursue their traditional occupations like crafts. The forests department has to issue these permits on the basis of the recommendations made by officials of tribal welfare department.
9. Scheduled areas of Odisha are gifted with abundant medicinal and aromatic plants; a comprehensive inventory of these plants region-wise has to be prepared. The forest department and tribal welfare department in collaboration with Indian medicines and Ayurvedic department should organize awareness training courses in different parts of tribal areas.
10. Government of India, Ministry of Tribal Affairs has to formulate National Policy on Tribal Culture, including arts and crafts in consultation with the Department of Culture, Ministry of Human Resources Development, in order to preserve and facilitate continuation of the rich cultural heritage of tribes.
11. Cultural fairs and Festivals at State and National levels may be organized frequently. Tribal artists and folk art performers may be encouraged by organizing training classes in their respective areas of specialization by experts belonging to their communities.
12. The important folk dances should be included in the curriculum of the schools. A post of folk dance teacher preferably belonging to the tribes should be created in order to teach the students folk music, dance and art.
13. Government has to issue orders to all departments, not to take up any kind of work without the consent of the concerned gram sabha. All other Institutions at the village level should be brought under the control of gram sabha only in tribal areas.

CONCLUSION

Odisha is one of the fascinating ethnographic states having larger concentration of tribal population. According to the Census 2011, the total strengths of tribal communities in Odisha come to more than eight million (8,145,081) constituting 22.1 percent of the total population of the State of 41,947,358 and 9.7 per cent of the total tribal population of the country. Malkangiri district has the highest proportion of STs (57.4 per cent) followed by Mayurbhanj (56.6 per cent), Rayagada (55.8 per cent) and Nabarangapur (55 per cent). Puri district has the lowest by proportion of STs (0.3 per cent). Out of sixty two STs, living in Odisha, Khond is the most populous tribe followed by Gond. The other major tribals living in Odisha are Santal, Kolha, Munda, Saora, Shabar and Bhottada, Bhumij, Bhuiya, Oraon, Paroja and Kisan. Languages spoken by them are different from Odia though many of the tribes now understand Odia (*source: Directorate of field publicity, Bhubaneswar*)

The tribal communities of Odisha are at different stages of economic development. According to Chopra (1991),Tribes like, Kharia, Mankidi, Mankidia and Birhor, mainly depend on forest resources for their livelihood by practicing hunting, gathering and collecting. The tribal community, 'Koya' is the lone cattle-breeder tribal community of Odisha. Tribes like Mahali and Kol-Lohara practise crafts like basketry and black-smithy. In northern Odisha the Juang and Bhuyan, and in southern Odisha the Kondh, Saora, Koya, Parenga, Didayi, Dharua and Bondo practise shifting cultivation. The tribal community of Santal, Munda, Ho, Bhumij, Oraon, Gond, Mirdha, Savara etc. are settled agriculturists, though they supplement their economy with hunting, gathering and collecting. A part of various advanced tribal communities like Santal, Munda, Ho, Oraon, Kisan, Gond etc have moved to mining, industrial and urban areas for earning a secured living through daily wage-labour. There are innumerable constraints responsible for lower pace of tribal development process than desired. Some of the major constraints are:(i) Destruction of forests. The forests are not only the source of livelihood for tribes but there is an intricate relationship between tribes and forests in Eco-systems. The depleting forest resources are threatening forthcoming food security for a good portion of the tribal population. (ii) There are lack of awareness among tribal population about various developmental programmes launched by Government of India and States, resulting in their exploitation. (iii) Tribes have been given numerous rights and concessions under various statutes of central as well as State Governments but they remain deprived of the benefits arising out of such statutory provisions due to their ignorance and apathy of enforcing agencies. As per Roy (1965) Therefore suitable, implementable and planned socio-economic development strategy is needed to improve the quality of their life. Hence this study illustrates sustainable socio-economic development to the poorest of the poor tribal community of Odisha who display an interesting profile of the states ethnic diversity.

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Chapter 8
Socio-Economic Impact of Rural Tourism:
A Study on Padmanavpur Village of Odisha

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ABSTRACT

In recent years, rural villages of India have found a place on the tourist map of the world. Not only does rural tourism provide an additional source of income to the villagers but it also helps showcase the rural life and culture of the people, such as art, crafts, and heritage, etc., of the village and community. At present, most of the states of India are facing many challenges for the implementation of rural tourism projects, which stands against achieving the objective of the project set-up by the Ministry of Tourism, Govt. of India. Some of the problems are very grave and need immediate attention of the administration. The Department of Tourism, Govt. of Odisha, has identified eight villages in the state for implementation of the Rural Tourism project. Padmanavapur, a village in South Odisha is one of them. The author has taken this village to study the impact of rural tourism on the socio-cultural life of the local community. The chapter indicates that the village has a high potential for tourists, but due to the delay in implementation and completion of the project, the stakeholders are not getting the desired benefits.

INTRODUCTION

Over the past years, tourism has been received recognition as an economic development tools. This has led to various reactions in government policy and planning. Tourism is gaining increasing attraction also as a tool for the rural policy making. However, transition from rural economics to tourism, brings a great challenge for policy makers in deciding on how to plan and implement the different schemes related to rural tourism. Rural tourism project in the different villages of India have been attracting sizable number of tourist to gain experience the rural culture of local people.

IMPORTANCE OF THE STUDY

Padmanavapur is a small village located in Ganjam district of Odisha. The village is divided into three parts and 104 families are living in this village. All the families belong from Weaving Profession

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and most of the family members are engaged in different weaving activities. The main product of this village is saree which popularly known as Berhampuri Saree. The product has good market in Odisha and outside. The specialties of the weaving here is that till today they are using traditional equipments for weaving for which one can feel the skill of the artisans in the weaving.

LITERATURE REVIEW

As per the definition of the UN-WTO rural tourism product is that gives to visitors personalized contacts, a taste of physical and human environment of country side and as far as possible allow them to participate in the activities traditions and life styles of local people. There are variety of terms used to describe tourism in rural areas including rural life, art culture and heritage at rural location even farm tourism, agri-tourism etc. Oppermann (1997) felt “rural tourism as that occurs in non-urban setting where human activities is present (Beeeton, 2006). Ministry of Tourism, Govt. of India defines “Any form of tourism that show cases the rural life, art, culture and heritage at rural locations there by benefiting the local community economically and socially as well as enabling interaction between the tourists and the locals for more enriching tourism experience can be termed as rural tourism.” Rural tourism is essentially an activity which takes place in the countryside. In India the important role of cooperative society in promoting tourism is yet to be recognized. So tourism through community participation has yet to be popularized in a big way. Some countries are using rural tourism as a development strategy to improve the social and economic well being of rural area. Benefits of rural tourism have been expressed as employment growth and broadening a regions economic base, there is repopulation, social improvement, revitalization of local crafts etc. (Sharpley, 2000).

There is no commonly accepted definition of rural tourism. Some authors view rural tourism as a panacea for rural areas others are more skeptical. The model of Beeton (2006) explain the complex nature of rural tourism. This model indicates the relationship between tourism and rural village. The community is the central theme of the rural tourism concept which cannot be replaced.

Objectives of the Study

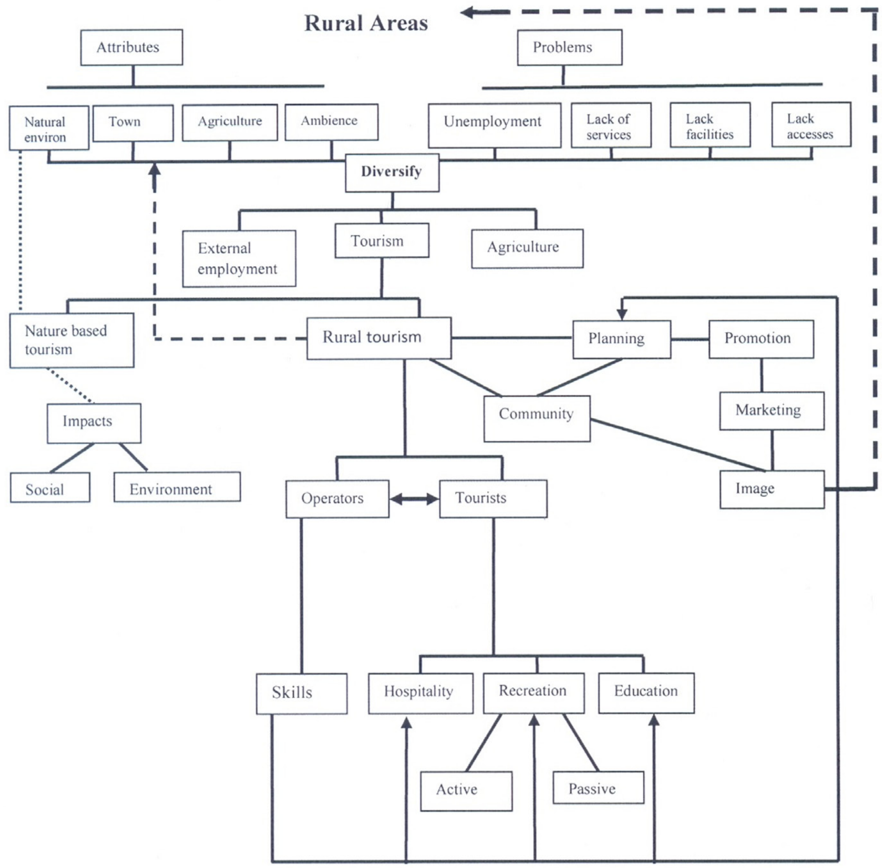
The objectives of the study are:

1. To understood the potential of the study village.
2. To analyze the economic and social impact of rural tourism that have occurred in the weaving village of Padmanavapur.
3. Identify the challenges to the rural tourism development in the study village.
4. To make recommendation on the basis of the finding of the study for implementation of scheme offered by Ministry of Tourism, Govt. of India.

Scope of the Study

The study is confined to examine the implementation of rural tourism scheme of Govt. of India in the weaving village of Padmanavapur. This is an exploration study which attempts to analyze the various factors that affects rural tourism in the village. Further, in general the study is measuring the socio-economic impact of rural tourism village of Odisha. Here the interest was in finding out if there are any particular areas relating to impact of rural tourism that can be given greater attention so that the employment can be generated and service satisfaction can be further developed.

Figure 1. Rural Tourism. Adopted from Beeton (2006, p. 143)



Rural tourism. Adopted from Beeton (2006, p. 143)

Research Methodology

The universe of the present study is Padmanavapur village of Odisha. The empirical data has been collected to understand the pattern of changes taken place in their socio-economic life after the declaration of the village as rural tourism village and partly its implementation of the different components of the project.

For the purpose of the study, a questionnaire was formulated comprising various aspects of socio-economic impact, as detailed under objective. The questionnaire was tested for validity and reliability. The opinion/ attitude on these statements were sought from 97 families of Padmanavpur village on a 5-point Likert-type Scale. The Mean and Standard Deviation were calculated. Factor Analysis and Multiple regression analysis was employed to find the factors of the respondents and the opinion scores.

Hypothesis

The following hypotheses were framed in order to fulfill the objectives of the study.

- H_0 1 The rural tourism project has brought positive changes in the village.
- Ha1 There is no visible impact of rural tourism in the study area.

- $H_0$2 There is a positive impact of Rural Tourism on socio economic life of the community of study area.
- Ha2 There is no positive impact of Rural Tourism on socio economic life of the community of study area.

Data Analysis

Demographic Profile Analysis of Respondents

The 97 respondents contacted for the study in Padmanavpur Village. Out of 97 of respondents 55 male (55.7 percent) and 42 (43.3 percent) were female. The respondents were well distributed among all age groups, majority of the respondents i.e. 37.1 percent belongs to age group 31 to 40 years and 26.61 percent of respondents belong to 41 to 50 years of age group. Out of total population the majority of respondents (36.29 percent) belong to 3 to 4 lakhs per annum income group and 17.74 percent belongs to the income group of 1 to 2 lakhs per annum.

Reliability and Validity

After reviewing of the Table 2 it can be concluded that the items used in the questionnaire are internally homogenous and internally consistent. At the same time all the items are good items, which validated the questionnaire. Therefore, all the variables in the questionnaire are significant for the study.

The Table 2 reveals that each variables used in this research is a good measurement. The cronbach alpha value of all the 20 variables used for the purpose of the study of the socio-economic impact of rural tourism are more than 0.50 which is a good measurement thereby validating the questionnaire.

Factor Analysis

The table below shows the output of principal data extraction of various factors under the study. The KMO value was coming greater than 0.5 reveals that all the 20 variable and 97 sample size are adequate to the factor analysis.

The Table 4 shows the total variance (in percentage) explained by each of the 6 factors and six factor are extracted from this 20 variables undergoes in the study. The cumulative variance of all factors has come out to be 73.504% which was better than the expected/ desired average of 60%. The system stops the iteration at 6 factors.

The table below shows the factor loadings (correlations) of all the 20 variables under the study in terms of 6 factors. The factor loading provide an indication of which original variables are correlated with each factor and the extent of the correlation. This information was used later to identify and label the unobservable factors subjectively. The results of the corresponding calculation yield the composition of each of the 6 factors, which are discussed below:

- **Factor 1:** Roads have been developed for tourists, Learn new things from tourists, Villages are becoming crowded, Tourists don’t know how to behave with villagers, Garbage has increased, Vehicular Pollution has increased
- **Factor 2:** Vehicular Pollution has increased, Bad behavior such as theft, alcoholism, drug abuse have increased with tourism, more cleanliness.
- **Factor 3:** Rural Tourism created job in your village, Incomes of villagers have increased, Prices have increased with coming of tourists, Proud to identify your village as rural tourism village, and Villagers help to tourists.
- **Factor 4:** No scheme for villagers to involve in tourism

Table 1. Demographic profile of the respondents

Category	Frequency	Percent	Cumulative Percent
Gender			
Male	55	56.7	56.7
Female	42	43.3	100.0
Total	**97**	**100.0**	
Age			
Below 18	12	12.4	12.4
19 - 35	39	40.2	52.6
36 - 50	37	38.1	90.7
51 +	9	9.3	100.0
Total	**97**	**100.0**	
Marital Status			
Married	64	66.0	66.0
Unmarried	33	34.0	100.0
Total	**97**	**100.0**	
Education			
Illiterate	7	7.2	7.2
Matric	56	57.7	64.9
10+2	9	9.3	74.2
Graduate	6	6.2	80.4
Other	19	19.6	100.0
Total	**97**	**100.0**	
Occupation			
Farming	0	0.0	0.0
Dairying	1	1.0	1.0
Tourism	0	0.0	0.0
Other	96	99.0	100.0
Total	**97**	**100.0**	

Table 2. Reliability statistics

Cronbach's Alpha	N of Items
.705	20

- **Factor 5:** No variable loaded here
- **Factor 6:** Tourism disturbing your old age tradition

Table 3. Kaiser Meyer-Olkin measure

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.751
Bartlett's Test of Sphericity	Approx. Chi-Square	1191.619
	df	190
	Sig.	.000

The multiple regression result presented in the ANOVA table or F-test (Table 6) reveals there was a impact of rural tourism for the development of socio-economic life of the rural community of the study village, which was quite significant and it is significant at 1 percent level. The R square value of the regression model was coming 0.786 which means all the 20 variables measures the impact around 78.6 percent which was also a good indicator.

Table 7 of the multiple regression coefficients indicates that tolerance is more than .20 and VIF is less than 5 also which satisfy the multicollinearity test i.e. there is no multicollinearity exists in the above regression model. (A tolerance of less than 0.20 or 0.10 and/or a VIF of 5 or 10 and above indicates a multicollinearity problem (but see O'Brien 2007).[11])

In the below regression model, the model fits the data well, the overall R^2 value will be high, and the corresponding P value will be low (the great fit is unlikely to be a coincidence). In addition to the overall P value, multiple`1regressions also reports an individual P value for each independent variable. A low P value here means that this particular independent variable significantly improves the fit of the model. It is calculated by comparing the goodness-of-fit of the entire model to the goodness-of-fit when that independent variable is omitted.

Table 4. Total variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.478	32.389	32.389	6.478	32.389	32.389	5.516	27.581	27.581
2	2.357	11.786	44.176	2.357	11.786	44.176	2.238	11.189	38.770
3	1.758	8.790	52.966	1.758	8.790	52.966	2.059	10.297	49.067
4	1.639	8.195	61.160	1.639	8.195	61.160	2.034	10.172	59.238
5	1.322	6.611	67.771	1.322	6.611	67.771	1.550	7.750	66.988
6	1.147	5.733	73.504	1.147	5.733	73.504	1.303	6.516	73.504
7	.978	4.890	78.393						
8	.842	4.209	82.602						
9	.668	3.341	85.944						
10	.477	2.386	88.330						
11	.434	2.171	90.500						
12	.404	2.022	92.522						
13	.332	1.660	94.182						
14	.278	1.390	95.572						
15	.264	1.318	96.889						
16	.219	1.095	97.984						
17	.153	.767	98.751						
18	.095	.474	99.225						
19	.083	.417	99.642						
20	.072	.358	100.000						

Extraction Method: Principal Component Analysis.

FINDINGS

Negative

- Price of essential commodities have been increased.
- Theft, alcoholism etc. have increased.
- Village is becoming crowded.
- Disturbing the old age traditions.

Positive

- Income of villagers have increased.
- Organizing cultural activities for tourist have increased.
- More jobs have been created.
- Learn new things from tourist.
- Villagers help tourists.
- Villagers want to be involved in different tourism activities.
- Feel proud as in habitant of rural tourism village.

CONCLUSION

From the above findings the two hypotheses which have declared in the study is coming true. The main objective of the present paper is to determine impact and challenges of the rural tourism in the

Table 5. Rotated component matrix

Sl. No.	Items	Component					
		1	2	3	4	5	6
1	Rural Tourism created job in your village	-0.652	0.245	**0.538**	0.153	-0.022	0.078
2	Incomes of villagers have increased	-0.68	0.217	**0.538**	0.262	0.038	0.119
3	Prices have increased with coming of tourists	-0.246	0.09	**0.796**	-0.011	0.119	0.034
4	Roads have been developed for tourists	**0.881**	-0.13	0.038	-0.187	-0.047	0.034
5	Facilities are regularly used by villagers	-0.305	**0.807**	0.004	-0.15	0.192	-0.09
6	Proud to identify your village as rural tourism village	-0.219	-0.145	**0.508**	0.408	-0.322	0.331
7	Organize cultural activities for tourists quite often	-0.133	**-1.097**	1.012	0.966	-0.836	0.752
8	Learn new things from tourists	**0.654**	0.085	-0.276	0.123	0.106	-0.121
9	Tourism disturbing your old age tradition	-0.107	0.455	-0.205	0.303	-0.226	**0.603**
10	Villagers help to tourists	0.065	-0.421	**0.526**	0.101	-0.33	-0.109
11	No scheme for villagers to involve in tourism	-0.141	0.114	0.282	**0.624**	0.26	0.132
12	NGOs are working for tourists	-0.095	-0.292	0.688	**0.664**	0.387	-0.262
13	NGO is helpful	-0.112	-0.462	0.932	**0.824**	0.630	-0.498
14	Tourists are using things that belonged that villagers	-0.129	-0.633	1.175	**0.985**	0.873	-0.733
15	Villages are becoming crowded	**0.881**	0.173	-0.099	-0.054	-0.027	-0.013
16	Bad behavior such as theft, alcoholism, drug abuse have increased with tourism	-0.001	**0.403**	-0.019	-0.026	-0.116	-0.016
17	Tourists don't know how to behave with villagers	**0.749**	0.155	0.061	-0.216	-0.024	-0.251
18	Garbage has increased	**0.907**	-0.093	-0.17	-0.05	0.021	-0.051
19	Vehicular Pollution has increased	**0.941**	-0.047	-0.083	-0.129	0.004	-0.01
20	More cleanliness	0.252	**0.827**	0.142	-0.027	0.052	0.018

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 12 iterations.

Table 6. Analysis of variance of regression model (impact of rural tourism)

Items	Sum of Squares	df	Mean Square	F	Sig.
Regression	28.577	20	1.429	13.932	.000[b]
Residual	7.795	76	.103		
Total	36.371	96			
a. Dependent Variable: Impact	*R Square*	*0.786*	*Std. Error*	*0.32*	

study village. This empirical study reveals that the socio-economic impact of rural tourism on Padmanavpur textile village has many positive indications for improving the livelihood of the villagers. If sustained effort will be made to address the said parameters, there can be significant change in improvement of socio-economic level of the villager. Rural tourism is considered to be one of the multi-dimensional activities essential to the local area not only rural villages in Odisha, but all the nations of the world. However Odisha has many potential in development of tourism

Table 7. Multiple regression co-efficient (impact of rural tourism)

Sl. No.	Items	Unstandardized Coefficients		Standardized Coefficients	T Test	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
	(Constant)	-.460	.227		-2.025	.046		
1	Rural Tourism created job in your village	.026	.039	.084	.685	.002*	.289	4.304
2	Incomes of villagers have increased	.010	.053	.029	.186	.041**	.214	4.776
3	Prices have increased with coming of tourists	.088	.042	.170	2.123	.037**	.439	2.277
4	Roads have been developed for tourists	.054	.040	.161	1.355	.179	.299	4.023
5	Facilities are regularly used by villagers	.058	.042	.138	1.378	.172	.281	3.563
6	Proud to identify your village as rural tourism village	.102	.030	.285	3.418	.001*	.406	2.465
7	Organize cultural activities for tourists quite often	.087	.039	.161	2.220	.029**	.533	1.875
8	Learn new things from tourists	.089	.032	.221	2.748	.007*	.437	2.290
9	Tourism disturbing your old age tradition	.100	.036	.192	2.759	.007*	.580	1.724
10	Villagers help to tourists	.093	.027	.238	3.515	.001*	.615	1.626
11	No scheme for villagers to involve in tourism	.082	.029	.197	2.830	.006*	.582	1.718
12	NGOs are working for tourists	-.007	.041	-.014	-.168	.867	.392	2.553
13	NGO is helpful	.025	.049	.040	.519	.605	.474	2.109
14	Tourists are using things that belonged that villagers	.012	.030	.028	.400	.690	.585	1.709
15	Villages are becoming crowded	.106	.040	.338	2.664	.009*	.275	4.712
16	Bad behavior such as theft, alcoholism, drug abuse have increased with tourism	.079	.032	.156	2.471	.016**	.709	1.411
17	Tourists don't know how to behave with villagers	.052	.029	.160	1.788	.078	.354	2.826
18	Garbage has increased	.089	.046	.282	1.918	.059	.231	4.662
19	Vehicular Pollution has increased	-.047	.051	-.148	-.928	.356	.211	4.007
20	more cleanliness	.053	.036	.118	1.454	.150	.428	2.338

*Significant at 1 percent level, ** Significant at 5 percent level, VIF: Variance Inflation Factor

especially rural tourism but development of rural tourism in the state is still in its nascent stage. Odisha has perfect opportunities to enhance its rural tourism but it needs coordinated efforts from all the stakeholders. This paper showed a brief conception of rural tourism and its barriers in the rural areas of Padmanavpur. The main approaches which suggested in this study are appropriate planning and implementation of the project for the benefit of the rural community. So there is need to develop and implement the strategies for tourism infrastructure, community involvement, capacity building for the villagers as well as service providers, visitor management and conservation of the cultural traditions of the village Hence this study can be a motivation for futures to investigate the impacts of rural tourism for tourism development in the local areas of Odisha.

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KEY TERMS AND DEFINITIONS

Rural Tourism: The development of infrastructure in rural areas having potential for tourism is being supported under the existing scheme of destination development. The objective is to showcase rural life, art, culture, and heritage at rural locations and in villages, which have core competence in arts and crafts, handloom, and textiles as also an asset base in the natural environment.

Socio Economic Impact: The intention is to benefit the local community economically and socially as well as enable interaction between tourists and the local population for a mutually enriching experience. Under this scheme, the thrust is to promote village tourism as the primary tourism product to spread tourism and its socio-economic benefits to rural and new geographic regions, thereby stopping the exodus from rural to urban areas. The Village Level Council (VLC) is the interactive forum for local community participation in work plan implementation, further supported by other community level institutions.

Chapter 9
Investigation into Loan Default Problems in Infrastructure, Real Estate, and Constructions Sectors facing the New Generation Private Sector Banks in India

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ABSTRACT

The rating agency Standard and Poor's recently warned that India could become the first of the BRIC economies to lose its investment-grade status because of the slowing down of growth prospect in the face of bad loans. Against the backdrop of the loan defaults in the real estate and infrastructure sectors leading to the slackening of economic growth, which caused downgradation of India's international credit rating, this chapter aims to inquire into the modus operandi of credit rating by banks and rating agencies, the impact of economic downturn on the behaviors of borrowers as well as lenders, mode of calculation of default probability, and the unaddressed needs of academic and professional research.

BACKGROUND

Livemint and the Wall Street Journal (2013) reported that (a) many of the infrastructure projects would hit their project completion deadlines from the next fiscal year onwards when they would have to start making the loan repayments and (b) outstanding bank loans to infrastructure firms rose to Rs.6.9 trillion as of 31 December 2012 from Rs.5.96 trillion a year ago followed by growth of such credit slowing down to 16% in the 12 months that ended in December 2012 from 20.5%. Dun and Bradstreet (2012) found that many retailers on the supply side are slowing down their expansion plans and many real estate developers are falling behind schedules

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in their shopping mall projects considering the credit crunch, because the economic slowdown has deeply affected the Indian organized retail sector in terms of deceleration in retail sales growth, footfalls, store expansions, employment rates and most importantly, profitability. In a similar note of tune, Indian Express (2010) reported that RBI had hiked the risk weight on commercial real estate project loans to 1 per cent from 0.4 per cent. It cited more than 40 per cent increase in loans to commercial real estate and also added a note of caution on the fact that nearly 14 per cent of commercial realty assets were restructured by banks. In industry-wise chronological break-up CRISIL (2011) found that the number of defaults in real estate doubled in December 2011 over last year. ICRA (2011) maintained that historically banks have been taking exposure to state power projects as well as independent power projects but many banks approaching the exposure cap on lending to the power sector and given the concerns hovering over the prospects of the sector itself, the pace of growth of credit to this segment could slow down. Standard & Poor's (2012) has warned that India could become the first of the BRIC economies to lose its investment-grade status because of slowing down of the growth prospect in the face of bad loans (Pandey & Shah, 2012).

NATURE OF THE PROBLEM

Economy wide loan defaults reflect slackening economic growth e.g. rising non-performing assets of the Indian banking industry caused downgradation of India's credit rating announced by the international credit rating agencies. This study aims to investigate into the credit portfolios of six new generation private sector banks in India in the context of downgradation of credit rating of the defaulting borrowers in these sectors. These borrowers fulfilled the initial credit score requirements at the time of applying for loans.

OBJECTIVES

This chapter intends to have insight into

1. The *modus operandi* of credit rating by banks and rating agencies.
2. The impact of economic downturn on the behaviors of borrowers as well as lenders.
3. Mode of calculation of default probability.
4. The unaddressed needs of academic and professional research.

OVERVIEW OF LITERATURE

The development of the literature on credit risk was reflected in several papers published in the Journal of Banking and Finance, a concise summary of which was fortunately written by Altman and Saunders (1998). They also mentioned a number of driving factors like disintermediation by large borrowers and declining value of real assets emerging thenceforth contributing to a greater chance of credit default. In the context of the circumstances similar to what is currently prevailing in India that emerged in 2000-2001 in USA, Altman (2002) applied Z Score Model and MKV's EDF Model. One of the most recent developments in the credit risk measurement literature is an effort by Dong, Chiara, Kokkaew, and Xu (2012) in developing a copula based model to assess the project credit portfolio by implementing variance model and the double stochastic intensity model. In India, Jayadev (2006) took note of the banks lending on the foundation internal rating-based models which differ widely across banks. Das and Ghosh (2007) believed that non performing loans are the result of both macroeconomic and microeconomic factors. Accordingly they built up an econometric model to explain the fraction of nonperforming loans with the macroeconomic factors like the growth rate of GDP (Gross Domestic Product) and micro level factors like real loan growth rate.

Thiagarajan, Ayappan, and Ramchandran (2011) revealed that (i) the lagged nonperforming assets had a strong and statistically significant positive influence on the current non-performing assets, (ii) there is a significantly inverse relationship between the GDP and the credit risk for both public and private sector banks and (iii) both macroeconomic and bank specific factors play crucial role in determining the credit risk of the commercial banking sector. Again, Mahanta and Kakati (2012) tested the effectiveness of the internal credit rating models of Indian banks and found these models performing poorly.

CONCEPTUAL FRAMEWORK

Since nationalization in 1969 the Indian banks are committed to economic growth and development of the country. Infrastructure and real estate project loans constitute a sizeable fraction in the loan portfolio of the banks. These are likely to give birth to concentration risk. Credit risk of loans arises to all types of banks because of the possibility that promised cash flows on the loans will not be paid in full but in general, the banks that make loans with long maturities are more exposed than are the banks that make loans with short maturities. In the event of default the bank earns zero interest on the loan and may lose all or part of the principal lent, depending on its ability to claim some of the borrower's assets through legal bankruptcy and insolvency proceedings. Accordingly a key role of the banks involves screening and monitoring loan applicants to ensure that the bankers fund the most creditworthy loans (Saunders & Cornett, 2008). This means the banks exposed to infrastructure and real estate loans are facing risk since these loans are by and large of long duration. So before granting credit every bank needs to assess the credibility of the borrower. They need to calculate expected loss, default probability and exposure at default, and calibrate the default probabilities to ratings (Bluhm, Overbeck, & Wagner, 2003). Academics developed the traditional models like linear discriminant models, linear probability models and logit models as well as the new generation models like term structure approach, mortality rate, RAROC and option model to calculate credit risk (Saunders & Cornett, 2008). Some advanced methods are Reduced Form Models, Value at Risk Approach, Macro Simulation Approach combined with stress testing on all of above models (Saunders and Allen, 2002). Stress testing means giving shock to input data, e.g. 0.5 times of the standard deviation and then observe the fluctuations in the output data in a process of simulation.

A loan is an asset for a bank and is supposed to work as a source of income. In terms of the Indian banking regulator Reserve Bank of India (2012a):

1. If a commercial real estate loan ceases to generate income for the bank in terms of interest and/ or installment of principal remain overdue for a period of more than ninety days, the loan is called non-performing asset (NPA). It becomes a loss asset where loss has been identified by either of the bank, external auditors and the RBI inspector. In this case either the exposure amount is not written off fully. The asset is considered uncollectible and may be of such little value that its continuance as a bankable asset is not warranted although there may be some recovery value.
2. With effect from 31 March 2005, if a loan remained NPA for a period less than or equal to 12 months it would be termed as substandard asset. These are the loans where the current net worth of the borrower/ guarantor or the current market value of the security charged is not enough to ensure recovery of the dues to the banks in full or alternatively these

loans have well defined credit weaknesses that obstruct the liquidation of the loan and bear the distinct possibility that the banks will sustain some loss, if deficiencies are not corrected.

3. With effect from March 31, 2005 if a loan remains in the substandard category for one year it is termed as ‘doubtful’ because it demonstrates all the weaknesses of a substandard asset and such weaknesses make highly questionable and improbable collection or the act of liquidation in the current circumstances.

THE CIRCUMSTANCES

The year wise ratios of net NPAs to net advances for all the six banks are given in Table 1 and the same has been illustrated in bar diagrams of Figure 1.

The measures of gross NPAs, net NPAs, gross advances and net advances are provided in Annex – 1 of Reserve Bank of India (2012a).

The sector wise classification of NPA was not available before 2010 for these banks. The year wise exposures to commercial estates of all the six banks are given in Table 2 and the same has been illustrated in line diagrams of Figure 2.

The NPAs of a bank imply poor quality of assets. Reserve Bank of India (2012b) observed that inadequate credit appraisal during the boom period of 2003-07 coupled with the adverse economic situation in the domestic as well as the external fronts resulted in the current increase in the NPAs which is why the asset quality of the banking system has deteriorated significantly during the year 2011-12 after a period of sustained improvement. In sharp contradiction of above, Reserve Bank of India (2011) declared improvement in the capital base, asset quality and profitability with both gross and net NPA ratios declining in comparison with the previous year.

The ICICI Bank had the largest exposure to commercial real estates. Though Yes Bank came to the birth much later than IndusInd Bank, the former has more credit risk appetite than the latter as evidenced by Table 2.

INTERNAL CREDIT RISK ASSESSMENT BY BANKS

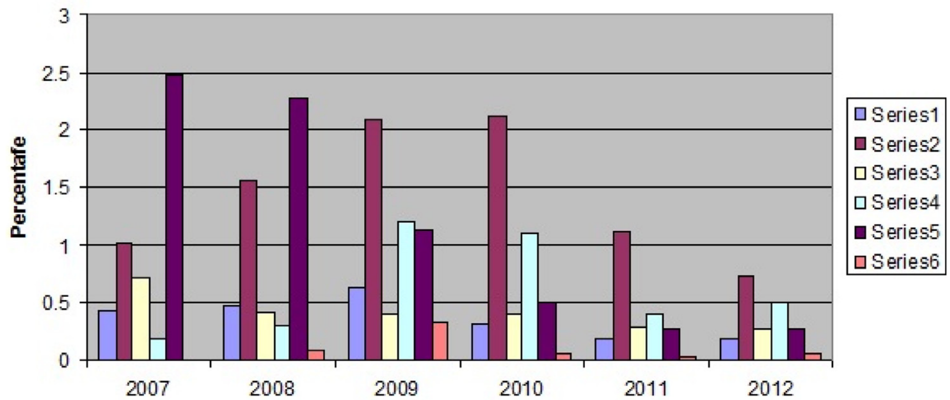
Large banks have sophisticated credit risk assessment methods. They charge higher price to more risky borrowers. But small banks charge a flat price to the borrowers across credit risk profiles. This encourages the borrowers with higher credit rating turn away from small banks. The size of a bank means the sum of its businesses – deposits and loans. A large bank means larger volumes of businesses than the small banks. Price means the rate of return or yield to maturity (YTM),

Table 1. Ratios of net NPAs to net advances (%)

Year	HDFC Bank	ICICI Bank	Axis Bank	Kotak Mahindra Bank	IndusInd Bank	Yes Bank
2007	0.43	1.02	0.72	0.18	2.47	0
2008	0.47	1.55	0.42	0.3	2.27	0.09
2009	0.63	2.09	0.4	1.2	1.14	0.33
2010	0.31	2.12	0.4	1.1	0.5	0.06
2011	0.19	1.11	0.29	0.4	0.28	0.03
2012	0.18	0.73	0.27	0.5	0.27	0.05

Sources: Annual Reports of the banks

Figure 1. Bankwise net NPA ratios



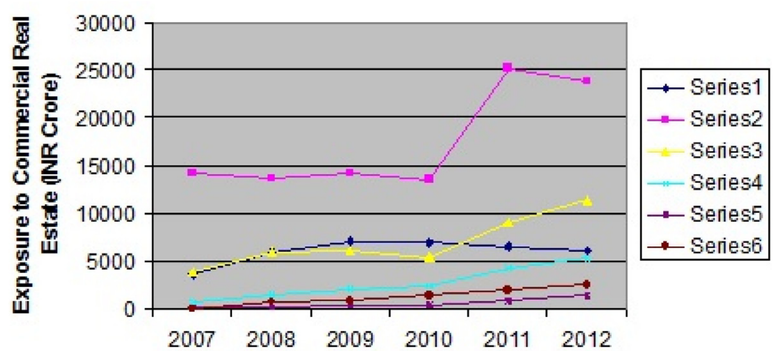
Series1: HDFC Bank, Series2: ICICI Bank
Series 3: Axis Bank, Series 4: Kotak Mahindra Bank
Series 5: IndusInd Bank, Series 6: Yes Bank
Source: Annual Reports of the Banks

Table 2. Exposures to commercial real estate (INR Crore[1])

Year	HDFC Bank	ICICI Bank	Axis Bank	Kotak Mahindra Bank	IndusInd Bank	Yes Bank
2007	3552.72	14250.9	3885.16	635.82	78.73	0
2008	5902.01	13733.6	5914.04	1454.58	153.69	684.1
2009	7099.65	14244.2	6090.45	2081.81	448.64	844.9
2010	6945.38	13519.9	5373.73	2328.91	452.96	1349.8
2011	6454.23	25094.9	9029.16	4273.87	882.79	1935.8
2012	6146.9	23790	11292.31	5216.39	1377.48	2458.5

Sources: Annual Reports of the banks

Figure 2. Temporal movement of exposure to commercial real estate



Series1: HDFC Bank, Series 2: ICICI Bank
Series 3: Axis Bank, Series 4: Kotak Mahindra Bank
Series 5: IndusInd Bank, Series 6: Yes Bank
Source: Annual Reports of the Banks

which a bank earns on a loan. It is different than the nominal rate of interest. Chakrabarty (2013) covered these points.

As per Basel Committee on Banking Supervision (2000) a well-structured internal risk rating system is a good means of differentiating the degree of credit risk in the different credit exposures of a bank because it allows more accurate determination of the overall characteristics of the credit portfolio, concentrations, problem credits, and the adequacy of loan loss reserves. The above committee holds on that an internal risk rating system categorizes credits into various classes designed to take into account gradations in risk.

At this stage it is imperative to illustrate with a simple example how a potential borrower is classified in some credit category. Let us consider a case of personal loan and a case of corporate loan. Let us suppose there are two applicants for personal loan – A and B and the bank's internal retail credit rating model has two parameters - annual income and ratio of annual savings to annual income each with five points scale as shown in Table 3.

Table 3. Two parameters of the bank's internal credit rating model applicable to personal loans

Let us suppose individual A has annual income 55 million INR and saves 20% per annum while individual B has annual income 45 million but saves 30%. Here credit score for A is 4 + 2 = 6 while credit score for B is 3 + 3 = 7. So B is classified into higher credit category relative to A.

Now let us consider there are two corporate applicants for corporate loan – X and Y and the bank's internal retail credit rating model has two parameters - annual net profit and annual rate of return on equity each with five points scale as shown in Table 4. For the sake of simplicity but maintaining brevity little alterations are done in Table 3 in order to create Table 4.

Let us suppose X has annual net profit 55 billion INR and earns a return on equity 20% per annum while B has annual net profit 45 billion INR but earns a return on equity 30%. Here credit score for X is 4 + 2 = 6 while credit score for Y is 3 + 3 = 7. So Y is classified into higher credit category relative to X.

CONCEPTS AND MANAGEMENT OF CREDIT RISK AND CREDIT CONCENTRATION RISK

The concept of credit risk is succinctly described by IndusInd Bank (2012) as follows:

1. Credit risk is defined as the probability that the borrower may not meet contractual obligations because of inability or reluctance to do so.
2. Credit risk has two components – (a) default risk at individual level, (b) portfolio risk due to concentration, correlation etc and (c) contagion risk for interconnected individuals or corporate entities across sectors, i.e. Reliance Retail and Reliance Petroleum.

Table 3.

Points	Annual Income (INR million)	Ratio of Annual Savings to Annual Income (%)
1	Up to 1	Up to 15
2	Above 1 up to 20	Above 15 up to 25
3	Above 20 up to 50	Above 25 up to 45
4	Above 50 up to 80	Above 45 up to 50
5	Above 80	Above 50

Table 4. Two parameters of the bank's internal credit rating model applicable to corporate loans

Points	Annual Net Profit (INR billion)	Annual Rate of Return on Equity (%)
1	Up to 1	Up to 15
2	Above 1 up to 20	Above 15 up to 25
3	Above 20 up to 50	Above 25 up to 45
4	Above 50 up to 80	Above 45 up to 50
5	Above 80	Above 50

3. Credit risk is the largest of all risks a bank need to manage.
4. Credit risk management guidelines are laid down in credit policy, credit risk policy, loan review policy and recovery policy of a bank.

Credit concentration risk is defined to be the risk of default on part of the borrowers of some particular credit profile or to a specific sector of the economy in absence of sufficient of diversification of credit portfolio of the bank. Gurtler, Hibblen, and Vohringer (2010) felt that (a) the measurement of concentration risk in credit portfolios is necessary for the determination of regulatory capital under Pillar II of Basel II as well as for managing portfolios and allocating economic capital and (b) if a portfolio is lowly diversified, the risk will be underestimated when using the Basel II formula, which is why additional capital is required to capture these types of concentration risk. As per Basel Committee on Banking Supervision (2006), credit concentration risk may arise because of either of the two reasons – (a) large exposure to individual borrowers called 'name factor' and (b) large exposure to some specific sectors which are performing less than up to the expectations because of economic downturn called 'systemic factor'. As per Hibbeln (2010) the third reason called 'credit contagion', may also lead to concentration risk. It happens with interconnected companies across sectors, e.g. when one bank defaults in the interbank market, another bank also may do the same.

MANAGEMENT OF CREDIT CONCENTRATION RISK

Axis Bank (2012) narrated analytically management of concentration risk as follows –

1. Concentration risk is managed by means of appropriate structural limits and borrower-wise limits based on creditworthiness.
2. Sector specific caps are laid down in the bank's credit policy.
3. Different product specific scorecards are used for retail portfolio including small businesses and small agriculture borrowers.
4. Portfolio concentrations by segment, borrower, groups, industry and geography, wherever applicable are continuously monitored, e.g. the bank has individual borrower-wise exposure ceilings based on the internal rating of the borrower as well as group-wise borrowing limits which are continuously tracked and monitored.
5. The bank periodically monitors its portfolios for any lead indicators of stress which includes potential delinquencies, external rating downgrades and credit concentration. Borrowers or portfolios are marked for early warning when signs of weakness or financial deterioration are envisaged in order that timely remedial actions may be initiated.
6. In-depth sector specific studies are undertaken on portfolios vulnerable to extraneous shocks and the results are shared with the

business departments. Portfolio level delinquency matrices are tracked at frequent intervals with focus on detection of early warning signals of stress. The Bank has a well-defined stress testing policy in place and at least on a quarterly basis, stress testing is undertaken on various portfolios to gauge the impact of stress situations on the health of portfolio, profitability and capital adequacy

7. Key sectors are analyzed in detail to suggest strategies for business, considering both risks and opportunities. Industry analysis plays an important part in assessing the concentration risk within the loan portfolio. Industries are classified into various categories based on factors such as demand-supply, input related risks, government policy stance towards the sector and financial strength of the sector in general. This kind of categorization is used in determining the expansion strategy for the particular industry.
8. The Risk Management Committee of the bank periodically reviews the impact of the stress scenarios resulting from the rating downgrades, or drop in the asset values in case of secured exposures, on the portfolio.
9. The portfolio level risk analytics provide insight into the capital allocation required to absorb unexpected losses at a defined confidence level.

IndusInd Bank (2012) noted the role of statistics in evaluating concentration risk by way of carrying out detail analyses of portfolio risk and control measures in place on a monthly basis on various parameters.

Finally, the banks periodically report the outcomes of their Internal Capital Adequacy Assessment Process (ICAAP) practices in terms of the risk appetite statements and assessment of credit concentration risk and underestimation of credit risk under the standardized approach to their Boards of Directors and validate the same by prescribed external agencies (Kotak Mahindra Bank, 2012). The ICAAP a part of the Supervisory Review Process under Basel II plays an important role in credit risk management. It was mandatory that the ICAAP would be in addition to a bank's calculation of regulatory capital requirements under Pillar 1 and must be operationalized with effect from March 31, 2008 by the foreign banks and the Indian banks with operational presence outside India, and from March 31, 2009 by all other commercial banks, excluding the Local Area Banks and Regional Rural banks (Reserve Bank of India, 2008). The prescribed document here is supposed to include, among other things the capital adequacy assessment and projections of capital requirement for the ensuing year, along with the plans and strategies for meeting the capital requirement.

CONCENTRATION IN THE INDIAN NEW GENERATION PRIVATE SECTOR BANKS' CREDIT PORTFOLIO

The annual reports of the banks furnish the information that ICICI Bank has credit concentration risk while HDFC Bank does not have. ICICI Bank (2012) reported maximum exposure in the sector where home loan is an important constituent. The same reported lending to sectors including real estate, which are sensitive to asset price fluctuations. The real estate sector is reported by the same to be composed of (a) residential mortgages including individual housing loans under priority sector scheme, (b) commercial real estate including loans to individuals against non-residential premises, loans given to land and building developers for construction, corporate loans for development of special economic zone, loans to borrowers where servicing of loans is from some real estate activity and exposures to mutual funds/venture capital funds/private equity funds investing primarily in the real estate companies and (c) indirect exposures including mandatory contribution to the rural housing fund of National Housing Bank and some other exposure of negligible size. Axis Bank (2012) reported excess exposure over the sanctioned limit to two housing loan institutions - Housing Development Finance Corporation Limited (HDFC) and Life Insurance Corporation Housing Finance Limited (LICHF) by 26.34% and 6.51% respectively[2]. The corresponding figure for IndusInd Bank is 22.59% (IndusInd Bank, 2012). There is no such excess exposure in the case of Kotak Mahindra Bank (Kotak Mahindra Bank, 2012). Similar is the case for Yes Bank (Yes Bank. 2012). It is relevant here to add that Kotak Mahindra Bank (2012) reported a few large companies in the sensitive sectors like the infrastructure sector to be assuming disproportionate sizes in the banks' balance sheets.

In the case of name factor, IndusInd Bank seems to have the largest concentration risk in terms of the maximum proportion of total advances having been lent to twenty largest borrowers relative all the six banks. The relevant data have been furnished in Figure 3. Yes Bank does not have such concentration.

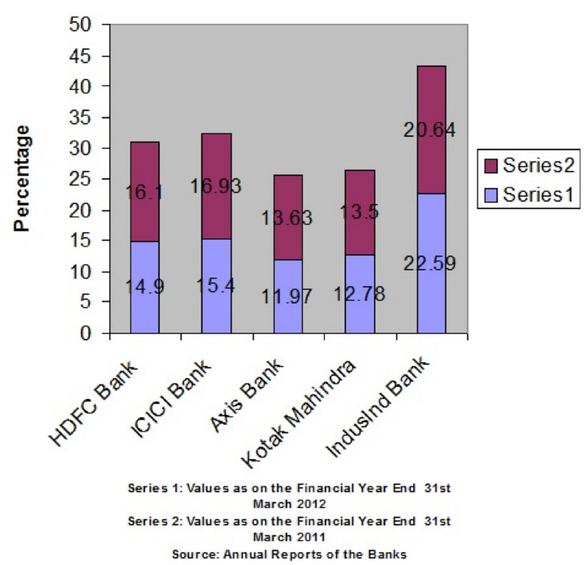
From the above discussion, it is clear that ICICI Bank and Axis Bank have concentration risk in the real estate and infrastructure sectors, while IndusInd Bank has name risk.

So it seems relevant to throw light on the slowdown of real estate and infrastructure sectors in India from the view point of credit rating.

Slowdown of Real Estate and Infrastructure Sectors in India

Popli, Singh, and Manish (2013) gave a precise account of impact of economic slowdown on the Indian real estate industry. CRISIL (2010) noted (i) an astounding fall in demand and capital values of real estate between first half of 2008 and first half of 2009 and fall in the demand for office space since the second half of 2008 largely because of the postponement of expansion plans by corporate entities; particularly on the developers' side there were postponement of the launch of new projects and also delay of those under construction. CRISIL (2010) further noted fall in room rate and occupancy rate in the hospitality real estate hotel industry because of economic slowdown followed increase in supply of room inventory.

Figure 3. Proportion of total advances to the largest twenty borrowers



It may be shown that in the state of low demand in any industry, the preferences regarding the amount of annuity payable by the borrower, composed of interests and a part of the principal, called equated monthly installment (EMI) in India, contradict between the lending banks and the borrowing business organizations in that industry. Let us suppose 'p' is probability of the property market experiencing falling demand and '1-p' is the probability of the property market not experiencing the falling demand. If the property demand is falling the value of the future payments to the lender is 'nV', otherwise it is 'V', where $n < 1$. The bank official would approve the loan application if the expected value of the future payments is at least equal to 'V', i.e. $(1 - p)\ V + pnV = V$, i.e. $1 + p\ (n - 1) = 1$, i.e. $p\ (n - 1) > 0$, this possible when $n > 1$. This contradicts the original assumption. Hence the proof.

MEASUREMENT OF CREDIT RISK

In one of the most lucid versions, Bluhm, Overbeck, and Wagner (2003) described the measure of credit risk of a loan facing a bank. For every borrower a bank computes (i) a probability of her defaulting, in short, default probability (DP), (ii) a proportion of the exposure or loan disbursed likely to be lost (LGD) and (iii) the outstanding amount of the exposure at the time of computing all these three items, called exposure at default (EAD). The product of EAD and LGD is the part of the outstanding loan likely to be defaulted. The probability-weighted loss or expected loss is the product of DP and the above product, i.e. DP, LGD and EAD. As per Reserve Bank of India (2013b) There are two approaches to estimation of DP, LGD and EAD – (i) Standardized Approach and (ii) Internal Ratings-based (IRB) Approach. In the Standardized Approach the bank should take their values from external agencies or regulators. In the IRB approach, which in turn has two versions – foundation and advanced, the bank should itself calculate their values. Under foundation IRB, the bank calculates only DP and other values come from the regulator, e.g. the regulatory value of LGD varies from 50% to 65% in India (Reserve Bank of India, 2013a). Under advanced IRB, the bank calculates all of their values. As a simple example, let us suppose the outstanding exposure at the end of the financial year on 31st March 2011 for a loan of two-year residual maturity is INR 100 crores. The DP is 0.8657% (Das, 2013) and the LGD is 60%. So the EAD = 0.8657% x 60% x 100 crores INR ≈ 5.2 million INR.

MEASUREMENT OF CREDIT CONCENTRATION RISK

An elaborate survey on various measures of concentration risk is in Bandyopadhyay (2010). He mentioned the indices like Herfindahl-Hirschman Index (HHI), Theil coefficient measure of inequality and Gini-Lorenz curve. Out of these HHI is the measure of single name concentration risk reported by him. He is of the opinion that lower degree of credit portfolio diversification leads to higher degree of concentration and hence higher correlation of defaults. He reported

1. The finding of Cowan and Cowan (2004) that the default correlation inversely varies with the internal ratings of the borrower,
2. The finding of Helbekkmo (2006) that banks with geographically diversified portfolio can gain benefits of up to 40% compared to the economic capital required for similar portfolios where the bank lacks any geographic diversification,
3. The finding of Lucas et al. (2001) that for a given correlation, a higher portfolio quality lowers the chance of extreme credit loss events[3],
4. The finding of the Research Task Force of the Basel Committee on Banking Supervisions that name concentration risk is likely to

represent a smaller marginal contribution to economic capital than sector concentration for a typical commercial bank with a medium to large sized loan portfolio,

5. The findings of Reynolds (2009) that after capturing correlation, along with the other key factors exposure, DP and LGD leads to a measure such as credit value at risk (CVaR), i.e. value at risk of the credit loss, that can uncover hidden information about a portfolio and also that a concentration ratio measure (defined by CVaR divided by the absolute loss) provides great portfolio insight that enables a risk manager to identify names that would have the lowest concentration ratio and could combine well with names having high concentration ratio[4] and
6. The finding of Nickell et al. (2001), that default probabilities depend strongly on the stage in the business cycle, and transition matrices tend to exhibit a higher frequency of downgrades during a recession and a higher occurrence of upgrades during booms.

An improved version of Bandyopadhyay (2010) is Bandyopadhyay (2011) in the sense that the former focused on concentration risk of Indian public sector banks while the latter compared vulnerability and diversification level between the credit portfolios of the banks of large size and mid size. In the context of vulnerability he explained the importance of stress testing.

Das (2013) found that the activities of stress-testing and scenario building under ICAAP conducted by the banks as per RBI guidelines circulated way back in March 2008 could not take the Indian banking system beyond Basel II. He calculated probabilities of default in the first and second year after borrowing. In addition, the finding of Nickell et al. (2000) mentioned in Bandyopadhyay (2010) is explained by Das (2013) with help of the negative outlook released by major credit rating agencies like CRISIL, ICRA, and FITCH.

ABOUT RATING MIGRATION OF REAL ESTATE DEVELOPERS, CONTRACTORS AND CONSULTANTS AND MIGRATION OF RATING

The two licensed India-based credit rating agencies of multinational nature in India are CRISIL and ICRA. CRISIL is a Standard and Poor's Company and ICRA is an associate of Moody's Investors Service.

The general credit rating methodology is illustrated by CRISL (2013a) while the credit grades of the real estate developers are given in CRISIL (2013b). ICRA (2007) laid down the details of the parameters for assessing business and financial risk and the rating scales of real estate developers, contractors and consultants. The parameters are of three broad categories – (1) Business Background and Competitive Position, (2) Management Quality and Corporate Governance and (3) Financial Position (ICRA 2013a).

The nomenclatures of ICRA's grading scales are 'RT' for real estate project, 'DR' for real estate developers, 'CR' for contractors or construction companies, 'CT' for consultants and 'OR' for project owners. The rating is the highest when the nomenclature is accompanied by the number '1' to its right and the lowest the number is '5'. A symbol like '+' or '-' may be attached to the number indicative of sub-rating within the rating.

Examples of migration of ratings during the economic slowdown available in ICRA (2013b) are given below:

1. Real estate developer Pasvnath Developers Limited and Shrishti Infrastructure Development Corporation suffered from downgradation of rating from 'DR2' to 'DR3+'.
2. Construction companies like Bhagheeratha Engineering Limited, Continental Construction Limited, MFAR Constructions Limited, Oriental Structural Engineers

Private Limited, Petron Civil Engineering Limited, Rudranee Construction Company and Tantia Construction Company Limited moved from ‘rated’ to ‘unrated category’.

3. Projects like JMC Projects (India) Limited moved from ‘rated’ to ‘unrated category’.
4. Consultants like MCM Services Private Limited and Swar Shilp Properties Limited moved from ‘rated’ to ‘unrated category’.

CREDIT RISK AND BASEL NORMS

Basel I is the document on the minimum capital requirements produced as a result of a series of brain storming sessions involving the banking regulators of G-10 countries in 1988. This document focused mainly on credit risk (Vasudev, 2013). Basel II enforces the Know Your Customer (KYC) Policy and disclosure norms, increases transparency of product and customer profitability and develops a risk differentiated product and customer management (KPMG, 2011). Kotak Mahindra Bank (2012) further added that (i) the risk appetite is a critical component of the ICAAP framework and sets the boundaries under which the Bank operates in pursuit of its defined strategy and (ii) under the approval of the Boards of the banks it covers capitalization levels, target rating, asset quality, profitability, regulatory compliance, liquidity, interest rate risk, leverage, operational risk and concentration risk.

Basel III prescribed *inter alia*, a capital charge for potential mark-to-market losses or credit valuation adjustment (CVA) associated with any deterioration in the credit worthiness of a counterparty (Basel Committee on Banking Supervision, 2010). CVA is the difference between the market value of the credit portfolio taking in to account the chance of default and the risk free value of the same.

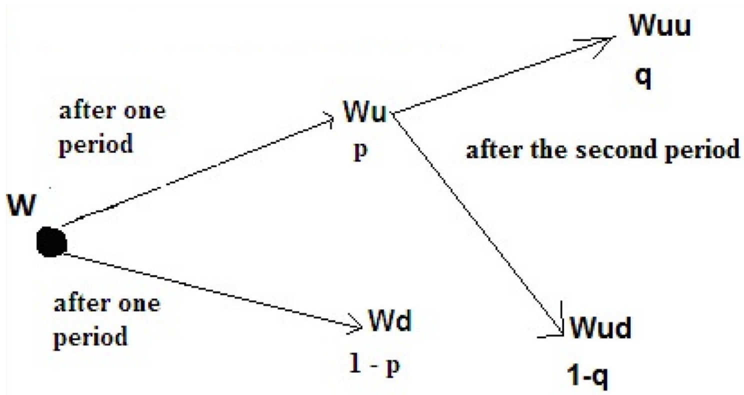
THE ISSUE IN THE EXISTING NORMS OF MEASUREMENT OF CREDIT RISK

Merton (1974) reported by Saunders and Allen (2002) implies that a corporate loan is essentially is an over the counter product with an embedded put option. Every installment of repayment may be deemed as a zero coupon bond. Due to economic downturn in the business cycle affecting some sector, at any time after borrowing if the market value of the assets of a firm is less than the installment, the firm may find incentive to default that installment. On the other hand, for the bank, asset values (i) increase during boom when the corporate borrowers by and large do not default and (ii) decrease when many corporate borrowers default. For a borrower being in default on an installment is equivalent to discontinuing the loan or exercising the put option on the loan. In this case it is easier for the bank to calculate, in the following way, the probability of default if the bank has estimates of its asset values at different stages of the business cycle:

If the ‘W’ is the wealth of the bank at the time of disbursement, ‘p’ is the probability of the wealth of the bank being ‘Wu’ if the borrower does not default, i.e. pays the first installment and $1 - p$ being the probability of the wealth of the bank being ‘Wd’ if the borrower defaults the first installment. The situation is described in Figure 4.

The probability weighted sum of the probable values of the weights should equal the initial net present value, i.e. $W= p\ Wu + (1-p)\ Wd$. The solution for $p = \{(W-Wd)/(Wu – Wd)\}$. Here $Wu > W$ because Wu includes investment gains. So $0 < p < 1$. The analysis may be extended to the second period where there are two cases. Here the bank needs to have prior forecasting of ‘W’, ‘Wu’ and ‘Wd’. This is a version of the model of computing expected loss in Hlawatsch and Ostrowski (2009) and the application of decision tree is inspired by Hull (2009).

Figure 4. Calculation of default probability



Excel based method of calculating default probability following Merton (1974), which may be adopted by the banks, is provided by Löffler and Posch (2007).

IMPLICATIONS AND RECOMMENDATIONS

This chapter has implications for bank officers in the loan-processing department and risk management department, the central banks in the context of credit policy formulation, the bankers' training institutes and also for the students of higher studies in Financial Economics and Risk Management.

There is a need for estimation of the asset value of every bank on everyday basis. Forecasting of marginal increment or reduction in the asset value attributable to every loan account is warranted here. As per Reserve Bank of India (2013b) every bank need to have DP data of minimum five years and the data on LGD and EAD of minimum seven years. These data along with daily data on repayments should come under disclosure norms for every loan accounts including project finance, overdraft, revolving line of credit, working capital loan, credit card outstanding and financing capital equipments. Every bank need to arrive at periodic credit score of every borrower and inform her immediately the same.[5]

CONCLUSION

This chapter starts with the concepts, measurement and regulatory guidelines regarding credit risk facing the new generation Indian private sector banks in their credit portfolios in infrastructure, real estate and construction sectors. In this chapter the author covered the economic scenario facing the real estate industry during 2008-10 and the consequent downgradation of the real estate developers, project owners, contractors and consultants based on information collected from India-based major multinational international credit rating agencies. He analyzed the nonperforming asset ratios, exposures to commercial real estate and exposures to the largest twenty borrowers with illustration based on the annual reports of the above banks. He gave an insight into (i) how corporate and individual borrowers are rated, (ii) how probability of default may be calculated and (iii) how EAD may be calculated. He investigated into the conflicting expectations of the banks and the corporate borrowers regarding the amount of EMI during economic slowdown. Finally he suggests for application of Merton's option pricing model in calculation of default probability for the corporate borrowers in a specific sector during the phase of economic downturn in the business cycle.

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KEY TERMS AND DEFINITIONS

Exposure at Default: The outstanding loan principal amount to be calculated at the time of a default event.

Loss given Default: The loss amount calculated by the borrower after every default event.

Non-Performing Asset: A loan asset, for which there is more repayment, i.e., a defaulted loan with no cash flow to the lender.

Probability of Default: Measure of the chance of the borrower's not paying a scheduled payment towards his loan account.

ENDNOTES

1. 1 crore = 10 million = 10^7, a very popular unit of measuring money amongst the banks in India.
2. HDFC and LICHF are term lending Institutions who extend, *inter alia*, home loan. HDFC and HDFC Bank are separate entities.
3. Lucas et al. (2001) also showed how portfolio term to maturity affects credit loss. Das (2013) demonstrated it for Indian corporate bonds.
4. An excellent monograph on LGD is Schuermann (2004). He found that the factors which drive significant differences in LGD are embedded in in the capital structure, presence and quality of collateral, industry and timing of the business cycle.
5. Author acknowledges the valuable comments of Ugam Raj Daga.

Chapter 10
Impact of NPAs on Bank Profitability:
An Empirical Study

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ABSTRACT

NPA is a "termite" for the banking sector. It affects liquidity and profitability of the bank to a great extent; in addition, it also poses a threat to the quality of asset and survival of banks. The post-reform era has changed the whole structure of the banking sector of India. Now, the economy is not confined to the domestic boundary of the country. The core intention of economic reforms in India was to attract foreign investments and create a sound banking system. This chapter provides an empirical approach to the analysis of profitability indicators with a focal point on Non-Performing Assets (NPAs) of commercial banks in the Indian context. The chapter discusses NPA, factors contributing to NPA, magnitude, and consequences. By using an analytical perspective, the chapter observes that NPAs affected significantly the performance of the banks in the present scenario. On the other hand, factors like better credit culture, managing the risk, and business conditions led to lowering of NPAs. The empirical findings using observation method and statistical tools like correlation, regression, and data representation techniques identify that there is a negative relationship between profitability measure and NPAs.

INTRODUCTION

NPA (Non Performing Assets) broadly defined as non-repayment of interest and installment of principal amount (Das & Ghosh, 2006). Amongst the various desirable characteristics of a well-functioning financial system, the maintenance of the Non-performing assets is an important one. NPA after a certain level is indeed a serious concern for the banking system because credit is essential for economic growth and NPA affects the smooth flow of credit. Banks increases their resources not only from the public deposits but also by multiplying the funds received from the

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borrowers (Bodla & Verma, 2006). Thus, when a loan turns into NPA, it affects the recycling of credit and credit creation. It also affects the profitability of the banks because then the banks have to create more provisions against bad loans.

In India the definitions of NPAs has changed over time. According to the Narasimham Committee Report (1991), those assets (overdraft/cash credit) for which the interest remains due for a period of four quarters (180 days) should be considered as NPAs. Subsequently, this period was reduced and from March 1995 onwards assets for which interest remains unpaid for a period of 90 days were considered as NPAs. Thus, NPA constitutes an important factor in the banking system as it seriously affects the profitability of the banks.

The NPA can broadly be classified into Gross NPA and Net NPA. Gross NPA reflects the quality of the loans made by banks whereas Net NPA shows the actual burden of banks. The banks and the financial institutions have to take the initiative to reduce NPAs in a time bound strategic approach especially of public sector banks because they dominate the banking industries and also since they have much larger NPAs compared with the private sector banks. This raises a concern in the banking industry because it is generally felt that NPAs reduce the profitability of banks, weaken its financial health and erode its solvency (Karunakar, 2008). For the recovery of NPAs a broad framework has evolved for the management of NPAs under which several options are provided for debt recovery and restructuring. However, with the banking reforms in India and adoption of international banking practices, this issue received due focus. Though the issue has received a considerable attention in the post reform period but the ultimate solution has not yet achieved.

Thus, this research paper focuses on this severe problem and tries to suggest some remedies to overcome it. The paper consists of secondary data which has been collected from different publications such as the Reserve Bank of India publications, the reports published by commercial banks, various issues of the IBA journal etc. The empirical findings using observation method and statistical tools like correlation, regression and data representation techniques identifies that there is a negative relationship between profitability measure and NPAs.

KINDS OF NPAS

1. Gross NPA
2. Net NPA

1. Gross NPA

Gross NPAs are the sum total of all loan assets that are classified as NPAs as per the RBI guidelines as on Balance Sheet date. It reflects the quality of the loans made by banks. It consists of all the non-standard assets such as sub-standard, doubtful, and loss assets. It can be calculated with the help of following ratio:

Gross NPA ratio = Gross NPAs / Gross Advances

2. Net NPA

Net NPAs are those type of NPAs in which the bank deducts the provision regarding NPAs. Net NPA shows the actual burden of banks. Since in India, bank balance sheets contain a huge amount of NPAs and the process of recovery and write off of loans is very time consuming, the provisions the banks have to make against the NPAs according to the central bank guidelines, are quite significant. That is why the difference between gross and net NPA is quite high. It can be calculated by following.

Net NPAs= Gross NPAs – Provisions/ Gross Advances – Provisions

CATEGORIES OF NPAS

The issue of NPA has given due importance after the Narasimham Committee report highlighted its impact on the financial health on the commercial banks and subsequently various asset classification were introduced (Mishra, 2011). It also suggested that for the purpose of provisioning, banks and financial institutions should classify their assets by into four broad groups namely:

Standard Assets: Standard assets are the ones in which the bank is receiving interest as well as the principal amount of the loan regularly from the customer. Such assets carry normal risk and are not NPA in the real sense. So, no provisions are required for standard assets. Here, it is also very important that in this case the arrears of interest and the principal amount of loan do not exceed 90 days at the end of the financial year. If asset fails to be in the category of standard asset i.e. amount due for more than 90 days then it is NPA and NPAs are further need to classify in sub categories.

Banks are required to classify non-performing assets further into the following three categories based on the period for which the asset has remained *non-performing* and the *realisability* of the dues:

1. Sub-standard Assets
2. Doubtful Assets
3. Loss Assets
   a. **Sub-Standard Assets:** With effect from 31st March, 2005, a sub-standard asset would be one, which has remained NPA for a period less than or equal to 12 months. The following features are exhibited by sub-standard assets: the current net worth of the borrowers / guarantor or the current market value of the security charged is not enough to ensure recovery of the dues to the banks in full; and the asset has well-defined credit weaknesses that jeopardize the liquidation of the debt and are characterized by the distinct possibility that the banks will sustain some loss, if deficiencies are not corrected.
   b. **Doubtful Assets:** A loan classified as doubtful has all the weaknesses inherent in assets that were classified as sub-standard, with the added characteristic that the weaknesses make collection or liquidation in full – on the basis of currently known facts, conditions and values – highly questionable and improbable. With effect from March 31st, 2005, an asset would be classified as doubtful if it remained in the sub-standard category for more than 12 months.
   c. **Loss Assets:** A loss asset is one which considered uncollectible and of such little value that its continuance as a bankable asset is not warranted- although there may be some salvage or recovery value (Gupta & Kumar, 2004). Also, these assets would have been identified as 'loss assets' by the bank or internal or external auditors or the RBI inspection but the amount would not have been written-off wholly.

IMPACT OF NPA

The health of a bank is reflected not only by the size of its balance sheet but also by the return on its assets. NPAs generate no interest income (Chaudhuri, 2002). The banks are required by law to provide for future loan losses arising from its bad assets (at a coverage of 70%), out of current profits. This not only affects the profitability but also liquidity because now the bank has fewer funds to lend out or recycle. It further increases indirect costs. High NPAs degrade a bank's credit rating, lowering its credibility as well as its ability to raise fresh capital (Indira & Vasishtha, (2001).

The NPAs have deleterious impact on the return on assets in the following ways:

1. The interest income of banks will fall and it is to be accounted only on receipt basis.
2. Banks profitability is affected adversely because of the providing of doubtful debts and consequent to writing it off as bad debts.
3. Return on investments (ROI) is reduced.
4. The capital adequacy ratio is disturbed as NPAs enter into its calculation.
5. The cost of capital will go up.
6. Asset and liability mismatch will widen.
7. It limits recycling of the funds.

FACTORS CONTRIBUTING TO NPAS

The banking sector has been facing the serious problems of the rising NPAs. But the problem of NPAs is more in public sector banks when compared to private sector banks and foreign banks (Pradeep, 2007). The NPAs in PSB are growing due to external as well as internal factors.

External Factors

1. **Ineffective Recovery Tribunal:** The Govt. has numbers of recovery tribunals which works for recovery of loans and advances. Due to their negligence and ineffectiveness in their work the bank suffers the consequence of non-recovery, there by reducing their profitability and liquidity.
2. **Willful Defaults:** There are borrowers who are able to payback loans but are intentionally withdrawing it. These groups of people should be identified and proper measures should be taken in order to get back the money extended to them as advances and loans.
3. **Natural Calamities:** This is the major factor which is creating alarming rise in NPAs of the PSBs. Every now and then India is hit by major natural calamities thus making the borrowers unable to pay back loans. Thus, banks have to make large amount of provisions in order to compensate loans, hence, reduces profit. Mainly our farmers depend on rain fall for croing. Due to irregularities of rainfall the farmers are not achieving the production level thus they are not repaying the loans.
4. **Industrial Sickness:** Improper project handling, ineffective management, lack of adequate resources, lack of advance technology, day to day changing govt. policies give birth to industrial sickness. Hence, the banks that finance those industries ultimately end up with a low recovery of their loans reducing their profit and liquidity.
5. **Lack of Demand:** Entrepreneurs in India could not foresee their product demand and starts production which ultimately piles up their product thus making them unable to pay back the money they borrow to operate these activities. The banks recover the amount by selling off their assets which covers a minimum level. Thus, the banks record the non-recovered part as NPAs and have to make provision for it.
6. **Change on Govt. Policies:** With every new govt. banking sector gets new policies for its operation. Thus, it has to cope with the changing principles and policies for the regulation of the rising of NPAs. The fallout of handloom sector is continuing as most of the weavers co-operative societies have become defunct largely due to withdrawal of state patronage. The rehabilitation plan worked out by the Central government to revive the handloom sector has not yet been implemented. So the over dues due to the handloom sectors are becoming NPAs.

Internal Factors

Defective Lending Process

There are three cardinal principles of bank lending that have been followed by the commercial banks since long.

1. Principles of safety.
2. Principle of liquidity.
3. Principles of profitability.
   a. **Principles of safety:** By safety it means that the borrower is in a position to repay the loan (both principal and interest). The repayment of loan depends upon the borrowers:
      i. Capacity to pay.
      ii. Willingness to pay.
   b. **Capacity to pay depends upon**
      i. Tangible assets
      ii. Success in business
   c. **Willingness to pay depends on**
      i. Character
      ii. Honesty
      iii. Reputation of borrower

The banker should, therefore, take utmost care in ensuring that the enterprise or business for which a loan is sought is a sound one and the borrower is capable of carrying it out successfully. He should be a person of integrity and good character.

Inappropriate Technology

Due to inappropriate technology and management information system, market driven decisions on real time basis can not be taken. Proper MIS and financial accounting system is not implemented in the banks, which leads to poor credit collection, thus resulting in NPA. All the branches of the banks should be computerized whether urban or rural.

Improper SWOT Analysis

The improper strength, weakness, opportunity and threat analysis is another reason for the rise in NPAs. While providing unsecured advances the banks depend more on the honesty, integrity, financial soundness and credit worthiness of the borrower. Banks should consider the borrowers own capital investment and should collect credit information of the borrowers:

1. From the bankers.
2. Enquiry from market/segment of trade, industry, business.
3. From external credit rating agencies.

Poor Credit Appraisal System

Poor credit appraisal is another factor for the rise in NPAs. Due to poor credit appraisal the bank gives advances to those who are not able to repay. They should use good credit appraisal to decrease the NPAs.

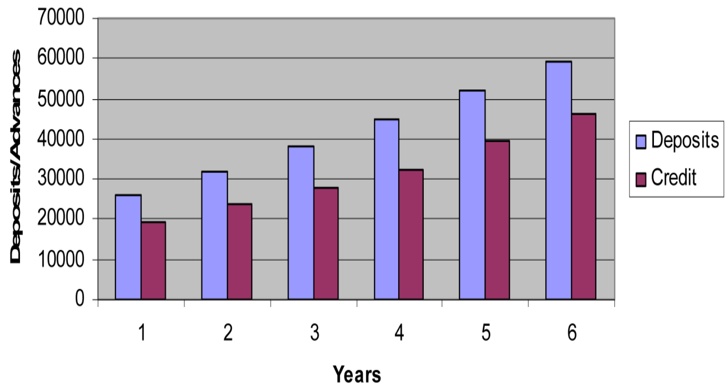
Managerial Deficiencies

The banker should always select the borrower very carefully and should take tangible assets as security to safeguard its interests. When accepting securities banks should consider the:

1. Marketability
2. Acceptability
3. Safety
4. Transferability.

The banker should follow the principle of diversification of risk based on the famous maxim "*do not keep all the eggs in one basket";* it means that the banker should not grant advances to a few big firms only or to concentrate them in few

Figure 1. Deposits and advances of SCBs



industries or in a few cities. If a new big customer meets misfortune or certain traders or industries affected adversely, the overall position of the bank will not be affected (Prasad, 2004).

Position of Scheduled Commercial Banks

Table 1 reveals the details of deposits and advances of scheduled commercial banks in India from the last six years. The figures exhibits that the deposits of SCBs increased from Rs. 26119.33 billion in 2007 to Rs. 59090.82 billion in 2012. The advances also shows an increasing trend i.e. the amount increased from Rs. 19311.89 billion in 2007 to Rs. 46118.52 billion in 2012. Thus, it can be concluded that both (i.e. deposits and advances) have been increasing but the amount of advances as compared to the deposits is less.

Table 2 represents the classification of loan assets of scheduled commercial banks in India. Standard assets generate continuous income and repayments as and when they fall due. So, no special provision is required for them. As per the table above the amount of standard assets register a hike of 18,433.97 billion in 2007 to Rs. 45,284.48 billion in 2012. This shows that the SCBs are in good position The amount of sub-standard assets also increased from Rs. 196.80 billion in 2007 to Rs. 675.84 billion in 2012. the amount of doubtful assets increased from Rs. 245.31billion in 2007 to Rs 596.20 billion in 2012. The amount of loss assets increased from Rs. 59.05 billion in 2007 to Rs. 98.92 billion in 2012.

Table 1. Deposits and advances of scheduled commercial banks in India (in billion)

Years	Deposits	Credit
2007	26119.33	19311.89
2008	31969.39	23619.14
2009	38341.10	27755.49
2010	44928.26	32447.88
2011	52079.69	39420.82
2012	59090.82	46118.52

Source: www.rbi.org.in

Figure 2. Classification of loan assets

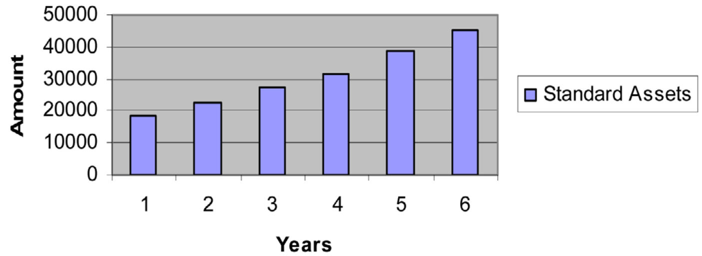


Figure 3. Classification of loan assets of SCBs

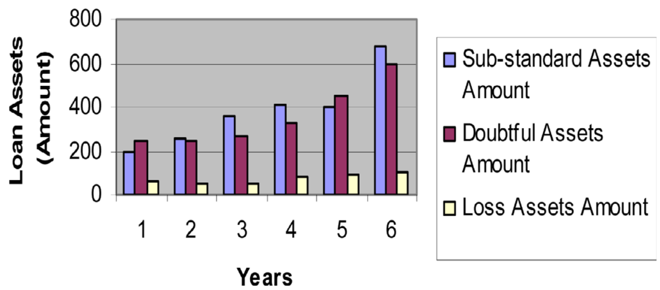


Table 2. Classification of loan assets of SCBs (Amt in billion)

Years	Standard Assets		Sub-standard Assets		Doubtful Assets		Loss Assets	
	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent	Amount	Per Cent
2007	18433.97	97.4	196.80	1.0	245.31	1.3	59.05	0.3
2008	22759.79	97.6	261.13	1.1	242.87	1.0	52.99	0.2
2009	27210.94	97.6	359.21	1.3	267.29	1.0	55.64	0.2
2010	31825.68	97.5	412.92	1.3	326.63	1.0	78.50	0.2
2011	38973.84	97.6	398.75	1.0	448.02	1.1	94.40	0.2
2012	45284.48	97.1	675.84	1.4	596.20	1.3	98.92	0.2

Source:www.rbi.org.in

In India, non-performing assets of commercial banks gradually declined over the years, such as, Gross NPAs (GNPAs) as % to Gross Advances from 2.5% as on 31st March 2007 to 2.2% as on 31st March, 2010 but it increased in the next couple of years with 2.4% in 2011 and 3.1% in 2012. The Gross NPAs as % of Total Assets also declined from 1.5% in 2007 to 1.2% in 2009 but again increased to 1.5% in 2010 and 1.6% thereafter. The Net NPAs (NNPAs) as % of Net Advances and Net NPAs as % of Total Assets exhibited a meager fluctuation (exhibited in Table 4).

The analysis showed a declining trend in the ratio of GNPAs and NNPAs in the initial years which are a clear indication that the measures adopted by the banks are effective in controlling the menace created by NPAs. It is very important to control the problem of NPAs as there are many

Figure 4. Gross and net NPAs of SCBs

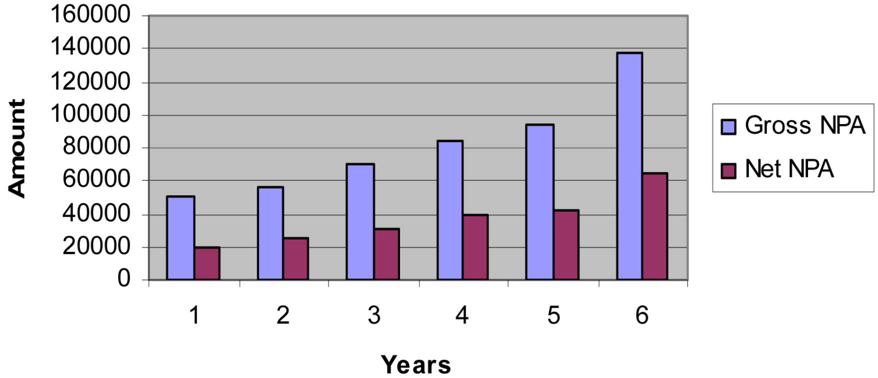


Figure 5. Percentage of GNPA and NNPA in ratio

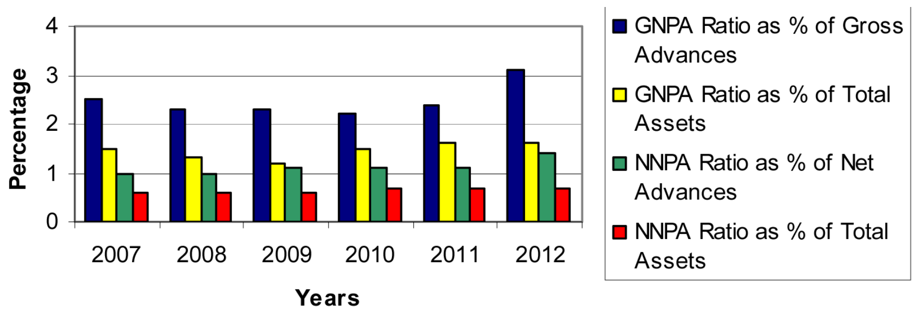


Table 4. Gross and net NPAS of SCBS (amount in RS. CRORE)

Years	Gross NPAs Amount	GNPA Ratio as % of G. Advances	GNPA Ratio % of Total Assets	Net NPAs Amount	NNPA Ratio % of N. Advances	NNPA Ratio % of Total Assets
2007	50634	2.5	1.5	20101	1.0	0.6
2008	56668	2.3	1.3	24730	1.0	0.6
2009	70062	2.3	1.2	31564	1.1	0.6
2010	84745	2.2	1.5	39126	1.1	0.7
2011	94084	2.4	1.6	41813	1.1	0.7
2012	137096	3.1	1.6	64900	1.4	0.7

Source: RBI Publication.

problems which are magnified like, Owners and Depositors do not receive a market return on their capital. In worst cases they lose their assets. Non performing asset may spill over the banking system and contract the money stock, which may lead to economic contraction and affect its liquidity and profitability which haened in the later years because of the increase in both the ratios.

Statistical Tools to Analyze the Relationship between GNPA, NNPA and ROA

Managing NPAs has a lot to do with managing productive assets and ensuring effective corporate governance. If performing assets are turning into NPAs, it is because there is a change in the quality of assets. As of now, NPAs in most of the nationalized banks are within the permissible limits. In this backdrop it becomes very important to understand the relationship of Non-performing assets and profitability, whether decrease in NPAs leads to increase in profitability or not. This information is very vital in monitoring, regulating and policy formulation. Correlation is calculated taking GNPA Ratio (Gross Non-Performing Asset Ratio) with the profitability measure as ROA (Return on Assets). Results are exhibited in Table 5.

There is negative correlation between GNPA with ROA as shown in above figures. An inverse relationship clearly defines that if non performing assets are controlled, it increases the profitability. The above relationship is also strengthened by the most popular statistical method of regression. To have more clarity on the issue, ROA has been taken as dependent variable and GNPA Ratio as independent variable.

Table 6 reveals F value is significant at 0.05 level. It is clearly indicating that the variation caused by independent variables in the value of ROA is significant and cannot be left to chance factors. The above table analyzes the results produced by the Regression Model so as to achieve the objective of analyzing the relationship of NPAs with profitability of banks. The value of Correlation Coefficient (R) and Coefficient of Determination (R square and Adjusted R square) of the finally selected model are less then one which shows the relationship of NPA and profitability is significant at 5% level of significance

Therefore, it is evidently proved that NPAs has an inverse impact on ROA or profitability of banks that means the bank can have an increasing trend of ROA by the effect of the declining trend of GNPAs ratios. This leads us to accept that there is a causal relationship between profitability measure and non-performing ratios. The above analysis would help in improving the quality of assets of banks. In turn the requirement for provisioning would automatically come down and it will directly add to the profit of banks.

Table 5. Correlation of NPA and ROA in SCBs

Variables	Correlation
GNPA Ratio with ROA	-0.442

CONCLUSION

The analysis concludes that there is a diminishing trend in the ratios of non-performing assets. There is a high degree of negative correlation between NPA Ratios with ROA. Regression model has also repeated the results and that there can be an enhancement in profitability of the banks if the NPAs has a continuous decreasing trend. Consequently, an inverse relationship among profitability and non-performing assets revealed the fact that the bank can have an increasing trend of profitability only by the effective decline in the NPAs. The assessment would help to improve the assets quality of banks, so that, provisioning requirement would automatically come down and it adds to the profits directly which leads to increase in the overall performance of the banks. It is important to manage the level of NPAs for Owners and Depositors also as they can face many problems due to augmented non-performing assets, even they cannot receive their aropriate return on their capital. NPA may spill over the banking system and contract the money stock, which may lead to economic contraction and affect its liquidity and

Figure 6.

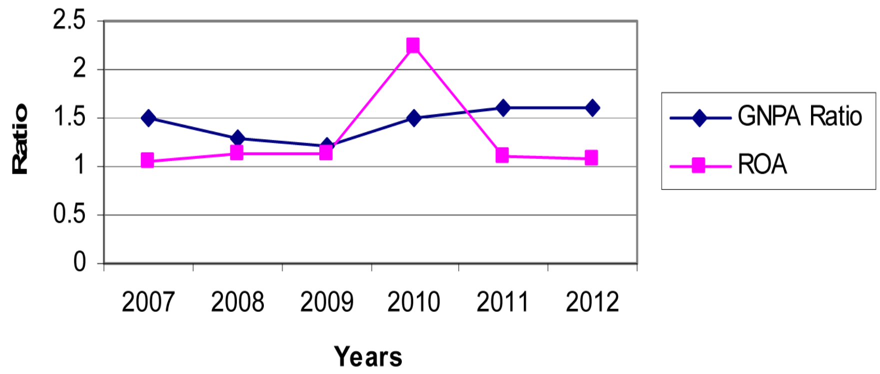


Table 6. Model summary and anova (f) results in SCBs

Variables/ Measures	R	R2	Adjusted R2	F-Value	Sig.
GNPA	0.982	0.964	0.965	106.25	.000

profitability. Though total elimination of NPAs is not possible in banking business as elements of risk is an inseparable ingredient but by effective management it can be minimized.

RECOMMENDATIONS

1. Relentless monitoring and focus on the continuous viability of the borrowing concern with improved asset classification is must. At the same time all accounts in the Standard category should not be taken for granted and should be subjected to periodical and in-depth review in a systematic manner through a sound adequate loan review mechanism in place.
2. Banks should ensure that they should move with speed and charged with momentum in disposing off the loss assets. This is because as uncertainty increases with the passage of time, there is all possibility that the recoverable value of asset also reduces and it cannot fetch good price. If faced with such a situation than the very purpose of getting protection under the Securitization Act, 2002 would be defeated and the hope of seeing a must have growing banking sector can easily vanish.
3. Bank should adhere to "Know Your Customer" norms for identification of borrower, guarantor and verification of their addresses to minimize the risk of default in case of housing sector lending. In respect of agricultural advances, recovery camp should be organized during the harvest season.
4. Ongoing monitoring of banks borrowers is important to understand the primary cause of corporate decline and to be able to identify the symptoms of a potential distress situation. Loan Officers and staff should be alert and diligent for signs of borrower distress. It is essential to identify signs of distress which diminish the Borrowers capacity to repay debt. Early recognition followed by aropriate action is essential if the bank is to minimize NPAs.
5. Loan Workout Unit should be created which should be exclusively responsible for managing non-performing and under performing loans to maximize the recovery value from a portfolio of distressed loans, through the employment of an equitable and professional workout process.

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Chapter 11
Stress Management in Educational Institutions:
A Questionnaire-Based Study

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ABSTRACT

In the modern state of affairs, people are stressed due to insignificant effects in life, whether it is at work or at home. Many studies have been conducted on stress over hundreds of years. Stress can be alleviated by engaging in different activities, which are of one's interest. This chapter, therefore, tries to address many questions related to stress in the workplace (in educational institutions in Jabalpur District). It also analyzes the stress levels with the help of percentage among the teaching faculty in professional and degree colleges through data collection and feedback. This chapter shows the reason behind the conception of stress amongst the teaching faculties of technical and non-technical teaching institutes in Jabalpur district, along with the remedies in dealing with stress and managing it to be successful. It enhances the confidence level by recommending the stress relieving activities. This chapter explores the meaning, causes, and a literature review of stress and techniques to handle it. This chapter also includes primary data collected from 6 different colleges (3 technical and 3 non-technical) of 150 teachers, which is further analyzed and discussed along with the recommendations to relieve stress.

1. INTRODUCTION

Peoples' lives today have become so concentrated and stressful. If observed closely, as compared to earlier times, there are more things to do, more people to please, more complexities, competition, misunderstandings, anxieties in an individual's life whereas there is less tolerance, time, endurance, understanding and acceptance. To make things worse even though we are surrounded by so many people, it's hard to find someone who will not judge, prosecute or label us and who is willing to

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hold our hand and navigate us through the stormy seas of our daily lives and our inner conflicts.

The present study, therefore, tries to address to certain questions while studying human behavior at work. What is stress? Where does stress come from? What are the causes of stress? And how can stress be managed?

The highlights included in this research paper are the main areas of stress when it comes to educational institutions.Teachers and educators endure a specific type of stress and anxiety in job; being responsible for the education of students, which can be difficult at times. While many educators teach with passion and love their jobs, they are not immune to stress. As teachers, we know how profoundly our mood can affect our classroom teaching. By taking time to manage our stress during and after class, we can be a calmer, more effective educator.This research study is being done with the intention to introduce the teaching staff in various colleges to some methods of stress reduction aimed at helping the educators to calm themselves in times of crisis, and remain peaceful in predictably stressful situations.

The main idea is to understand the actual causes which are causing stress to the teaching staff in colleges and to analyze the same. The motive of the study is also to suggest the remedial measures in order to reduce the level of stress and help in improving the work efficiency of the affected class.

Connotation of Stress

Stress is a physiological retort of the body to life situations, including both happy and unhappy events.Any time a demand is made to a person to make some sort of adjustment; it can lead to increased stress. Typical stress issues may include relationships, positive or negative job changes, children, fears and illness. Individuals with autism tend to have unusually high levels of stress. The source of this stress can be associated with social situations, changes in routine, fear, interruption of a preservative routines or an inability to effectively communicate. Stress and anxiety may take the form of screaming, throwing things, hitting, and swearing or oppositional behavior. Such high levels of stress should be addressed as a part of behavior intervention plans designed to reduce such unwanted behaviors. Prolonged or intense stress can be detrimental physically as well as psychologically and behaviorally.

A lot of research studies have been conducted on stress over the last hundred years. Some of the theories behind it are now settled and accepted; others are still being researched and debated on. During this time, there seems to have been something approaching open warfare between competing theories and definitions. Views have been passionately held and aggressively defended. People can alleviate stress by engaging in an activity they find calming such as reading, physical exercise, painting, counseling or some other assertive action or relaxation routine.

Causes of Stress

Management of Stress is difficult unless the individual experiencing stress is not aware of the specific causes or sources of stress. As we can see, many things/ conditions can cause stress. Conditions that cause stress are called ‘stressors’ or ‘loads’.

Stressors can be defined as the causes of stress, including any environmental conditions that place a physical or emotional demand on the individual. Stress originates from a misfit between environmental demands and personal adequacies to meet these demands. Different researchers have tried to classify the various causes of stress into different categories. But in this chapter three types of factors are discussed below:

- **Organizational Factors:** Stressor does not occur only outside the organization, but within it also. Organizational stressors may come in many forms, such as organizational policies, procedures and structure. Most forms of organizational change are stressful such as task, role and interpersonal demands, organizational structure and leadership. For example, downsizing (reducing the number of employees) is extremely stressful to both employees who lose their jobs and also who remain in the organization. As a result, the remaining workers are forced to pick up the slack of the workers who have left.

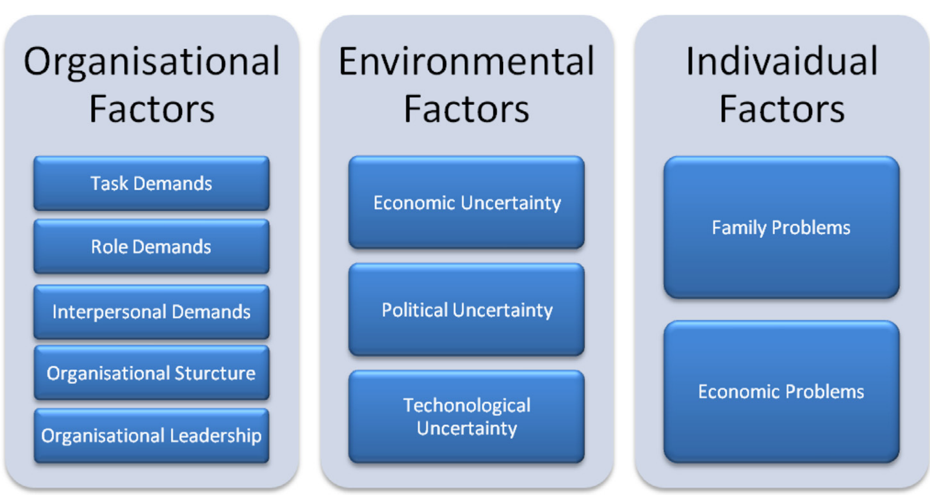
- **Environmental Factors:** Environmental factors do also have impact on employee stress. The environmental factors to which an employee responds mainly include things such as fast economic and political uncertainty and technological change. For example, a government employee of 53 years is sent for the computer training as there has been introduction of computer technology in the organization which is a necessary for the development of the same.
- **Individual Factors:** As far from stressors discussed so far organizational and environmental, there are individual factors also that cause stress. These are family and economic problems. Life events, personal traits and workload are the causes of stress for an individual. For example, there are evidences that women cope with stress better than their male counterparts. The reason attributed to it is women are more likely to seek emotional support from others in stressful situations, whereas men try either to change the stressor or use less effective copping strategy. However, we must remember that exceptions are always there.

Techniques to Handle Stress

It is better to bend than to break hence, the need for coping with stress is important. Though stress is helpful, but it is usually harmful as it is imposed on employee's health and his/ her task performance. Therefore, stress needs to be managed or coped with to minimize its debilitating effects. The word managing or coping denotes the way of dealing with stress. The strategies vary from person to person and in the same way from time to time according to the threat, challenge or automatic response. The various strategies can be classified into two broad categories:

1. At individual level.
2. At organizational level.

Figure 1. Causes of stress



At Individual Level: Individual strategies are based on 'self-help' or 'do it yourself' approaches. Some specific techniques that individuals can use to effectively manage their job stress are physical exercise, social support, yoga and meditation, behavioralself-control, pampering oneself, changing gears, rearranging one's job schedule and warming up oneself.

At Organizational Level: Like an individual level, an organization can also help to manage stress through various proactive interventions. Some of these interventions are stress audit, setting clear objectives, clarity in roles, fit between person and work, spread the message and counseling.

2. LITERATURE REVIEW

The published and unpublished studies which defines a variety of stress-management techniques used in worksite studies, including muscle relaxation, meditation, biofeedback, cognitive-behavioral skills, and combinations of these techniques. The most common techniques described here are muscle relaxation, cognitive-behavioral skills, and combinations of two or more techniques Murphy, 1984; Smith & Witt, 1993). In teaching related stress: the emotional management of faculty (Gates, 2000) research paper describe the work of faculty is stressful, yet most stress studies focus on faculty's research rather than teaching. This study examines the experience of nine tenured professors in search of answers to the questions as to what classroom interactions do faculty find stressful and why do they find these activities stressful. It has also been questioned, how these faculties explain, perform, and organize classroom practices to cope with these stresses. In this book the Lori Leyden – Ruben Stein (1999) present a proven programme of life strategies for coping with stressors and changing behavior. Stress reduction approach discussed in this book includes yoga, relaxation training, guided imagery, bio feedback, hypnosis, psychotherapy, cognitive restructuring and behavior modification.

3. DATA AND METHODOLOGY

Data for the proposed study has been collected from primary sources with the help of pre structured questionnaire. Considering the objectives of the study, two sets of questionnaire were developed to make the analysis more transparent. This study is to reveal the stress levels among the teaching faculty in professional and degree colleges and to do a comparative study between the two. The educational institutions were divided into two categories i.e. degree colleges and professional colleges. Efforts have been made through data collection and feedbacks to evaluate where the level of stress is more among the educational institutions.

The study period of this research work was from February 2012 to January 2013 the entire research was divided into 3 phases:-

The first phase was selecting the sample size for study which comprised of 150 teachers from professional and degree colleges. The initial ground work i.e. the collection of information about the faculties, deciding about the sample size etc. was over in the first month. The first questionnaire was distributed to the teaching faculties in mid-April 2012 with the intension to catch up with the root cause of their stress.

The collected feedback was scrutinized to find out the major stress issues of the sample and then the remedial or suggestive measures which included counseling/group discussion, yoga/meditation, recreational activities were given by the authors. It was made sure that the suggestive measures were strictly followed by the members for the given period of time i.e. May 2012 to July 2012.

Repeated counseling and orientation sessions were conducted by our experts where teachers were made to realize what exactly their drawbacks were which was causing stress in their professional and personal life. Solutions were offered by the experts and personal interactions were also done with the faculties in order to help them tackle their stress issues.

Regular meditation and yoga sessions were organized for the teachers to give them mental peace and to maintain their calm. Recreational activities such as music therapy and aerobics were also organized for the same purpose. It was assured that the members took part in all activities and enjoyed them also. This entire process was carried on for a period of 2 months.

In August 2012 a second questionnaire was distributed to get know-how of how much the remedial measures have helped the teachers overcome their stress. The teaching faculties were asked about the various activities that were conducted and their feedback was taken regarding the same.

In the next 5 months a complete analysis of the entire research study was done, the observations were studied and accordingly conclusions were drawn. In this time period also the authors were in regular contact with the teachers and any problem related to the research study which was brought forth by the faculties was promptly dealt with.

3.1. Research Objective and Questions

Objectives of this research study are based on the following research questions:-

- **Research Question# 1:** What is the level of stress in the technical and non-technical institutions?
- **Research Question# 2:** What is the effect this stress level on the teaching faculty?
- **Research Question# 3:** What are the various causes of these stress issues?
- **Research Question# 4:** What suggestive and remedial measures can be adopted for reducing the level of stress in educational institutions?

4. ANALYSIS AND DISCUSSION

The numerical data provided in this chapter are shown in percentage form so that the entire concept is easily understandable to the readers.

Personal and basic information relating to the working conditions of the teaching faculty in educational institutions was collected. The colleges included in this research study were 3 degree colleges namely, St. Aloysius (Auto.), Mata Gujri (Auto.) and Hitkarini Mahila Mahavidyalay and 3 professional colleges namely, St. Aloysius Institute of Technology, Hitkarini Engineering College and Shri Ram Engineering College. The sample size taken was 150 teachers from both the categories, 25 teachers from each college.

Table 1 and Figure 2 show the stress level of the teachers in the age group of three categories. The major part of the sample size was of the age group 35-45yrs which was 42.67% and also witnessed that the stress level was highest in this age group.

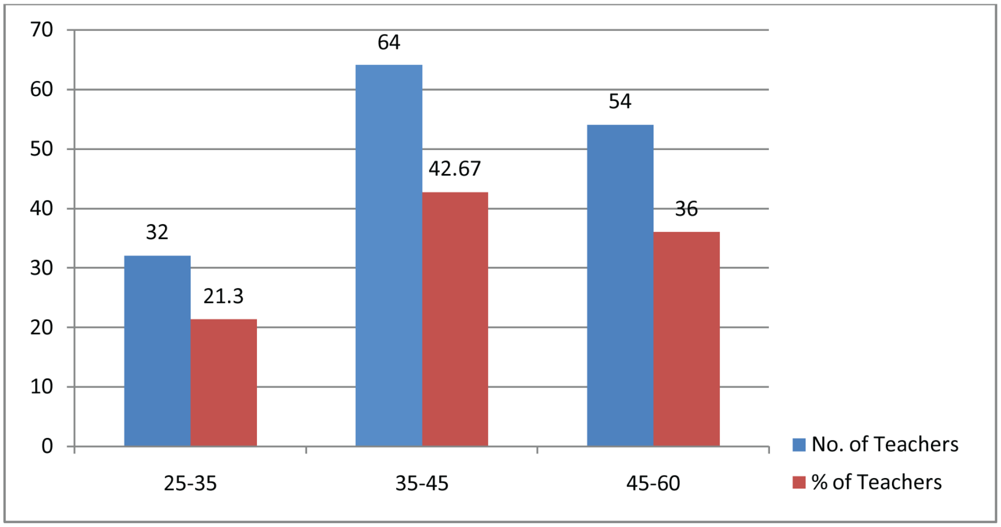
In the survey done, the faculty from professional was 67 and non professional was 83. Whereas 150 was further divided into 68 males and 82 female candidates. Highest number of faculty members was females with 54.7%.

Table 1. Stress level of teachers according to age group

Age	No. of Teachers	Percentage
25-35	32	21.3
35-45	64	42.67
45-60	54	36
Total	**150**	**100**

Source: Data Collected from field Survey

Figure 2. Stress level of teachers according to age group



More stress is seen in the married class i.e. 82.67% as they have more responsibilities in comparison to unmarried teaching staff i.e. 17.33%

Teaching faculty with children was found to be more stressful since they were facing problems apart from their working place relating to their family and children. In total 124 faculties had children out of which 82 said yes and 42 no who were facing stress related problems.

Table 2. Stress level according to the Sex ratio of teaching faculty

Sex	Males	Females	Total
Professionals	45	22	67
Non Professionals	23	60	83
% of males & females	45.3	54.7	**150/100**

Source: Data Collected from field Survey

Figure 3. Stress level according to the sex ratio of teaching faculty

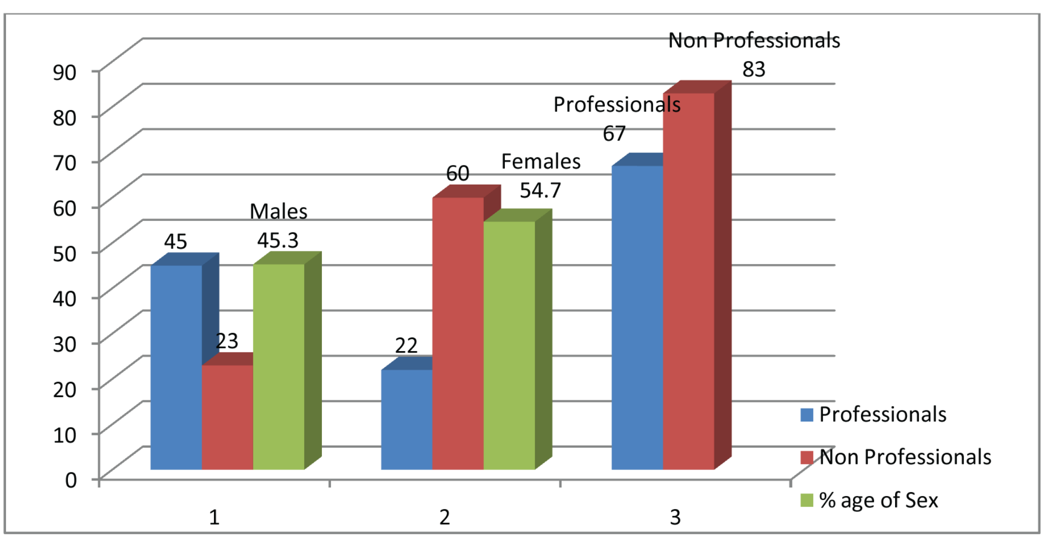


Figure 4. The marital status of teaching faculty

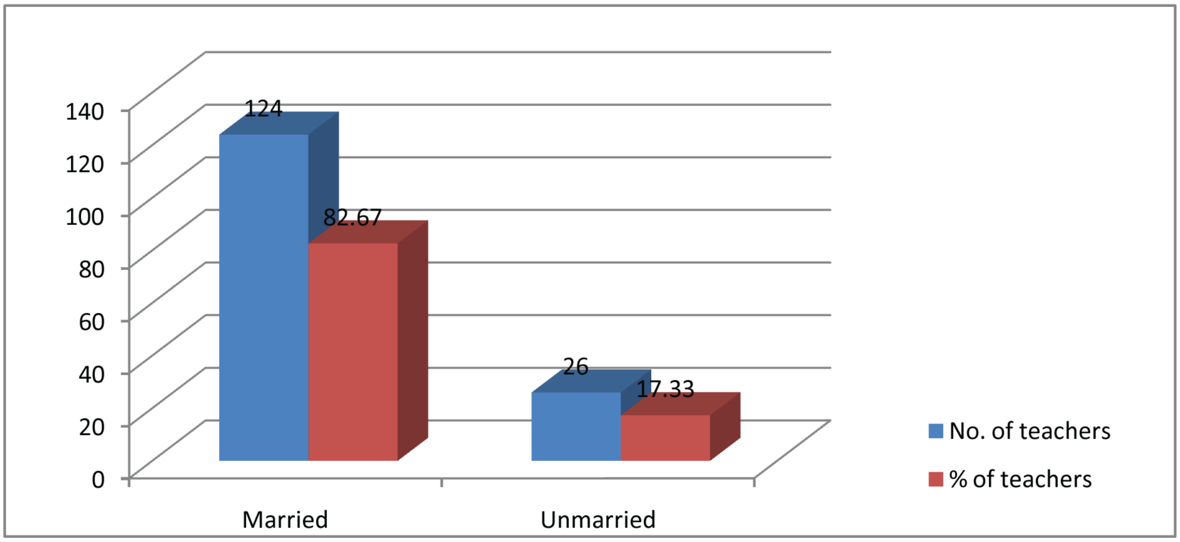


Table 3. The marital status of teachers

Marital Status	Married	Unmarried
No. of teachers	124	26
%	82.67	17.33

Source: Data Collected from field Survey

Table 4. Number of teachers having children

Children	No. of Teachers	%
Yes	82	66.13
No	42	33.87
Total	**124**	**100**

Source: Data Collected from field Survey

Figure 5. Number of teachers having children

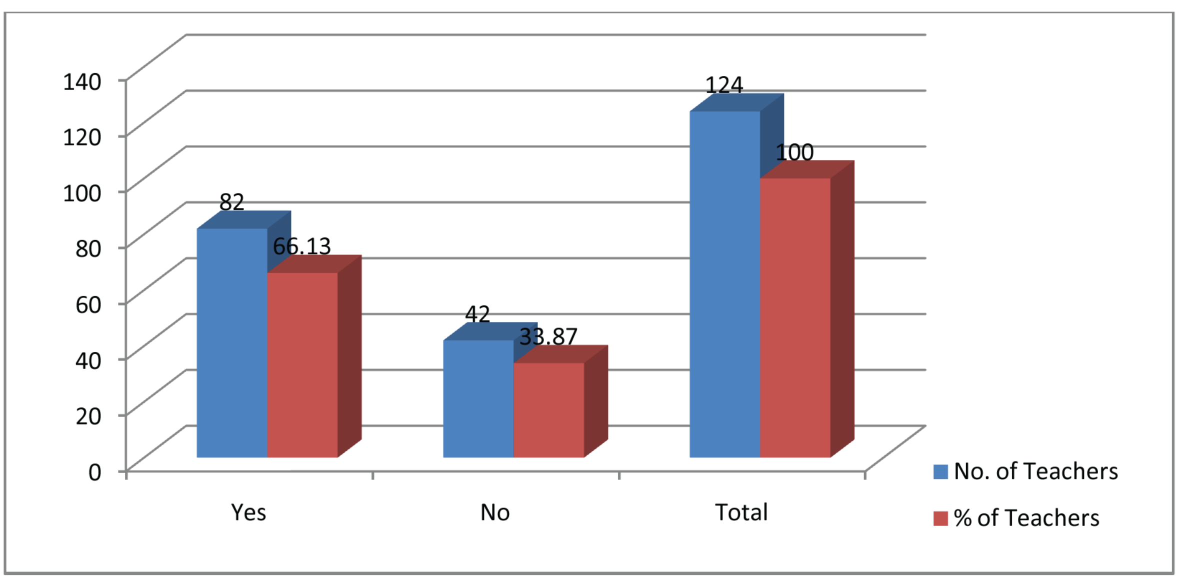


Figure 6. Family type of teaching faculties

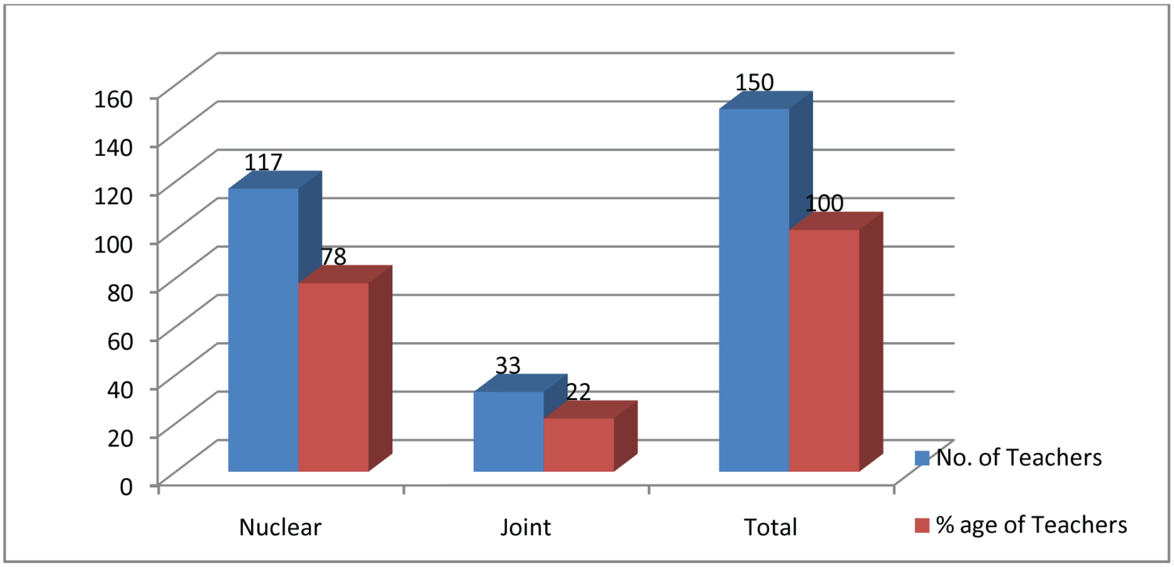


Table 5. Family type of teaching faculties

Family Type	No. of Teachers	%
Nuclear	117	78
Joint	33	22
Total	**150**	**100**

Source: Data Collected from field Survey

Among 150 teaching faculty 117 were living in nuclear family and rest 33 were in joint family either with father, mother, brother, sister, brother in law and sister in law, etc. People living in joint families were found to be more stressful since they were facing problems apart from their working place relating to their family and children as well.

4.1. Findings

After collecting the required information from the sample of the selected colleges the study progressed and following findings were observed:-

- It was witnessed that the major part of the sample size was of the age group 35-45yrs i.e. 42.67%and it was also seen that the stress level was highest in this age group.
- The stress level was higher in both the cases.
- More stress is seen in the married class as they have more responsibilities in comparison to unmarried teaching staff
- People with children were found to be more stressful since they were facing problems apart from their working place relating to their family and children.
- People living in joint families were found to be more stressful(78%) since they were facing problems apart from their working place relating to their family and children.
- One of the reasons for increased stress in the sample size was found to beover competitiveness and confrontational institutional culture.
- According to the feedback taken 37% of the sample size agreed that the culture was sometimes supportive and 35% said that it

was not at all encouraging. However 28% agreed that their working conditions were mostly favorable.

- Observation tells us that 59% of the sample size agreed that they faced stress situations most of the time whereas 35% of the people seldom faced such a situation. Only 6% of the total sample size denied of having stress (remarkably this 6% belonged to the category of senior teachers or holding authorities).
- Maximum teachers (46%) tackled the stress situation according to the level of stress they were experiencing. However 41% teachers were seeking help from others (it was observed that they were not getting the required support all the time). Only 9% of the total sample size consented on handling the stress optimistically and rest 4% were not able to handle the stress situation.
- According to the feedback taken 39% of the sample size agreed that they are able to handle the stress situation to a certain extent. However 29% agreed that they could manage their stress to a satisfactory level. 24% simply couldn't handle their stress issues whereas 8% are completely able to cope up.
- 7% of the teaching faculty was dissatisfied with the incentives offered by the management of their respective institutions one of the reasons given for stress by some of the teachers was the extensive competition among the colleagues which forced them to work under pressure. 34% of the teachers were facing stress because they were not getting their work's worth. It was observed that most of the teachers i.e. 36% were stressed due lack of management support.
- 13% of the teachers admitted that inspite of being knowledgeable, were not able to impart the same to the students and 22% found that their interaction with the students was a matter of stress for them. The next major issue which led to stress was that the faculty found it difficult to cope up with the latest and rapidly changing technology i.e. was 24%. As observed in the earlier question here also the maximum stress was caused due to improper interaction with colleagues and authorities.
- According to the survey 78% of the sample size agreed of taking leave in the past 12 months due to work related stress and 22% disagreed for the same.
- 37% of the people adopted the method of discussion with family / friends/ colleagues to share their problems and relieve their stress, while 28% adopted yoga and meditation. 26% people opted for other activities like sports and recreational activities and 9% of the faculty was not involved in any such activities.
- According to this survey the stress situations faced by the faculties of the educational institutions are mostly i.e. 14% are taken care of. Whereas 18% are in rare situations and 68% are totally neglected from the management point of view.
- Maximum teachers (64%) are frustrated or depressed due to the work load and management is not supportive in their working conditions and competition among the co workers and 35% of the teaching faculties are satisfied with their working conditions in the organisation. Whereas 7% of the faculties are unable to concentrate and out of 6% only 4% of the total sample size feels great while working in the organization as mentioned above according to the question number 2.
- After getting feedback from the first questionnaire it was evident that the faculties were for sure under a lot of stress but it was found that there were no issues which could not be embarked upon or managed. To administer the same, after consulting

the experts,the authors decided to resolute a series of stress reducing activities in the various educational institutions included in the research studies.

- As expected the feedback given by the faculties was positive i.e. a remarkable reduction was seen in their stress levels which automatically gave rise to their confidence level. The teachers not only enjoyed these activities but they also gave suggestions to improvise the same. They admitted that they were able to handle their stress in a better way and more effectively as compared to the past and were also eager to practice the remedies suggested to them on a regular basis. Some of the suggestions given by the faculty members were that due to stress personal growth slows down and they cannot concentrate on their work. Authority should take initiative to become the mediator between the problem developers and suffers. And the remedial measures suggested by the authors should be continuous due to which stress was reducing upto a certain extent.

4.2. Implications

4.2.1. Outcome of the Research

- After getting feedback from the first questionnaire it was evident that the faculties were for sure under a lot of stress but it was found that there were no issues which could not be embarked upon or managed. To administer the same, after consulting the experts, the authors decided to resolute a series of stress reducing activities in the various educational institutions included in the research studies.
- As expected the feedback given by the faculties was positive i.e. a remarkable reduction was seen in their stress levels which automatically gave rise to their confidence level. The teachers not only enjoyed these activities but they also gave suggestions to improvise the same. They admitted that they were able to handle their stress in a better way and more effectively as compared to the past and were also eager to practice the remedies suggested to them on a regular basis. Some of the suggestions given by the faculty members were that due to stress personal growth slows down and they cannot concentrate on their work. Authority should take initiative to become the mediator between the problem developers and suffers. And the remedial measures suggested by the authors should be continuous due to which stress was reducing upto a certain extent.

4.2.2. Policy Formulation

- The management of the various sample colleges agreed on the recommendations given by the authors and decided to continue with the various anti stress activities on regular basis.
- It was decided by the authorities of the institutions that a stress management cell would be setup in the college for the benefit of the faculty.

5. RECOMMENDATIONS

5.1. Guidelines for Reducing Stress in the Work Place

Management can provide invaluable support to employees by setting effective stress management techniques. Some of the crucial ways to reduce stress are:

- **Set reasonable goals and priorities:** Management should encourage employees to be part of the priority-setting process. When they feel they are part of the decision, they are more likely to take responsibility, rather than grumble about "my nasty boss" and "this terrible place."

- **Encourage good time-management techniques:** The Management should encourage their employees in planning for important activities, scheduling them in advance, following up with others, and keeping good records, help people get things accomplished on time and realize their value. Employees should also take time to note successes and projects accomplished.
- **Rehearse and prepare:** When person is prepared in advance, stress is comparatively less. Be prepared in advance of stressful situations for all possible outcomes.
- **Don't procrastinate:** Procrastination and delay breeds stress! Eliminate items which won't/can't get done and do those that are important first. This will help in reducing stress for future.
- **Know your limits:** Employees should be realistic about what they can accomplish. They should change attitudes and not be over aggressive for their ambitions. Think of stressful situations as a challenge to creative thinking. Know that eventually everything will either get done or itwon't - worrying won't make it better.
- **Learn to say "no":** When employees schedule is full, they should learn to say "no" to activities they don't enjoy, to unrealistic demands, to responsibilities that aren't theirs. Doing this with tact and diplomacy takes some practice and may require special training.
- **Give positive reinforcement:** Management should encourage their employees for achieving their ambition and accomplishing their task on time will help them to manage people when they do a good job.
- **Set up employee recognition programs:**"Employee of the Month" or "Creative Suggestion" systems encourage people to do a good job. Everyone needs a pat on the back and a sense of being a valuable person. Constant criticism is counterproductive and causes hard feelings. This practice will help the employees in getting recognition in the organization.
- **Take responsibility:** Employee's should be encouraged to take responsibility for their own job and for their contribution to the success of the company as a whole. This encourages a feeling of control over their life. Let them know how important their efforts are to the overall plan.
- **Provide a sympathetic ear:** often stressful situations can be managed if there is someone who is willing to listen to the employee's concerns and provide positive encouragement that they will get through the problem. For many people, 15 minutes of a sympathetic listener can cancel out many days of otherwise unproductive worry. This helps in releasing stress of the employees in the organization.
- Take short breaks after a particularly stressful event, management should encourage employees to take a 5 minute walk around the block or a few minutes of quiet meditation tore-balance their energies. Several short breaks throughout the can keep employees working at peak performance.
- Most essential, *maintain a sense of humor.* As a wise philosopher said, "Don't take life so seriously, it's only a hobby. People don't remember whatwas stressful in life six months ago or a year ago. Chances are, more positive. We know that this day will be just another day as a part of history and whatever seems traumatic now will fade into oblivion as time passes. So they should try to forget the past and learn for it rather than remembering it throughout the life as acidic memories.

6. CONCLUSION

Emotions are contagious, and stress has an impact on the quality of one's interactions with others. The better we are at managing our own stress, the more we'll positively affect those around us, and the less other people's stress will negatively affect us. While at some workplaces stress is normal, excessive stress can interfere with the productivity and affect the physical and emotional health of an individual.

After the entire research work was completed the following conclusions were drawn:-

- It was concluded that the selected sample size was undergoing a lot of stress due to excessive workload and family and society pressure.
- The level of stress was observed to be high in degree colleges as compared to the professional colleges.
- It was observed that married staff was under more pressure as compared to unmarried staff as they had to face issues not only related to their work place but also their personal issues.
- Female faculties were again found to be more stressful as compared to their male counterparts' reason being they were also dealing with their children, families and social needs.
- Almost all the stress related issues faced by the members were manageable but most of the time they were unable to find a way to release their stress.
- After undergoing the various stress relieving activities suggested by the authors most of the teachers agreed that these activities helped them in reducing their stress level.
- In the present scenario educational institutions are striving hard to keep up their name and fame, due to which they are neglecting the human aspects of their employees. This results in deterioration of the mental and physical health of the employees.

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KEY TERMS AND DEFINITIONS

Degree Colleges: A degree given to students of a higher learning institution signifying required credits have been obtained in specific areas of study. There are several levels of college degrees ranging from an Associate's degree to a Doctoral degree.

Educational Institution: A place where people of different ages gain an education, including preschools, childcare, elementary schools, and universities.

Faculty: A division within a university comprising one subject area, or a number of related subject areas.

Stress: A state of mental or emotional strain or tension resulting from adverse or demanding circumstances.

Stress Level: The level of tangential or hoop stress, usually expressed as a percentage of specified minimum yield strength.

Stress Management: The wide spectrum of techniques and psychotherapies aimed at controlling a person's levels of stress, especially chronic stress, usually for the purpose of improving everyday functioning.

Technical Institute: A designation employed for a wide range of learning institutions awarding different types of degrees and operating often at variable levels of the educational system.

APPENDIX

Questions Put Up to Gather Personal Information of the Sample Size

A. Name of the institution: ____
B. Age: 25 – 35 yrs [ ] 35-45 yrs [ ] 45 – 60yrs [ ]
C. Sex: Male/ Female
D. Education: ______________________
E. Marital Status: i) Married ii)Unmarried
F. If married, Do you have children? Yes / No
G. Family type: Joint / Nuclear
H. Professional information
    1. Number of years of work experience: __________yrs
    2. Number of years in present organization: __________yrs

Questionnaire No.1 for Stress Management is as Follows

Q1. Is work culture supportive in your organization?
    a. Mostly
    b. Sometimes
    c. Not at all
Q2. How often you face stress situation in your organization?
    a. Mostly
    b. Sometimes
    c. Not at all
Q3. How do you handle stress situations?
    a. Optimistically
    b. seek help from others
    c. Depends upon stress level
    d. Cannot handle
Q4. To what level you are able to handle your Stress situation?
    a. Completely
    b. To a certain extent
    c.To a satisfactory
    d. Not at all
Q5. Why do you feel stressed?
    a. Feeling work not valued
    b. Lack of management support
    c. Over competitive culture/ peer pressure
    d. Incentive Policy

Q6. Most of your stress is related to:
a. Teaching
b. Interaction with colleagues / authorities
c. Interaction with students
d. Latest trends (technology development)

Q7. Have you taken leave in the past 12 months due to work related stress?
a. Yes
b. No

Q8. Which activity do you adopt to release your stress?
a. Yoga/ meditation
b. Discussions with Family / Friends/ Colleagues
c. Other activities
d. No such activities

Q9. How often you face stress situation being taken care of?
a. Mostly
b. Rarely
c. Not at all

Q10. How do you feel while working in the organization?
a. Great
b. Satisfied
c. Unable to concentrate
d. Frustrated/ Depressed

Questionnaire 2 (Used After Providing Remedies) for Stress Management is as Follows

1. Did you find our remedial measures useful?
   a. Yes
   b. No
   c. Sometimes
2. Are you able to handle your stress issues in a better way as compared to the past?
   a. Yes
   b. No
   c. Most of the times
3. Would you like to practice the remedies suggested by use regularly in future also?
   a. Yes
   b. No
4. Which activity did you find the most beneficial?
   a. Yoga/ meditation
   b. Counseling / Group Discussion
   c. Recreational activities (music therapy, dance & aerobics)
5. Suggestions:

Case Study

Sanjay Sharma technician by profession leave his home from East Delhi at 5:10 A.M. and moved for the 30 mile drive to Gurgaon everyday for his job. He hoped he had left early enough not to face rush hour traffic entering the city. He was not thinking about distance, but only for a job opportunity he had to pursue, as Mr. Sharma had not been employed full time for nearly two years. Though he was a technician with over seven years of experience, he had failed the licensing test to become a master technician three times. Although he had more time to study and prepare for test in recent months because of lack of work, many days he did not work with house hold chores and caring for his two children – a daughter and a son. Both were of school age.

Sanjay's wife was teaching Science and Mathematics at high school standard in the Satyam Public School, New Delhi for the last twelve years. Her work had been interrupted two times due to the birth of their children. When Sanjay was employed full time and Pooja was teaching, their daily lives were very hectic. Both had to get up very early morning to get sufficient time to wake up the children, give them bath, feed them and get them dressed, and take them to school and day care daily. As Sanjay had to report for work by 7.00 A. M., Pooja used to handle the children and arrive at her school by 8.30 A.M. Sanjay's finishing time to his work day was also unpredictable than Pooja's. Many days Sanjay was required to work beyond 6.00 P.M. naturally, only Pooja had to pick up the children from day care, prepare evening meal, help the children in their home works, and perform other household tasks without Sanjay's assistance. The fact remains that both Sanjay and Pooja were obviously extremely busy and nearly exhausted by early in the evening. Moreover Pooja usually had school work (assignments, tests papers to evaluate and students performance to evaluate) also to complete in the evening itself because she did not get time in the morning. Though she enjoyed teaching very much, but she was becoming increasingly frustrated. The reason being more of her teaching day was taken up with student discipline problems, meetings with parents and non teaching tasks. She along with her colleagues had concluded that 14 and 15 year olds were undoubtedly the toughest age group to teach effectively.

Despite the difficulties Sanjay and Pooja had while both worked full time, neither of them anticipated the problems associated with Sanjay's under employment. For the last year Sanjay has worked, on average, two days a week. On Sundays, he would arrange for repair and other minor electoral works for neighbors and others. Uncertainty of his future work and irregularity of his work not only reduced family income but also created must disruption of their daily lives. Their already complicated situation culminated to the breaking point shortly after Sanjay arrived home from Gurgaon at 7.15 P.M. from his first full day of work is nearly four weeks.

As Sanjay pulled the gateway of his home, he was greeted by a police inspector: what happened late today in the school day, a seventh class student, namely, Brijesh Kumar, who had not only been difficult, but at times abusive also, badly confronted Pooja and struck her with his belt. By this time, the school medical officer gave first aid and had bandage on Pooja's forehead. The police inspector had come to their home to gather additional information for the filing of the charges against the difficult boy – Brijesh Kumar. When Sanjay entered the house, he found Pooja in a very emotional and distraught condition. Her face turned bright red. The moment Pooja saw Sanjay; she broke down and started sobbing. She told Sanjay that she could not go to the school the next day and that she wanted to quit teaching. Later in the night, Sanjay concluded that she might be having a nervous breakdown backed by heavy work stress and strain.

Exercise Questions

Q1. What were the causes of stress in Pooja's life?

Q2. How could Pooja and Sanjay get over their stress, and give suggestions to them for life a normal life in future?

Chapter 12
Working Capital Management: A Study Based on Cipla Ltd.

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ABSTRACT

It is expected that proper management of working capital contributes positively to the value of the firm, and liquidity of the firm negatively affects the profitability of the company. The purpose of the chapter is to analyze the composition and changes of the working capital and to find the impact of liquidity and efficiency of working capital management on profitability. For this purpose, this study is conducted on Cipla Ltd. for the period 2001-2009. From the study, it is found that there is a significant negative relationship between liquidity and profitability. It also reveals that managers can create value for the firm by reducing the holding period in inventories and receivable.

INTRODUCTION

Working capital is the part of the capital which is required for day to day operation of the business. So it is considered as lifeblood for any business. Working capital management is an important area of financial management. Management of working capital means management of various components of working capital in such a way that an adequate amount of working capital is maintained for smooth running of the firm. A firm is required to maintain a balance between liquidity and profitability while conducting its day to day operations. Liquidity means that sufficient cash is available to make the payment of the liabilities when they become due. On the other hand profitability means profit earning capacity of the firm .If the firm utilizes the funds properly, the profitability of the business firm increases. There is an inverse relationship between liquidity and profitability. If too much emphasis is laid on liquidity, cash will not be invested in profitable channels and profitability of the firm will suffer. On the other hand if a major portion of the funds available is invested in profitable activities to increase the profitability of the business firm then liquidity will be hampered. For this reason the determination of optimum working capital

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is very difficult. The amount of working capital depends on nature of business, scale of operation, production cycle, credit policy availability of raw materials etc.

Efficient management of working capital is an important indicator of sound health of an organization. Therefore, the working capital management needs attention of all financial managers. In this paper an attempt has been made to analyze the working capital management of Cipla Ltd during the period 2000-01 to 2008-09.

Objectives of the Study

1. To study the different composition of working capital and changes in working capital position of Cipla Ltd. during the study period.
2. To study the liquidity position of Cipla Ltd. by taking different components of working capital.
3. To analysis the selected ratios of working capital management.
4. To study the relationship between liquidity and profitability.
5. To study the impact of liquidity and length of cash conversion cycle (CCC) on profitability.

Review of Literature

Sur (2001) studied the association between liquidity and profitability of Indian private sector enterprises as a case study of aluminum producing industry. He concluded that liquidity variables jointly influenced profitability of the selected companies.

Ghosh and Maji (2003) examined the efficiency of working capital management of Indian cement companies during 1992-93 to 2001-02. They used performance, utilization and overall efficiency indices for measuring efficiency of working capital management. They concluded that Indian cement Industry as a whole did not perform remarkably during this period.

Kesseven (2006) investigated the trend in working capital and its impact on firm's performances on 58 small manufacturing firms, using panel data analysis for the period 1998-2003. He concluded that there is inverse relationship between investment in inventories and profitability. He found that best practices in the paper industry contributed to the performance.

Abdul and Nasr(2007) studied the impact of liquidity on profitability. They conducted the study on selected 94 Pakistani firms listed on Karachi Stock Exchange and found a significant negative relationship between net operating profitability and average collection period, inventory turnover in days, average payment period and cash conversion cycle.

Kannadhasan (2007) examined the working capital management of Titan Industries for the period from 1998-99 to 2004-45. From the study it revealed that the liquidity position of the Titan industries is good and it remained above the standard norms throughout the period of study. He also concluded that the working capital management efficiency has been increasing every year during the study period.

Database, Variables and Research Methodology

The data of Cipla Ltd have been collected from the annual reports of the company. The present study covers a period of nine years from 2000-01 to 2008-09. The data collected from this source have been collected and complied with due care as per requirement of the study. The following variables used in the study:

1. **Current Ratio (CR):** It is the Ratio of current asset and Current liabilities. Current Ratio measures the ability of the firm to meet its current liabilities. This ratio is an indicator of short term liquidity position of the firm.

2. **Quick Ratio (QR):** It is the ratio of quick asset and quick liabilities. It measures the absolute liquidity position of the firm. In calculating quick asset, inventories are excluded from current asset and bank overdrafts are excluded from the current liabilities.
3. **Inventory Turnover Ratio (ITR):** It is the ratio between cost of goods sold to average inventory. It measures the efficiency of the inventory management. The higher the ratio, the more efficient of the management of inventories and vice-versa.
4. **Debtors Turnover Ratio (DTR):** This ratio shows how many times sundry debtors turn over during the year. It is the ratio between net credit sales and average debtors. It measures the efficiency of the credit and collection policies of the firm.
5. **Creditor Turnover Ratio:** This ratio measures the average credit period enjoyed from the creditors and is calculated as under. It is the ratio between credit purchase and average creditors. A high ratio indicates that creditors are not paid in time. While low credit period gives an idea that business is not taking the full advantages of credit period allowed by creditors.
6. **Working Capital Turnover Ratio (WCT):** It is the ratio between net sales and net working capital. It measures the efficiency of utilization of the working capital. Higher ratio indicates low investment in the working capital and low working capital turnover ratio indicates that working capital is not efficiently utilized.
7. **Cash Conversion Cycle (CCE):** It is a total measure of working capital management. It is calculated by adding inventory turnover ratio with days with debtor turnover ratio with days and subtracting creditor turnover ratio with days from it.
8. **Return on Capital Employed (ROCE):** EBIT*100/Capital Employed. This ratio is an indicator of the earning capacity of the capital employed in the business. It is the ratio between earnings before interest and taxes and capital employed. This ratio is considered to be most important ratio because it reflects overall efficiency of the business.

Profitability of the firm is measured by ROCE. To measure the liquidity, current ratio is used and cash conversion cycle is used for measuring efficiency of working capital:

The collected data have been analyzed in the following ways

1. Analysis of different composition of working capital and changes in working capital.
2. Liquidity ranking.
3. Analysis of selected ratios of working capital management.
4. Analysis of impact of liquidity as well as efficiency of working capital management on profitability.

To know the relationship between profitability and liquidity and efficiency correlation coefficient are computed. To know the joint influence of selected liquidity ratios and efficiency of working capital management on profitability of Cipla Ltd, multiple regression have been used in this study. In this study ROCE is considered as dependent variable and CR has been taken as a measure of liquidity and the variable CCC is taken as a comprehensive measure of efficiency of working capital management .The regression model used in this study is

ROCE= f (CR.CCC.)

FINDINGS

Different Composition and Changes in Working Capital

The element wise analysis of working capital helps to know the composition of working capital. It helps to examine elements of working capital fund which are locked up. It also helps to identify the significant changes in gross working capital. The composition of working capital has been presented in Table 1. From the table, it is observed that out of four elements, inventory contributed on an average 38.89%, debtor contributed 33.21%, cash and bank contributed 1.61% loan and advances contributed 26.29% of gross working capital, Inventory to gross working capital fluctuate from 43.43% to 31.64%, we observed that there is a decreasing trend between 2001 to 2009.It is a positive sign of liquidity for the organization. During the study period Debtor to gross working capital has increased from 23.59% to 33.21%, It shows that working capital has been blocked up due to increases in debtors resulting in collection charges and bad debt increases. Whereas loans and advance to gross current assets contribute 32.07% to 25.59% between 2001-2009, with an average 26.29% towards gross working capital. The share of cash and bank in gross working capital has increased from 0.91% to 1.20% during 2001-09.It means absolute liquidity position of the company has increased during the study period.

From Table 2, it is observed that growth rate in current asset is 597.14 and current liabilities has been increased with a growth rate 375.14%. Its growth rate is less than the growth of current assets which indicates the better liquidity position. The growth rate of sales is 413.16%. Working capital of Cipla Ltd. had been increased from Rs 338.35 to 3015.01 with growth rate 791.01% between 2001-2009 which shows that working capital positively increases with the increase of sales volume.

Liquidity Position of Cipla Ltd.

The liquidity position of the firm is determined by taking the composition of working capital. To determine the liquidity position, comprehensive test has been used. A process of ranking has been used to arrive at a more comprehensive measure of liquidity in which four factors namely inventory

Table 1. Components of working capital

Year	Gross Working Capital	Inventory to Gross Working Capital	Debtor to Gross Working Capital	Cash and Bank to Gross Working Capital	Loans and Advance to Gross Working Capital
2001	633.96	43.43	23.59	0.91	32.07
2002	970.55	40.83	26.24	1.60	31.33
2003	1291.10	45..64	27.52	1.02	25.82
2004	1436.23	39.61	34.69	0.43	25.27
2005	1749.04	42.63	33.58	0.64	23.15
2006	2292.29	41.75	38.21	1.94	18.10
2007	2834.68	34.52	36.29	4.64	24.55
2008	3743.98	29.93	37.23	2.12	30.72
2009	4419.57	31.64	41.57	1.2	25.59
Mean		38.89	33.21	1.61	26.29
Standard Deviation		5.53	6.09	1.27	4.47

Table 2. Working capital position during 2001-09

Year	Current Asset	Current Liabilities	Cash and Bank	Net Sales	Capital Employed	Working Capital	Increase/ Decrease of Working Capital
2001	633.96	295.61	5.80	966.68	738.05	338.35	-
2002	970.55	450.09	15.57	1274.51	913.56	520.46	182.11
2003	1291.10	596.61	13.12	1437.28	1154.54	694.49	174.03
2004	1436.23	679.59	6.24	1842.24	1464.45	756.64	62.15
2005	1749.04	778.44	11.20	2181.26	1734.77	970.60	213.96
2006	2292.29	908.21	44.48	2891.36	2442.86	1384.08	413.48
2007	2834.68	941.26	131.49	3438.24	3350.86	1893.42	509.34
2008	3743.98	1287.79	79.28	3997.90	4287.30	2456.19	562.77
2009	4419.57	1404.56	53	4960.60	5282.02	3015.01	558.82
Growth	597.14	375.79	813.79	413.16	615.67	791.09	

to current asset, debtor to current asset, cash and bank to current asset, loan and advance to current asset have been combined in a point score. In case of stock to gross working capital, low value indicates favorable position, on the other hand debtor to gross working capital, cash & bank to gross working capital, loan and advance to gross working capital, a high value indicates favorable position and ranking has been made in that order. Based on the principle, it can be concluded that lower the points scored, the more favorable is the liquidity position. From Table 3, it can be observed that year 2004 registered the most liquidity position of the company and was followed by 2005, 2001, 2002, 2009, 2007, 2003, 2006, and 2008 respectively in that order

Analysis of Important Parameters of Working Capital Management

Analysis of important parameters of working capital is shown in Table 4.

Table 3. Statement of ranking in order of liquidity

Year	Inventory to Gross Current Asset	Rank	Debtor to gross Current	Rank	Cash, Bank to Gross Current	Rank	Loans, Advances to Gross Current	Rank	Total Rank	Ultimate Rank
2001	43.43	8	23.59	1	0.91	3	32.07	9	21	4.5
2002	40.83	5	26.24	2	1.6	6	31.33	8	21	4.5
2003	45.64	9	27.52	3	1.02	4	25.82	6	22	7.5
2004	39.61	4	34/69	5	0.43	1	25.27	4	14	1
2005	42.63	7	33.58	4	0.64	2	23.15	2	15	2
2006	41.75	6	38.21	8	1.94	7	18.10	1	22	7.5
2007	34.52	3	36.29	6	4.64	9	24.55	3	21	4.5
2008	29.93	1	37.23	7	2.12	8	30.72	7	23	9
2009	31.64	2	41.57	9	1.2	5	25.59	5	21	4.5

Table 4. Important parameters of working capital management

Year	CR	QR	ITR	DTR	CTR	WCT	CCC
2001	1.96	1.21	4.30	9.09	14.04	2.86	129
2002	1.94	1.28	4.13	6.86	13.52	2.45	133
2003	1.9	1.18	3.15	5.08	12.59	2.07	163
2004	1.87	1.28	3.41	4.63	11.06	2.43	154
2005	1.89	1.29	3.54	4.29	11.77	2.25	157
2006	2.06	1.47	3.55	4.13	10.74	2.09	157
2007	2.42	1.97	3.65	3.71	8.49	1.82	156
2008	2.62	2.04	3.9	3.38	9.86	1.63	161
2009	2.7	2.15	3.99	3.11	7.77	1.65	162
Mean	2.18	1.58	3.67	4.40	10.73	2.05	152.44
S.D	0.33	0.39	0.37	1.92	2.14	0.41	12.55
C.V	15.14	24.68	10.08	43.64	19.94	20	8.23

1. **Current Ratio (CR):** It is the ratio between current assets & current liabilities. An ideal current ratio is 2:1. An increase in current ratio means improvement in the liquidity position of the company. In case of Cipla Ltd, current ratio has been increased from 1.96 to 2.7 between 2001- 2009. Average current ratio is 2.18:1. It indicates that liquidity position of the company is very strong and the standard deviation is 0.33 and coefficient of variation is 15.14% which indicates consistency of the ratios.
2. **Quick Ratio (QR):** It is the ratio of quick assets and quick liabilities. The standard ratio is 1:1. Quick ratio of Cipla ltd is more than standard during study period. Average quick ratio is 1.58:1. This ratio has also been increased during the study period and standard deviation is 0.39 and coefficient of variation is 24.68 which show variability of this ratio during study period.
3. **Inventory Turnover Ratio (ITR):** This ratio shows the relationship between cost of goods sold and average inventory. High inventory turnover ratio means quick conversion of stock into sales and vice-versa. In case of Cipla Ltd ITR has been decreased from 4.30 to 3.99. Average ITR is 3.67 and Standard deviation is 0.37 and coefficient of variation is 10.08 which is not satisfactory.
4. **Debtor Turnover Ratio (DTR):** Debtor turnover ratio has been decreased from 9.09 to 3.11 during the study period. It indicates that the company followed liberal credit policy or inefficient of the collection department. It also increases the chances of bad debt. Average DTR is 4.4 which is not satisfactory and standard deviation is 1.92 and coefficient of variation is 43.64. It indicates high fluctuating trends in DTR.
5. **Creditor Turnover Ratio (CTR):** Creditor turnover ratio has been decreased from 14.04 to 7.77. Average Creditor turnover ratio is 10.73. The ratio decreases during the study period. It means that delays in payment of creditors. In other words operations of the company are being financed interest free suppliers fund. It improves the liquidity position of the firm.
6. **Working Capital Turnover Ratio (WCT):** Working Capital turnover ratio has been reduced from 2.86 to 1.65. From Table 2,

it is observed that working capital have increased during the study period but WCT ratios have been decreased during 2001 to 2009. It means that the company could not generate adequate sales by utilizing the working capital.

7. **Cash Conversion Cycle (CCC):** Cash Conversion Cycle is used to measure efficiency of working capital management. The mean value of CCC is 152 days and cash conversion cycle is increasing over the study period (except the year 2003 and 2007). It indicates the inefficiency of working capital management.

Relationship between Liquidity and Profitability

To know the relationship between selected profitability ratios relating to working capital management and profitability, correlation coefficients are computed. The correlation coefficient between different ratios is presented in Table 5. From Table 5, it is observed the value of correlation coefficient between CR and ROCE is -0.812 which indicates strongly negative relationship between CR and ROCE and at 1% level, the value of correlation co efficient is significant. The value of correlation coefficient between ROCE and QR is -0.811. This value is found to be statistically significant at 1% level. It also indicates that liquidity position is adversely affected the profitability of Cipla Ltd. The correlation coefficient between ITR and ROCE is 0.091. It is found to be insignificant at 1% and 5% respectively. It indicates that lower degree of positive correlation between these variables. The correlation between DTR and ROCE is 0.763. The correlation coefficient is found to be significant at 5% level. It indicates that there is a high degree of positive relationship between ROCE and DTR. Lower the debtor means prompt payment by the customers and better the liquidity of the customers. It indicates less bad debt, collection expenses which in turn improves the profitability. The correlation coefficient between CTR and ROCE is 0.811 which is found to be statistically significant at 1% level. The correlation coefficient between ROCE and WCT is also positive (0.83). It indicates that there is a high positive correlation between WCT and ROCE. It means that when WCT increases ROCE increases. The correlation between CCE and ROCE is -0.74 Which is found to be statistically significant at 5% level.

To know the joint influence of liquidity and efficiency of working capital management on profitability of Cipla Ltd, multiple Regression has been used in the study. The results of regression analysis are shown below. From the correlation table it is observed that there is high Positive correlation exist between CR and QR and high negative correlation exist between CR and WCT .The correlation coefficient between CCC and ITR is -0.69 and the correlation coefficient between CCC and DTR is -0.91 . To avoid multicollinearity two variables (CR and CCC) are considered as explanatory variables. In this regression analysis, CR and CCC have been taken as a measure of liquidity and efficiency of the working capital management. On the other hand, ROCE (measure of profitability) has been taken as dependent variable. Thus the regression model is:

ROCE=88.794-11.030CR-.230CCC

The coefficient of C is 88.79 and it is significant at 1 percent level. The coefficient of Current ratio (CR) is -11.03.The coefficient of current ratio is significant at 5 percent level. It implies that liquidity of the firm has negative impact on profitability. It indicates that there is a negative relationship between liquidity and profitability .The coefficient of current ratio also implies that 1% change in current ratio would result in 11.03 percent opposite change in profitability. The Value of coefficient of CCC is negative (-0.230) and the t value is significant at 5 percent level. It

Table 5. Correlation between different parameters of working capital management and profitability

	ROCE	CR	QR	ITR	DTR	CTR	WCT	CCC
ROCE	1.00							
CR	-0.81 (0.008)	1.00						
QR	-0.81 (0.008)	0.98 (0.00)	1.00					
ITR	0.091 (0.817)	0.31 (0.413)	0.23 (0.551)	1.00				
DTR	0.76 (0.017)	-0.58 (0.102)	-0.67 (0.049)	0.49 (0.18)	1.00			
CTR	0.811 (0.008)	-0.819 (0.007)	-0.892 (0.001)	0.13 (0.727)	0.85 (0.003)	1.00		
WCT	0.83 (0.005)	-0.81 (0.007)	-0.84 (0.004)	0.234 (0.544)	0.889 (0.001)	0.853 (0.003)	1.00	
CCC	-0.74 (0.024)	0.42 (0.260)	0.47 (0.198)	-0.69 (0.038)	-0.91 (0.001)	-0.70 (0.036)	-0.81 (0.008)	1.00

Table 6. Results of linear regression

R=0.92 R^2 Value= 0.848					
ANOVA Table					
	Sum of Squares	**Df**	**Mean Squares**	**F**	**Significance Level**
Regression	246.629	2	123.315	16.721	0.004
Residual	44.248	6	7.375		
Total	290.877	8			
Coefficients					
	Unstandardized Coefficients		**'t'value**		**Significance Level**
CR	-11.03		-3.483		0.013
CCC	-0.230		-2.725		0.034
Constant	88.79		7.537		0.001

Dependent Variable: ROCE

indicates that a decrease of 0.230 in profitability as a result of one percent increase in CCC. It is because the firms with longer CCC are more likely to be less profitable than the firms with shorter CCC .The firm with shorter CCC need not require external financing, which results in incurring less borrowing cost. From the results it also clear that cash conversion cycle (CCC) and profitability inversely related. The multiple correlation coefficient of ROCE on CR and CCC is .92. It reveals that profitability of the company is highly influenced by these two variables and the R^2 value is 0.85.It implies that 85 percent of variability of dependent variable is explained by these two variables CR and CCC .The analysis of variance table shows F value is 16.72 and the value is significant at 1 percent level.

CONCLUSION

From the study it is evident that inventories have been decreased during the study period. It indicates that liquidity position of the company has improved. On the other hand debtor has increased which implies the inefficiency of the debtor's management. It is found that liquidity ratios have negative impact on profitability. There is also negative relationship between cash conversion cycle (CCC) and profitability (ROCE). This suggests that managers can create value of the firm by reducing the cash conversion cycle to a certain extent. If the firm can reduce its cash conversion cycle, it can reduce average holding period in inventories and receivables. As a result, less capital is required for the business, so extra financing is not required for the business which helps to increase profitability of the company.

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KEY TERMS AND DEFINITIONS

Cash Conversion Cycle (CCE): A total measure of working capital management. It is calculated by adding inventory turnover ratio with days with debtor turnover ratio with days and subtracting creditor turnover ratio with days from it.

Creditor Turnover Ratio: This ratio measures the average credit period enjoyed from the creditors and is calculated as under. It is the ratio between credit purchase and average creditors. A high ratio indicates that creditors are not paid in time, while a low credit period gives an idea that business is not taking the full advantages of the credit period allowed by creditors.

Debtors Turnover Ratio (DTR): This ratio shows how many times sundry debtors turn over during the year. It is the ratio between net credit sales and average debtors. It measures the efficiency of the credit and collection policies of the firm.

Inventory Turnover Ratio (ITR): The ratio between cost of goods sold to average inventory. It measures the efficiency of the inventory management. The higher the ratio, the more efficient of the management of inventories and vice-versa.

Quick Ratio (QR): The ratio of quick asset and quick liabilities. It measures the absolute liquidity position of the firm. In calculating quick asset, inventories are excluded from current asset and bank overdrafts are excluded from the current liabilities.

Return on Capital Employed (ROCE): EBIT*100/Capital Employed. This ratio is an indicator of the earning capacity of the capital employed in the business. It is the ratio between earnings before interest and taxes and capital employed. This ratio is considered to be the most important ratio because it reflects overall efficiency of the business.

Working Capital Turnover Ratio (WCT): The ratio between net sales and net working capital. It measures the efficiency of utilization of the working capital. A higher ratio indicates low investment in the working capital, and a low working capital turnover ratio indicates that working capital is not efficiently utilized.

Chapter 13
International Portfolio Diversification Benefits among Developed and Emerging Markets within the Context of the Recent Global Financial Crisis

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ABSTRACT

This chapter aims to examine the existence of dynamic linkages among the major emerging stock markets, namely Brazil, Hungary, China, Taiwan, Poland, and Turkey, as well as developed markets, particularly the US, the UK, and Germany during the period 2004-2013. Potential dynamic long-run interdependencies are investigated using Johansen and Juselius (1990) multivariate cointegration test and causal relationship through the Vector Error Correction Model (VECM). Moreover, to capture the impact of the recent global crisis on the cointegrating relationship among the developed and emerging markets, the sample period is divided into pre- and post-crisis sub periods. The empirical findings show that, after the crisis period, the direction of the long-run relationship varies, and furthermore, the stock market interdependence increases, supporting herding behavior of investors during the stock market crash period. Therefore, the increasing dynamic co-movements in the period after the crisis provide direct implications for the international investors due to potential limitation in the international risk diversification and the achievement of greater portfolio returns through global investment.

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INTRODUCTION

Portfolio management, in general sense, is the design of optimal portfolios that match the rational investor's objectives with the future prospects of portfolio manager. Modern portfolio theory states that investors constantly attempt to maximize the expected rate of return through diversification opportunities. The increasing trend in the free capital flows, technological developments in communication and trading systems, thereby, reduction in cost of information and the introduction of new financial products create more diversification opportunities for both individual and institutional investors. Rational investors make their decisions based on their risk aversion rather than maximizing the expected utility. Therefore, international investors have begun to implement international portfolio diversification as a tool for reducing the expected portfolio risk and maximizing the expected rate of return.

One of the main principles of international diversification is the existence of uncorrelated return among markets. When returns from investments in different countries' stock markets are not correlated, the opportunities generated from portfolio diversification are more profitable, according to modern portfolio theory (Elton & Gruber, 1995; Farrell, 1997, Strong, 2000). In recent years, however, globalization, economic and financial integration and assimilation between countries have enhanced the interdependency of global markets and these phenomena seem to affect the decisions of investors in the allocation of financial assets. It is well accepted that integration of financial markets, is primarily linked to economic growth through risk sharing benefits, improvements in allocation efficiency, and reductions in macroeconomic volatility (Pagano, 1993). Since greater integration exists between national stock markets, investors prefer to make an investment in the emerging markets to exploit benefits of international diversification, in the belief that there may be low correlations between developed and emerging markets. In this context, reflecting the trend towards greater integration of stock markets, this chapter explores how application of international portfolio diversification occurs among developed and emerging markets through an assessment of the impact of recent global financial crisis.

The recent global financial crisis is entitled as one of the most severe, because of its global nature. The crisis started in the US and spread through major stock markets all over the world, leading to confusion among policy makers and investment practitioners, and raising many questions relating to the subject of international financial integration. Characterized by turbulent financial markets and widespread economic slowdown across the countries since the middle of 2007, this crisis could be fuelling entirely negative impacts on international financial integration. Given that significant changes have occurred across the world financial markets, it appears timely and interesting to examine whether the relationships among these markets have changed over this crisis period. Therefore, understanding the interaction of global markets across countries interact could provide crucial inputs for policy purposes in dealing with crises spreading from one country to another.

This chapter concentrates on the following questions:

1. What is indicated by any dynamic long-run relationship among emerging and developed stock markets over the period?
2. Have the long-run relationships across stock markets changed since the recent global financial crisis?
3. What are the short-run linkages and causality effects between major developed and emerging stock markets over the period?
4. Are there any specific changes in the short-run and causal relationship among the sample countries after the recent global crisis?

5. How does the recent global crisis affect the integration of emerging and developed stock markets'?
6. What are the key implications of the recent global financial crisis on stock market integration?

Based on the questions above, this chapter investigates possible long-run relationship and short-run dynamic causal linkages between major stock markets in developed countries, particularly the US, the UK and Germany, and those in emerging countries, namely Brazil, Poland, Hungary, Taiwan, China and Turkey, during the period 2004-2013, and also assesses the impact of the recent global financial crisis on the level of financial integration among these markets. This study is of particular importance for both investors and corporate managers, as it considers the influences on international asset allocation and diversification benefits and the cost of capital, which contribute significantly to economic growth.

The contribution of this chapter to the literature is two-fold: First, it utilizes a comprehensive data set that includes daily data for the major stock markets of developed and emerging countries from April, 2004 to March, 2013. Second, it considers whether the recent global financial crisis has resulted in long and short-term structural changes on the co-integrating and lead-lag relationship among the stock markets. To the author's best knowledge, it would appear that a limited number of studies have addressed the issue of how this crisis altered market integration among these countries. By dividing the sample into two sub-periods, it also considers potential differences in terms of international diversification benefits available for both institutional and/or individual investors before and after the recent global financial crisis.

The rest of this chapter is organized as follows. The first part focuses on broad definitions and discussions of the topic within the scope of literature. The second part outlines the econometric methodology, followed by data set. The third part presents the empirical results. Future research directions are discussed in the fourth part. Finally, the chapter concludes with discussion of the overall coverage.

BACKGROUND

The study of Markowizt (1952) is esteemed as first to quantify portfolio diversification, and pioneered the concept of modern portfolio theory. There is always a tradeoff between risk and return in the field of investment. Basically, if an investor invests in an asset with high expected return, the expected risk would be higher for that asset as well. Modern portfolio theory is in the center of this tradeoff, and describes how to select a portfolio that would maximize the expected return through diversification opportunities. Starting from 1970s, liberalization trend in international stock markets led to international investment movements which encouraged international portfolio diversification (Haroon et al., 2012). The primary motivation for international portfolio diversification is to reduce the expected portfolio risk and expand the opportunities for expected portfolio return beyond those available through domestic securities. Investors are assumed to be risk averse in classical portfolio theory, thus they search for an optimal portfolio that maximizes the expected utility (Fama & MacBeth, 1973).

The total risk of any portfolio is composed of two types, systematic, referring to market risk, and unsystematic, referring to individual securities risk. The solution for unsystematic risk is to increase the number of securities in the portfolio (Eiteman et al., 2010). Moreover, investing in different sectors would reduce the company specific and industry specific risks which can be attributed unsystematic risk. However, in each case, systematic risk remains constant unless overall economic conditions change in the country. Therefore, to reduce systematic risk, modern portfolio theory proposes to diversify the portfolio, by investing in different countries' stock markets which are not perfectly co-integrated or have inverse price patterns (Elton & Gruber, 1995; Coeurdacier & Guibaud, 2011; Haroon et al., 2012).

A growing literature focuses on international portfolio diversification. The majority of previous empirical research has concentrated on diversification opportunities in European stock markets (e.g. Taylor & Tonks, 1989; Corhay et al., 1993; Serletis & King, 1997; Dickinson, 2000; Yang et al., 2003; Demian, 2011), and in Asian and Pacific stock markets (e.g. Hung & Cheung, 1995; Corhay et al., 1995; Janakiramanan & Lamba, 1998; Fan, 2001; Karim et al., 2009; Haroon et al., 2012). Also many studies have examined stock market co-integration across regions (e.g. Hassan & Naka, 1996; Huang et al. 2000; Bessler & Yang, 2003; Kenourgios & Samitas, 2011; Gupta & Guidi, 2012). Moreover, as the correlations between developed markets increased, investors started to seek for new benefits of international diversification, and shifted the direction to emerging markets due to the perception of lower the correlations between developed and emerging markets. Therefore, in the literature, there are also a number of studies that focus on the diversification linkages between emerging markets, and developed markets (e.g. Syriopoulos, 2004; Kenourgios & Samitas, 2011; Yorulmaz, 2011).

Prior literature also provides empirical results for recent global financial crises in the context of portfolio diversification (Hwang, 2012; Meric et al. 2012; Niklewski & Rodgers, 2012; Thao & Daly, 2012). The results demonstrate that events of global importance have significant impacts on the correlation patterns of global stock markets. For instance, Hwang (2012) found no opportunities for global investors to improve their portfolio risk-return performance during 2007 crisis. Also, the study of Meric et al. (2012) demonstrated a considerable decrease in global portfolio diversification during this 2007 crisis. In addition, the effects of 1987 stock market crash on global portfolio diversification were studied by many researchers (Roll, 1988; Malliaris & Urritia, 1992; Arshanapalli & Doukas, 1993; Lee & Kim, 1993; Lau & McInish, 1993; Meric et al. 2001). Similarly, it was found that benefits of global portfolio diversification decreased significantly after the crisis periods. Since the existing studies on this issue are limited, it is crucial to assess whether the recent global crisis has had any effect on the dynamic linkages and interdependencies, as well as the benefits brought by international portfolio diversification, among the major developed and emerging stock markets, as the crisis due to the resulting in structural changes in the financial architecture.

METHODOLOGY

This chapter uses the methodology of cointegration analysis to investigate the issue of likely benefits of diversification through the dynamic comovements and linkages among developed and emerging markets. Interrelations and linkages among the developed and emerging markets are estimated by testing for the presence and number of cointegrating vectors. The cointegrating relationship allows us to determine whether there is stable long-run stationary relationships among the selected variables. To test for the causal dynamic relationship between these stock markets, standard causality test or vector error correction model is conducted.

Unit Root Test

To test for the existence of cointegration, the first step is to analyze each stock index series for the presence of unit roots, which shows whether or not the series are non-stationarity. The order of the integration of all series must be determined, and its equality for all series must be confirmed.

Augmented Dickey and Fuller (ADF) (Dickey & Fuller, 1979, 1981) and Philips and Perron (PP) (Phillips & Perron, 1988) unit root tests were used to check the non-stationarity properties of the series. Additionally, in order to confirm the validity of the ADF and PP unit root test results, Kwiatkowski, Philips, Schmidt and Shin (KPSS) (Kwiatkowski, Philips, Schmidt and Shin, 1992) unit root test was performed. The more general and common ADF test, which includes a drift plus a time trend, is based on the following model:

$$\begin{aligned}&\Delta y_t = \alpha + \mu t + \rho y_{t\text{-}1}\\&+\sum\nolimits_{i=1}^{k} \Delta y_{t-i} + \varepsilon_t\\&\varepsilon_t \approx i.i.d.\left(0, \sigma^2\right)\end{aligned} \tag{1}$$

where Δ represents first difference of the series, the term μ indicates a trend variable, and ε_t is the white noise term. ADF test is only valid under the assumption of *i.i.d.* processes. The null hypothesis implies that y_t series contains a unit root when $\rho = 0$. The rejection of the null hypothesis implies the stationarity of the series, implying that there is no unit root. The optimal lag length is determined by using the appropriate information criteria, such as Akaike information criterion (AIC) or the Schwarz information criterion (SIC).

PP test is a generalization of the Dickey-Fuller test and described as follows:

$$y_t = \alpha_0 + \alpha y_{t\text{-}1} + u_t \tag{2}$$

where u_t is the white noise term. Philips and Perron (1988) modified the ADF test by allowing the error disturbances to be weakly dependent and heterogeneously distributed, since the ADF test assumes that errors are statistically independent and have constant variance. This test tends to be more robust to a wide range of serial correlations and time-dependent heteroscedasticity.

Unlike the ADF and PP unit root tests, KPSS assumes the stationarity of the series as the null hypothesis and the rejection of the null hypothesis indicates a non-stationary time series. The KPSS test uses a frequency zero spectrum estimation of the residuals in:

$$y_t = \alpha_0 + \beta t + \varepsilon_t \tag{3}$$

The KPSS test is one-sided Lagrange Multiplier (LM) test and is described as follow:

$$LM = \sum\nolimits_{t=1}^{T} \frac{\left(\sum\nolimits_{r=1}^{t} \varepsilon_t\right)^2}{T^2 f_0} \tag{4}$$

where f_0 is the estimator of the residual spectrum at frequency zero.

Cointegrating Vectors

If two or more variables are cointegrated, there may exist stationary linear combinations of these variables. In absence of a cointegrating relationship among the variables, the variables have no long-run interdependence and can drift arbitrarily from each other (e.g. Engle & Granger, 1987; Johansen; 1988). Johansen's methodology (Johansen, 1988; Johansen & Juselius; 1990) is applied to determine whether stock prices of developed and emerging markets move together over the long run.

Johansen cointegration approach, which takes its starting point in the vector autoregressive (VAR) analysis, utilizes maximum likelihood estimates to test for the number of cointegrating relationships in the multivariate system[1]. This approach relies on the relationship between the rank of a matrix and its characteristic roots (eigenvalues). Consider a VAR of order *p*:

$$z_t = A_1 z_{t\text{-}1} + A_2 z_{t\text{-}2} + \ldots + A_p z_{t\text{-p}} + \mu_t \tag{5}$$

where z_t is an n x 1 vector of variables, each of A_i represents a n x n matrix of parameters and μ_t is a zero mean white noise vector process. The VAR representation is also re-written as follows:

$$\Delta z_t = c + \prod z_{t-1} + \sum_{i=1}^{p-1} \Gamma_i \Delta z_{t-1} + \mu_t \tag{6}$$

where

$$\prod = \sum_{i=1}^{p} A_i - I$$
$$and$$
$$\Gamma_i = -\sum_{j=i+1}^{p} A_j$$

If the coefficient matrix Π has reduced rank $r < n$, then there exist n x r matrices α and β each with rank r such that $\Pi = \alpha\beta'$ and $\beta' z_t$ is stationary. r represents the number of the cointegrating relationship (cointegrating rank), the elements α are known as the adjustment parameters in the vector autoregressive model and each column of β is the cointegrating vector. The Johansen approach provides the estimates of Π matrix, that is, α and β, using the 'reduced rank regression" procedure and tests whether the restrictions implied by the reduced rank of Π matrix can be rejected (Harris, 1995).

In order to determine the rank of matrix Π (that is, the number of cointegrating vectors), the characteristic roots or eigenvalues, λ of Π are estimated. Based on Johansen cointegration approach, two types of test statistics can be used for the hypothesis of the existence of r cointegrating vectors, maximum likelihood-based trace test λ_{trace} and maximum eigenvalue test ($\lambda_{\max}$), which are computed by using the following formulas:

$$\lambda_{trace}\left(r\right) = \text{-}T\sum_{j=r+1}^{k} \ln(1 - \hat{\lambda}_j) \tag{7}$$

$$\lambda_{\max}\left(r, r+1\right) = \text{-Tln}(1 - \hat{\lambda}_{r+1}) \tag{8}$$

where T is the sample size, $\hat{\lambda}_j$ and $\hat{\lambda}_{r+1}$ equal the estimated values of the characteristic roots (eigenvalues) obtained from the Π matrix, r is the number of cointegrating vectors. The trace test evaluates the null hypothesis of the existence of at most r distinct cointegrating vectors against the alternative hypothesis of n cointegtaing vectors, whereas the maximum eigenvalue tests the null hypothesis of r cointegrating vectors against the alternative hypothesis of $r+1$ cointegrating vectors. If the computed values of λ_{trace} and $\lambda_{\max}$ are less than the critical value provided by Osterwald-Lenum (1992), then the null hypothesis cannot be rejected. The optimal lag structure of vector autoregression model is determined by using Akaike Information Criterion (AIC) and Schwarz Bayesian Criterion (SBC).

On the basis of Johansen approach, two alternative models were conducted to compare and contrast the linkages among the stock markets in the multivariate system; *model 1,* a model with no trend and *model 2,* a model with a linear trend in the cointegrating vector.

Error Correction and Granger Causality

The direction of the relationship between the variables was investigated by employing the causality test based on Granger's approach (Granger, 1969). The linear Granger causality approach stated a testable definition of causality in terms of predictability in a set of non-cointegrated variables. In the presence of cointegration, standard Granger causality test is misspecified and a vector error correction model (VECM) can be formulated that captures both the long-run relationship and the short-run dynamics of the variables. The VECM depicts the feedback process and adjustment speed of short-run deviations towards the long-run equilibrium path. For two cointegrated series, x_t and y_t, the error correction mechanism can take the following forms:

$$\Delta y_t = \alpha_1 + \sum_{i=1}^{m1} \beta_{1i} \Delta x_{t-i} + \sum_{i=1}^{m2} \beta_{2i} \Delta y_{t-i} + y_1 z_{t-1} + u_{1t} \tag{9a}$$

$$\Delta x_t = \alpha_2 + \sum_{i=1}^{m3} \beta_{3i} \Delta x_{t-i} + \sum_{i=1}^{m4} \beta_{4i} \Delta y_{t-i} + y_2 z_{t-1} + u_{2t} \tag{9b}$$

where y_1 and y_2 are the error correction terms. The magnitude of the coefficients of these error correction terms represents the speed of adjustment back to the long-run equilibrium after the market shock. In the case of large coefficients, reversion to the long-run equilibrium will be rapid and z will be highly stationary.

DATA

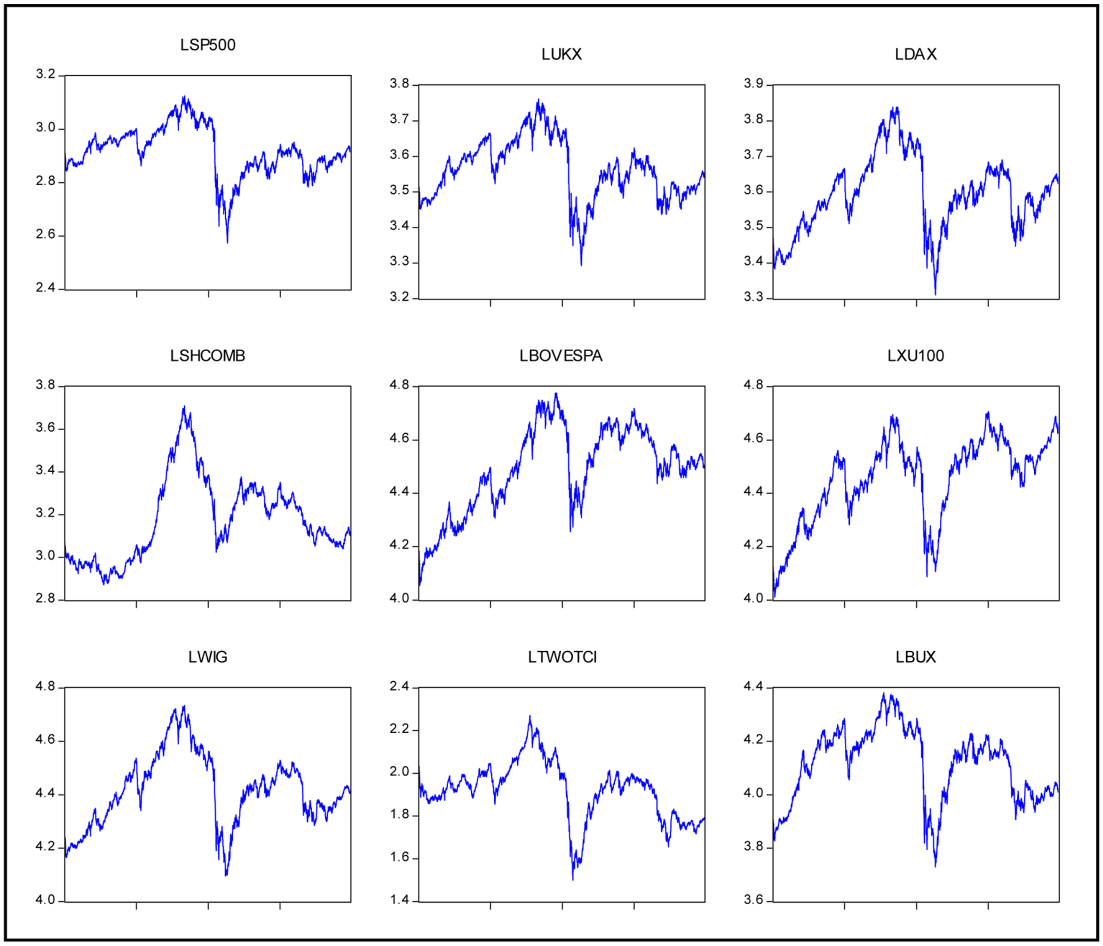
The dataset is comprised of the daily stock index closing prices from the sample markets from April 26, 2004 through March 8, 2013, obtained from Matriks Database. While the US, the UK and Germany were selected as representative for developed countries, the stock market indices of Brazil, Hungary, China, Taiwan, Poland and Turkey represented emerging stock markets (selected on the basis of their representativeness of emerging stock markets). Each stock price indices is denominated in US dollars. Any observations affected by national or other holidays are removed from the sample. Following the removal of these non trading days, 1991 observations were remained. As a means of conducting the impact of the global crisis on stock markets, the sample period was divided into two sub-periods. The beginning of August 2007 is chosen as the moment when the global financial crisis began to demonstrate its full manifestations on international stock markets. The first sub-period covers from April, 26 2004 to July, 31 2007. The second sub-period is from August, 1, 2007 to March, 8, 2013 corresponding to the post-crisis period.

The Lehman Brothers' collapse in September 2008 is used by many researchers as the event which reflects the beginning of the crisis on international financial markets. However, a more thorough investigation demonstrates manifestations of the crisis in the second half of 2007, and spreading across economies, and engulfing developed and emerging economies, as shown in Figure 1.

The descriptive statistics of the return structure for the sample stock markets are represented in Table 1. The mean excess return is lower in the developed stock markets (SP500 and UKX) whereas the mean return is found to be higher for Brazil (BOVESPA) and Turkey (XU100). As anticipated, the emerging stock markets exhibit higher volatility, as indicated by larger standard deviation values with the exception of China, Taiwan and Poland. The results for skewness point to all stock indices being skewed to the left. The presence of high value of kurtosis for each index demonstrates leptokurtic distribution. The results for skewness and kurtosis statistics also signify the non-normality of returns, supported by Jarque-Bera statistics suggesting that any of the return series are not normally distributed.

The unconditional contemporaneous correlation matrix of the developed and emerging stock market indices providing important information for the subsequent Granger causality tests is reported in Table 2. Partitioning the period into two sub-periods, it is observed that there is an increase in the pairwise correlations among all developed and emerging stock markets, and all stock markets interconnections were strengthened after the crisis period, except those between Poland-Taiwan and Turkey-Taiwan. This result is accompanied by increases in the standard deviations of market returns and a reflection of the wider worldwide trend of greater global financial integration. The stock indices of the US, the UK and Germany indicate high and positive correlations, averaged between 80% and 95%, suggesting weak portfolio diversification benefits among the developed

Figure 1. Stock markets (log) plots



Note: *LSP500, LUKX LDAX, LSHCOMB, LBOVESPA, LXU100, LWIG, LTWOTCI, and LBUX* stand for the natural logarithm of stock prices in the US, the UK, Germany, China, Brazil, Turkey, Poland, Korea, and Hungary, respectively.

Table 1. Descriptive statistics

Variables	Index	Mean	Std. Dev.	Max.	Min.	Kurt.	Skew.	JB
USA	*SP500*	0.000028	0.021537	0.163582	-0.250623	19.92590	-1.104741	24159.26
UK	*UKX*	0.000046	0.020292	0.141071	-0.215918	15.56678	-0.951582	13394.87
Germany	*DAX*	0.000202	0.021966	0.167980	-0.230938	14.99537	-0.753375	12119.02
China	*SHCOMB*	0.000047	0.021753	0.107980	-0.166398	7.446637	-0.467735	1712.037
Brazil	*BOVESPA*	0.000380	0.026484	0.187099	-0.300137	17.12214	-0.978196	16853.83
Turkey	*XU100*	0.000626	0.025292	0.141483	-0.259147	11.62690	-0.840471	6405.232
Poland	*WIG*	0.000196	0.020806	0.107434	-0.211730	12.61403	-0.983965	7985.066
Taiwan	*TWOTCI*	-0.000275	0.020134	0.098440	-0.154339	9.076587	-1.005101	3396.750
Hungary	*BUX*	0.000135	0.024268	0.152027	-0.204375	11.80804	-0.471713	6506.609

Note: Std. Dev. indicates standard deviation. Jarque-Bera (JB) normality test statistic has a chi-square distribution with 2 degrees of freedom.

Table 2. Unconditional correlation matrix

Variables	SP500	UKX	DAX	BOVESPA	BUX	SHCOMB	TWOTCI	WIG	XU100
Before Crisis									
SP500	1.00000								
UKX	0.80992	1.00000							
DAX	0.79741	0.93994	1.00000						
BOVESPA	0.81315	0.71708	0.69305	1.00000					
BUX	0.58674	0.72372	0.68581	0.55849	1.00000				
SHCOMB	0.48699	0.48081	0.45204	0.46589	0.37862	1.00000			
TWOTCI	0.55105	0.61206	0.60165	0.47717	0.52212	0.41078	1.00000		
WIG	0.70315	0.81717	0.77882	0.64361	0.79815	0.48646	0.61242	1.00000	
XU100	0.62375	0.73652	0.71054	0.58207	0.70175	0.42166	0.60282	0.73332	1.00000
After Crisis									
SP500	1.00000								
UKX	0.83663	1.00000							
DAX	0.85376	0.93826	1.00000						
BOVESPA	0.85513	0.82484	0.81753	1.00000					
BUX	0.72547	0.79711	0.80002	0.72207	1.0000				
SHCOMB	0.48614	0.54682	0.53415	0.54745	0.49915	1.00000			
TWOTCI	0.56774	0.63697	0.61822	0.59737	0.56667	0.55563	1.00000		
WIG	0.76539	0.85331	0.84827	0.76711	0.79856	0.54921	0.61561	1.00000	
XU100	0.72672	0.82083	0.80307	0.72768	0.73525	0.52871	0.61881	0.82251	1.00000

markets before and after the crisis period. The correlation coefficients report that developed markets are highly integrated with the emerging markets, namely Brazil, Poland, Hungary and Turkey, in the short run. These finding may be associated to closer economic ties, geographic proximity and EU union accession process. Surprisingly, the relatively isolated markets of China and Taiwan exhibit low correlations with the all developed markets. Further investigation through cointegration techniques whether the short-term correlations among the developed and emerging markets support the existence of international diversification benefits for the long-term investment will be discussed in the next section.

EMPIRICAL RESULTS

Results of the Unit Root Test

To test for the presence of stochastic non-stationarity in the data, the integration order of the each stock index series is investigated using standard unit root tests. The ADF, PP and KPSS unit root tests are applied both with and without trend on the levels, and first differences of each series and the results are reported in Table 3. The null hypothesis of a unit root test is not rejected at the 1% significance level by both ADF and PP tests for any stock indices in the log levels. Hence, the first differences series reject the null hypothesis, indicating that they are integrated of order one,

Table 3. Unit root tests

		ADF		PP		KPSS	
	Level/First Difference	No Trend	Trend	No Trend	Trend	No Trend	Trend
Before Crisis							
SP500	Level	-0.912888	-2.407005	-0.964511	-2.460582	2.175871*	0.251923*
	First Diff.	-26.78615*	-26.78068*	-26.77105	-2676491	0.079112	0.048940
UKX	Level	-0.894895	-2.550933	-0.885729	-2.718559	2.704174*	0.306638*
	First Diff.	-29.29536*	-29.28038*	-29.27603*	-29.26124*	0.051895	0.047289
DAX	Level	-0.044479	-2.750244	-0.029821	-2.750244	3.000597*	0.188509**
	First Diff.	-28.72627*	-28.74211*	-28.71673*	-28.73591*	0.128175	0.056770
BOVESPA	Level	-0.282233	-2.718028	-0.323188	-2.809058	3.060504*	0.159367**
	First Diff.	-27.16540*	-27.16174*	-27.15515*	-2.715515*	0.069166	0.038772
BUX	Level	-1.077205	-1.985628	-0.994449	-2.003609	2.664819*	0.559949*
	First Diff.	-17.86755*	-17.85637*	-26.28736*	-26.27153*	0.068792	0.068611
SHCOMB	Level	2.605255	-0.376504	2.532590	-0.488841	2.151006*	0.767245*
	First Diff.	-29.56490*	-30.10609*	-29.53252*	-30.12250*	1.480166*	0.043579
TWOTCI	Level	0.716924	-2.127234	0.627430	-2.345925	2.257821*	0.320716*
	First Diff.	-25.26770*	-25.49099*	-25.29669*	-25.48461*	0.598559**	0.087796
WIG	Level	0.341360	-3.226443***	0.229546	-3.393609***	3.250448*	0.210547**
	First Diff.	-18.03036*	-18.05672*	-27.84568*	-27.86570*	0.129527	0.032317
XU100	Level	-0.903574	-2.121018	-0.799365	-2.093131	2.779769*	0.416620*
	First Diff.	-26.08118*	-26.06466*	-26.05255*	-26.03574*	0.061412	0.064951
After Crisis							
SP500	Level	-2.202141	-2.023264	-2.033968	-1.803011	0.841325*	0.536699*
	First Diff.	-6.953302*	-7.008950*	-38.04734*	-38.07735*	0.165527	0.055397
UKX	Level	-2.216877	-2.165856	-2.170975	-2.115511	1.103529*	0.414235*
	First Diff.	-7.140590*	-7.166269*	-35.41577	-35.41865	0.103598	0.047970
DAX	Level	-2.166148	-2.040914	-2.143726	-1.967271	0.839947*	0.442236*
	First Diff.	-7.367854*	-7.401755*	-35.04438*	-35.05363*	0.133411	0.052715
BOVESPA	Level	-2.255436	-2.485370	-1.999167	-2.224254	0.706801**	0.260344*
	First Diff.	-6.671278*	-6.670470*	-35.51938*	-35.50367*	0.056757	0.056087
BUX	Level	-2.183812	-2.255926	-2.047045	-1.964740	1.100577*	0.330741*
	First Diff.	-6.542570*	-6.552310*	-32.38393*	-32.39456*	0.119021	0.083896
SHCOMB	Level	-1.621405	-1.760921	-1.538913	-1.719635	2.462739*	0.347828*
	First Diff.	-32.09488*	-32.09187*	-32.09564*	-32.09257*	0.110324	0.079123
TWOTCI	Level	-2.117293	-2.074556	-2.270862	-1.957332	1.184502*	0.340903*
	First Diff.	-6.780843	-6.807140	-29.04153	-29.08944	0.239533	0.139857***
WIG	Level	-2.085591	-1.884309	-2.171979	-1.872130	0.880924*	0.425195*
	First Diff.	-10.56787*	-10.60466*	-31.58764*	-31.65005*	0.216596	0.091486
XU100	Level	-1.934897	-2.177374	-1.480473	-1.833652	0.801141*	0.345696*
	First Diff.	-6.592990*	-6.614105*	-32.99722*	-33.00757*	0.164509	0.084370

Note: *SP500, UKX, DAX, BOVESPA*, *BUX, SHCOMB, TWOTCI, WIG and XU100* represent natural logarithm of stock price index.

ADF: Optimum lag is selected according to the AIC, critical values are based on MacKinnon (1991); critical values are -3.43 (99%), -2.86 (95%), -2.56 (90%) and -3.96 (99%), -3.41 (95%), -3.13 (90%) with no trend and with trend, respectively.

PP: Optimum lag is selected according to the AIC, critical values are based on MacKinnon (1991); critical values are -3.43 (99%), -2.86 (95%), -2.56 (90%) and -3.96 (99%), -3.41 (95%), -3.13 (90%) with no trend and with trend, respectively.

KPSS: Optimum lag is selected according to Schwert (1989); critical values are 0.216, 0.146, and 0.119 for the model with trend; 0.739, 0.463, 0.347 for the model without trend and for 1, 5, and 10% respectively (KPSS, 1992).

*, ** and *** denote rejection of null hypothesis at 1, 5 and 10%, respectively

I (1). These findings are also supported by the KPSS test. The next step is to check whether the stock markets are cointegrated in the long-run.

Cointegration and Causality Analysis

Having established the unit root characteristics of the stock market indices, multivariate models can be conducted to allow examination of the presence or absence of cointegrating relationships among the emerging and developed markets. Johansen's approach, which requires the estimation of VAR (*p*), is employed to analyze whether developed and emerging stock market indices are jointly integrated. The optimal number of lag (*p*) of the VAR is determined based on Akaike Information Criterion (AIC). The determination of the order of the stock market indices in the VAR model depends upon the market capitalization value of each series. As mentioned above, two alternative models, a model without trend (model 1) and a model with a linear trend in the cointegrating equation (model 2), are employed to compare whether the inclusion of trend in the cointegrating vector alters the critical values of the test statistics. Table 4 and Table 5 present the results of the λ_{trace} and $\lambda_{\max}$ tests, respectively. In the case of λ_{trace} test, the empirical findings of both models indicate that there are at most two cointegrating vectors for the pre- and post-crisis period, since H_0 of $r \leq 2$ is not rejected at the 5% significance level. The presence of a long run relationship is an evidence of financial integration among these markets, which will accelerate the adjustment process from the short run to the long run. However, the empirical findings of $\lambda_{\max}$ test reveal the presence of one cointegrating vector only for the post-crisis period in both versions of the model. Since the tests for cointegration utilizing both the λ_{trace} and $\lambda_{\max}$ statistics represent different results, λ_{trace} test is more preferable than $\lambda_{\max}$ test (Johansen & Juselius, 1990)[2].

Since cointegration tests carried out for the developed and emerging stock markets show a long run relationship, the coefficients in the cointegrating vector inform us the extent of the stock market integration in the long run. With respect to the reported two cointegrated vectors according to the λ_{trace} test, the influence of two developed markets (the US and the UK) on emerging equity markets was investigated. Table 6 reports the normalized cointegration vector from the two versions of the model for the pre- and post-crisis period. The relative size of the coefficient of the cointegrating vector provides considerable information about the role of the individual stock markets in the group.

The empirical findings of model *1* and model *2* indicate that the US stock market has a positive long run impact on Brazil, Poland and Taiwan, whereas a negative long run impact on Germany, China, Turkey and Hungary in the pre-crisis period. In the post-crisis period, the direction of the relationship between developed (the US) and emerging markets remains the same, except for Brazil in model *1*, and Brazil and Turkey in model 2. Surprisingly, the prevailing significant relationship disappears between the US and two emerging markets, namely Poland and Taiwan, in model *2*. The results indicate that these two pairwise countries have relatively less financial importance in comparison with the other emerging countries in our sample. As noted by Forbes and Chinn, 2004, after the divergence of economic and industrial structures of countries, the degree of financial integration between the stock markets may also differ. Given the primary role of the US, the UK and Germany, in terms of trading volume, market capitalization, depth and liquidity, these findings are reasonable and consistent with the results of previous studies (Ratanapakorn & Sharma, 2002; Syriopoulos, 2006, 2007 and 2011). Overall, the findings reveal that the global crisis results both in changes in the direction of the long-run relationship among some markets, and

Table 4. Tests for the presence of cointegrating vectors

Null	Eigenvalues		Critical Values at 95%	
	Model 1	Model 2	Model 1	Model 2
Before Crisis				
$r = 0$	0.066967	0.073483	197.3709	228.2979
$r \leq 1$	0.058310	0.058320	159.5297	187.4701
$r \leq 2$	0.048784	0.048821	125.6154	150.5585
$r \leq 3$	0.035751	0.040572	95.75366	117.7082
$r \leq 4$	0.029238	0.034702	69.81889	88.80380
$r \leq 5$	0.020225	0.028011	47.85613	63.87610
$r \leq 6$	0.012821	0.019247	29.79707	42.91525
$r \leq 7$	0.006984	0.010552	15.49471	25.87211
$r \leq 8$	0.000100	0.005252	3.841466	12.51798
After Crisis				
$r = 0$	0.049245	0.058079	197.3709	228.2979
$r \leq 1$	0.036437	0.036719	159.5297	187.4701
$r \leq 2$	0.029414	0.032977	125.6154	150.5585
$r \leq 3$	0.024117	0.029395	95.75366	117.7082
$r \leq 4$	0.015519	0.018378	69.81889	88.80380
$r \leq 5$	0.013235	0.013546	47.85613	63.87610
$r \leq 6$	0.008345	0.013020	29.79707	42.91525
$r \leq 7$	0.005440	0.008332	15.49471	25.87211
$r \leq 8$	0.000335	0.005422	3.841466	12.51798

Notes: $H_1(r)$ against $H_1(n)$. Model 1: model without trend; Model 2: model with a linear trend in the cointegrating equation; critical values from Ostenwald-Lenum (1992).

causes striking increases in the relative size of the coefficients of all markets in the cointegrating vector. The increase in the magnitude of the interrelationship and dynamic linkages has in the post-crisis period among the developed and emerging markets is due to the herding behavior of the investors throughout the financial crisis period, and growing inflow and outflow of portfolio investments across developed and emerging markets.

The co-movements and linkages among these stock markets may be attributed to international financial globalization, and integration as well

Table 5. Tests for the number of cointegrating vectors

Null	λ_{max} Test		Critical Values at 95%	
	Model 1	Model 2	Model 1	Model 2
Before Crisis				
$r = 0$	53.71892	59.15063	58.43354	62.75215
$r = 1$	46.56136	46.56956	52.36261	56.70519
$r = 2$	38.76086	38.79100	46.23142	50.59985
$r = 3$	28.21457	32.09882	40.07757	44.49720
$r = 4$	22.99769	27.37151	33.87687	38.33101
$r = 5$	15.83479	22.01867	27.58434	32.11832
$r = 6$	10.00041	15.06163	21.13162	25.82321
$r = 7$	5.431379	8.221358	14.26460	19.38704
$r = 8$	0.077887	4.081154	3.841466	12.51798
After Crisis				
$r = 0$	61.05371*	72.33945*	58.43354	62.75215
$r = 1$	44.87433	45.22830	52.36261	56.70519
$r = 2$	36.09549	40.54127	46.23142	50.59985
$r = 3$	29.51455	36.07129	40.07757	44.49720
$r = 4$	18.91000	22.42549	33.87687	38.33101
$r = 5$	16.10795	16.48920	27.58434	32.11832
$r = 6$	10.13128	15.84435	21.13162	25.82321
$r = 7$	6.595037	10.11552	14.26460	19.38704
$r = 8$	0.405462	6.573618	3.841466	12.51798

Notes: $H_1(r)$ against $H_1(r + 1)$. Model 1: model without trend; Model 2: model with a linear trend in the cointegrating equation; critical values from Ostenwald-Lenum (1992).

as, to the common path of their economies. The global crisis, as an external shock to the domestic markets, affected all emerging markets, leading to a long-run equilibrium path. Therefore, the presence of cointegrating relationship between developed and emerging markets reveals that the latter have become increasingly integrated with the former after crisis period, implying that long-run international investors who seek to diversify their portfolios across the emerging and developed markets should expect only modest long-term portfolio benefits. These findings are in line with the previous empirical findings (Meric et al., 2012). From such an investment allocation, it has become

Table 6. Normalized cointegrated vector

SP500	UKX	DAX	SHCOMB	BOVESPA	XU100	WIG	TWOTCI	BUX	TREND
Before Crisis									
Model 1									
1.000000	0.000000	-1.150426	-0.306973	0.446308	-0.245183	0.755045	0.212052	-0.228625	
		(0.28847)*	(0.07409)*	(0.19827)*	(0.14171)*	(0.15443)*	(0.12785)*	(0.10520)*	
0.000000	1.000000	-0.359098	-0.149727	0.532754	-0.399494	0.074280	0.042423	-0.236702	
		(0.18345)*	(0.04712)*	(0.12609)*	(0.09012)*	(0.09821)	(0.08131)	(0.06690)*	
Model 2									
1.000000	0.000000	-1.139904	-0.286467	0.403493	-0.194982	0.651367	0.233705	-0.236428	0.0000901
		(0.26879)*	(0.06932)*	(0.18682)*	(0.13383)*	(0.23007)*	(0.13679)*	(0.09884)*	(0.00015)
0.000000	1.000000	-0.334597	-0.098142	0.422576	-0.271080	-0.182737	0.096735	-0.257140	0.000225
		(0.13761)*	(0.03549)*	(0.09565)*	(0.06852)*	(0.11779)*	(0.07004)*	(0.05060)*	(0.00008)
After Crisis									
Model 1									
1.000000	0.000000	-5.666269	-1.089680	-2.721908	-1.325693	6.292273	-2.027003	4.056465	
		(1.51641)*	(0.53950)*	(0.96110)*	(0.52047)*	(2.03669)*	(0.91890)*	(1.23371)*	
0.000000	1.000000	-1.065456	-0.241672	-1.028.004	-0.140186	0.515923	-0.143847	0.938914	
		(0.34209)*	(0.12171)*	(0.21682)*	(0.11742)*	(0.45947)*	(0.20730)	(0.27832)*	
Model 2									
1.000000	0.000000	-1.317942	-0.627204	-0.802583	0.913134	0.055026	0.090113	0.347244	-0.000884
		(0.32282)*	(0.14848)*	(0.20416)*	(0.26473)*	(0.43076)	(0.19443)	(0.30707)*	(0.00021)
0.000000	1.000000	-0.183784	-0.141405	-0.642539	0.275978	-0.736741	0.293097	0.206779	-0.000148
		(0.14275)*	(0.06566)*	(0.09028)*	(0.11706)*	(0.19048)*	(0.08598)*	(0.13579)*	(0.00009)

Notes: Figures in () are standard errors. Model 1: model without trend; Model 2: model with a linear trend in the cointegrating equation. * indicates 1% significant level.

more difficult to reduce the portfolio risk because the diversification benefit is less effective across the cointegrated stock markets.

Error Correction and Causality

In the presence of cointegrating vectors across the developed and emerging markets under study, the possible short-run (uni-or bi-directional) Granger causal relationship among the stock markets is investigated through the VECM estimations. In addition to the short run causalities, the VECM captures both speed of adjustment through the long-run equilibrium path and lead-lag relationships between developed and emerging markets. Hence, it is possible to draw conclusions from these results for the international investment allocation.

In the VEC model, there are two approaches to estimating the causal relationship between the stock markets; one is through the error correction term, which estimates the response of the dependent variable to departure from equilibrium and the other one is through the lagged differences of variables. The results of Granger causality tests through VECM between the stock markets are reported in Tables 7 and 8. The optimal lag length for the VECM is selected based on the Akaike Information Criterion (AIC) for each sub-period.

Table 7. VECM estimated for before crisis period

Variables	SP500	UKX	DAX	SHCOMB	BOVESPA	XU100	WIG	TWOTCI	BUX
Panel A. Error Correction Term Estimates									
ECT	0.019227	0.028382**	0.022253	0.007154	0.052440*	0.002008	-0.016508	-0.035720**	-0.021450
	(0.01246)	(0.01269)	(0.01448)	(0.01926)	(0.02043)	(0.02117)	(0.01616)	(0.01567)	(0.01726)
	[1.54313]	[2.23663]	[1.53667]	[0.37150]	[2.56709]	[0.09487]	[-1.02125]	[-2.27941]	[-1.24296]

Panel B. Granger Causality Test	F Statistic		F Statistic
SP500→UKX	25.5556*	BOVESPA→XU100	26.6222*
SP500→DAX	21.7645*	BOVESPA→WIG	18.5774*
SP500→SHCOMB	3.20090**	BOVESPA→TWOTCI	13.2294*
SP500→BOVESPA	0.44459	BOVESPA→BUX	21.5436*
SP500→XU100	23.7682*	XU100→SP500	0.37008
SP500→WIG	13.9952*	XU100→UKX	2.96367***
SP500→TWOTCI	11.5537*	XU100→DAX	0.41666
SP500→BUX	13.2930*	XU100→SHCOMB	3.48315**
UKX→SP500	0.62927	XU100→BOVESPA	0.37259
UKX→DAX	0.44849	XU100→WIG	0.54658
UKX→SHCOMB	2.51235***	XU100→TWOTCI	2.70534***
UKX→BOVESPA	0.93512	XU100→BUX	0.39053
UKX→XU100	2.52575***	WIG→SP500	2.82542***
UKX→WIG	0.25023	WIG→UKX	0.74780
UKX→TWOTCI	4.85384*	WIG→DAX	1.88422
UKX→BUX	1.61886	WIG→SHCOMB	3.75743**
DAX→SP500	1.19981	WIG→BOVESPA	4.92078*
DAX→UKX	0.83568	WIG→XU100	0.80587
DAX→SHCOMB	3.10944**	WIG→TWOTCI	7.88343*
DAX→BOVESPA	2.63092***	WIG→BUX	0.38887
DAX→XU100	3.62695**	TWOTCI→SP500	0.73428
DAX→WIG	0.45320	TWOTCI→UKX	1.27798
DAX→TWOTCI	7.31959*	TWOTCI→DAX	2.43938***
DAX→BUX	1.49686	TWOTCI→SHCOMB	2.02329
SHCOMB→SP500	3.35566**	TWOTCI→BOVESPA	0.56392
SHCOMB→UKX	0.52000	TWOTCI→XU100	1.91855
SHCOMB→DAX	0.36999	TWOTCI→WIG	2.16633
SHCOMB→BOVESPA	4.30560**	TWOTCI→BUX	0.00516
SHCOMB→XU100	0.79256	BUX→SP500	0.51066
SHCOMB→WIG	1.26152	BUX→UKX	1.26181
SHCOMB→TWOTCI	2.17713	BUX→DAX	0.04942
SHCOMB→BUX	0.62341	BUX→SHCOMB	3.28051**
BOVESPA→SP500	0.86576	BUX→XU100	0.87568
BOVESPA→UKX	20.5822*	BUX→BOVESPA	0.22040
BOVESPA→DAX	13.4738*	BUX→WIG	0.88558
BOVESPA→SHCOMB	6.43574*	BUX→TWOTCI	3.11197**

Notes: Figures in (), [ ] are standard errors and t-statistics, respectively. *,**,*** indicate 1%, 5% and 10% significant level, respectively.

Table 8. VECM estimated for after crisis period

Variables	SP500	UKX	DAX	SHCOMB	BOVESPA	XU100	WIG	TWOTCI	BUX
Panel A. Error Correction Term Estimates									
ECT	-0.000805	0.004990	0.003542	-0.001695	0.001856	0.000769	-0.008811**	-0.000449	-0.008218***
	(0.00437)	(0.00395)	(0.00429)	(0.00389)	(0.00501)	(0.00458)	(0.00387)	(0.00372)	(0.00458)
	[-0.18399]	[1.26242]	[0.82517]	[-0.43579]	[0.37008]	[0.16774]	[-2.27685]	[-0.12058]	[-1.79480]

Panel B. Granger Causality test	F Statistic		F Statistic
SP500→UKX	18.1776*	BOVESPA→XU100	2.10407***
SP500→DAX	10.1389*	BOVESPA→WIG	0.41388
SP500→SHCOMB	10.2290*	BOVESPA→TWOTCI	4.99398*
SP500→BOVESPA	6.35331*	BOVESPA→BUX	4.73304*
SP500→XU100	5.74039*	XU100→SP500	2.04324
SP500→WIG	3.51748**	XU100→UKX	1.81410
SP500→TWOTCI	7.71023*	XU100→DAX	1.49023
SP500→BUX	8.65956*	XU100→SHCOMB	7.84621*
UKX→SP500	2.6.316**	XU100→BOVESPA	1.65225
UKX→DAX	0.18178	XU100→WIG	1.53655
UKX→SHCOMB	11.5630*	XU100→TWOTCI	4.33206*
UKX→BOVESPA	2.46581***	XU100→BUX	5.39618*
UKX→XU100	2.05937	WIG→SP500	5.26514*
UKX→WIG	2.75126**	WIG→UKX	6.51636*
UKX→TWOTCI	4.27446*	WIG→DAX	6.29729*
UKX→BUX	2.00898	WIG→SHCOMB	10.6575*
DAX→SP500	1.15596	WIG→BOVESPA	4.57119*
DAX→UKX	0.06568	WIG→XU100	2.07568
DAX→SHCOMB	8.51174*	WIG→TWOTCI	6.42116*
DAX→BOVESPA	1.80968	WIG→BUX	7.42057*
DAX→XU100	1.64853	TWOTCI→SP500	3.10044**
DAX→WIG	2.15398***	TWOTCI→UKX	4.27735*
DAX→TWOTCI	5.02095*	TWOTCI→DAX	2.74514**
DAX→BUX	1.43772	TWOTCI→SHCOMB	4.33019*
SHCOMB→SP500	1.33218	TWOTCI→BOVESPA	5.83655*
SHCOMB→UKX	1.60980	TWOTCI→XU100	0.70372
SHCOMB→DAX	0.69820	TWOTCI→WIG	3.84063*
SHCOMB→BOVESPA	3.75617**	TWOTCI→BUX	1.04021*
SHCOMB→XU100	0.20826	BUX→SP500	0.50687
SHCOMB→WIG	1.49505	BUX→UKX	1.17614
SHCOMB→TWOTCI	0.54385	BUX→DAX	0.50896
SHCOMB→BUX	2.60136**	BUX→SHCOMB	5.71579*
BOVESPA→SP500	0.58076	BUX→BOVESPA	0.42239
BOVESPA→UKX	3.51280**	BUX→XU100	0.94132
BOVESPA→DAX	0.87162	BUX→WIG	1.11205
BOVESPA→SHCOMB	8.25508*	BUX→TWOTCI	2.50297***

Notes: Figures in (), [ ] are standard errors and t-statistics, respectively. *,**,*** indicate 1%, 5% and 10% significant level, respectively.

In order to investigate the speed of adjustment to restoring long-run equilibrium in the dynamic model, the error correction terms are estimated, and the results are reported in Tables 7and 8, Panel A. In the pre-crisis period, the ECT is found to be statistically insignificant in all developed markets except for the UK. In the post-crisis period, however, the UK ECT coefficient turned out to be insignificant. This may be explained by the fact that these developed markets appear statistically exogenous to the system and they determine the trends/paths that the other emerging markets will follow in the long-run, which is in line with the previous studies (Syriopoulos, 2007, 2011). For the emerging markets, ECT is found to be statistically significant for Brazil and Taiwan pre-crisis period, whereas the post-crisis coefficient estimates for the ECT are found to be statistically significant mainly in cases of Poland and Hungary. These results imply that these emerging markets seem to be potentially influenced by short-run shocks in the developed markets. The larger ECT coefficients for Brazil stock market before the crisis period and Poland and Hungary stock markets after the crisis period state that a deviation from the long-run equilibrium following a short-run shock is adjusted more rapidly compared to the other stock markets. This may be linked to the fact that these emerging markets, namely Brazil, Poland and Hungary, are more closely integrated with the developed markets.

The results of the direction of the causal relationship and lead-lag effects between each pair of markets in our dataset for the two sub-periods are summarized in Tables 7 and 8, Panel B. The empirical results from the causality test support the international leading role of the US and German markets, implying that these markets have a strong impact on all other stock markets in both sub-periods, which is consistent with the previous studies (Massih & Massih, 1997; Ratanapakorn & Sharma, 2002). These findings appear to be reasonable because of their market capitalization as well as foreign direct capital inflows and investors' stock investments in the emerging markets (Hanousek & Filer, 2000). Of all the emerging markets under study, the one that seems to have the most influence of the US market is China, due to the geographic proximity, robust trade and financial transactions and the highest market capitalization. As expected, the pre-crisis causal relationship between the US and China is found to be bi-directional, while Chinese stock market is not seen to exert any significant impact on the other developed countries, Germany and the UK. The global financial crisis that started in the US caused a slowdown of the growth in China. Hence, after the crisis period, the influence of China on the US stock market has totally disappeared. As a consequence, the recent worldwide financial crisis has proved that Chinese stock market remains isolated from the external shocks which originating from developed stock markets, especially, the US.

Surprisingly, for the pair-wise setting, only Poland and Taiwan represent bi-directional causal relationship among the developed and emerging markets after the crisis period, as in the case of unilateral causal effects of Poland on the US, China and Brazil; and Taiwan on Germany. During this recent crisis, the contagion originating in the US spread quickly to the other countries around the world. The episodic evidence of results confirms the possible short-run granger causal relationship among the stock markets post-crisis. On the other hand, taking the results of the tests for the Hungarian stock market into consideration, it seems that there was no change in the nature of the causal relationship over the time period. It is worth pointing out that no causal bi-directional relationship is detected between the US and Brazil for either sub-periods, despite the strength of trade, the geographical proximity, cultural factors and portfolio fund flows between the two economics. In the pair-wise setting of Turkey and the UK, it is noted that the initial evidence of causal relationship disappears in the post-crisis.

FUTURE RESEARCH DIRECTIONS

The dynamic co-movements and causal relationship among the developed and emerging markets under study studied in this chapter provides a guide for future research. In order to further understand the stock market interdependencies, in addition to conventional cointegration tests, regime-shifting cointegration models will be studied since they allow structural changes in the cointegrating vectors. Moreover, future research at these nodes will include variance decomposition and impulse response analysis. Variance decomposition analysis, which provides a quantitative measure of the linkages among the stock markets, explains the degree of a movement in a stock market through other markets, in regard to the percentage of forecast error variance of that market. Impulse response analysis, as a further investigation of the short-term relationship among stock markets, maps out the responsiveness of a particular stock market to the shocks emerging from other stock markets, and examines whether the impact of an unexpected shock is permanent or transitory in each stock market.

Additionally, future research at these nodes will capture the impact of the recent global crisis on the time-varying correlation dynamics by employing GARCH models. If stock returns exhibit GARCH effects, it is reasonable to expect that the cointegrating relationship among markets could be affected by the presence of time-varying volatility. Hence, the future research adopts the modified cointegration tests with time-varying volatility effects.

CONCLUSION

This chapter investigates short and long-run dynamic linkages and causal effects among stock markets of developed countries, particularly the US, the UK and Germany, and emerging countries namely Brazil, Poland, Hungary, Taiwan, China and Turkey over the period 2004-2013, and examines whether the developed and emerging stock markets have been affected by the recent global financial crisis. The time period is considered long enough for stock markets to show the effects of the global crisis; therefore, the empirical findings have direct implications for the assessment of risk and return characteristics and will be helpful in understanding the short and long-run diversification benefits for international investors.

The multivariate cointegration test results demonstrate that the global crisis changes the direction of the long-run relationship between the US-Brazil, the US-Hungary, the UK-Brazil and the UK-Hungary stock market pairs for two alternative models. However, only, the integration of the US and the UK with Turkey becomes positive for one of the cointegration model after the crisis period although it is negative before the crisis period. The magnitude of the coefficients of the cointegrating vector increases after the crisis period among the developed and emerging markets which is informative on the respective role of the each market. The presence of high degree of correlations across emerging and developed countries can be attributed to an increase in economic and financial integration among these countries, and in fact, there is a growing inflow and outflow of portfolio investments across developed and emerging markets, which is a result of herding behavior of investors throughout the crisis period. The results of the Granger causality tests clearly reveal that the interdependencies among stock markets are generally greater in the post-crisis period. The US stock market has the greatest impact on all emerging markets in either sub-period, supporting the leading influential role of the US.

As expected, all empirical analyses confirm the strong interrelations between the stock markets after the crisis period, which, in turn, implies that the benefits of international portfolio diversification disappear after financial turmoil. These findings indicate that investors who try to diversify their portfolios among emerging markets as well as developed countries may expect rather short-run portfolio gains, since investment risk cannot be reduced, and market shocks can affect the portfolio returns. These results are in line with the findings of Grubel and Fadner (1971), Ripley (1973), and Panton et al. (1976) who point out that the benefits from international diversification will be reduced in the long run, because long-run interrelationship between stock markets are higher than those in the short run.

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KEY TERMS AND DEFINITIONS

Causality: If a time series is said to cause, or lead, another time series in the short run, or vice versa, there exists a causal relationship among the series, meaning that these time series affect each other in the short run.

Cointegration: If two or more than two series have a linear combination with each other at the same time period, then these series are said to be cointegrated, implying some underlying long-term equilibrium relationship.

Correlation: When two or more than two series are statistically related with each other involving dependency, then these series are said to be correlated.

Global Financial Crisis: Known as the "sub-prime mortgage crisis," started in the US in 2007 and resulted in a bankruptcy of many financial institutions, stock market crashes, and decline in economic activities all around the world.

International Portfolio Diversification: By making an investment in a variety of assets from foreign stock markets, investors can reduce portfolio risk as much as possible by holding international assets that are negatively correlated.

International Stock Market: This market allows companies to raise a larger amount of capital than a single market and investors to hold stocks in a number of different countries simultaneously.

Vector Error Correction Model: A dynamical system that forecasts both the impact of one variable on another by directly indicating the speed of adjustments of one variable to restore equilibrium after the change in another variable.

ENDNOTES

1 The comparative advantage Johansen's approach is that it provides independent estimates of the multiple cointegration vectors.

2 The trace test provides more powerful result than the maximum eigenvalue test when the eigenvalues are evenly distributed (Kasa 1992). Moreover, according to Cheung and Lai (1993), the trace test indicates more robustness to both skewness and excess kurtosis in the residuals than the maximum eigenvalue test.

Chapter 14
Modern Risk Management Techniques in Banking Sector

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ABSTRACT

Risk management as a very rapid emerging subject has been affected by several happenings in the world. There are many studies covering risk definition, risk types, and risk management, plus there are many contemporary approaches in order to calculate the risk incurred by the companies due to their transactions. In the modern business life, since the transactions have become very fast and their risk exposure increases, the companies, especially the financial institutions, started to use new techniques to measure the probable effects of the risks that they have taken while undertaking the transactions. In this chapter, the authors show two techniques as the contemporary approaches to risk management. These are operations research and statistics. They know that these two concepts are very detailed and sophisticated tools, which require software for better results. The banks have been investing in these solutions, and they are designing new organizations to handle these issues. Thus, the authors introduce these techniques very briefly with using some banking practices for better understanding.

INTRODUCTION

The Chinese word for "crisis" represents "danger" and "opportunity," which shows "risk" and "gain" are sisters.

As the entire world becomes more united and many countries began to be the part of international trade, they have enacted many laws in order to sustain the continuity of these transactions. They have agreed on the financial deregulations which are the main milestone to open the local country for international transactions by allowing imports and exports. These happenings were firstly welcomed by the local people since the imported goods more easily provided and the public was benefiting from the competition due to the different brands in the same sector. This is the main advantage of financial deregulations and open market transactions.

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However, as the transactions become more fast, they became also uncontrollable. Due to this uncontrollable structure of the transactions, many speculators have invested into many emerging markets in order to benefit from the high interest gain. For instance US investors have converted their local currency to emerging countries' currencies in order to buy their currencies which have a yield of 50-100% in the mid-1990s. This led to unbelievable profits which were impossible to be earned in US in one year period.

Not only the foreign investors but also the local individuals and also the banks have done the same in order to reach big profits. However, since the type of these investments were portfolio investments rather than direct investments such as real estate or project investments which reduce unemployment, they have not added value in the financial strength of the country. Thus, they did not increase the welfare of the public in that country. For example, the unemployment was very volatile and has not decreased to the accepted rates; the GDP per person has not reached the developed countries' figures. These were the frequent sayings against financial deregulations and globalization. However, after any bad happening about the political or economic structure of the country it was seen that the portfolio investments have left the country. This shows that these funds may cause may financial disability if they are not ruled or managed in a clear way.

Therefore, many emerging countries like Argentina, Mexico, Brazil, Turkey etc. have entered into crises environments. This showed that the reserves of the central banks were not enough and the financial strengths of the local banks were not able to satisfy the needs of these portfolio investors. Furthermore, the banking sectors of many emerging markets had entered into a very tough competition which brings the financial weaknesses. The financial weaknesses of the banks were stemming from two main causes; insufficient liquidity and capital. This was the result of the aggressive growth strategies of the banks by ignoring risk management.

As it is mentioned in the below paragraphs, the need for risk management has been understood after the crises happened in several emerging countries. Therefore these countries started to pay more attention to risk management and they have implemented new techniques in order to prevent big losses of especially banking sector. They have realized that if banking sector goes under financial distress not only financial sector but also many sectors have been badly affected from these happenings. This put stress on the financial regulators of different countries to implement new acts and regulations involving different and modern risk management techniques to be imposed on the banks and other financial sector actors.

In this chapter we will try to show what these techniques are and how these techniques can be used by the banks. However before going forward that stage we need to show what risk is and how risk management should be defined in banking sector. Afterwards, we will be dealing with the risk types imposed on banking sector. The risk types will be purchase power risk, interest rate risk, market risk, politic risk, FX risk, liquidity risk, credit risk, operational risk, financial risk, management risk and company and industry risk. In order to manage risk by mitigating it, there would be several business tools relying on operations research and statistics. The definitions, theory and examples of these techniques will be clearly explained throughout the chapter.

WHAT IS RISK AND RISK MANAGEMENT?

Before going forward into the deep details of this study, we should define what risk is and what the usage of risk management is. Since we are living in a very complex world with a wide variety of transactions, we need more sophisticated decision making tools than before. Since the variety of transactions increase rapidly the outcomes of the decisions vary accordingly. Each decision may lead to different outcome which may contain undeserved consequences. These undeserved consequences are defined as risk. If we define risk in a very brief way, we can use the following definition (Arnoldi, 2009);

Risk is the potential danger.

If we make the definition wider, we would say;

Risk is the possibility of something bad happening or to do something although there is a chance of a bad result.

For example, if a bank lends a credit facility to a customer, in case of no repayment, this bank is risking the amount lent. The bank is monitoring the customer payment behaviors until the payment comes; this amount is seen as the risk of the bank.

As it is shown at the beginning of the chapter and in Figure 1, the Chinese character (pronounced "Wei Ji"), like many Chinese characters, is composed of two individual characters, each one with a different meaning. The first character means "danger" and the second means "opportunity." When combined, they mean "crisis." The word "crisis" is commonly associated with "a situation that has reached an extremely difficult or dangerous point" with special attention paid to the element of danger in the situation. However, a key sense of the word crisis is that it refers to a "turning point for better or worse." To better understand the relationship between "Wei Ji," it will help to substitute "risk" for "danger" and "return" for "opportunity" to relate the concepts more closely to finance. This shows that risk and return are sisters and you cannot avoid one of them to have the other.

Figure 1. Chinese word for crisis

What we generally know about risk are:

- We are all confronted with risks in the contemporary social or business life.
- Risk cannot be totally avoided.
- Risk should be welcomed or taken into consideration in order to be a candidate for gains.
- Each decision includes risk of not taking other decisions.

This shows that risk is not only a financial subject but also a very strong social issue which is very important of each and every individual's or institution's life.

After, we have given the definition of risk; we need to say that risk should be controlled by somehow in order to project the happenings in the future. This, statement leads us to another concept which is "risk management."

For many social analysts, politicians, and academics risk management is the management of environmental and nuclear risks that appear to threaten our existence. For the bankers and financial officers it is the sophisticated use of techniques like currency hedging, interest rate swaps, credit repayments etc. For the insurance buyers and sellers it is coordination of insurable risks and the reduction of insurance costs.

If we make a general definition without considering its functions we can say that (Gallati, 2003).

Risk management is the process of protecting an organization from potential asset or income loss.

The procedure of the related subject can be illustrated as follows. As it is shown in Figure 2, the company should use each and every opportunity of improving the existing risk management of the organization. This is due to the change happening around the company and among the business life. Furthermore, if we discuss the main phases of risk management we need to talk about:

- Establishing the context.
- Identification of risks.
- Analysis of risks.
- Evaluation of the risks and their probable consequences.
- Treating the risk.

This is a closed loop and surely repeated continuously (The University of Newcastle Australia, 2013).

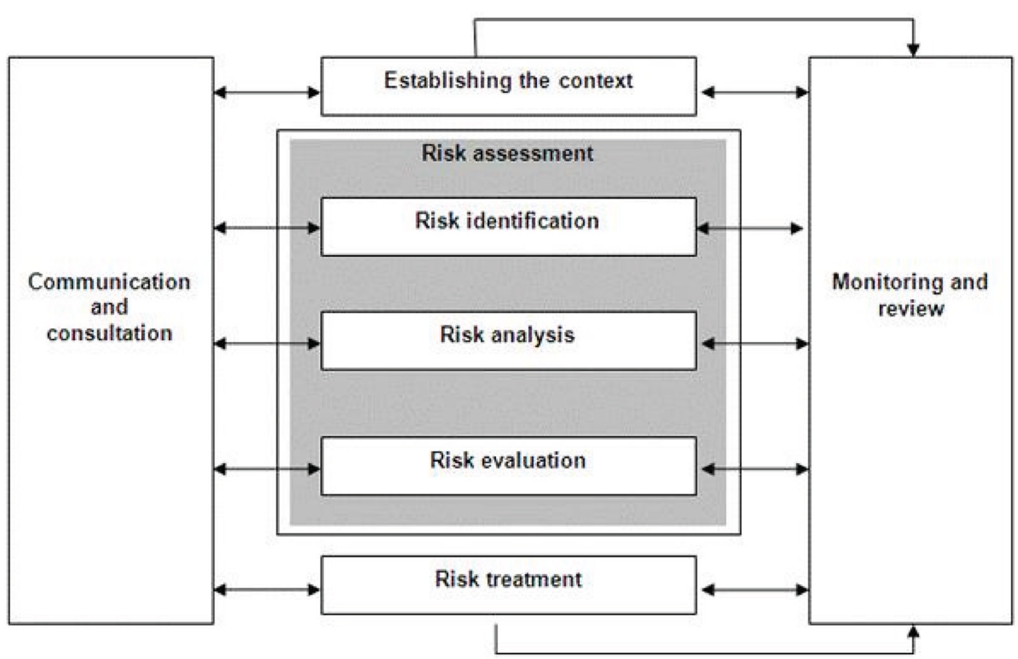
There has been evolved a new and emerging subject called Enterprise risk management (ERM) which brings new approach to risk management. We know that enterprise risk can include a variety of factors with potential impact on an organizations activities, processes and resources. External factors can result from economic change, financial market developments and dangers arising in political, legal, technological and demographic environments (Olson, 2008).These all combined factors constitute the enterprise risk management's approach.

The main differences between traditional risk management and ERM are depicted in Table 1.

TYPES OF RISKS

The risks facing an organization and its operations can result from factors both external and internal to the organization. According to Federation of European Risk Management Associations (FERMA) Figure 3 summarizes examples of key risks in these areas and shows that some specific risks can have both external and internal drivers and therefore overlap the two areas. They can be categorized further into types of risk such as strategic, financial, operational, hazard, etc. (FERMA, 2013).

Figure 2. Risk management



Before going more detail, we can talk on two main types of risks (Megginson, 2008):

- **Systematic Risk:** This is the uncontrollable risk which is originated from the market conditions. This risk can be named as market risk and it has an effect on all investments in that market. This risk is an externally driven risk which cannot be mitigated through diversification.
- **Unsystematic Risk:** The risk of the investment itself is defined as the unsystematic risk. This is driven by internal factors and can be mitigated through diversification. The diversifiable risk is depicted as per Figure 4.

After defining the systematic and unsystematic risks we should go forward to define the types of the risks standing under these risks. Under unsystematic risks we have management, industry, liquidity, credit and operational risks. However, the last three can be also categorized under systematic risks as per some other financial books.

- **Management Risk:** This is the risks associated with ineffective, destructive or underperforming management, which hurts shareholders and the company or fund being managed.
- **Industry Risk:** This is the chance that a set of factors particular to an industry group drags down the industry's overall performance. For example a tax increase in the automobile industry may adversely affect the profits of the automobile producers due to the sharp decline in the sales volume (Maheshwari, 2008).
- **Liquidity Risk:** Liquidity is generally defined as the ability of a financial firm to meet its debt obligations without incurring unacceptably large losses. An example is a firm preferring to repay its outstanding one-month commercial paper obligations by issuing new commercial paper instead of by selling assets. Thus, "liquidity risk" is the risk that a firm will not be able to meet its current and future cash flow and collateral needs, both expected and unexpected, without materially affecting its daily operations or overall financial condition. Financial firms are especially sensitive to funding liquidity risk since debt maturity transformation (for example, funding longer-term loans or asset purchases with shorter-term deposits or debt obligations) is one of their key business areas (Federal Reserve Bank of San Francisco, 2013).
- **Default or Credit Risk:** Credit risk is most simply defined as the potential that a bank

Table 1. Differences between traditional risk management and ERM

Traditional Risk Management	ERM
Risk as individual hazards	Risk viewed in the context of business strategy
Risk identification and assessment	Risk portfolio development
Focus on discrete risks	Focus on critical risks
Risk mitigation	Risk optimization
Risk limits	Risk strategy
Risk with no owners	Defined risk responsibilities
Haphazard risk quantification	Monitoring and measurement of risks

(Source: Olson, Wu, Ibid)

Figure 3. Type of risks

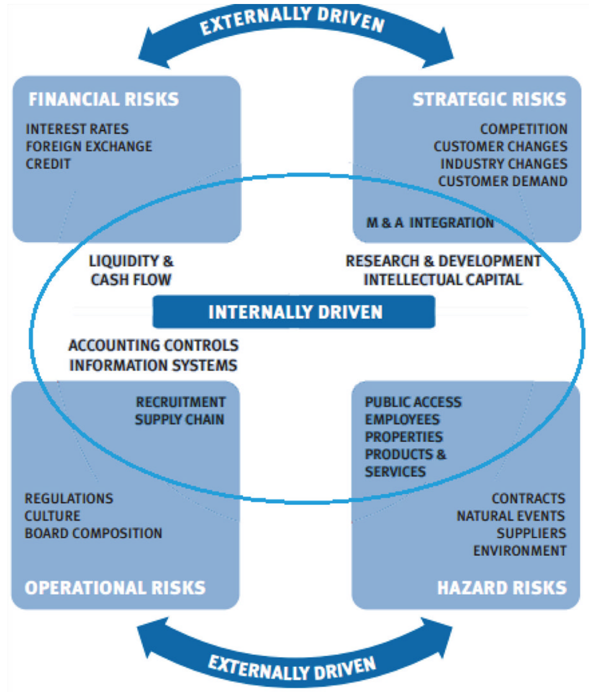
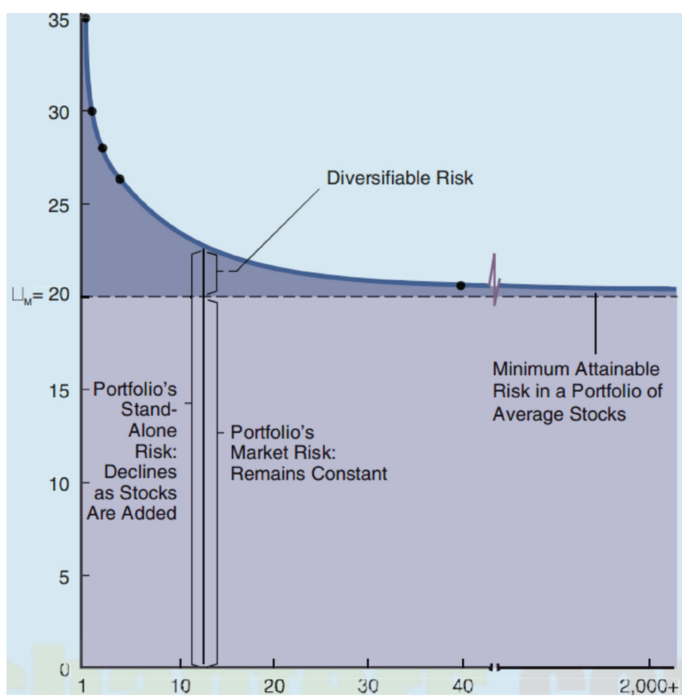


Figure 4. Systematic and unsystematic risks



borrower or counterparty will fail to meet its obligations in accordance with agreed terms. The goal of credit risk management is to maximize a bank's risk-adjusted rate of return by maintaining credit risk exposure within acceptable parameters. Banks need to manage the credit risk inherent in the entire portfolio as well as the risk in individual credits or transactions. Banks should also consider the relationships between credit risk and other risks. The effective management of credit risk is a critical component of a comprehensive approach to risk management and essential to the long-term success of any banking organization(Basel Committee of Banking Supervision, 1999).

We can say that when a credit is utilized, since there is a potential threat of default of the capital and the interest/profit, each credit amount is named as risk. This type of risk can be also named as customer risk or default risk. In order to reduce the risk, the banks are demanding down payments or placing pledges on the tangible assets.

- **Operational Risk:** Operational risk is "the risk of direct or indirect loss resulting from inadequate or failed internal processes, people and systems or from external events."(Basel Committee of Banking Supervision, 1999: 4) The most important types of operational risk involve breakdowns in internal controls and corporate governance. Such breakdowns can lead to financial losses through error, fraud, or failure to perform in a timely manner or cause the interests of the bank to be compromised in some other way, for example, by its dealers, lending officers or other staff exceeding their authority or conducting business in an unethical or risky manner. Other aspects of operational risk include major failure of information technology systems or events such as major fires or other disasters (Basel Committee of Banking Supervision, 1999).

The systematic risks are as follows:

- **Market Risk:** In most of the financial literature market risk and systematic risk is used instead of each other. Market risk is the possibility that financial markets will drop in value and create a ripple effect in one's investment. Market risk arises because market prices in general move up and down consistently for some time. There are many market related risks that a company should try to manage or mitigate during risk management (Maheshwari, 2008). These are depicted as follows.
- **Interest Rate Risk:** This risk arises for the holder of an interest bearing position. This is the exposure of a bank's financial condition to adverse movements in interest rates. Accepting this risk is a normal part of banking and can be an important source of profitability and shareholder value. However, excessive interest rate risk can pose a significant threat to a bank's earnings and capital base. Changes in interest rates affect a bank's earnings by changing its net interest income and the level of other interestsensitive income and operating expenses. Changes in interest rates also affect the underlying value of the bank's assets, liabilities and off-balance sheet instruments because the present value of future cash flows (and in some cases, the cash flows themselves) change when interest rates change. Accordingly, an effective risk management process that maintains interest rate risk within prudent levels is essential to the safety and soundness of banks (Basel Committee on Banking Supervision, 1997).

- **Currency (FX) Risk:** It is the risk that arises from the possible movements in the value of the foreign currencies. It arises from three different environments (Jorion, 2003);currency float in which the external value of the currency is free to move, to depreciate or appreciate; fixed currency system in which the external value of the currency is fixed to another currency and the changes in the currency regime in which the movements from pegged to floating or vice versa, affects the value of the currency.
- **Political Risk:** With increasing interaction of the world's markets, political climates around the world can affect the value of domestic and international investments. A period of instability may decrease the value of the investments and a stability period may increase the wealth of people by increasing the value of the investments (Maheshwari, 2008).Other than stability and instability there might be the risks related to the political regime followed by the rulers of the country. The political risks arises when the rulers choose the following paths:
  - Nationalization.
  - Partial nationalization.
  - Limitation of the activities.
  - Limitation on the acquisitions and mergers.
  - Uncertainties in the laws (especially in tax laws.)

These risks are all called as political risks.

- **Equity Risk:** This risk arises for the holder of an equity position. An example of this risk is a bank that has purchased shares/ equities in a company. A loss arises when the share/equity is fixed at a lower market value.
- **Commodity Value Risk:** This risk that arises for the holder of a commodity position. An example of commodity risk is a bank that has purchased gold. A loss for the bank arises when the price of gold is fixed at a lower level in the commodities markets.
- **Settlement and Counterparty Risk:** It is the risk that arises on transactions in interest rates, currency, equities or commodities that have not yet been settled. An example is a bank that has purchased a share from another bank that is not the issuer of the share, but which has to deliver the share to the purchaser against payment. A loss arises for either party in the transaction if settlement does not occur.
- **Purchase Power Risk:** This risk is related to the inflation in a country. If the inflation which is defined as the continuous increases in the overall prices in an economy, is higher than the average income increase.

MODERN RISK MANAGEMENT TECHNIQUES

After defining risk, risk management and the types of risk we now will try to explain what the modern risk management techniques are and how they are used to forecast the possible outcomes of different transactions.

As we already know, the decision making under risk has drawn much attention in many different social sciences, especially in economics and management. In economics, the microeconomic problem concerning consumers and firms under the uncertainty circumstance must be solved on the basis of the theory of the decision making under risk. Moreover, in management, modeling the decision making under risk is a key problem of the risk management and decision science.

The first technique that is applied under uncertain and risky situation is Operations Research. This is an interdisciplinary branch of mathematics (especially applied mathematics) used to provide a scientific base for management to take timely and effective decisions to their problems. It tries to avoid undesired consequences from taking decisions merely by guessing or by using thumb rules (Operations Research Society of America, 1987). It uses methods like mathematical modeling, statistics, and algorithms to arrive at optimal or good decisions in complex problems which are concerned with optimizing the maxima (profit, faster assembly line, greater crop yield, higher bandwidth, etc.) or minima (cost loss, lowering of risk, etc) of some objective function.

As it is seen from the definition, the related technique is mainly used for optimizing the decision making. This will decrease the uncertainty and of course mitigate the risk. Nevertheless, although this technique is useful for reducing the risk, since the computations are mainly dependent on the previous data or personal experiences, this doesn't mean that the risk is totally avoided.

The second one is Statistics, Statistics is the study of how to collect, organize, analyze and interpret numerical information from data. Descriptive statistics involves methods of organizing, picturing and summarizing information from data. Inferential statistics involves methods of using information from a sample to draw conclusions about the population.

One of the main concepts of statistics is standard deviation. This is the main item that is being used in the calculation of risk. Moreover, risk is defined as the standard deviation of the average real annual returns (Siegel, 2002). Therefore, if the standard deviation of A type financial instrument is more than B type financial instrument, it is said that A type is more riskier than the B type.

Operations Research

As it is seen from the definition made a few paragraphs ago, the related technique is mainly used for optimizing the decision making. This will decrease the uncertainty and of course mitigate the risk. Nevertheless, although this technique is useful for reducing the risk, since the computations are mainly dependent on the previous data or personal experiences, this doesn't mean that the risk is totally avoided.

Decisions that lend themselves to display in a decision table also lend them to display in a decision tree. The decision tree is a graphical display of the decisions process that indicates decision alternatives and their respective probabilities and pay offs for each combination of alternative(Shah & Gor, 2007). The decision tree classifier is one of the possible approaches to multi-stage decision making. The basic idea involved in any multi-stage approach is to break up a complex decision into a union of several simpler decisions. This is done by a decision tree in which each internal node denotes a test on an attribute; each branch represents an outcome of the test (Han & Kamber, 2001).

Figure 5 shows a basic decision tree.

The circular nodes which are also called as state of nature node show uncertain conditions where square nodes which are called as decision nodes represent the decision making activity under certain conditions. Therefore, the nodes; 2 and 3 stand for uncertain events where 1 stands for certain conditions.

For business, this technique is mainly dealing with the calculation of expected utility or expected monetary value of the project. The formulas are depicted as follows (Taha, 1997).

$$E(V) = \sum_{i=0}^{n} P_i \text{ x } V_i$$

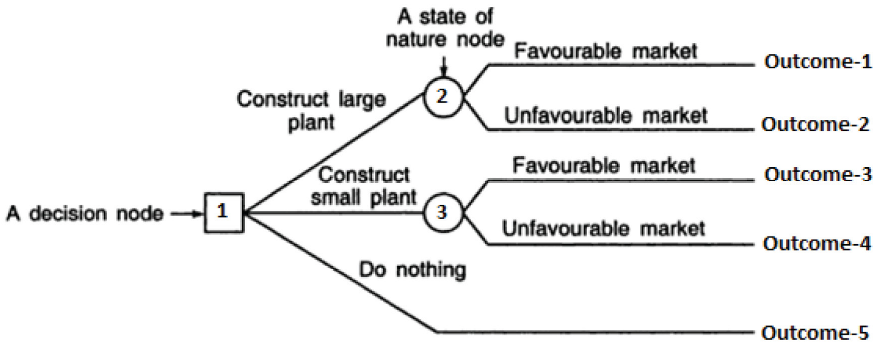
or

$$E(U) = \sum_{i=0}^{n} P_i \text{ x } U_i \qquad (1)$$

where,

i: Event number; P_i: The probability corresponds to same event; V_i: The value or return of the event i; U_i: The utility of the event i.

Figure 5. A decision tree



Box-1

Halech Bank is a multinational commercial bank that mainly operates in corporate, small business, retail, investment and VIP banking. The stakeholders are putting 1 million USD equity to be used in banking channels which is expected to bring about 2.5% (risk free return) return in one year time period. If the bank utilizes this amount to the existing banking channels the probability of default would be 2%, 5%, 3%, 1.5% and 1% for corporate, small business, retail, investment and VIP banking respectively. The returns would be 12%, 17%, 15%, 10% and 8% for corporate, small business, retail, investment and VIP banking respectively. The utilizations would be made evenly across all banking channels. Other than investing into the bank for utilizing as loans, the stakeholders and the management are in different between buying a new bank in MENA region which would generate 10% return with a probability of 40%, 8% with a probability of 30% and 12% with a possibility of 20%. The bank management is in different between these decisions and opts for to make the decision with decision trees. *The management has drawn a decision tree as depicted in Figure 6.*

The expected values of decision nodes are calculated as follows:

$$E(V)_{utilize\ as\ loan} = 20\%\text{x}\left(98\%\text{x}12\% + 2\%\text{x}0\%\right) + 20\%\text{x}\left(95\%\text{x}17\% + 5\%\ \text{x}0\%\right) + 20\%\text{x}\left(97\%\ \text{x}\ 15\% + 3\%\ \text{x}\ 0\%\right) + 20\%\ \text{x}\left(98.5\%\ \text{x}\ 10\% + 1.5\%\ \text{x}\ 0\%\right) + 20\%\ \text{x}\left(99\%\ \text{x}\ 8\% + 1\%\ \text{x}\ 0\%\right)$$

$$E(V)_{invest\ in\ a\ bank\ MENA} = 40\%\text{x}12\% + 30\%\text{x}10\% + 20\%\ \text{x}\ 8\%$$

$$E(V)_{do\ nothing} = 2.5\%$$

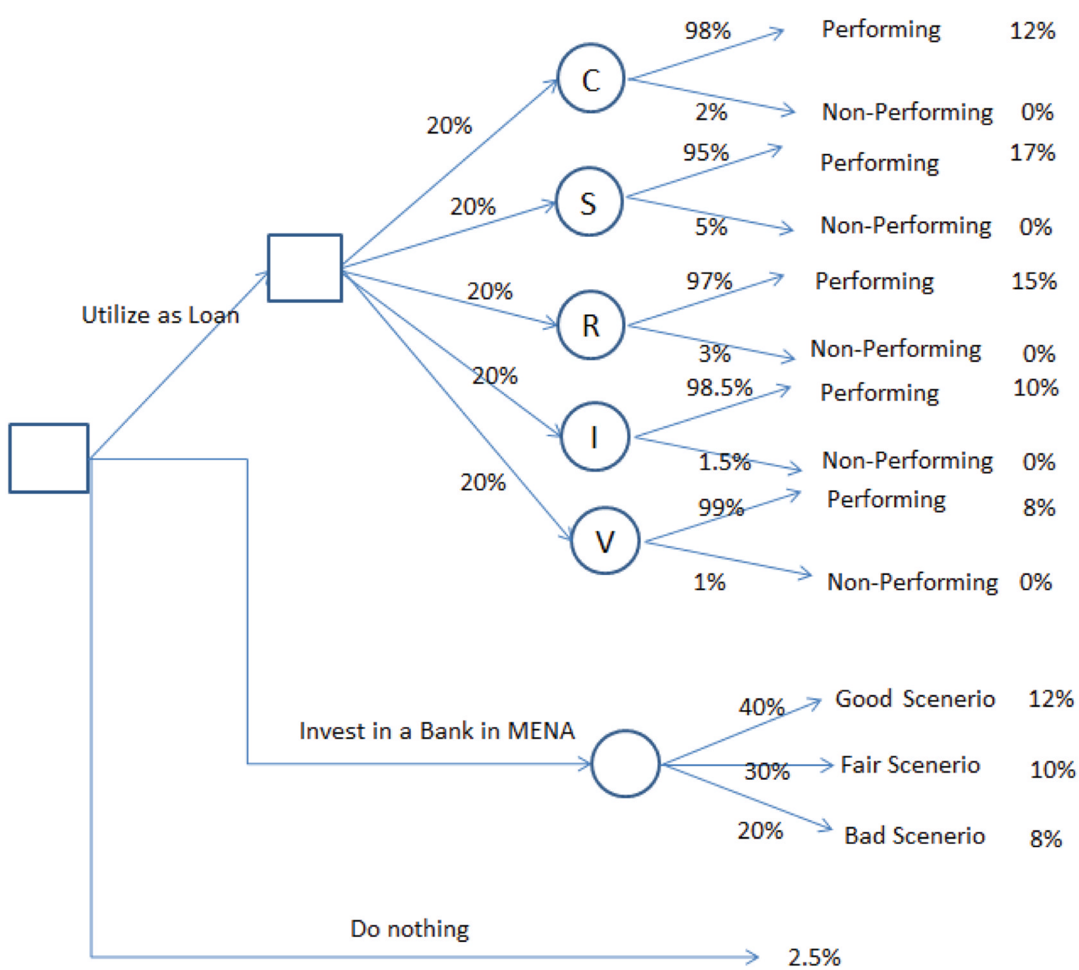
$$E(V)_{utilize\ as\ loan} = 12.05\%$$

$$E(V)_{invest\ in\ a\ bank\ MENA} = 9.4\%$$

$$E(V)_{do\ nothing} = 2.5\%$$

Since the $E(V)_{\text{utilize as loan}}$ has the biggest return the bank management should prefer to use this capital in utilizing loans.

Figure 6. Halech Bank decision tree



Box-2

Pasha Bank has two investment alternatives which are mostly about new banking channels. These are a new mobile branch and a new digital technology branch. Both investments have only two years economic life due to the new discoveries in technology which would possible make these two investments obsolete in two year time. The expected rate of return is 10% p.a. and the details of the investment are depicted as per Table 2.

They need to see the NPV (net present value)[1] of each investment on a decision tree.

$$E(V)_{mobile\ branch} = 10\%\text{x}\begin{pmatrix}10\%\ \text{x}\ 250+\\ 40\%\ \text{x}\ 500+\\ 50\%\ \text{x}\ 750\end{pmatrix}\text{x}$$

$$0.8264^2 + 250\ \text{x}\ 0.909^3) + 40\%\text{x}(10\%\text{x}250 +$$

$$40\%\text{x}500 + 50\%\text{x}750)\text{x}0.8264 + 500\text{x}0.909) +$$

$$50\%\text{x}\left(10\%\text{x}250 + 40\%\text{x}500 + 50\%\text{x}750\right)\text{x}$$

$$0.8264 + 750\ \text{x}\ 0.909) = USD\ 1{,}041.24\ thousand$$

Table 2. Pasha Bank channel alternatives

	Mobile Branch	Digital Branch
Economic Life	2 years	2 years
Investment Cost	USD 1 million	USD 750 thousand
Expected Cash Flows/year	USD 250 thousand 10% probability	USD 150 thousand 10% probability
	USD 500 thousand 40% probability	USD 350 thousand 40% probability
	USD 750 thousand 50% probability	USD 500 thousand 50% probability

$$E(V)_{digital\ branch} = 10\%\ \text{x}(10\%\ \text{x}150 +40\%\text{x}350 + 50\%\ \text{x}\ 500)\text{x}0.8264 +150\ \text{x}0.909) + 40\%\text{x}\ (10\%\text{x}150 +40\%\text{x}350 + 50\%\text{x}500)\text{x}0.8264 +350\ \text{x}0.909) + 50\%\ \text{x}(10\%\ \text{x}\ 150 +40\%\text{x}350 + 50\%\text{x}500)\ \text{x}0.8264 +500\ \text{x}0.909) = +USD\ 702.84\ thousand$$

$$The\ NPV_{mobile\ branch} = 1{,}041.24 - 1{,}000.00 = +\ USD\ 41.24\ thousand$$

$$The\ NPV_{digital\ branch} = 702.84 - 750.00 = -\ USD\ 47.16\ thousand$$

Mobile branch is the most feasible alternative.

To sum up, when we come to risk management, it is for sure that these decision trees will mitigate the risk incurred. This is because it is helping to decrease the uncertainty. The managers are more aware of what will happen in the future by considering the previous information on the probability of the different and possible outcomes.

Statistics

In risk management, statistics have been widely used in order to understand and mitigate risk. There are various applications of statistics in risk management but most of them are based on the variation of the assets' prices. Therefore the term variance and standard deviation are commonly used in this area. Standard deviation is the square root of variance and the formula is depicted as follows (Spiegel & Lindstrom, 2000):

$$\sigma\sqrt{\frac{\sum_{j=1}^{N}(X_j - \bar{X})^2}{N}} \qquad (2)$$

where;

σ, represents standard deviation.

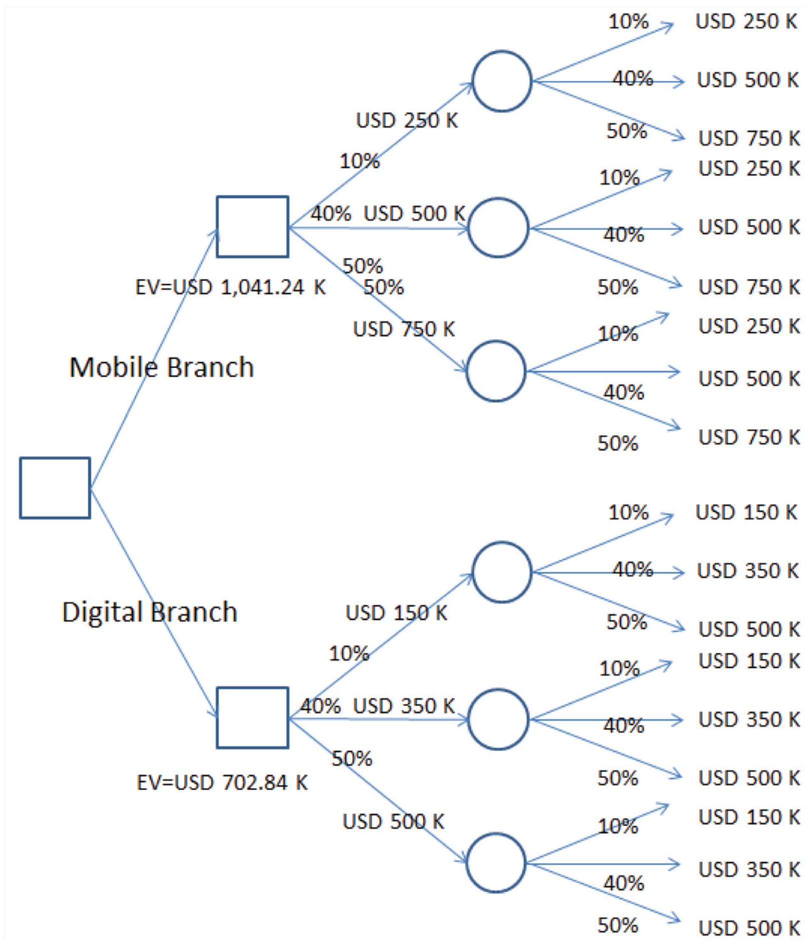
$X_{j,}$ represents j^{th} datum in the population.

X, represents the average of all data in the population.

N, represents the number of data in the population.

In this chapter we will show how the bank management uses statistics and of course standard deviation and variance to understand the possibilities of different scenarios which are probable to happen in the future.

Figure 7. Pasha Bank decision tree



The first major technique is called as VaR (value at risk). VaR is a statistical concept which shows the maximum loss that an institution can be confident it would lose on a portfolio of assets due to normal market movements (Penza, Bansal, 2001). As it is in the definition, VaR analysis is a powerful analysis to manage market risk. In order to compute the standard deviation for VaR analysis we can use the following formula (the number of work days in 1 year is almost 252) to show the relationship between daily and annual standard deviations

$$\sigma_{annual} = \sigma_{daily} \times \sqrt{252} \qquad (3)$$

This also shows that:

$$VaR_{annual} = VaR_{daily} \times \sqrt{252} \qquad (4)$$

$\sqrt{252} = 15.87$ means that σ_{daily} is almost 6.3% of σ_{annual}.

Furthermore, we can also understand that since:

$\sigma_{monthly} = \sigma_{daily} \times \sqrt{22}$; $\sqrt{22} = 4,69$

The daily standard deviation is 22% of the monthly standard deviation.

When we come to the VaR analysis we can use the following formula:

VaR = The market value of the financial position x Volatility.
Volatility = σ x Z score of an accepted confident interval.

This financial position can be anything including FX, stocks, commodities etc. Therefore, any position held by the bank can be analyzed using this method of statistics.

If we go deep into the detail we can convert the formula to the following formulas:

VaR = The market value of the foreign currency position x Volatility in FX.
VaR = The market value of the stock position x Volatility in Index.
VaR = The market value of the bond x Volatility in bond return.

We will show it in a banking sector scenario as follows.

Box-3

Canaria Bank which is a Spanish Bank has a long position of USD 12.5 million, the bank wants to see how the VaR would be in one year time for this long position. The board of directors hates speculation so they have always demanded square position from the bank management. The bank management tries to show that the annual VaR is not so big to be scared. They have hired a consultancy firm and they wanted them to calculate the VaR of this position in one year time. The calculations of the firm are as follows:

They have taken the last 20 working days USD exchange rates against Euro *(EUR 1 = USD 1,30..)* which is shown in Table 3.

The standard deviation is calculated as 1.06% as per the formula (2). They have used a confident interval of 95% which corresponds to 1.65 as Z score (shown in Table 4).

VaR = The market value of the foreign currency position x Volatility in FX.
VaR= USD 12.5 million x 1.06% x1.65.
VaR = USD 218.6 thousand.

But this is calculated for only 20 working days. Therefore we need to convert it to 252 working days which is almost 1 year.

As per Formula (3)

$$VaR_{annual} = VaR_{20\ days} \text{ x } \sqrt{\frac{252}{20}}$$

$$VaR_{annual} = \text{USD 218.6 thousand x } \sqrt{\frac{252}{20}}$$

$$VaR_{annual} = \text{USD 775.9 thousand}$$

Table 3. USD vs Euro exchange rates

Dates	Exchange Rate	Dates	Exchange Rate
29-Apr	1.3018	14-May	1.2970
30-Apr	1.3090	15-May	1.2987
2-May	1.3075	16-May	1.2887
3-May	1.3167	17-May	1.2874
6-May	1.3109	20-May	1.2864
7-May	1.3107	21-May	1.2863
8-May	1.3099	22-May	1.2871
9-May	1.3125	23-May	1.2932
10-May	1.3145	24-May	1.2882
13-May	1.3007	27-May	1.2961

Table 4. Z Table

Z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
1.1	0.8643	0.8665	0.8686	0.8708	0.8729	0.8749	0.8770	0.8790	0.8810	0.8830
1.2	0.8849	0.8869	0.8888	0.8907	0.8925	0.8944	0.8962	0.8980	0.8997	0.9015
1.3	0.9032	0.9049	0.9066	0.9082	0.9099	0.9115	0.9131	0.9147	0.9162	0.9177
1.4	0.9192	0.9207	0.9222	0.9236	0.9251	0.9265	0.9279	0.9292	0.9306	0.9319
1.5	0.9332	0.9345	0.9357	0.9370	0.9382	0.9394	0.9406	0.9418	0.9429	0.9441
1.6	0.9452	0.9463	0.9474	0.9484	0.9495	0.9505	0.9515	0.9525	0.9535	0.9545
1.7	0.9554	0.9564	0.9573	0.9582	0.9591	0.9599	0.9608	0.9616	0.9625	0.9633
1.8	0.9641	0.9649	0.9656	0.9664	0.9671	0.9678	0.9686	0.9693	0.9699	0.9706
1.9	0.9713	0.9719	0.9726	0.9732	0.9738	0.9744	0.9750	0.9756	0.9761	0.9767
2.0	0.9772	0.9778	0.9783	0.9788	0.9793	0.9798	0.9803	0.9808	0.9812	0.9817

Other than VaR Analysis, there are many other methods can be used in banking based on statistics. We will introduce one other technique related to statistics in order to show how banking industry is so close to statistic applications. As we all know that like any other company, the banks are making financial planning and budgeting before the beginning of the New Year. Their main purpose is to find out how much profit to be earned in the coming year having last 4-5 years trend in hand. This analysis of course is made with sophistical analyses with very detailed calculations and having many other factors affecting the bank's performance. Here, we will only show a very basic example to understand how regression analysis is used to estimate the coming year's performance with the last 5 years data.

Regression analysis is a very common and widely used analysis which is used in a very wide scope of business decisions. This analysis is the study of the data in which a relationship between data sets has been analyzed. There are independent variable(s) which are represented by x_n which are assumed that they have direct impact on the dependent variable called "y" (Sen, Srivastava, 1990). The regression model has the following formula.

$$Y = B + \sum_{n=1}^{n} AnXn$$

where; Y represents the dependent variable, X represents the independent variable.

Box-4

Tarabia Bank management and the stockholders have a conflict on the coming years profit budget. The management as the operations side knows that the coming year's profit would not be as much as the stockholders are expecting. The stockholders are thinking that they have invested in this bank 10 years ago and this is the time to see sufficient returns after a decade time. Therefore, they have agreed on hiring a consultancy agency to make a feasible but efficient budget for the bank for the coming year.

The firm has suggested using the last 5 years figures in order to understand the following year's performances. They have also suggested regression analysis which is a very powerful technique of statistics. They have investigated the results of the last five years in detail and they have decided to use income statements of the last five years (Table 5) to forecast the next three years' figures.

They have used MS excel to forecast the new year's figures with a very simple way.

Step-1: Input Data to Excel.
Step-2: Select Data (Figure 8).
Step-3: Move the Mouse to the bottom-right most (Column F, Row 12) expand it to the three left columns (Figure 9).

The forecasted values are listed under the years 2013, 2014 and 2015. If we want to see the equations we can use the following technique.

Step-1: Draw the charts of each item. To do that, go to insert menu, select line and select 2-D line (Figure 10).
Step-2: The drawn figure is in Figure 11. Right Click on each line, select Add Trendline. Afterwards, click on "Linear," "Display equation on Chart" and "Display R-squared Value on Chart." (Figure 12-13)

R^2 which is an indicator of the accuracy of the model calculated through the regression analysis has a value range of 0 to 1. As the R^2 value increases the accuracy of the model increases. This means that the regression models for the first three items are more accurate than the last two items. This means that the bank will achieve a net profit amount of 1,031,944, 1,152,990 and 1,274,036 in the coming three years.

CONCLUSION

Here in this study we have tried to show the modern risk management techniques which have been used by the banks so far in order to make more accurate estimations for the consequences of the banking transactions. Before doing that, we have defined what risk and risk management are. As we have shown in the beginning of the chapter the risk was defined as the possibility of something bad happening or to do something although there is a chance of a bad result. Moreover, the risk management was defined as the process of protecting one's person or organization from potential asset or income loss.

Afterwards, we have shown the types of risks which have been gathered under both systematic and unsystematic risks. As it was explained throughout the chapter, the systematic risks were defined as the uncontrollable risks which are originated from the market conditions. However, there are other risks called unsystematic risks which are mainly originated from the operations

Table 5. Tarabia Bank income statements

	2008	2009	2010	2011	2012
I. Interest Revenue	2,785,584	2,987,461	2,813,874	3,535,559	4,806,433
II. Interest Expenses	1,528,419	1,123,190	1,025,457	1,655,215	2,336,515
III. Net Interest Gain (I - II)	1,257,165	1,864,271	1,788,417	1,880,344	2,469,918
IV. Net Commission Gain	228,958	291,561	313,912	42,522	482,226
V. Other Revenue	83,056	243,917	255,736	782,780	228,799
VI. Operation Profit	1,569,179	2,399,749	2,358,065	2,705,646	3,180,943
VII. Provisions	36,253	691,863	506,431	452,552	727,519
VIII. Other Expenses	1,139,274	930,391	1,072,156	2,161,405	1,497,825
IX. Earning Before Tax	393,652	777,495	779,478	91,689	955,599
X. Tax	-51,189	-17,271	-163,187	-199,534	-235,918
XI. Net Profit	342,463	604,785	616,291	1,060,809	719,681

Figure 8. Excel calculations-select data

	A	B	C	D	E	F	G	H	I
1		2008	2009	2010	2011	2012	2013	2014	2015
2	I. Interest Revenue	2,785,584	2,987,461	2,813,874	3,535,559	4,806,433	4,762,721	5,221,701	5,680,680
3	II. Interest Expenses	1,528,419	1,123,190	1,025,457	1,655,215	2,336,515	2,178,224	2,393,046	2,607,868
4	III. Net Interest Gain (I - II)	1,257,165	1,864,271	1,788,417	1,880,344	2,469,918	2,584,497	2,828,655	3,072,813
5	IV. Net Commission Gain	228,958	291,561	313,912	42,522	482,226	349,085	374,835	400,584
6	V. Other Revenue	83,056	243,917	255,736	782,780	228,799	567,962	650,997	734,032
7	VI. Operation Profit	1,569,179	2,399,749	2,358,065	2,705,646	3,180,943	3,501,544	3,854,486	4,207,429
8	VII. Provisions	36,253	691,863	506,431	452,552	727,519	825,890	940,212	1,054,534
9	VIII. Other Expenses	1,139,274	930,391	1,072,156	2,161,405	1,497,825	1,944,645	2,139,457	2,334,268
10	IX. Earning Before Tax	393,652	777,495	779,478	91,689	955,599	731,009	774,818	818,627
11	X. Tax	-51,189	-17,271	-163,187	-199,534	-235,918	-298,936	-354,108	-409,280
12	XI. Net Profit	342,463	604,785	616,291	1,060,809	719,681	1,031,944	1,152,990	1,274,036

Figure 9. Excel calculations–expand data

	A	B	C	D	E	F	G	H	I
1		2008	2009	2010	2011	2012	2013	2014	2015
2	I. Interest Revenue	2,785,584	2,987,461	2,813,874	3,535,559	4,806,433	4,762,721		
3	II. Interest Expenses	1,528,419	1,123,190	1,025,457	1,655,215	2,336,515	2,178,224		
4	III. Net Interest Gain (I - II)	1,257,165	1,864,271	1,788,417	1,880,344	2,469,918	2,584,497		
5	IV. Net Commission Gain	228,958	291,561	313,912	42,522	482,226	349,085		
6	V. Other Revenue	83,056	243,917	255,736	782,780	228,799	567,962		
7	VI. Operation Profit	1,569,179	2,399,749	2,358,065	2,705,646	3,180,943	3,501,544		
8	VII. Provisions	36,253	691,863	506,431	452,552	727,519	825,890		
9	VIII. Other Expenses	1,139,274	930,391	1,072,156	2,161,405	1,497,825	1,944,645		
10	IX. Earning Before Tax	393,652	777,495	779,478	91,689	955,599	731,009		
11	X. Tax	-51,189	-17,271	-163,187	-199,534	-235,918	-298,936		
12	XI. Net Profit	342,463	604,785	616,291	1,060,809	719,681	1,031,944		

	A	B	C	D	E	F	G	H	I
1		2008	2009	2010	2011	2012	2013	2014	2015
2	I. Interest Revenue	2,785,584	2,987,461	2,813,874	3,535,559	4,806,433	4,762,721	5,221,701	
3	II. Interest Expenses	1,528,419	1,123,190	1,025,457	1,655,215	2,336,515	2,178,224	2,393,046	
4	III. Net Interest Gain (I - II)	1,257,165	1,864,271	1,788,417	1,880,344	2,469,918	2,584,497	2,828,655	
5	IV. Net Commission Gain	228,958	291,561	313,912	42,522	482,226	349,085	374,835	
6	V. Other Revenue	83,056	243,917	255,736	782,780	228,799	567,962	650,997	
7	VI. Operation Profit	1,569,179	2,399,749	2,358,065	2,705,646	3,180,943	3,501,544	3,854,486	
8	VII. Provisions	36,253	691,863	506,431	452,552	727,519	825,890	940,212	
9	VIII. Other Expenses	1,139,274	930,391	1,072,156	2,161,405	1,497,825	1,944,645	2,139,457	
10	IX. Earning Before Tax	393,652	777,495	779,478	91,689	955,599	731,009	774,818	
11	X. Tax	-51,189	-17,271	-163,187	-199,534	-235,918	-298,936	-354,108	
12	XI. Net Profit	342,463	604,785	616,291	1,060,809	719,681	1,031,944	1,152,990	

	A	B	C	D	E	F	G	H	I
1		2008	2009	2010	2011	2012	2013	2014	2015
2	I. Interest Revenue	2,785,584	2,987,461	2,813,874	3,535,559	4,806,433	4,762,721	5,221,701	5,680,680
3	II. Interest Expenses	1,528,419	1,123,190	1,025,457	1,655,215	2,336,515	2,178,224	2,393,046	2,607,868
4	III. Net Interest Gain (I - II)	1,257,165	1,864,271	1,788,417	1,880,344	2,469,918	2,584,497	2,828,655	3,072,813
5	IV. Net Commission Gain	228,958	291,561	313,912	42,522	482,226	349,085	374,835	400,584
6	V. Other Revenue	83,056	243,917	255,736	782,780	228,799	567,962	650,997	734,032
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8	VII. Provisions	36,253	691,863	506,431	452,552	727,519	825,890	940,212	1,054,534
9	VIII. Other Expenses	1,139,274	930,391	1,072,156	2,161,405	1,497,825	1,944,645	2,139,457	2,334,268
10	IX. Earning Before Tax	393,652	777,495	779,478	91,689	955,599	731,009	774,818	818,627
11	X. Tax	-51,189	-17,271	-163,187	-199,534	-235,918	-298,936	-354,108	-409,280
12	XI. Net Profit	342,463	604,785	616,291	1,060,809	719,681	1,031,944	1,152,990	1,274,036

Figure 10. Excel calculations–draw line

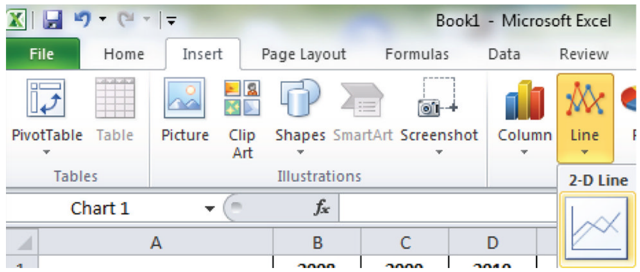
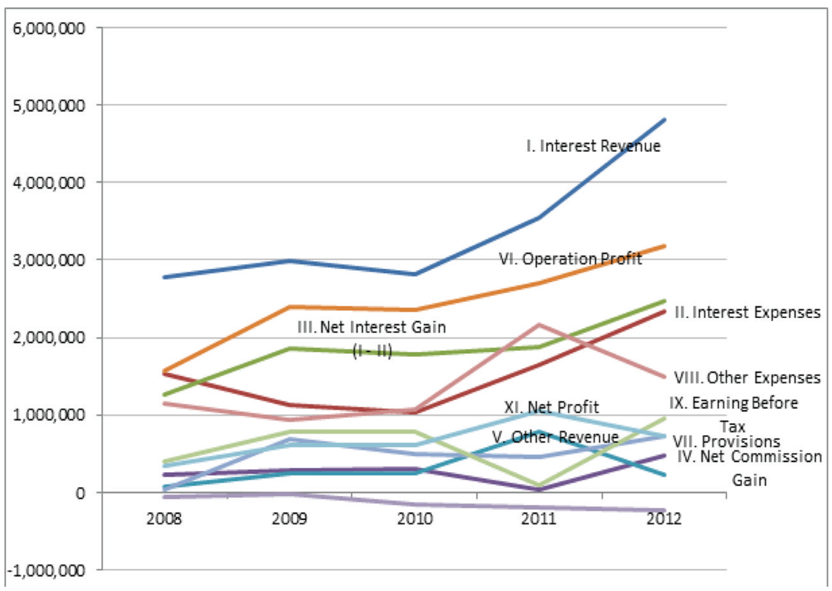


Figure 11. Tarabia Bank income statement items



of the company itself. All of these risks have been explained briefly throughout the chapter.

After defining risk, risk management and types of risks, we have introduced contemporary risk management techniques. As we know that there are many other techniques other than these two techniques, we have restricted our study with only operations research and statistics. Moreover we know that both operations research and statistics cover a wide scope of business decisions thus what we have expressed here in this study is only a sample when we compare it the whole concept of these two techniques.

As it was mentioned in the study with the literature review and the examples, both operations research and statistics have been getting more importance in the modern financial applications. Since banks are one of the most important actors in the financial system both techniques have been started to be used by these institutions in order to mitigate and manage risk.

As these are emerging subjects, there would be many researches to be conducted upon these two techniques. The banks would be more interested in more sophisticated aspects of both operations research and statistics. We have started to see many applications regarding statistics. The Basel Accords and all principles adopted with several amendments by Basel Banking Committee have shown that statistics have started to be used in

Figure 12. Excel calculations–add trendline

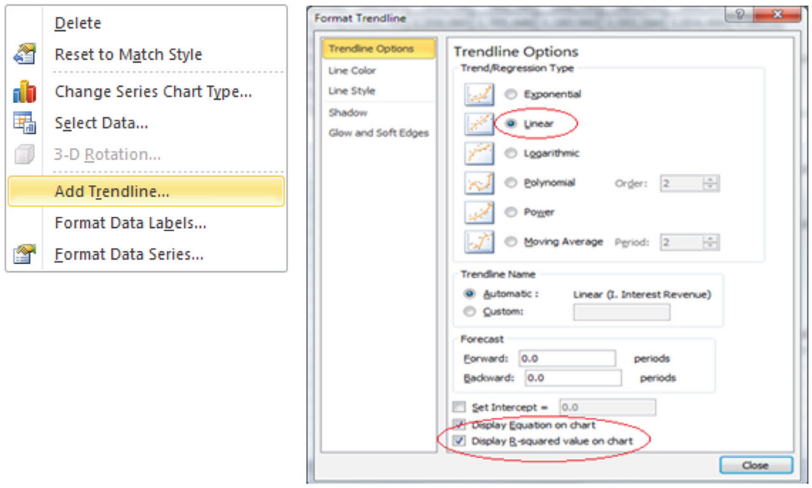
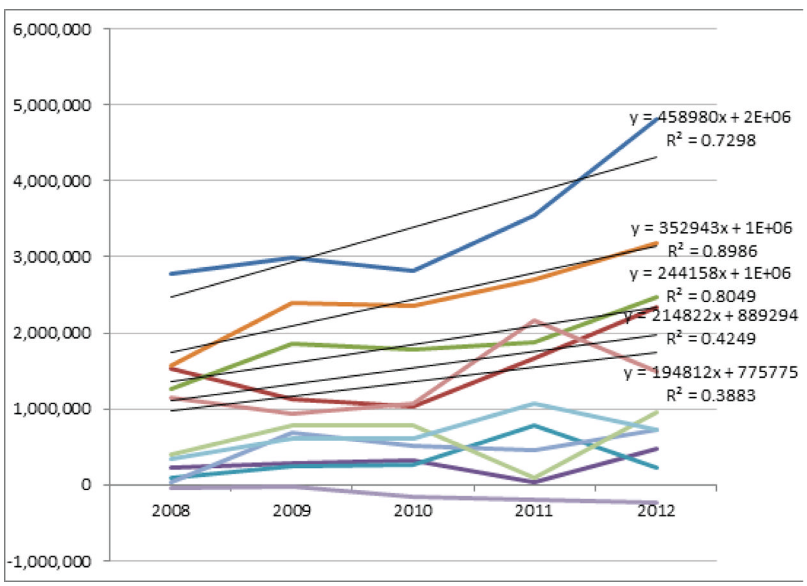


Figure 13. Tarabia Bank income statement regression models



managing different types of risks which have direct influence on the banking risks. As statistics have been used in all empirical analysis which has been done upon different aspects of sciences, the researchers are very close to these applications. However, since there are many techniques in statistics there is a very long way to go to calculate and estimate the risks more accurately in the future. Furthermore, there would be many other different statistical and operational research based analysis to be developed and the banking sector would make of these techniques more clearly in the future.

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KEY TERMS AND DEFINITIONS

Industry Risk: The chance that a set of factors particular to an industry group drags down the industry's overall performance. For example a tax increase in the automobile industry may adversely affect the profits of the automobile producers due to the sharp decline in the sales volume.

Management Risk: The risks associated with ineffective, destructive or underperforming management, which hurts shareholders and the company or fund being managed.

Systematic Risk: The uncontrollable risk which is originated from the market conditions. This risk can be named as market risk and it has an effect on all investments in that market. This risk is an externally driven risk which cannot be mitigated through diversification.

Unsystematic Risk: The risk of the investment itself. This is driven by internal factors and can be mitigated through diversification.

ENDNOTES

1 NPV is the difference between the present values of all future cash flows and the initial investment cost. A positive NPV shows that the project is feasible. The more the NPV the more economical the Project.

2 2 year interest factor of 10% which is used to convert USD 1 future cash flow to two years before. It is $1/(1+0.1)^2$

3 1 year interest factor of 10% which is used to convert USD 1 future cash flow to one year before. It is $1/(1+0.1)^1$

Chapter 15
Linkage between Efficiency of Assets Management and Profitability in Selected Companies in Pharmaceutical Industry

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ABSTRACT

This chapter empirically investigates the relationship between the efficiency of asset management and profitability of the Indian pharmaceutical industry during the period 2002-03 to 2011-12. The chapter also tries to make a comparison, in respect of the efficiency of assets management, between multinational and domestic companies in the Indian pharmaceutical industry during the same period. The sample size of the study consists of 20 pharmaceutical companies by taking 10 multinational and 10 domestic companies from the Indian pharmaceutical industry. The issues analyzed in this study have been tackled using relevant statistical tools and techniques.

1. INTRODUCTION

In today's challenging and competitive business environment, the matter of designing appropriate strategies for improving efficiency of assets management in accomplishing the wealth maximization objective of corporate is of utmost importance. The way in which assets are managed can have a considerable impact on profitability of the company. The efficiency with which assets are managed is gleaned from turnover ratios. In fact, it is an empirical question whether a high value of turnover ratio has a positive influence on the company's earning capacity. Virtually no study has so far been made on this unresolved issue considering both multinational and domestic companies of the Indian pharmaceutical sector. However, Indian pharmaceutical industry has experienced stunning changes due to India's signing of Trade Related Intellectual Property Rights System. In this

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backdrop, the present study seeks to analyze the relationship between efficiency of assets management and profitability of Indian pharmaceutical industry during the period 2002-03 to 2011-12. Besides this, the paper has also made a modest effort to compare the relationship between efficiency of assets management and profitability of multinational companies with that of the domestic companies of the Indian pharmaceutical industry during the same period.

2. OBJECTIVES OF THE STUDY

- To study the relative efficiency-profitability status of the selected companies.
- To measure the extent of relationship between efficiency of cash management and profitability, between efficiency of inventory management and profitability, between efficiency of debtors management and profitability and between efficiency of fixed assets management and profitability of the selected companies and to compare the said matters of the multinational companies with that of the domestic companies in Indian pharmaceutical sector.
- To assess the joint effect of cash management, inventory management, debtors management and fixed assets management of the selected multinational and domestic companies on their earnings performance as well as to compare the said matter of multinational companies with that of domestic companies under study.

3. METHODOLOGY OF THE STUDY

The study is based on twenty (consisting of ten multinational and ten domestic companies) pharmaceutical companies which have been selected from Indian pharmaceutical sector following purposive sampling procedure. While making this selection, net sales revenue has been considered as the selection criterion. The selected ten multinational and ten domestic companies have been listed in Appendix 1. The data of the selected companies for the period 2002-03 to 2011-12 used in this study have been taken from secondary sources i.e. Capitaline Corporate Database of Capital Market Publishers (I) Ltd. Mumbai. For analyzing the data in this study, simple mathematical tools like percentages, averages, ratios have been used. The ratios relating to the measurement of efficiency of assets management which have been used in this study are: (a) cash turnover ratio (CTR), (b) inventory turnover ratio (ITR), (c) debtors turnover ratio (DTR) and (d) fixed assets turnover ratio (FATR). The profitability measure which has been selected for this study is return on capital employed (ROCE). In order to measure the performance in respect of efficiency in assets management more precisely a comprehensive rank test considering average values of the above mentioned indicators of the assets management have been made. The degree of relationship (high, medium or low) between each of the efficiency indicators of assets management and profitability have been assessed through correlations between the selected measures of efficiency in assets management and profitability. For studying the joint influence of the selected measures relating to the efficiency of assets management on the overall profitability, multiple correlation and multiple regression techniques have been applied. In order to examine whether the computed values of partial regression coefficients are statistically significant or not, t test has been used. The multiple correlation coefficients have been tested by F test.

4. FINDINGS OF THE STUDY

1. In this section the overall efficiency of assets management and profitability of the selected multinational companies has been compared with that of the selected domestic companies

in the Indian pharmaceutical sector during the study period. For measuring the efficiency status of the selected multinational as well as domestic companies more precisely, a comprehensive rank test considering the average values of all the selected efficiency measures has been made. In this test, a process of ranking has been used to arrive at a more comprehensive measure of efficiency in which average values of the selected four ratios, namely, CTR, ITR, DTR and FATR have been combined in a points score. High value of all selected efficiency measures indicates greater efficiency and ranking has been done in that order. Ultimate efficiency ranking has been done on the basis of the principle that the lower the aggregate of individual ranks the more favorable is the efficiency position and vice versa. ROCE has been used as an indicator of overall profitability. High value of ROCE indicates high profitability and ranking has been done accordingly. In Table1 an attempt has been made to compare the efficiency-profitability status of the selected multinational pharmaceutical companies with that of the selected domestic pharmaceutical companies by using the ultimate efficiency in assets management rank and overall profitability rank. On the basis of such composite scores assigned to the selected multinational and domestic companies, their overall efficiency-profitability status has been assessed more precisely. Ultimate efficiency-profitability ranking has been done on the principle that the lower the aggregate of overall efficiency and profitability rank, the better is the efficiency-profitability status of the company. Table 1 depicts that Abbott which ranked first according to the average ITR and average DTR, third according to the average FATR, and tenth according to the mean CTR had a combined score of 15 in the composite efficiency ranking. Similarly, Fulford had a combined efficiency score of 23, Aventis 24.5, Organon 26, Merck 27, Pfizer 30, Glaxosmithkline 35, Astrazeneca and Novartis 41, Piramal 42, Wyeth 48, Cadila and Wockhardt 49, Sun 49.5, Cipla 50, Ipca 53, Aurobindo 56, Lupin 58, Dr. Reddy's 61 and Ranbaxy 63. According to the combined efficiency score based on the mean values of the selected efficiency measures Abbott captured the highest rank and has been followed by Fulford, Aventis, Organon, Merck, Pfizer, Glaxosmithkline, Astrazeneca and Novartis, Piramal, Wyeth, Cadila and Wockhardt, Sun, Cipla, Ipca, Aurobindo, Lupin, Dr. Reddy's and Ranbaxy respectively in that order. Therefore, it is evident from the composite scores computed by using the average values of the selected efficiency indicators, nine multinational companies found place in the first ten positions. It reflects that in respect of overall efficiency status the majority multinational companies occupied the upper ranks as compared to the domestic companies. Table 1 also discloses that considering overall profitability aspect Astrazeneca captured the top most position and has been followed by Pfizer, Merck, Wyeth, Aventis, Glaxosmithkline, Cipla, Organon, Novartis, Sun, Piramal, Fulford, Ipca, Wockhardt, Dr. Reddy's, Aurobindo & Ranbaxy, Cadila, Abbott and Lupin respectively in that order. Finally 'ultimate efficiency in assets management rank' and 'overall profitability rank' for each of the selected companies (both multinational and domestic) has been added to arrive at its 'sum of ultimate efficiency in assets management and overall profitability rank', which has been ultimately used to ascertain its final efficiency-profitability rank. Final efficiency-profitability ranking has been done on the principle that the lower the aggregate of 'ultimate efficiency in assets management rank' and 'overall profitability rank', the

Table 1.

Computation of Ultimate Efficiency in Assets Management Rank Based on the Average Values of the Selected Efficiency Measures of the Selected Companies								
		Average Cash Turnover Ratio(CTR)	**Rank**	**Average Inventory Turnover Ratio(ITR)**	**Rank**	**Average Debtors Turnover Ratio(DTR)**	**Rank**	**Average Fixed assets Turnover Ratio (FAT R)**
Multinational Companies	Abbott	56.21	10	6.06	3	9.71	1	19.51
	Astrazeneca	8.67	20	3.09	10	8.58	2	8.28
	Aventis	244.83	2	2.83	12	7.16	7.5	13.09
	Fulford	70.88	8	24.19	1	6.83	10	11.09
	Glaxosmithkline	28.44	15	4.69	5	6.49	13	14.44
	Merck	80.69	6	3.15	9	7.41	5	8.77
	Novartis	53.97	11	3.54	7	6.68	11	7.79
	Organon	254.77	1	6.26	2	6.17	15	8.55
	Pfizer	14.41	17	4.80	4	7.96	3	9.43
	Wyeth	12.71	18	4.67	6	4.55	19	10.76
Computation of Ultimate Efficiency in Assets Management Rank Based on the Average Values of the Selected Efficiency Measures of the Selected Companies					**Computation of Overall Rank Based on the Average Values of the Selected Profitability Measure of the Selected Companies**		**Computation of Final Efficiency-Profitability Rank**	
		Rank	**Sum of all Efficiency Ranks**	**Ultimate Efficiency in Assets Management Rank**	**Average Return on Capital Employed (ROCE) (in percentage)**	**Overall Profitability Rank**	**Sum of Ultimate Efficiency in Assets Management and Overall Profitability Rank**	**Final Efficiency-Profitability Rank**
	Abbott	1	15	1	17.36	19	20	10
	Astrazeneca	9	41	8.5	40.34	1	9.5	4
	Aventis	3	24.5	3	34.15	5	8	2
	Fulford	4	23	2	23.31	12	14	7
	Glaxosmithkline	2	35	7	33.68	6	13	6
	Merck	7	27	5	37.80	3	8	2
	Novartis	12	41	8.5	31.13	9	17.5	9
	Organon	8	26	4	33.37	8	12	5
	Pfizer	6	30	6	39.94	2	8	2
	Wyeth	5	48	11	35.42	4	15	8
Computation of Ultimate Efficiency in Assets Management Rank Based on the Average Values of the Selected Efficiency Measures of the Selected Companies								
		Average Cash Turnover Ratio(CTR)	**Rank**	**Average Inventory Turnover Ratio(ITR)**	**Rank**	**Average Debtors Turnover Ratio(DTR)**	**Rank**	**Average Fixed assets Turnover Ratio(FAT R)**
Domestic Companies	Aurobindo	49.26	12	3.33	8	5.54	16	3.65
	Cadila	108.28	5	1.59	20	6.23	14	8.16

continued on following page

Table 1. Continued

	Cipla	124.54	4	2.99	11	3.77	20	5.51
	Dr Reddy's	10.09	19	2.47	14	7.13	9	4.04
	Ipca	152.15	3	2.24	17	4.74	17	5.06
	Lupin	58.01	9	2.10	19	6.65	12	4.21
	Piramal	77.05	7	2.15	18	7.18	6	7.87
	Ranbaxy	42.84	13	2.42	15	4.63	18	4.77
	Sun	21.62	16	2.77	13	7.16	7.5	6.10
	Wockhardt	30.39	14	2.35	16	7.50	4	5.17
Computation of Ultimate Efficiency in Assets Management Rank Based on the Average Values of the Selected Efficiency Measures of the Selected Companies					**Computation of Overall Rank Based on the Average Values of the Selected Profitability Measure of the Selected Companies**		**Computation of Final Efficiency-Profitability Rank**	
		Rank	**Sum of all Efficiency Ranks**	**Ultimate Efficiency in Assets Management Rank**	**Average Return on Capital Employed (ROCE) (in percentage)**	**Overall Profitability Rank**	**Sum of Ultimate Efficiency in Assets Management and Overall Profitability Rank**	**Final Efficiency-Profitability Rank**
	Aurobindo	20	56	17	20.42	16.5	33.5	17
	Cadila	10	49	12.5	19.19	18	30.5	16
	Cipla	14	50	15	33.39	7	22	12
	Dr Reddy's	19	61	19	20.44	15	34	18
	Ipca	16	53	16	22.88	13	29	15
	Lupin	18	58	18	17.32	20	38	20
	Piramal	11	42	10	24.73	11	21	11
	Ranbaxy	17	63	20	20.42	16.5	36.5	19
	Sun	13	49.5	14	29.73	10	24	13
	Wockhardt	15	49	12.5	22.52	14	26.5	14

more favorable is the efficiency-profitability position and vice versa. Table 1 discloses that Aventis, Merck and Pfizer which ranked third, fifth and sixth respectively according to 'ultimate efficiency in assets management rank' and fifth, third and second respectively according to 'overall profitability rank' had a combined score of 8 (in case of Aventis, Merck and Pfizer) in the 'sum of ultimate efficiency in assets management and overall profitability rank'. Therefore, Considering both the aspect of efficiency in assets management and overall profitability, Aventis, Merck and Pfizer jointly captured the top most position and has been followed by Astrazeneca, Organon, Glaxosmithkline, Fulford, Wyeth, Novartis, Abbott, Piramal, Cipla, Sun, Wockhardt, Ipca, Cadila, Aurobindo, Dr. Reddy's, Ranbaxy and Lupin respectively in that order. So according to the relative efficiency-profitability status ten multinational companies occupied the first ten positions.

2. In Table 2.1 efficiency-profitability status of the selected multinational as well as domestic companies in Indian pharmaceutical sector has been assessed with reference to efficiency of cash management (CTR) and overall profitability (ROCE). It has been observed from Table 2.1 that four multinational companies (Aventis, Organon, Abbott and Fulford) and six domestic companies (Aurobindo, Dr. Reddy's, Lupin, Piramal, Ranbaxy and Wockhardt) registered a positive correlation between cash management and overall profitability. Aventis and Organon have been 'high efficiency-high profitability' companies whereas companies like Abbott, Fulford, Aurobindo, Dr. Reddy's, Lupin, Piramal, Ranbaxy and Wockhardt have been placed in the low efficiency-low profitability class. Merck (multinational company) and Cipla (domestic company) maintained moderate efficiency-high profitability blend whereas in case of Cadila and Ipca (both are domestic companies) a combination of moderate efficiency and low profitability has been found. Astrazeneca, Glaxosmithkline, Pfizer and Wyeth (all are multinational companies) have been placed in low efficiency-high profitability cell. Novertis (multinational company) and Sun (domestic company) maintained a low efficiency-moderate profitability combination.

In Table 2.2 efficiency-profitability profile of the selected companies has been measured on the basis of efficiency of inventory management (ITR) and overall profitability (ROCE). Table 2.2 shows that only one multinational (Abbott) and eight domestic (Aurobindo, Cadila, Dr. Reddys, Ipca, Lupin, Piramal, Ranbaxy and Wockhardt) pharmaceutical companies under study recorded positive correlation among the efficiency of inventory management and overall profitability. Abbott has been the only multinational company out of twenty companies under study recorded 'low

Table 2.1. Efficiency-profitability status of the selected companies in indian pharmaceutical industry based on combination of cash management and profitability

ROCE CTR	High (≥ 32%)	Moderate (>25% but <32%)	Low (≤25%)
High (≥160)	Aventis, Organon		
Moderate (>80but <160)	Merck, Cipla		Cadila, Ipca
Low (≤80)	Astrazeneca, Glaxosmithkline, Pfizer, Wyeth	Novartis, Sun	Abbott, Fulford, Aurobindo, Dr. Reddy's, Lupin, Piramal, Ranbaxy, Wockhardt

Source: Compiled and computed from 'Capitaline Corporate Database' of Capital Market Publishers (I) Ltd., Mumbai.

Table 2.2. Efficiency-profitability status of the selected companies in indian pharmaceutical industry based on combination of inventory management and profitability

ROCE ITR	High (≥ 32%)	Moderate (>25% but <32%)	Low (≤25%)
High (≥16)			Fulford
Moderate (>8 but <16)			
Low (≤8)	Astrazeneca, Aventis, Glaxosmithkline, Merck, Organon, Pfizer, Wyeth, Cipla	Novartis, Sun	Abbott, Aurobindo, Cadila, Dr.Reddy's, Ipca, Lupin, Piramal, Ranbaxy, Wockhardt

Source: Compiled and computed from 'Capitaline Corporate Database' of Capital Market Publishers (I) Ltd., Mumbai.

efficiency-low profitability' combination on the basis of efficiency of inventory management and overall profitability. This Table also discloses that Aurobindo, Cadila, Dr. Reddys, Ipca, Lupin, Piramal, Ranbaxy and Wockhardt (all are domestic companies) have been placed in the 'low efficiency-low profitability class. Besides this the table discloses that Astrazeneca, Aventis, Glaxosmithkline, Merck and Organon, Pfizer, Wyeth (all are multinational companies) and Cipla (domestic company) maintained a low efficiency-high profitability combination whereas one multinational company (Fulford) has been placed in high efficiency-low profitability category. Novartis (multinational company) and Sun (domestic company) maintained a low efficiency-moderate profitability blend during the period under study.

In Table 2.3 efficiency-profitability status of the chosen companies has been analyzed in terms of efficiency of credit management (DTR) and overall profitability (ROCE). Table 2.3 exhibits that five multinationals (Astrazeneca, Aventis, Merck, Pfizer and Novartis) and two domestic companies (Ipca and Ranbaxy) registered a positive correlation between the efficiency of debtors management and overall profitability. Among these four multinational companies (Astrazeneca, Aventis, Merck and Pfizer) recorded high efficiency-high profitability combination. Novartis (multinational company) maintained moderate efficiency-moderate profitability combination and Ipca and Ranbaxy (both are domestic companies) registered low efficiency-low profitability combination. Glaxosmithkline and Organon (multinational companies) have been placed in medium efficiency-high profitability cell. On the other hand, Sun (domestic company) has been the only company among the selected companies that maintained a high efficiency and moderate profitability combination. Abbott (multinational company), Dr. Reddy's, Piramal, Wockhardt (all are domestic companies) occupied high efficiency-low profitability cell whereas Fulford (multinational company) Aurobindo, Cadila and Lupin (all are domestic companies) placed in medium efficiency-low profitability cell. Both Wyeth (multinational company) and Cipla (domestic company) displayed low efficiency-high profitability combination during the study period.

In Table 2.4 efficiency-profitability status of the chosen companies has been analyzed in terms of efficiency of fixed assets management (FATR) and overall profitability (ROCE). Table 2.4 exhibits that two multinational (Aventis and Glaxosmithkline) and eight domestic companies (Sun, Aurobindo, Dr. Reddy's, Ipca, Lupin, Piramal, Ranbaxy and Wockhardt) registered a positive correlation between the efficiency of assets management and overall profitability. Two multinational companies (Aventis and Glaxosmithkline) recorded high efficiency-high profitability combination. Sun (domestic company) the only company recorded moderate efficiency-moderate profitability position whereas seven domestic pharmaceutical companies (Aurobindo, Dr. Reddy's, Ipca, Lupin, Piramal, Ranbaxy and Wockhardt) displayed low efficiency-low profitability combination during the study period.

Table 2.3. Efficiency-profitability status of the selected companies in indian pharmaceutical industry based on combination of debtors' management and profitability

ROCE DTR	**High (≥ 32%)**	**Moderate (>25% but <32%)**	**Low (≤25%)**
High (≥7)	Astrazeneca, Aventis, Merck, Pfizer	Sun	Abbott, Dr.Reddy's, Piramal, Wockhardt
Moderate (>5but <7)	Glaxosmithkline, Organon,	Novartis	Fulford, Aurobindo, Cadila, Lupin
Low (≤5)	Wyeth, Cipla		Ipca,, Ranbaxy

Source: Compiled and computed from 'Capitaline Corporate Database' of Capital Market Publishers (I) Ltd., Mumbai.

Table 2.4. Efficiency-profitability status of the selected companies in indian pharmaceutical industry based on combination of fixed assets management and profitability

ROCE FATR	High (≥ 32%)	Moderate (>25% but <32%)	Low (≤25%)
High (≥13)	Aventis, Glaxosmithkline		Abbott
Moderate (>8 but <13)	Astrazeneca, Merck, Organon, Pfizer, Wyeth	Sun	Fulford, Cadila
Low (≤8)	Cipla	Novartis	Aurobindo, Dr.Reddy's, Ipca, Lupin, Piramal, Ranbaxy, Wockhardt

Source: Compiled and computed from 'Capitaline Corporate Database' of Capital Market Publishers (I) Ltd., Mumbai.

Besides this, Astrazeneca, Merck, Organon, Pfizer and Wyeth (all are multinational companies) placed in moderate efficiency-high profitability cell. On the other hand, Cipla (domestic company) has been the only company among the selected companies that maintained a low efficiency-high profitability combination. Both Fulford (multinational company) and Cadila (domestic company) displayed moderate efficiency-low profitability combination during the study period. Besides this, Abbott (multinational company) maintained high efficiency-low profitability mix and Novartis (multinational company) maintained low efficiency-moderate profitability combination during the study period.

3. The joint influence of the selected ratios indicating efficiency of assets management on the overall profitability of the companies under study has been studied in Table 3. The multiple regression equation which has been fitted in this study for each company is: ROCE= B_0 + B_1.CTR + B_2.ITR +B_3. DTR+B_4.FATR where B_0 is the constant, B_1, B_2, B_3 and B_4 are the partial regression coefficients. Table 3 exhibits that when CTR increased by one unit, the ROCE went up in eleven out of the selected twenty companies but the increase in ROCE has been found to be statistically significant in Dr. Reddy's, Ipca and Sun whereas for one unit increase in CTR, the ROCE came down in remaining nine companies, out of which in case of two companies (Novartis and Aurobindo) the partial regression coefficient has been found to be statistically significant. In case of multinational companies under study when CTR increased by one unit, the ROCE improved (statistically insignificant) in three out of ten multinational companies, whereas for one unit improvement of CTR, the ROCE came down in seven out of total ten multinational companies and the decrease in ROCE has been found to be statistically significant in case of one multinational company (Novartis) under study. In case of domestic companies under study when CTR increased by one unit, the ROCE improved in eight out of ten multinational companies and the increase in ROCE has been found to be statistically significant in four companies (Dr. Reddy's, Ipca and Sun), whereas for one unit improvement of CTR, the ROCE came down in rest two domestic companies under study and the decrease in ROCE has been found to be statistically significant in case of one company (Aurobindo) under study. For one unit increase in ITR, the ROCE increased in ten companies whereas it reduced in the remaining ten companies under study. The increase in ROCE and the decrease in ROCE have been found to be statistically significant in five companies (Fulford, Merck, Novartis, Aurobindo and Piramal) and one company (Sun) respectively. In case of multinational companies, when ITR im-

Table 3. Analysis of multiple regression of ROCE on CTR, ITR, DTR and FATR of the selected companies in the indian pharmaceutical industry

Regression Equation of ROCE on CTR, ITR, DTR and FATR: ROCE = $B_0+B_1.CTR+B_2.ITR+B_3.DTR+B_4.FATR$						
Multinational	**Company**	**Partial Regression Coefficient**				**Constant B_0**
		B_1 (CTR)	**B_2 (ITR)**	**B_3 (DTR)**	**B_4 (FATR)**	
	Abbott	-0.049 (-0.524)	-1.874 (-1.092)	-1.194 (-0.710)	8.896 (1.278)	40.198 (2.741)
	Astrazeneca	-0.089 (-0.453)	-0.071 (-0.066)	-2.675 (-1.938)	30.431 (6.402)***	-26.390 (-1.916)
	Aventis	-0.016 (-1.419)	3.550 (0.773)	-1.705 (-0.767)	12.789 (1.381)	2.174 (0.067)
	Fulford	0.138 (0.944)	26.187 (2.056)*	-7.438 (-1.066)	-4.475 (-1.764)	43.184 (0.698)
	Glaxosmithkline	0.107 (1.018)	-3.643 (-0.876)	3.321 (5.882)***	-3.352 (-1.260)	24.693 (1.283)
	Merck	-0.006 (-0.326)	3.175 (3.119)**	-6.140 (-1.497)	-17.082 (-2.802)**	126.435 (2.735)
	Novartis	-0.077 (-2.586)**	9.936 (4.590)***	-8.218 (-4.495)***	13.676 (5.726)***	-16.232 (-1.574)
	Organon	-0.004 (-0.159)	-2.839 (-0.884)	2.659 (1.417)	5.506 (0.675)	-7.685 (-0.173)
	Pfizer	-0.030 (-0.132)	-4.224 (0.796)	4.199 (1.456)	17.701 (1.758)	-41.867 (-0.904)
	Wyeth	0.236 (1.200)	3.594 (1.337)	-0.475 (-0.452)	3.792 (1.779)	3.476 (0.218)
Domestic Companies	Aurobindo	-0.027 (2.547)*	4.573 (4.353)***	6.743 (6.195)***	-2.170 (-1.436)	-24.250 (-6.513)
	Cadila	0.003 (0.418)	-2.656 (-1.208)	0.706 (0.544)	-12.524 (-2.353)*	48.200 (4.900)
	Cipla	0.018 (1.021)	-1.387 (-0.297)	-0.005 (-0.002)	5.784 (0.996)	16.081 (0.810)
	Dr Reddy's	0.326 (3.151)**	1.724 (1.154)	-5.222 (-1.319)	20.636 (6.956)***	-24.070 (-2.096)
	Ipca	0.093 (4.283)***	6.573 (0.994)	2.643 (1.098)	9.330 (1.693)	-57.336 (-1.953)
	Lupin	0.001 (0.044)	-0.515 (-0.525)	-0.759 (-0.375)	6.892 (1.545)	11.498 (1.280)
	Piramal	0.023 (0.588)	2.663 (2.037)*	-0.156 (-0.102)	11.584 (3.110)**	-18.222 (-1.070)
	Ranbaxy	-0.025 (-0.410)	11.684 (1.412)	-4.662 (-0.900)	18.934 (1.451)	-57.265 (-2.276)
	Sun	0.095 (2.788**)	-9.090 (-7.805)***	-5.070 (-3.133)**	7.615 (2.415)*	100.362 (4.965)
	Wockhardt	0.010 (0.365)	-2.655 (-0.799)	1.422 (0.285)	19.132 (1.635)	-12.608 (-1.181)

Note: Figures in the parentheses indicate t values, * Significant at 10 per cent level, ** Significant at 5 per cent level, *** Significant at 2 per cent level, **** Significant at 1 per cent level

Source: Compiled and computed from 'Capitaline Corporate Database' of Capital Market Publishers (I) Ltd., Mumbai.

proved by one unit, the ROCE stepped up in five out of the ten companies under study and the increase in ROCE has been found to be statistically significant in three companies (Fulford, Merck and Novartis), whereas for one unit increase in ITR, the ROCE decreased (statistically insignificant) in five companies. In case of domestic companies when ITR increased by one unit, the ROCE went up in five companies, out of which in two cases (Aurobindo and Piramal) the increase in ROCE has been statistically significant whereas for one unit increase in ITR, the ROCE deteriorated in five companies, out of which in case of one company (Sun) decrease of ROCE has been statistically significant. When DTR increased by one unit, the ROCE stepped up in seven companies, but this change has been found to be statistically significant in case of only two companies (Glaxosmithkline and Aurobindo) whereas the decrease in ROCE due to one unit increase in DTR has been found in the remaining thirteen companies, out of which in two companies (Novartis and Sun), the partial regression coefficient has been found to be statistically significant. In case of multinational companies under study when DTR increased by one unit, the ROCE improved in three out of ten multinational companies out of which in case of only Glaxosmithkline, increase in ROCE when DTR increased by one unit has been statistically significant, whereas for one unit improvement of DTR, the ROCE came down in seven companies out of which in case of one company (Novartis) this change has been statistically significant. On the other hand, in case of domestic companies under study when DTR increased by one unit, the ROCE improved in four companies and the increase in ROCE has been found to be statistically significant in one company (Aurobindo), whereas for one unit improvement of DTR, the ROCE came down in rest six domestic companies under study and the decrease in ROCE has been found to be statistically significant in case of one company (Sun) under study. When FATR increased by one unit, the ROCE stepped up in fifteen companies, but this change has been found to be statistically significant in case of only five companies (Astrazeneca, Novartis, Dr. Reddy's, Piramal and Sun) whereas the decrease in ROCE due to one unit increase in FATR has been found in the remaining five companies, out of which in two companies (Merck and Cadila), the partial regression coefficient has been found to be statistically significant. In case of multinational companies under study when FATR increased by one unit, the ROCE improved in seven companies and the increase in ROCE has been found to be statistically significant in two companies (Astrazeneca and Novartis), whereas for one unit improvement of FATR, the ROCE came down in rest three multinational companies under study and the decrease in ROCE has been found to be statistically significant in case of one company (Merck) under study. On the other hand, in case of domestic companies under study when FATR increased by one unit, the ROCE improved in eight companies and the increase in ROCE has been found to be statistically significant in three companies (Dr. Reddy's, Piramal and Sun), whereas for one unit improvement of FATR, the ROCE came down in rest two domestic companies under study and the decrease in ROCE has been found to be statistically significant in case of one company (Cadila) under study.

Table 3 reveals that the multiple correlation coefficient of ROCE on CTR, ITR, DTR and FATR in the selected companies ranged between 0.604 (Abbott) and 0.994 (Aurobindo). The Table shows that the joint influence of firm's efficiency in managing its cash, inventory, debtors and fixed assets on profitability has been notable in ten companies (Astrazeneca, Fulford, Glaxosmitkline, Novartis, Wyeth, Aurobindo, Dr. Reddy's, Ipca, Ranbaxy and Sun). The coefficients of multiple determination in the selected companies reflected that the percentage of the total variation in the ROCE of the selected twenty companies due to the variation in CTR, ITR, DTR and FATR ranged between 36.50 per cent and 98.90 per cent. Table 4 also exhibits that the multiple correlation coefficient of ROCE on CTR, ITR, DTR and FATR in the selected multinational companies ranged between 0.604 (Abbott) and 0.979 (Glaxosmithkline) whereas the multiple correlation coefficient of ROCE on CTR, ITR, DTR and FATR in selected domestic companies ranged between 0.688 (Lupin) and 0.994 (Aurobindo). This coefficient has been found to be statistically significant in five multinational companies (Astrazeneca, Fulford, Glaxosmithkline, Novartis and Wyeth) and five domestic companies (Aurobindo, Dr. Reddy's, Ipca, Ranbaxy and Sun) under study. Besides this, the coefficients of multiple determination in the selected ten multinational companies reflected that the percentage of the total variation in the ROCE of the selected ten multinational companies due to the variation in CTR, ITR, DTR and FATR ranged between 36.50 per cent and 95.80 per cent, whereas the coefficients of multiple determination in the selected ten domestic companies showed that the percentage of the total variation in the ROCE of the selected ten domestic companies due to the variation in CTR, ITR, DTR and FATR ranged between 47.40 per cent and 98.90 per cent.

5. CONCLUDING REMARKS

1. Considering both the aspects of efficiency in assets management and overall profitability, Aventis, Merck and Pfizer jointly captured the top most position and has been followed by Astrazeneca, Organon, Glaxosmithkline, Fulford, Wyeth, Novartis, Abbott, Piramal, Cipla, Sun, Wockhardt, Ipca, Cadila, Aurobindo, Dr. Reddy's, Ranbaxy and Lupin respectively in that order. So according to the relative efficiency-profitability status ten multinational companies occupied the first ten positions. It reflects that multinational companies captured the upper ranks as compared to the domestic companies indicating that the selected multinational companies performed considerably better as compared to the domestic ones in respect of the overall efficiency-profitability status during the period under study.
2. Aventis captured high efficiency – high profitability combination in Tables 2.1, 2.3 and 2.4. It reflects that the cash management, credit management and fixed assets management of the Aventis (multinational company) made a significant contribution towards achieving its excellent performance in terms of profitability during the study period. Organon (multinational company) captured high efficiency – high profitability combination in Table 2.1 only. It denotes that the cash management of the Organon made a significant contribution towards achieving its excellent performance in terms of profitability during the period under study whereas Astrazeneca, Merck and Pfizer (all are multinational companies) captured high efficiency – high profitability combination in Table 2.3. It implies that the credit management of Astrazeneca, Merck and Pfizer made a significant contribution towards achieving its excellent performance in terms of profitability. Glaxosmithkline (multinational company) captured high efficiency – high profitability combination in Table 2.4 only. It reflects that the fixed assets management of the Glaxosmithkline made a significant contribution towards achieving its excellent performance in terms of overall profitability. Thus, all the 'high efficiency – high profitability' combinations have been captured by multinational companies (Astrazeneca,

Table 4. Analysis of multiple correlation of ROCE on CTR, ITR, DTR and FATR of the selected companies in the indian pharmaceutical industry

Multinational Companies	Company	R	R^2	F
	Abbott	0.604	0.365	0.720
	Astrazeneca	0.970	0.941	20.101**
	Aventis	0.881	0.776	4.339
	Fulford	0.929	0.862	7.826*
	Glaxosmithkline	0.979	0.958	28.788**
	Merck	0.878	0.772	4.226
	Novartis	0.951	0.905	11.908**
	Organon	0.665	0.442	0.990
	Pfizer	0.689	0.475	1.129
	Wyeth	0.902	0.814	5.461*
Domestic Companies	Aurobindo	0.994	0.989	110.806**
	Cadila	0.860	0.740	3.553
	Cipla	0.893	0.797	4.899
	Dr Reddy's	0.975	0.950	23.851**
	Ipca	0.916	0.839	6.518*
	Lupin	0.688	0.474	1.124
	Piramal	0.864	0.746	3.678
	Ranbaxy	0.950	0.903	11.633**
	Sun	0.964	0.929	16.470**
	Wockhardt	0.862	0.743	3.608

Note: * Significant at 5 per cent level, ** Significant at 1 per cent level
Source: Compiled and computed from 'Capitaline Corporate Database' of Capital Market Publishers (I) Ltd., Mumbai.

Aventis, Glaxosmithkline, Merck, Organan and Pfizer) during the period under study.

3. Novartis (multinational company) and Sun (domestic company) have been placed in the moderate efficiency – moderate profitability category in Table 2.3 and 2.4 respectively. It implies that in case of Novartis only the creditors' management out of other components of assets management (cash management, inventory management and fixed assets management) made a positive influence on its profitability whereas in case of Sun only the fixed assets management out of other components of assets management (cash management, inventory management and creditors' management) made a positive impact on its profitability during the study period.
4. Ranbaxy has been placed in the low efficiency – low profitability cell in Tables 2.1, 2.2, 2.3 and 2.4. It denotes that the inefficiency of the cash management, inventory management, credit management and fixed assets management of Ranbaxy have been responsible for poor performance in terms of its earning capability during the period under study. Aurobindo, Dr. Reddy's, Lupin, Piramal and Wockhardt have been placed in the low efficiency – low profitability cell in the Tables 2.1, 2.2 and 2.4. It implies that the inefficiency of the cash management, inventory management and fixed assets

management of these companies have been responsible for poor performance in generating overall profitability during the period under study. Abbott has been placed in the low efficiency – low profitability cell in the Tables 2.1 and 2.2. It indicates that the inefficiency of the cash management and inventory management of Abbott have been the causes for poor performance in terms of its earning capability during the period under study. Ipca has been placed in the low efficiency – low profitability cell in the Tables 2.2, 2.3 and 2.4. It denotes that the inefficiency of the inventory management, credit management and fixed assets management have been responsible for poor performance in terms of its earning capacity of this company during the period under study. Fulford has been placed in the low efficiency – low profitability cell in the Table 2.1. It reveals that the inefficiency of the cash management of this company has been responsible for poor performance in terms of its earning capability during the period under study. Cadila has been placed in the low efficiency – low profitability cell in the Table 2.2. It discloses that the inefficiency of inventory management of Cadila has been responsible for poor performance in generating overall profitability during the study period. Thus majority of the domestic companies (Aurobindo, Cadila, Dr.Reddy's, Ipca, Lupin, Piramal, Ranbaxy and Wockhardt) compared to the multinational companies (Abbott and Fulford) have been placed in low efficiency – low profitability cell during the study period.

5. The study of the partial regression coefficients reveals that in case of eight domestic companies (Cadila, Cipla, Dr. Reddys, Ipca, Lupin, Piramal, Sun and Wockhardt) and three multinational companies (Fulford, Glaxosmitkline and Wyeth) the effect of efficiency of cash management on profitability has been positive during the study period. The study of the partial regression coefficients also reveals that five multinational (Aventis, Fulford, Merck, Novartis and Wyeth) and five domestic (Aurobindo, Dr. Reddy's, Ipca, Piramal and Ranbaxy) companies under study recorded the positive effect of efficiency of inventory management on overall profitability during the study period. Besides this, the study also discloses that the effect of efficiency of debtors' management on profitability has been negative in case of majority of both multinational and domestic companies during the study period. On the other hand, the study reveals that the effect of efficiency of fixed assets management on overall profitability has been positive in case of majority of both multinational and domestic pharmaceutical companies under study.
6. The study of multiple correlation coefficient reflects that the joint impact of liquidity management, inventory management, credit management and fixed assets management on profitability has been notable in ten out of twenty companies, while the study of coefficient of multiple determination witnesses that at least 81.40 per cent of the total variation in the profitability of these ten companies has been accounted for by the joint variation in the four selected measures (CTR, ITR, DTR and FATR) relating to efficiency of assets management. The joint influence of companies' efficiency in managing its cash, inventory, debtors and fixed assets on profitability has been notable in case of five multinational companies (Astrazeneca, Fulford, Glaxosmithkline, Novartis and Wyeth) and five domestic companies (Aurobindo, Dr. Reddy's, Ipca, Ranbaxy and Sun) during the study period.

APPENDIX 1

Table 5.

List of the Companies Under Study	
Multinational Companies	**Abbott**
	Astrazeneca
	Aventis
	Fulford
	Glaxosmithkline
	Merck
	Novartis
	Organon
	Pfizer
	Wyeth
Domestic Companies	Aurobindo
	Cadila
	Cipla
	Dr Reddy's
	Ipca
	Lupin
	Piramal
	Ranbaxy
	Sun
	Wockhardt

APPENDIX 2

Table 6.

Company wise Efficiency in Assets Management – Profitability Data						
	Company	**Average Cash Turnover Ratio (CTR)**	**Average Inventory Turnover Ratio (ITR)**	**Average Debtors Turnover Ratio (DTR)**	**Average Fixed Assets Turnover Ratio (FATR)**	**Average Return on Capital Employed (in percentage) (ROCE)**
Multinational Companies	Abbott	56.21	6.28	9.66	6.06	17.36
	Astrazeneca	8.67	6.69	9.26	3.09	40.34
	Aventis	244.83	6.66	13.55	2.83	34.15
	Fulford	70.88	5.80	12.62	24.19	23.31
	Glaxosmithkline	28.44	6.27	15.37	4.69	33.68
	Merck	80.69	5.85	8.45	3.15	37.80
	Novartis	53.97	6.15	7.29	3.54	31.13
	Organon	254.77	5.27	8.54	6.26	33.37
	Pfizer	14.41	7.27	10.52	4.80	39.94
	Wyeth	12.71	4.55	10.56	4.67	35.42
Domestic Companies	Aurobindo	45.99	5.92	4.02	3.33	20.42
	Cadila	99.77	6.16	7.82	1.59	19.19
	Cipla	135.81	3.83	9.24	2.99	33.39
	Dr Reddy’s	21.08	6.36	3.67	2.47	20.44
	Ipca	151.85	4.71	5.04	2.24	22.88
	Lupin	43.63	8.30	4.14	2.10	17.32
	Piramal	79.34	7.23	7.63	2.15	24.73
	Ranbaxy	44.15	4.69	4.75	2.42	20.42
	Sun	33.67	6.60	7.18	2.77	29.73
	Wockhardt	29.17	7.72	5.47	2.35	22.52

Source: Compiled and computed from ‘Capitaline Corporate Database’ of Capital Market Publishers (I) Ltd., Mumbai.

Chapter 16
Risk-Based Selection of Portfolio:
Heuristic Approach

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ABSTRACT

This chapter examines the closeness between the optimum portfolio and portfolio selected by an investor who follows a heuristic approach. There may be basically two ways of arriving at an optimum portfolio – one by minimizing the risk and the other by maximizing the return. In this chapter, the authors propose to strike a balance between these two. The optimum portfolio has been obtained through a mathematical programming framework so as to minimize the portfolio risk subject to return constraint expressed in terms of coefficient of optimism (α), where α varies between 0 to 1. Simultaneously, the authors propose to develop four heuristic portfolios for the optimistic and pessimistic investors, risk planners, and random selectors. Given the optimum portfolio and a heuristic portfolio, City Block Distance has been calculated to measure the departure of the heuristic solution from the optimum solution. Based on daily security wise data of ten companies listed in Nifty for the years 2004 to 2008, the authors have obtained that when the value of α lies between 0 to 0.5, the pessimistic investor's decision is mostly closest to the optimum solution, and when the value of α is greater than 0.5, the optimistic investor's decision is mostly near to the optimum decision. Near the point α = 0.5, the random selectors and risk planners' solutions come closer to the optimum decision. This study may help the investors to take heuristic investment decision and, based on his/her value system, reach near to the optimum solution.

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1. INTRODUCTION

1.1. The Concerns

In asset allocation analysis one mostly uses the mean – variance approach for analyzing the tradeoff between risk and expected return. Since the seminal work of Markowitz (1952, 1959) the computational aspects of finding efficient portfolios have been a concern of the finance profession. In Markowitz portfolio theory, the portfolio of financial assets is characterized by a desired property, the 'reward', and something undesirable, the 'risk'. Balancing financial aspects against statistical and, particularly, computational limitations, Markowitz identified reward and risk with the expectation and the variance of returns, respectively.

Since 1952, many works have been done to select an optimum portfolio. But in most of the cases it is difficult to arrive at an optimal solution. The main problem of selection of optimum portfolio is to obtain correct and precise portfolio weights (the proportion of wealth invested in each individual asset). If weights can be precisely estimated, it can reduce unnecessary transaction costs and help to construct the optimum portfolio. From a theoretical point of view, one should optimize expected utility for which several techniques are there to optimize the portfolio of which mean-variance approach can be an option. At a given point of time and a given set of conditions, heuristic solution may give reasonable result, and heuristically one can reach to the optimum or near optimum solution.

The portfolio optimization problem is mainly concerned with selecting the optimal investment strategy of an investor without considering the value system. In other words, the investor looks for an optimal decision which eventually is number of shares of which security the investor should purchase to maximize their expected utility. If the investor knows the securities that may give them maximum expected return or minimum expected risk, it is easy for them to take optimal decision. But in real world it is difficult to find out those securities due to presence of efficient market. In this empirical study we have tried to find out a heuristic solution with four different value systems which can help an investor to take decision and ascertain the portfolio based on the nearness to the optimum decision.

Roy, Mitra, and Chowdhury (2010) have proposed heuristic procedures to compute securities weights based on the investors' propensity to take risk. They have chosen two extreme situations – risk taker and risk aversive investor. By constructing heuristic portfolios, they have shown the extent of closeness between the ideal portfolio constructed on the basis of optimization method and portfolio constructed on the basis of heuristic methods. In this work we tried to extend that work in terms of initial choice of the securities, construction of distance metric and value system of the investor.

In their empirical study, Roy, Mitra, and Chowdhury (2010) have considered big-cap companies of Nifty. As a result, it was more of a purposive selection. Random selection techniques for selection of companies were not considered in their study. Because of this non probabilistic selection, the conclusions drawn therein may not be extendable for the set of all securities. The next limitation arises out of a consideration of only two value systems covering pessimistic investors and optimistic investors.

2. THE MOTIVATION OF THE WORK

The present work is based on the exploration and understanding of earlier works addressing the issue of portfolio optimization. Arbitrage Pricing Theory (APT) developed by Ross (1976) claimed that two portfolios having the same risk cannot offer different expected return. According to APT model, the expected return of a financial asset is a linear function of various macro-economic factors, where sensitivity to change in each factor is represented by a factor-specific beta coefficient. The calculated rate of return can then be used to price the asset correctly. If the price of the asset diverges, arbitrage should bring it back into line. However, the theory fails to describe the nature and number of the factors influencing the return of any asset. In another work, Merton (1980) was interested on the expected return of portfolio. He described the difficulty of estimating the expected return of a portfolio and explicitly explained the dependence of the market return on the interest rate. Three models of equilibrium expected market returns which reflect the dependence of the market return on the interest rate was developed by him. Merton was able to reduce the portfolio problem to a stochastic optimum control problem by using stochastic control methodology. He considered 53 years of data (1926 to 1978) collected from New York stock exchange. Although the model addressed many issues it failed to describe the effect of changes in the level of market risk.

Investors with both expected utility and non-expected utility and their market timing, horizon effects and hedging demands were explained by Sahalia and Brandt (2001) to study the effect of asset allocation of a portfolio when the conditional moments are partly predictable. They described how the predictive variables affect the choice of optimal portfolio weights. For this purpose they combined the predictive variables into a single index so that the time variations effect in investment opportunities can be factored into. The index so developed may help the investors to determine the combinations of the variables which will assist them to select the right portfolio. Schaerf (2002) considered few constraints which are suitable for real world trading system and with the help of which he discussed how a portfolio can be selected by suitably balancing the expected return and risk of the investors. He also discussed how the local search technique (tabu search technique) can be made useful to construct a portfolio. His work showed that the burden of parameter can be reduced by adaptive adjustment and randomization technique to select a portfolio and his model can also be used to solve the public benchmark problem.

Detemple, Garcia, and Rindisscher (2003) designed a simulation based approach with complex dynamics for the state variables and large numbers of factors and assets to get the optimal portfolio in realistic environment. In the study it was shown that an investor can make a choice between equity and cash with nonlinear interest rate and market price of risk dynamics. They observed that in case of wealth dependent risk aversive investors, the dividend yield can predict the stock returns. Nasdaq index, S&P 500 index was used as an empirical evidence to highlight the importance of risk as a value system of the investor. In another study, Non-smooth optimization technique was used by Beliakov and Bagirov (2006) for large portfolio optimization problem. In the study it was discussed how various methods for calculating the Conditional Value-at-risk (CVaR) can be used for constructing the optimum portfolio and they also proved that the non-smooth optimization method of the discrete gradient is comparatively more efficient to select an optimum portfolio.

Brandt and Clara (2006) suggested a dynamic portfolio selection method which can be used to construct an optimum portfolio in an expanded asset space. They expanded the set of asset gradually and optimized the portfolio statistically in that extended asset space. They presented two portfolios viz. conditional portfolio and timing portfolio and showed that the static choice of the managed portfolios represents a dynamic strategy that closely approximates the optimal dynamic strategies for horizons up to five years. In another observation a multivariate shrinkage estimator was proposed by Okhrin and Schmid (2008) to calculate the optimal portfolio weights. They discussed the estimated shrinkage weights analytically and also used Monte Carlo simulation technique to calculate the estimated shrinkage weight of the portfolio. They have shown how the shrinkage estimator gives the most accurate estimation of the portfolio weights. Empirical analysis in support of their observation was also carried out in the study.

Recently, Roy, Mitra, and Chowdhury (2010) have proposed heuristic solutions to reach near the optimum portfolio, considering two extreme value systems of investors covering optimistic and pessimistic investors. They have examined closeness between these heuristic solutions and the optimum solution with the help of a distance measure. Euclidean Distance technique has been used by them to show the similarity between the optimum portfolio and the heuristic portfolios. For the purpose of empirical analysis, they have selected ten companies of Nifty and the data range was taken from 2006 to 2007.

2.1. The Mission

The mission of the current work is to examine whether an investor can adopt heuristic solution in place of the optimum solution without much deviation from the benefits of the optimum decision. In other words, the main aim of this empirical work is to examine whether there is any closeness between the optimum portfolio and portfolio constructed heuristically, given the value system of the investor under consideration.

3. THE APPROACH AND DESIGN OF THE WORK

In their empirical study, Roy, Mitra, and Chowdhury (2010) have considered big-cap companies of Nifty. As a result, it was more of a purposive selection. Random selection techniques for selection of companies were not considered in their study. Because of this non-probabilistic selection, the conclusions drawn therein may not be extendable for the set of all securities. The next limitation arises out of a consideration of only two value systems covering pessimistic investors and optimistic investors. Jauch and Glueck (1988) discussed the importance of human value system. One of them is risk value. In fact, risk taking propensity is the most important value system that affects the decision making process and there may be several subdivisions of it. Lastly, they have used Euclidian Distance to calculate the threshold point for observing the behavior of the portfolios. Though Euclidian Distance is the basic technique to calculate distance between two points, a few other distances are there which are having better appeal in the context of managerial problems.

To overcome these limitations we have selected companies by applying random selection technique and induced un-biasedness in the study. Random selection technique can also help us to arrive at a conclusion with the widest appeal. We have also interlinked the concept of optimality with the risk taking propensity of the investors. There is no doubt that investor always wants to choose the optimum portfolio for their investment, but, the definition of optimality varies from individual to individual depending on the value system of the investors. To address this issue we need to have a closer look at the value system. In the true sense, choice of portfolio depends on the value system of the investors and arriving at value based optimum solution may not be an easy task. To handle this problem, we have incorporated in the optimization framework the coefficient of optimism introduced by Hurwitcz (see Taha) in the context of decision theory. For a wider coverage in the heuristic solution we have expanded the risk taking propensity beyond the optimistic and pessimistic value systems. The four types of investors considered herein are optimistic investor, pessimistic investor, random selector and risk planner. For example, risk oriented investor may like to put more importance on return than risk and risk aversive investor may like to assign more emphasis on risk than return. On the other hand, risk planner may consider both risk and return to be important while selecting a portfolio. A random selector may not put emphasis either on return or on risk. Regarding the proximity measure, in place of Euclidian Distance we have considered City Block Distance to observe the closeness between heuristic choice and the optimum choice. City Block Distance is a special case of Minkwoski's distance.

3.1. Research Design

Following the existing literature, there are two ways through which a portfolio can be optimally constructed. One method is to minimize risk subject to a minimum return constraint. The other way is to maximize the expected return subject to a certain level of risk. We propose to strike a balance between these two approaches by allowing either the minimum return or the maximum risk to vary. This variation is to be incorporated in the mathematical programming framework in terms of coefficient of optimism (α) in the constraint set. The optimization problem considered for the current work is of the following type:

$$\text{Min } \underset{\sim}{w}' \sum \underset{\sim}{w}$$

Subject to:

$$\underset{\sim}{w}' \underset{\sim}{R} \geq \alpha\mu_{\max} + (1-\alpha)\mu_{\min}$$

where, μ_{min} = Minimum return of the securities in the portfolio and

μ_{max} = Maximum return of the securities in the portfolio.

α = Coefficient of optimism of the investor ($0 \leq \alpha \leq 1$),

$\sum$ = Dispersion matrix of the securities,

$\underset{\sim}{w}$ = Weight vector, and

$\underset{\sim}{R}$ = Expected return vector.

The risk and return of the optimum portfolio have been calculated by using the following equations respectively.

$$R_P^O = \sum_{i=1}^{n} w_i^O R_i \tag{1}$$

$$\sigma_P^O = \sqrt{\sum_{i=1}^{n}\sum_{j=1}^{n} w_i^O w_j^O \sigma_i \sigma_j r_{ij}} \tag{2}$$

where, R_P^O = Expected return of the optimum portfolio,

w_i^O = Optimum weight of the 'i'th security,

n = Number of the securities in the portfolio,

σ_P^O = Risk of the optimum portfolio,

w_i^O = Optimum weight of the 'i'th security,

r_{ij} = Correlation coefficient between 'i'th and 'j'th securities and

σ_i = Standard Deviation of the 'i'th security.

Depending on the choice of α we get an optimum solution of this problem. Thus, weight vector will be a function of α. One can get the optimum portfolio corresponding to the minimum return of the security by considering α = 0 and the optimum portfolio corresponding to the maximum return of the security by considering α = 1. However, for the purpose of empirical study, we have varied α from 0 to 1 with increase of 0.1428 in each step resulting in eight cases. Here, α = 0 represents pessimistic investors and α = 1 represents optimistic investors. For random selector and risk planner's the value of α lies between 0 and 1. In each case, one can get different optimum weights and with those weights return and risk of the optimum portfolio can be calculated using equations (1) and (2).

In the next phase we have developed a heuristic solution with the help of which we may get an alternative choice of portfolio based on propensity to take risk. In fact, we have constructed four types of heuristic portfolios covering optimistic investor, pessimistic investor, risk planner and random selector.

In case of heuristic optimistic portfolio, we have considered security weights directly proportional to expected return of the security based on the assumption that an optimistic investor gives more importance on expected return irrespective of the risk. To ensure non-negativity in the system a locational shift has been undertaken with point of origin as μ_{min}. Thus, for heuristic optimistic solution the following formula has been used for calculating the weights of the securities of the portfolio.

$$w_i^{HO} = \frac{(\mu_i - \mu_{\min})}{\sum_{i=1}^{n} (\mu_i - \mu_{\min})} \tag{3}$$

where, w_i^{HO} = Heuristic optimistic weight of 'i'th security,

μ_i = Expected return of 'i'th security,
μ_{min} = Minimum return of the security in the portfolio and
n = Number of securities in the portfolio.

Given this weight function we have calculated the expected return and risk as follows:

$$R_P^{HO} = \frac{\sum_{i=1}^{n} (\mu_i - \mu_{\min}) R_i}{\sum_{i=1}^{n} (\mu_i - \mu_{\min})} \tag{4}$$

$$\sigma_P^{HO} = \frac{\frac{1}{\sum_{i=1}^{n} (\mu_i - \mu_{\min})}}{\sqrt{\sum_{i=1}^{n} \sum_{j=1}^{n} (\mu_i - \mu_{\min})(\mu_j - \mu_{\min}) \sigma_i \sigma_j r_{ij}}} \tag{5}$$

where, R_P^{HO} = Expected return of the heuristic optimistic portfolio,

σ_P^{HO} = Standard Deviation of the heuristic optimistic portfolio.

For heuristic pessimistic portfolio, security weights have been considered as inversely proportional to standard deviation of the security. Here we have made an assumption that a pessimistic investor gives more importance on risk of the portfolio ignoring the expected return part and more the risk less is the chance of selection. For pessimistic solution following formula has been used for calculating the weights of the securities of the portfolio.

$$w_i^{HP} = \frac{1/\sigma_i}{\sum_{i=1}^{n} 1/\sigma_i} \tag{6}$$

where, w_i^{HP} = Heuristic pessimistic weight of the 'i'th security.

Given this weight function we have calculated the expected return and risk as follows:

$$R_P^{HP} = \frac{\sum_{i=1}^{n} \frac{1}{\sigma_i} R_i}{\sum_{i=1}^{n} \frac{1}{\sigma_i}} \tag{7}$$

$$\sigma_P^{HP} = \frac{1}{\sum_{i=1}^{n} \frac{1}{\sigma_i}} \sqrt{\sum_{i=1}^{n} \sum_{j=1}^{n} r_{ij}} \tag{8}$$

where, R_P^{HP} = Expected return of the heuristic pessimistic portfolio,

σ_P^{HP} = Standard Deviation of the heuristic pessimistic portfolio.

For risk planner following formula has been used for calculating the weights of the securities of the portfolio where both return and risk have been considered. Basically this is a combination of the two extreme situations mentioned earlier.

$$W_i^{HRP} = \frac{(\mu_i/\sigma_i - Min\,\mu_i/\sigma_i)}{\sum(\mu_i/\sigma_i - Min\,\mu_i/\sigma_i)} \quad (9)$$

where, w_i^{HRP} = Heuristic risk planner weight of the 'i'th security.

Given this weight function we have calculated the expected return and risk as follows:

$$R_P^{HRP} = \frac{\sum_{i=1}^{n}(\frac{\mu_i}{\sigma_i} - \min\frac{\mu_i}{\sigma_i})R_i}{\sum_{i=1}^{n}(\frac{\mu_i}{\sigma_i} - \min\frac{\mu_i}{\sigma_i})} \quad (10)$$

$$\sigma_P^{HRP} = \frac{1}{\sum_{i=1}^{n}(\frac{\mu_i}{\sigma_i} - \min\frac{\mu_i}{\sigma_i})} \sqrt{\sum_{i=1}^{n}\sum_{j=1}^{n}(\frac{\mu_i}{\sigma_i} - \min\frac{\mu_i}{\sigma_i})(\frac{\mu_j}{\sigma_j} - \min\frac{\mu_j}{\sigma_j})\sigma_i\sigma_j r_{ij}} \quad (11)$$

where, R_P^{HRP} = Expected return of the heuristic risk planner portfolio.

σ_P^{HRP} = Standard Deviation of the heuristic risk planner portfolio.

For random selector, we have considered equal weight to each security as they do not put emphasis either on return or on risk. The weight for random selector is 1/n. Given this equal weights we have calculated the expected return and risk for the random selector as follows:

$$R_p^{HRS} = \sum_{i=1}^{n}\frac{1}{n}R_i \quad (12)$$

$$\sigma_p^{HRS} = \frac{1}{n}\sqrt{\sum_{i=1}^{n}\sum_{j=1}^{n}\sigma_i\sigma_j r_{ij}} \quad (13)$$

where, R_p^{HRS} = Expected return of the heuristic random selector portfolio.

σ_p^{HRS} = Standard Deviation of the heuristic random selector portfolio

4. ANALYSIS AND INTERPRETATION OF THE FINDINGS

For demonstration purpose we have considered daily security wise data of ten companies listed in Nifty for five years (2004 to 2008). Data have been collected from www.nseindia.com. To select ten companies out of fifty companies we have considered random selection technique. For this selection purpose 25th June, 2009 trading day was considered. The companies under consideration are Unitech, ONGC, Infosysth, Jindalstel, M&M, ACC, Grasim, TataPower, PNB, Nationalum. Average return and risk for the securities so selected have been calculated to arrive at the objective. Classical optimum technique has been used to optimize the portfolio.

Optimum weights of the ten securities have been calculated under different minimum return constraints. The results are shown below:

The weights of optimistic, pessimistic and risk planner solutions have been calculated using the Equations (3), (6) and (9) respectively. Table 2 shows the weights of the optimistic, pessimistic, risk planner and random sector solutions. Following table shows the weights, expected return and risk of the optimistic and pessimistic solutions.

Our objective is to examine the closeness between the optimum solution and heuristic solutions. For this purpose firstly, we have calculated the expected return and risk of the optimum portfolio by using Equation 1 and 2. To calculate these expected return and risk we have used the weights shown in Table 1. These expected return and risks of the optimum portfolio under different values of the coefficient of optimism (α) are shown in Table 3.

To study the closeness between the optimum choice of portfolio and the heuristic choice of portfolio, we have calculated expected return and risk of the heuristic portfolios using Equations 4 and 5, 7 and 8, 10 and 11, and 12 and 13. Weights of the heuristic portfolios shown in Table 2 are used to calculate these expected return and risk. Table 4 shows the values of expected returns and risks of the heuristic portfolios.

However, for a formal look at the behavior of heuristic solutions in respect of the optimum solutions, we would like to take into consideration a standard measure of distance. For this purpose City Block Distance has been considered. With the expected returns and risks of the optimum solution and heuristic solutions we have com-

Table 1. Optimum weights of ten securities under different minimum return constraints

Securities	$\alpha_{-0.00162}$	$\alpha_{-0.001162}$	$\alpha_{-0.0007032}$	$\alpha_{-0.0002448}$	$\alpha_{0.0002136}$	$\alpha_{0.0006719}$	$\alpha_{0.0011303}$	$\alpha_{0.00159}$
Unitech	0.02702518	0.02700748	0.09411032	0.1738903	0.2692297	0.42171212	0.6188597	1
ONGC	0.1298129	0.1296972	0.04192912	0	0	0	0	0
Infosystch	0.3414408	0.3413434	0.2579935	0.1365767	0	0	0	0
Jindalstel	0	0	0.06013910	0.1349205	0.2180887	0.3049357	0.3676378	0
M&M	0.1092442	0.1093418	0.1438800	0.1719426	0.1851014	0.1059878	0	0
ACC	0.08995927	0.08993005	0.03753884	0	0	0	0	0
Grasim	0.1741761	0.1744581	0.1848140	0.1748038	0.1273964	0	0	0
Tata Power	0.01385786	0.01380760	0.02037053	0.01755399	0	0	0	0
PNB	0.07788770	0.07789154	0.1189549	0.1566645	0.1874981	0.1673644	0.01350253	0
Nationalum	0.03659598	0.03652279	0.04026971	0.03364760	0.01268577	0	0	0

Table 2. Weights of heuristic optimistic, heuristic pessimistic, heuristic risk planner and random selector solutions

Securities	Heuristic Optimistic Weights	Heuristic Pessimistic Weights	Heuristic Risk Planner Weights	Heuristic Random Selector Weights
Unitech	0.313201	0.06383	0.22442	0.1
ONGC	0.004879	0.115201	0.025687	0.1
Infosystch	0	0.13417	0.00000284	0.1
Jindalstel	0.197971	0.07685	0.17511	0.1
M&M	0.090741	0.105422	0.101789	0.1
ACC	0.02049	0.105115	0.048669	0.1
Grasim	0.075129	0.121153	0.080506	0.1
Tatapower	0.098546	0.096169	0.111697	0.1
PNB	0.128793	0.09825	0.132241	0.1
Nationalum	0.070251	0.083839	0.099878	0.1

Table 3. Expected return and risk under different α values

Values of α	Minimum Return Constraints	Expected Returns	Expected Risk
0	-0.00162	-0.001129	0.0162676
0.1428	-0.001162	-0.001128723	0.0162695703
0.2856	-0.0007032	-0.0007	0.01705232
0.4284	-0.0002448	-0.00024	0.019308625
0.5712	0.0002136	0.000214	0.022977
0.714	0.0006719	0.000672	0.028084
0.8568	0.0011303	0.00113	0.03497
1	0.00159	0.00159	0.04695

Table 4. Values of expected returns and risks of heuristic portfolios

Heuristic Portfolios	Expected Return	Expected Risk
Optimistic	0.000254	0.02386
Pessimistic	-0.00075	0.017468
Risk Planner	-0.000017154	0.021584
Random Selector	-0.0005951	0.018184

puted City Block Distances (CBD) among the optimum portfolio and the heuristic portfolios. With City Block Distance we want to know the similarity between the optimum choice of portfolios and the heuristic choice of portfolios. For this purpose, we have graphically shown the City Block Distances between the optimum choice of portfolio and the heuristic choices of portfolios. Given four heuristic solutions we have compared them pair-wise resulting in six combinations. The results are presented with the help of six graphs with each graph depicting the City Block Distance between the optimum solution and two heuristic solutions. In the horizontal axis we have measured the values of minimum return constraints and in the vertical axis we have measured the values of City Block Distance.

In Figure 1, CBD between the optimistic and optimum choices of portfolio cuts the CBD between the pessimistic and optimum choices of portfolios in the second quadrant at point T1 which is the threshold point. To the left hand side of this threshold point (T1), decision of the pessimistic investors is very near to the optimum solution while to the right hand side of this point, the decision of the optimistic investors is closer to the optimum choice of portfolios.

In Figure 2, T2 is the threshold point. To the left of the threshold point (T2), the risk planner investors' decision is very closer to the optimum solution. On the other hand, in the right side of the point T2, the decision of the optimistic investors is closer to the optimum portfolio than that of the risk planner investors.

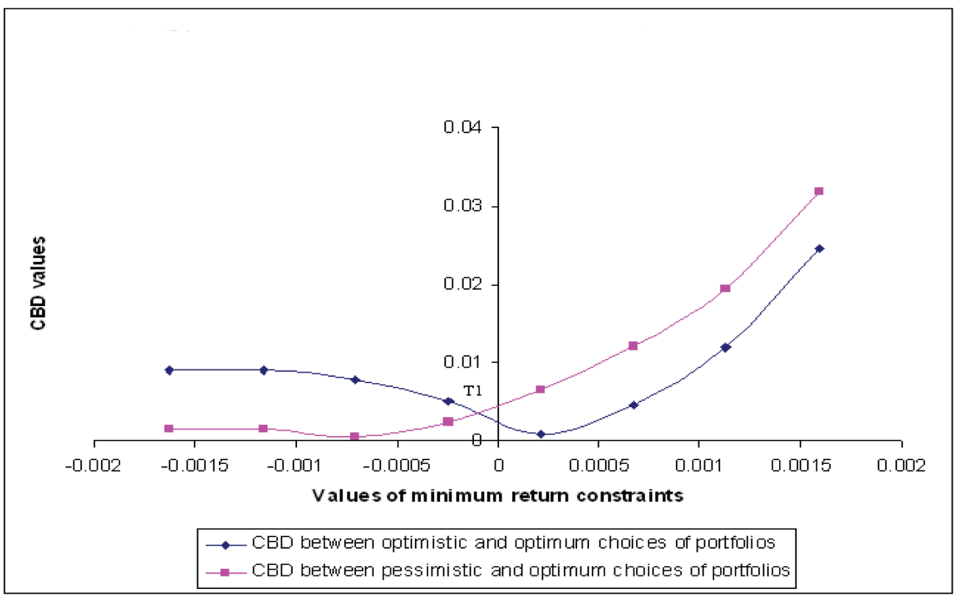
In the above figure, the threshold point is T3. To the left hand side of the threshold point, the random selector's decision is nearer to the optimum solution than the optimistic investor's decision. To the right hand side of the point T3, the decision of optimistic investor is closer to the optimum solution than that of the random selector.

T4 is the threshold point in the above figure. Here, in the second quadrant two curves cut each other. The decision of the pessimistic investors is

Table 5. City block distance between the optimistic and optimum choices of portfolios and pessimistic and optimum choices of portfolios

Values of α	Minimum Return Constraint	Optimistic	Pessimistic
0	-0.00162	0.008973424	0.001577424
0.1428	-0.001162	0.00897315	0.00157715
0.2856	-0.0007032	0.00776168	0.00046568
0.4284	-0.0002448	0.005045375	0.002350625
0.5712	0.0002136	0.000923	0.006473
0.714	0.0006719	0.004642	0.012038
0.8568	0.0011303	0.011986	0.019382
1	0.00159	0.024426	0.031822

Figure 1. CBD between the optimistic and optimum choices of portfolio



nearer to the optimum solution to the left hand side of the threshold point T4. To the right hand side of the point T4, the decision of the risk planner investors is closer to the optimum solution.

In Figure 5, the decision of the pessimistic investors and random selectors is very close to the optimum solution. A slight difference is there. In the left side of the threshold point T5, the pessimistic investors' decision is similar to that of the optimum choice of the portfolio while to the right hand side of the point T5, the random selectors' decision is closer to the optimum solution.

By putting the CBD values related to the risk planner and random selector, we have got T6 as the threshold point. When we compare the decision between risk planner and random selector from the above figure, we have found that to the left hand side of the threshold point (T6) random selectors' decision is closer to the optimum solution and to the right hand side of the threshold

Table 6. City block distance between the optimistic and optimum choices of portfolios and risk planner and optimum choices of portfolios

Values of α	Minimum Return Constraint	Optimistic	Risk Planner
0	-0.00162	0.008973424	0.00642627
0.1428	-0.001162	0.00897315	0.006427039
0.2856	-0.0007032	0.00776168	0.005215526
0.4284	-0.0002448	0.005045375	0.002499221
0.5712	0.0002136	0.000923	0.00162154
0.714	0.0006719	0.004642	0.007188154
0.8568	0.0011303	0.011986	0.014533154
1	0.00159	0.024426	0.026973154

Figure 2. CBD between optimum portfolio and optimistic and risk planner choice of portfolio

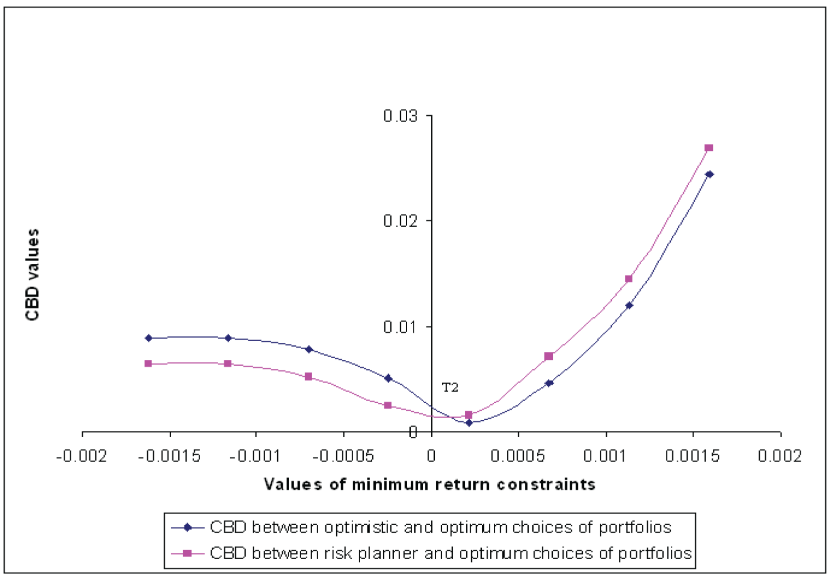


Table 7. City block distance between the optimistic and optimum choices of portfolios and random selector and optimum choices of portfolios

Values of α	Minimum Return Constraint	Optimistic	Random Selector
0	-0.00162	0.008973424	0.002448324
0.1428	-0.001162	0.00897315	0.00244805
0.2856	-0.0007032	0.00776168	0.00123658
0.4284	-0.0002448	0.005045375	0.001479725
0.5712	0.0002136	0.000923	0.0056021
0.714	0.0006719	0.004642	0.0111671
0.8568	0.0011303	0.011986	0.0185111
1	0.00159	0.024426	0.02983754

Figure 3. CBD between optimum portfolio and optimistic and random selector choice of portfolio

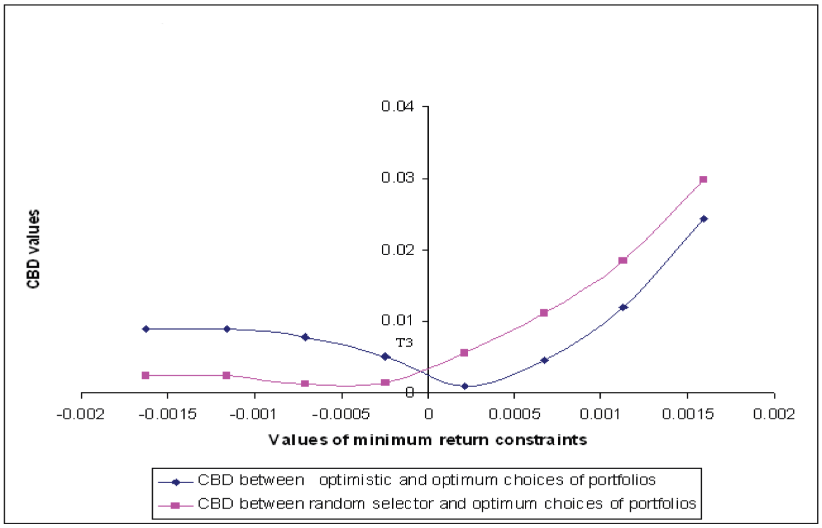


Table 8. City block distance between the pessimistic and optimum choices of portfolios and risk planner and optimum choices of portfolios

Values of α	Minimum Return Constraint	Pessimistic	Risk Planner
0	-0.00162	0.001577424	0.00642627
0.1428	-0.001162	0.00157715	0.006427039
0.2856	-0.0007032	0.00046568	0.005215526
0.4284	-0.0002448	0.002350625	0.002499221
0.5712	0.0002136	0.006473	0.00162154
0.714	0.0006719	0.012038	0.007188154
0.8568	0.0011303	0.019382	0.014533154
1	0.00159	0.031822	0.026973154

point (T6) risk planners' decision is nearer to the optimum solution.

After completing this pairwise comparison, we have also drawn a combined graph which shows all the six combinations so that we can examine the distances of all the heuristic solutions with the optimum solution together. Like the above graphs in Figure 7, on the horizontal axis we have measured minimum return constraints and on the vertical axis we have measured CBD values.

When we ordered the threshold points we have got the sequence T5, T4, T6, T1, T3 and T2. However, from the Figure 7 it is clear that some of the threshold points are inadmissible. In fact the pessimistic investors' decision is closest to the optimum decision up to the threshold point T5. Thereafter, the decision of the random selector is nearest to the optimum solution and this phase continues up to the threshold point T6. In between the points T6 and T2 the closest heuristic solution is provided by the risk planners. Thereafter, i.e; beyond the threshold point T2, decision of the optimistic investors is nearest to the optimum solution.

Figure 4. CBD between optimum portfolio and pessimistic and risk planner choice of portfolio

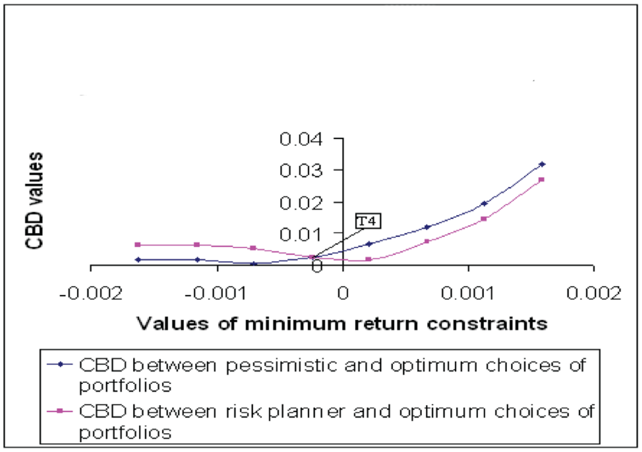


Table 9. City block distance between the pessimistic and optimum choices of portfolios and random selector and optimum choices of portfolios

Values of α	Minimum Return Constraint	Pessimistic	Random Selector
0	-0.00162	0.001577424	0.002448324
0.1428	-0.001162	0.00157715	0.00244805
0.2856	-0.0007032	0.00046568	0.00123658
0.4284	-0.0002448	0.002350625	0.001479725
0.5712	0.0002136	0.006473	0.0056021
0.714	0.0006719	0.012038	0.0111671
0.8568	0.0011303	0.019382	0.0185111
1	0.00159	0.031822	0.02983754

Figure 5. CBD between optimum portfolio and pessimistic and random selector choice of portfolio

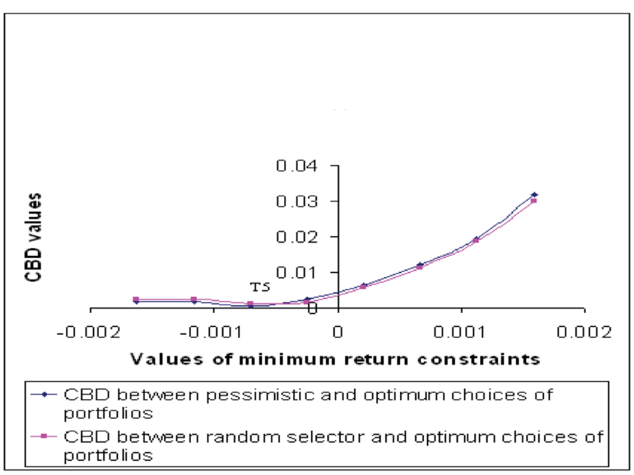


Table 10. City block distance between the pessimistic and optimum choices of portfolios and random selector and optimum choices of portfolios

Values of α	Minimum Return Constraint	Risk Planner	Random Selector
0	-0.00162	0.00642627	0.002448324
0.1428	-0.001162	0.006427039	0.00244805
0.2856	-0.0007032	0.005215526	0.00123658
0.4284	-0.0002448	0.002499221	0.001479725
0.5712	0.0002136	0.00162154	0.0056021
0.714	0.0006719	0.007188154	0.0111671
0.8568	0.0011303	0.014533154	0.0185111
1	0.00159	0.026973154	0.02983754

Figure 6. CBD between optimum portfolio and risk planner and random selector choice of portfolio

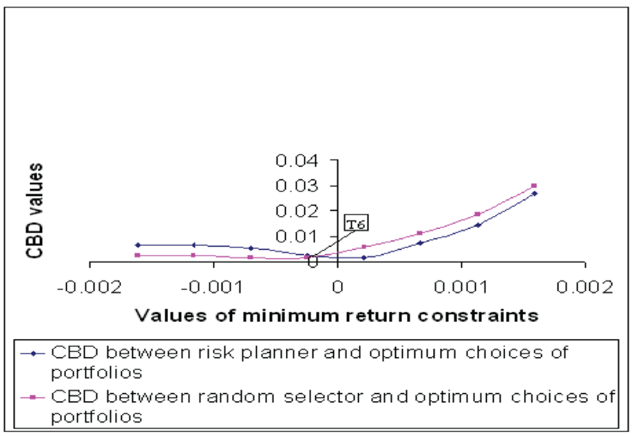


Figure 7. CBD between optimum portfolio and different heuristic portfolio

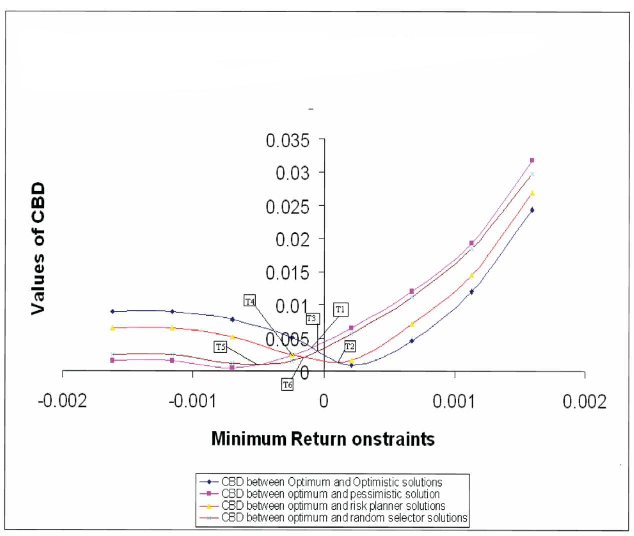


Table 11. City block distance between optimistic and optimum solutions, between pessimistic and optimum solutions, between risk planner and optimum solutions and between random selector and optimum solutions

Minimum Return Constraint	Optimistic	Pessimistic	Risk Planner	Random Selector
-0.00162	0.008973424	0.001577424	0.00642627	0.002448324
-0.001162	0.00897315	0.00157715	0.006427039	0.00244805
-0.0007032	0.00776168	0.00046568	0.005215526	0.00123658
-0.0002448	0.005045375	0.002350625	0.002499221	0.001479725
0.0002136	0.000923	0.006473	0.00162154	0.0056021
0.0006719	0.004642	0.012038	0.007188154	0.0111671
0.0011303	0.011986	0.019382	0.014533154	0.0185111
0.00159	0.024426	0.031822	0.026973154	0.02983754

5. CONCLUSION

After detailed analysis, it can be concluded that up to the threshold point T5, the pessimistic investors' decision is nearest to the optimum solution. Thereafter, the random selectors' decision is nearest to the optimum solution and up to the threshold point T6, their decision is similar to the optimum decision. The risk planners' decision is closest to the optimum solution in between the points T6 and T2. Beyond the threshold point T2, the optimistic investors' decision is nearest to the optimum solution. Thus, we can say that heuristically the optimum solution can be reached. In other words, it can be said that closeness is there between the optimum portfolio constructed on the basis of existing techniques and portfolio selected by investors who follow heuristic approach.

Risk management in portfolio optimization is of crucial importance for investors. But, the statistical and computational complexities seem to have made this risk management exercise highly sophisticated in nature for general investor to comprehend and apply practically. Hence, this study may help the investors to take heuristic investment decision which will be simplistic in nature and will be based on his/her value system helping them to reach near to the optimum solution.

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KEY TERMS AND DEFINITIONS

Portfolio: A collection of assets held by an institution or a private individual.

Risk: The probability that an actual return on an investment will be lower than the expected return.

Chapter 17
Financial Statement Analysis under IFRS

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ABSTRACT

This chapter provides a clear conceptual discussion on the recent developments in the Financial Statement Analysis (FSA). It presents how IFRSs changed the outlook of the financial reporting and the analysis and explains the key points that should be considered in FSA. Using a case study on the financial reports of Turkcell, a communication and technology company listed both on the New York Stock Exchange (NYSE) and the Borsa Istanbul (BIST), the differences between IFRSs and U.S. GAAP accounting standards in the measurement of overall financial performance and position are documented. Overall findings show that IFRSs change the appearance of financial statements significantly. While IFRS reporting extenuates "the bottom line" it accentuates total assets with higher shareholder equity compared to U.S. GAAP. This chapter might be a practical guide for users, preparers, and regulators to understand the cosmetic impact of IFRSs on financial statements.

INTRODUCTION

Financial statement analysis (FSA) is a fundamental element of business analysis. In a narrow manner, it is defined as the use of analytical tools and techniques on financial statements in order to obtain some estimates and inferences that are relevant in business decisions and analysis (Subramanyam & Wild, 2009, p.3). However this definition is not sufficient enough to describe the main aim of FSA. In today's' global business environment, with the integration of capital markets, FSA becomes more comprehensive. Beside analytical tools and techniques, it requires the general assessment of companies financial reporting process including accounting analysis

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(evaluation of accounting policies, estimations etc.), internal audit and control procedures, corporate governance structure and the quality of external audit and financial analysis.

FSA is important for several reasons. By providing information generated on a systematic way, FSA decreases the uncertainty and the need on intuition and guesses for business decisions (Subramanyam & Wild, 2009, p.4). Even though, FSA provides relevant information derived from financial statements, it still requires professional judgment to interpret the results. Thus, the numbers generated from financial statements are not enough, it is also equally essential to be able to understand the story of the numbers tells.

From an internal perspective of the company, FSA provides advantages in evaluating the performance of employees, comparing financial performance of different divisions, preparing financial projections and plans (Titman et al., 2011). Furthermore, internal FSA facilitates monitoring the firm's financial position in light of its competitors. From an external perspective, it provides information to all external users that have a direct economic link to the firm.

Firm valuation is one of the important objectives for many users of financial statements. Reliable forecasts of value aid current and potential shareholders to make buying, selling or holding decisions regarding securities of a firm (Subramanyam & Wild, 2009, p.612). Also, it enables us to determine the share prices for public offerings and evaluate the firm's creditworthiness. Simply, the value and the performance of a firm are mainly reflected by the present value of all expected future cash flows over the relevant time period.

Considering the role of FSA and the impact of accounting treatments on the determination of accounting-based firm-value, any changes in financial reporting and accounting standards will change the nature of FSA.

The transition to International Financial Reporting Standards (IFRSs) is considered as the most important issue of recent years in accounting and finance. It made significant changes in the structure of financial reporting in terms of measurement, initial and subsequent recognitions, classification of assets and liabilities, disclosure of notes related with those items for all financial and non-financial transactions. Previous studies on the impact and the economic consequences of the transition from local GAAP to IFRSs documents that there are significant differences in financial performance and financial situation of firms under different accounting standards sets.

Thus, this chapter aims to document the impact of using IFRSs on financial numbers. A comprehensive financial statement analysis of a large publicly held global company reporting under both IFRSs and U.S. GAAP was conducted in order to refer the differences between two accounting standards sets and FSA in the post-IFRSs era.

The differences in the accounting treatments of IFRSs compared to national accounting standards including U.S. GAAP in the United States changed the nature of FSA. Understanding the potential impact of IFRSs is vital for all stakeholders to use in decision making by evaluating firms' financial performance and position and measuring firms' value.

This chapter will provide a clear conceptual discussion on the recent developments in FSA. It presents how IFRSs change the financial reporting and analysis.

Mainly the chapter will address the following questions;

- Why financial statements analysis is important in today's business environment?
- What is the role of financial statements analysis in valuation?
- What are the recent developments in financial statement analysis?
- What are the differences between IFRSs and U.S. GAAP in the measurement of financial performance and position?

- What are the key points that should be considered in the analysis of financial statements under IFRSs?

BACKGROUND

Today's global business world with integrated capital markets made analyzing financial statements difficult for all stakeholders, particularly investors. In order to make their decision, investors need to analyze the current financial position and performance of companies and make some forecasts about their future performance (Lev et al. 2010). Thus, analyzing the financial statements of a firm is of interest to creditors, current and prospective shareholders, fund managers, investment advisors, customers, government agencies, suppliers, employees etc. For example, current and prospective shareholders are interested in current and future level of risk and return of a company to forecast its value. Also, creditors that lend funds to a company are interested in ability of a firm to satisfy its credit obligations. This comprises the analysis both liquidity and solvency. Government agencies are interested in auditing tax returns and checking the reasonableness of reported amounts. Besides, suppliers are interested in FSA to determine creditworthiness of a firm.

Comparative FSA, common-size FSA, ratio analysis, cash flow analysis and valuation are among extensively used analysis methods. Especially, valuation is a significant outcome of FSA and widely used by investors and security analysts. Simply, the value of any asset is equal to the present value of all expected future cash flows of an asset over the relevant time period. From that definition, investors may calculate the value of the equity security by discounting forecasted future dividend payments of the company to the present at an appropriate discount rate. Accordingly, investors need current and future level of risk and return of the firm. However, it is not easy to forecast infinite number of future dividend payments of a company due to the different dividend payment policies (Subramanyam and Wild, 2009, p.41). Therefore, instead of dividend payments, alternative valuation models; future expected free cash flows and earnings are used practically. In accounting-based valuation models, reliable estimates of earnings can only be achieved through professional assessment and judgment of financial reporting processes.

As it is clear from above, there are various analysis tools and techniques. However in all cases, the input is generated from a fixed source: financial statements. Thus, any changes in financial reporting and accounting standards are one of central concern of FSA. The increasing trend in technological developments and integrations of capital markets and significant amount of capital flows among world demand a common language for financial reporting that meets the financial reporting requirements of all countries. Taking this need into consideration, IFRSs brought uniformity regarding financial reporting. The aim of setting IFRSs is to develop, a single set of high-quality, understandable, enforceable and globally accepted financial reporting standards based on principles (IFRS, 2012).

IFRSs are principles based accounting standards that provides flexibility to management and accountants in using some accounting policies and methods. For fiscal years beginning on or after January 1, 2005, most of the major economies around the globe required for listed firms to use IFRSs in the preparation of financial reports[1]. As of January 2013, approximately over 120 countries have adopted IFRSs. In the United States (U.S.), the use of IFRSs is on debate. In 2007, Securities Exchange Commission (SEC) permitted foreign firms to use IFRSs without reconciling with U.S. GAAP (SEC, 2007), because most of global firms, particularly multinational firms, prefer to prepare their financial reports in accordance with IFRSs in order to use a single set of accounting standards both for domestic and foreign operations. Using a single set of accounting for all operations facilitates financial reporting and it ensures comparability in the analysis. Thus, in order to eliminate reconciliation costs (Rahmonova, 2009) and integrate with foreign firms, U.S. firms are more likely to prefer using IFRSs. However, SEC is pending decision regarding to the use of IFRSs for domestic firms and it is expected that complete adoption might be achieved as early as 2014 or 2015.

Before IFRSs, all countries were using their own local GAAP. The local GAAPs, including in Continental European countries and U.S., were mostly rule based that defines the accounting treatment for all specific business transactions. In the past, the issue of having rule based accounting and financial reporting standards would be beneficial. However, recent corporate scandals show that the rule based standards are not sufficient enough to describe the accounting treatments for all business transactions. As the developments of local accounting standards depend on different factors like political systems, sources of capital, inflation, taxation, business culture and complexity in a specific country (Smith, 2011), there exist significant differences in accounting standards among countries, which make the comparability of financial numbers among international firms impossible. Also, differences across different countries cause waste of time and resources due to the reconciliation of financial reports and conflicts in terms of FSA.

In literature, several studies focused on the impact of IFRSs on financial numbers. Haverty (2006) evaluated a sample of companies from the People's Republic of China that are listed on the NYSE. These companies prepare both IFRSs and U.S. GAAP financial statements which created an opportunity to observe the differences in financial numbers when holding the company constant. The financial statements are investigated in the study and the author realized net income differences under two accounting reporting standards. The reason for this situation is explained by the upward revaluation of fixed assets that is permitted under IFRSs. This also caused lower net income under IFRSs due to increases in depreciation expense. Conversely, Henry et al. (2009) found contradictory results that analyzed 75 European Union (EU) cross-listed firms by employing 2004 to 2006 reconciliation disclosures. They noticed that most firms reported higher earnings and lower shareholder's equity under the use of IFRSs than under U.S. GAAP resulting higher return on equity (ROE) ratios under IFRSs. Moreover, Gordon et al. (2008) presented evidence that U.S. GAAP-reconciled earnings reveal incremental and relative value relevance, whereas IFRS-reconciled earnings exhibit only incremental value relevance which is consistent with Henry et al.'s (2009) study.

More recently, Malikova, and Brabec (2012) examined the effects of differences in recording of accounting transactions under Czech accounting legislation and under the IAS/IFRS on financial ratios. They found large differences in return on capital and debt ratios while no significant differences were detected in asset turnover and acid-test ratios. Similarly, Lantto and Sahlström (2009) investigated the impact of conversion from Finnish Accounting Standards (FAS) to IFRS in accounting numbers and key financial ratios of Finnish companies. The results that are consistent with those of Jones and Higgins (2006) indicated that increase in profitability ratios and decrease in price-earnings ratios can be explained by the increases in profits. Furthermore, decreases in liquidity ratios were explained by the increase in current liabilities.

MAIN FOCUS OF CHAPTER

Issues, Controversies, Problems

With the globalization of capital markets, analysis financial performance and situation of companies become more complicated particularly due to dispersed types of accounting and financial reporting standards and differences in business culture, which in turn causes comparability problems for investors (Rahmonova, 2009). Thus, IFRSs are recommended as a solution to eliminate those problems and allow all, especially investors, to make their decisions based on worldwide used common accounting standard set.

Even IFRSs are introduced as a solution, due to their framework and structure, which are quite different than accounting standards in other jurisdictions, especially in Continental Europe; they brought several new problems into scene. According to Blanchette et al. (2011), IFRSs have several characteristics that are subjective and require strong ethical conduct due to the use of judgments and estimates. They argued that the principles based approach that focuses on the substance over form for any item to be recognized and presented, the use of fair value accounting, the introduction of comprehensive income, transparency and extensive disclosure of information in the notes are among most important ones. Therefore, the introduction of IFRSs both facilitates and impedes FSA.

Considering the common language approach, it is clear that because of the application of common principles in the measurement, recognition, classification and reporting of business transactions in all countries, the introduction of IFRSs facilitated FSA. It increases relevance, reliability, comparability of accounting information and transparency and quality of financial reports, decreases cost of capital. Moreover IFRSs are decreasing cost of information processing which in turn expect to make the capital markets more efficient and removes cross-border barriers for acquisitions and divestitures (Ball, 2006). Therefore, it encourages both national and global harmonization, consistency, quality and understandability in financial reporting (Rahmonova, 2009). As IFRSs provide more accurate, comprehensive and timely information, they allow a more-informed valuation in the capital markets, and reduce the risk to investors, particularly for small investors less informed compared to big and institutional investors (Ball, 2006).

On the other hand, FSA under IFRSs is not only related with analytical tools and techniques (ratio analysis, vertical and horizontal analysis etc.), but also closely associated with the analysis of all financial and non-financial events and transactions presented in financial statements and its notes (Özkan & Erdener, 2010). IFRSs require professional judgment in making estimates and choosing accounting policies and methods. Mainly, IFRSs impact on FSA is due to the differences in the measurement (e.g. amortized cost, fair value etc.), classification and reporting of different items, the accounting for financial investments and tax compared to national accounting standards.

Therefore, the first issue before starting FSA is conducting an accounting analysis to assess the quality of accounting information, by evaluating the reasons of choosing the accounting policies and methods, the reality of the assumptions and estimates and to decide whether the flexibility in the estimation of accounting policies and methods allowed under IFRSs to reflect the nature of the firms' operations or to manipulate the numbers.

The second issue is that, financial reports under IFRSs aim to meet the information needs of investors. Thus, fair value accounting, which might be subjective in the measurement, becomes more important under IFRSs. Even the use of fair value makes accounting numbers presented in balance sheet more relevant for stakeholders, especially investors, due to the unrealized gains and losses recognized through fair value market adjustments the profits appear more volatile compared to historical cost based accounting, the use of fair value accounting might provide the opportunity of discretion to managers (Watts, 2003).

The third issue is the process of consolidation and changes in accounting policies and methods. Both of those issues cause comparability and consistency problems in FSA. The analysis of consolidated financial statement is complicated compared to single financial reports. Therefore, before FSA industry analysis should be applied to all firms consolidated in the financial reports. Also, IFRSs allow firms to change accounting policies if it is required by a standard due to the amendments in the existed IFRSs. Beside the changes in policies mandated by IASB, IFRSs by itself provide flexibility to management and accountants and allow them to change policies, methods and estimates if results of changes provide more reliable and more relevant information about the effects of transactions. Additionally, different firms may use different accounting policies and methods. Before FSA, associated restatements should be considered to assure comparability within years and among firms. Another issue is the increasing importance of notes to the financial statements. Financial reports under IFRSs present main elements and show the details about those elements in the notes. Therefore, FSA requires a detailed analysis of notes to understand the overall financial position and performance of the company. From this point of view, the introduction of IFRSs impeded FSA.

Case Study

As a methodology, in this chapter, the differences arisen due the use of IFRSs in the preparation of financial reports will be presented in detail by a case study. Using financial reports of Turkcell, a communication and technology company listed on the New York Stock Exchange (NYSE) and the Borsa Istanbul (BIST), the impact of IFRSs standards compared to U.S. GAAP were documented based on financial ratios. Also, by using market measures, comparative market prices and capitalization were assessed to discuss about investors' perception of both standards. Share prices of Turkcell are moving in the same direction in both NYSE and BIST, while the price levels are different from each other during the period 2004-2012. Furthermore, it can be observed that the volatility of share price of Turkcell in NYSE is higher compared to the share price in BIST due to changing market conditions in the U.S. especially after market crash in 2008.

Turkcell is the leading communication and technology company in Turkey. As of December 31, 2012, it has 35.1 million subscribers and a market share of 52%. With its employees of 13,414 people, Turkcell reported a $1.15 billion profit for the year ($1.16 billion profit attributable to the owners of TURKCELL) with total assets of $10.5 billion as of December 31, 2012. There are two significant founding shareholders, Sonera Holding BV and Cukurova Group, directly and indirectly, own approximately 37.1% and 13.8% of its shares (at December, 31, 2012), respectively. In addition Alfa Group holds 13.2% of the Company's shares indirectly through Cukurova Holdings Limited and Turkcell Holding AS. It has been listed on the NYSE (Symbol TKC) and the BIST (Symbol TCELL) since July 2000, and is the only NYSE-listed company in Turkey. Currently 34.70% of its shares are publicly traded (Turkcell, 2012).

Until 2006, the consolidated financial statements are historically presented in US dollars in accordance with U.S. GAAP for purposes of reporting to the Securities and Exchange Commission (SEC) of U.S. and in New Turkish Lira (TRY) in accordance with Turkish GAAP and financial reporting standards adapted from IFRSs in line with the requirements of Turkish Capital Market Board (CMB) in Turkey. Starting from the first quarter of 2006, it started to report the consolidated financial statements in accordance with IFRS in U.S. dollars to international markets and in accordance with IFRS in TRY in line with the requirements of CMB in the local market. In the first year of IFRS financial reports, in 2006, it reported reconciliated accounting numbers in accordance with IFRSs for the fiscal year-ended 2005.

In order to avoid any correction errors under reconciliation, the influence of IFRSs on financial ratios is examined by comparing the ratios computed under IFRS and U.S. GAAP financial reports presented in U.S. dollar for the same accounting period, fiscal year-end 2005. The data for the year 2005 was gathered from the financial statement prepared under U.S. GAAP for the fiscal year-ended December, 31, 2005 and the financial statement prepared under IFRSs for the fiscal year-ended December, 31, 2006, which contains reconciliated accounting numbers under IFRSs for the fiscal year-ended 2005 (see Appendix 1).

Table 1 presents the comparative results for liquidity, solvency, performance, asset utilization and market ratios. As it is clear from the financial reports in Appendix 1, total assets of Turkcell is presented as $5,215,097 under IFRSs and $4,405,588 under U.S. GAAP. Considering that the total of assets is one of the important size indicators, using IFRSs for the preparation of financial

Table 1. Comparative Ratio Analysis – IFRS versus US-GAAP

Ratio	Definition	IFRS*	U.S. GAAP
Liquidity			
Current Ratio	Current Assets / Current liabilities	1.0162	1.1676
Acid-test Ratio	(Cash and Cash Equivalents + Marketable Securities + Accounts Receivable) / Current Liabilities	0.9146	0.9078
Collection Period	(Accounts Receivable / Sales)*360	25.5294	27.3773
Capital Structure and Solvency			
Total Debt to Equity	Total Liabilities / Shareholder's Equity	0.4205	0.6211
Long-term Debt to Equity	Long-term Liabilities / Shareholders' Equity	0.0530	0.1306
Return on Investment			
Return on Assets	Net Income / Total assets	0.1481	0.2068
Return on Common equity	Net Income / Shareholders' Equity	0.2129	0.3352
Operating Performance			
Gross Profit Margin	Gross Profit / Sales	0.4034	0.4399
Operating Profit Margin (Pretax)	Income from Operations / Sales	0.2146	0.2898
Net Profit Margin	Net income / Sales	0.1705	0.2134
Asset Utilization			
Cash Turnover	Sales / Cash and Equivalents	5.6029	5.3686
Accounts Receivable Turnover	Sales / Accounts Receivable	14.1014	13.1496
Inventory Turnover	Sales / Inventory	508.1908	464.0674
Working Capital Turnover	Sales / Working capital	209.7744	19.1005
Property, Plant and Equipment (PPE) Turnover	Sales / PPE	2.1132	2.6448
Total Asset Turnover	Sales / Total assets	0.8682	0.9689
Market Measures**			
Price-to-earnings	Market Price per Share / Earnings per Share	17.5032	12.5108
Earnings yield	Earnings per share/Market price per share	0.0571	0.0799
Dividend Payout Rate	Cash dividends per share/Earnings per share	0.5256	0.3757
Price-to-book	Market price per share/Book value per share	3.1425	4.1936

* Shareholders' equity includes only equity attributable to controlling shareholders.

** For the calculation of earnings per share and book value per share the number of outstanding shares was considered as 1,854,887,341 (741,954,936 ADR) as presented in the consolidated income statement prepared under U.S. GAAP in 2005.

statements pictures company size larger. Also, the use of IFRSs in financial reporting figures lower total liabilities and it presents higher shareholders' equity compared to U.S. GAAP. Finally, according to financial measures, IFRSs have a lowering impact on the "bottom line" of Turkcell in 2005 compared to U.S. GAAP.

The reconciliation financial statements from U.S. GAAP directly affect the numerator and denominator, or both in ratio calculations. According to the results, except acid-test ratio, presenting financial statement in accordance with U.S. GAAP shows firms liquidity slightly higher compared to IFRS reports. The main reason of higher current ratio under U.S. GAAP is due to the classification differences between two standard sets. While deferred taxes were classified as current asset under U.S. GAAP, IFRSs require them to be reported under non-current assets. In contrast to current ratio, as the calculation of acid-test ratio excludes deferred taxes, therefore the acid-test ratio appears higher under IFRSs. The differences for the collection period mainly results from the differences in total dollars amount of revenues and direct cost of revenues. IFRS reports present both revenues and direct cost of sales higher than U.S. GAAP reports.

One of the most significant differences appears in capital structure and solvency ratios. As it is shown in Table 1, all capital structure and solvency ratios are higher under U.S. GAAP reports than IFRSs. The reason of higher debt to equity ratio is basically because of the differences in the recognition of non-controlling interests (minority shareholders' interests) or differences in consolidation methods under two standards sets. According to IFRSs, non-controlling shareholders' interests are classified within equity separately from the parent's shareholders' equity. On the other hand, under U.S. GAAP non-controlling shareholders' interests are classified outside of equity between liabilities and equity[2]. Thus, shareholders equity under IFRSs appear higher compared to U.S. GAAP. If non-controlling interests are excluded from liabilities section of U.S. GAAP reports, total debt to equity and long-term debt to equity ratios drop to 0.60 and 0.11, respectively. Even they converge to each other; still U.S. GAAP provides higher solvency ratios.

Both return on investment and operating performance measures are higher under U.S. GAAP than IFRSs. As U.S. GAAP presents higher net income and lower equity, it is more likely to have higher return on equity ratio. For all return based performance measures, U.S. GAAP cosmetically draws a better picture for the company.

About asset utilization, except property plant and equipment and total asset turnovers, IFRS reports present higher ratios compared to U.S. GAAP. Mainly this difference is significantly higher for working capital turnover ratio, which is 209.77 under IFRSs and 19.10 under U.S. GAAP. This major difference is due the overstatement of revenues and the classification of deferred tax assets as non-current under IFRSs. If deferred tax asset is excluded from U.S. GAAP's current assets, the working capital turnover ratio increases to 138.84. Even a significant convergence will be achieved by this reclassification; still IFRS reports are quite higher.

Finally, according to the market measures, as IFRS reports have lower net income, earnings per share are lower under IFRSs. Moreover, book value per share is higher under IFRSs because of higher shareholders' equity (only equity attributable to controlling shareholders) under IFRSs.

The comparison of financial statements prepared in accordance with U.S. GAAP and IFRSs for Turkcell at the fiscal year-ended 2005 shows that IFRSs have a lowering impact on the "bottom line" and an exaggerated impact on total shareholders' equity. In order to understand the reasons, the statements were analyzed in thorough based on the notes disclosed by Turkcell. According to their reconciliation, the differences on net income and shareholders' equity basically explained by the differences arisen due to the differences on the accounting treatments for the non-controlling interests, indexation and translation, deferred taxes, financial instruments and investments under equity methods as it is presented in Table 2.

Aforementioned, while non-controlling interests are part of total equity under IFRSs it is reported outside of shareholders equity, in order to reconciliate IFRSs net income to U.S. GAAP net income attributed to non-controlling interest it should be added and for the shareholders equity, it is should be deducted.

Another issue is about differences on indexation and translation resulting from the translation differences under two standard sets on the comparative information presented in the opening and closing financial statements for the date of transition and the fiscal year ended in 2005. Also, accounting treatments under IFRSs and U.S. GAAP is different from each other for deferred tax calculation and presentation and in the classification, recognition and cost principles (amortized versus fair value) in most of the financial assets. While IFRSs requires financial assets and liabilities to be recognized at present value using effective interest method with charges flowing through the income statement, under U.S. GAAP there is no requirement for discounting in certain specified circumstances including trade receivable and payable maturing in less than one year and for

Table 2. Net income reconciliation

(Amounts expressed in thousands of US Dollars)	
	2005
Profit for the period (IFRS)	$747,453
Adjustments required to conform with US GAAP	
Minority interests	24,793
Differences on indexation and translation	260,320
Deferred taxes	(116,925)
Accounting for financial instruments	(4,079)
Investments accounted for under the equity method	(635)
Net income (US GAAP)	$910,927

Source: Turkcell FORM 20-F, SEC Filings on April 23, 2007, Note 34

Table 3. Shareholders' equity reconciliation

(Amounts expressed in thousands of US Dollars)	
	2005
Total equity (IFRS)	$3,690,321
Adjustments required to conform with US GAAP	
Minority interests	(63,794)
Differences on indexation and translation	(1,011,507)
Deferred taxes	94,764
Accounting for financial instruments	5,093
Investments accounted for under the equity method	2,696
Stockholders' equity in accordance with US GAAP	$2,717,573

Source: Turkcell FORM 20-F, SEC Filings on April 23, 2007, Note 34 borrowings. Besides, due the differences in the accounting treatment on investments accounted under the equity method, particularly in the carrying amount of long-lived assets due to the application of different principles in foreign currency translations and the amortization of goodwill until 2004. Therefore, in the reconciliation as it is seen above, some adjustment are required.

SOLUTIONS AND RECOMMENDATIONS

There are significant differences between two accounting and financial reporting sets. Beside the terminology used in and the way of presentation of the financial reports, two sets of standards differ in terms of classification, measurement, recognition and accounting of some items. As it is clear from the results presented in Table 1, those differences cause variations in the cosmetic appearance of firms' financial performance and position. These differences might affect decisions of all users of financial information including investors.

FSA aims to provide relevant information derived from financial statements to be used in the decision making. As financial numbers and accounting information are prepared based on the accounting standards, any change in the accounting treatments will change the appearance of financial statement and consequently its analysis. Since 2005, regulators in different jurisdictions prepared several documents for users that express the differences between IFRSs and the national GAAP used before IFRSs in detail. However, except academic research on the consequences of IFRSs on financial reporting, there is no clear guide which documents the direct impact of IFRSs reporting the accounting numbers. The effect of IFRS transition should be approached from FSA perspective, because financial statements appearance changes significantly with the use of IFRSs.

As a solution, this study recommends to integrate FSA impact of IFRSs into practitioners' trainings conducted during the transition.

FUTURE RESEARCH DIRECTIONS

This chapter uses a case study methodology on a firm at a specific time period to examine the impact of IFRSs on the accounting numbers and overall FSA based on ratios. As it uses the financial reports in the transition year from U.S. GAAP to IFRSs, it uses the actual accounting numbers filed to stock exchange market by the firm. All findings presented in this chapter are solely derived from a single company. As the aim of this chapter is presenting the direct effect by documenting all details in a chapter, using a single firm and time frame is the most appropriate research design.

In order to enhance the findings, the financial statements of several companies from different jurisdiction that report both under U.S. GAAP and IFRSs should be analyzed. This might help expand the sample size and also to derive some statistical inferences about the magnitude of IFRS impact on ratios. Therefore, as a future research direction, different companies from emerging and developed countries, code and common law countries and continents should be analyzed in a single study to show also the IFRS impact on financial ratios under different business cultures and political environment.

CONCLUSION

This chapter discusses how IFRSs changed the outlook of the financial reporting and analysis by using a case study on the financial reports of Turkcell. Overall findings show that, IFRSs financial reporting brought several new issues to FSA due to the changing nature of accounting treatments and implementation. Mainly, using IFRSs change the appearance of financial statements significantly in terms of presentation and reporting of financial situation and performance. As a result, there are major differences between IFRSs and U.S. GAAP reported financial ratios. According to results, IFRS reporting has a lowering impact on the net income and an exaggerated impact on total shareholders' equity that also affected the operating performance and capital structure and solvency ratios. These findings are vital for investors, creditors, consultants, managers, auditors, directors, analysts, regulators, and employees who uses financial statement analysis in their decision making processes. This study provides significant findings on the possible effect on financial performance and position of companies when they start using IFRSs in the U.S. in the following years. Therefore, it might be a practical guide for users, preparers and regulators to understand the cosmetic impact of IFRSs on financial statements.

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KEY TERMS AND DEFINITIONS

Asset Utilization Ratio: Asset utilization ratios measure the efficiency with which the firm uses its assets to generate sales revenue to reach a sufficient profitability level.

Capital Structure and Solvency Ratio: Capital structure and solvency ratio measures the firm’s ability to generate future revenues and meet its long-term obligations.

Financial Statements: A complete set of financial statements composed of an Income Statement (Statement of Comprehensive Income), a Statement of Changes in Equity, a Balance Sheet (Statement of Financial Position), a Cash Flow Statement, and notes.

Generally Accepted Accounting Principles (GAAP): A set of accounting principles, rules and standards issued by local accounting standards board of each country.

International Financial Reporting Standards (IFRSs): A set of accounting standards issued by International Accounting Standards Board (IASB) to provide uniformity in the financial reporting.

Liquidity Ratio: Liquidity ratios measure the firm's ability to meet its short-term obligations.

Market Measure Ratio: Market measure ratios show the relationship between the firm's market value that is measured by the current stock price and certain accounting values to asses the risk and return related with the firm.

Operating Performance Ratio: Operating performance ratios measure the firm's profitability with respect to its main operations.

Reconciliation: The process of adjustments and corrections in order to compare two accounts' records prepared under diffferent systems and bring them to an agreement.

Return on Investment Ratio: Return on investment ratios measure the performance of the firm by assessing the overall effectiveness of management in generating return on its asset and equity investments.

ENDNOTES

[1] A complete list of countries using IFRSs might be found from the following link: http://www.ifrs.org/use-around-the-world/Pages/use-around-the-world.aspx

[2] U.S. GAAP requires non-controlling interest to be reported between liabilities and equity which is defined as Mezzanine section. In 2007, with the amendment, this rule has been changed and starting from 2009 U.S. GAAP requires non-controlling interest to be reported component of equity seperately from parent' shareholders' interest like in IFRSs.

APPENDIX

Table A1. IFRS-balance sheet and income statement

Turkcell Iletisim Hizmetleri as and its Subsidiaries Consolidated Balance Sheet As at 31 December, 2006 (Prepared in accordance with IFRSs) (Amounts expressed in thousands of US Dollars unless otherwise indicated except share amounts)			
Assets	**Note**	**2006**	**2005**
Property, plant and equipment	11	1,916,991	2,142,710
Intangible assets	12	1,234,668	1,298,055
Investments in equity accounted investees	13	523,840	290,412
Other investments	14	35,095	29,395
Due from related parties	31	72,506	80,894
Other non-current assets	15	121,465	16,476
Deferred tax assets	16	3,052	2,940
Total non-current assets		**3,907,617**	**3,860,882**
Inventories		11,018	8,910
Other investments	14	61,733	23,287
Due from related parties	31	66,101	66,312
Trade receivables and accrued income	17	318,973	321,102
Other current assets	18	125,653	126,451
Cash and cash equivalents	19	1,598,640	808,153
Total current assets		**2,182,118**	**1,354,215**
Total assets		**6,089,735**	**5,215,097**
Equity			
Share capital	20	1,636,204	1,438,966
Share premium	20	434	434
Reserves	20	(4,884	84,590
Retained earnings	20	2,394,838	2,102,537
Total equity attributable to equity holders of the Company		**4,026,592**	**3,626,527**
Minority interest	**20**	**91,375**	**63,794**
Total equity		**4,117,967**	**3,690,321**
Liabilities			
Loans and borrowings	22	113,503	79,165
Employee benefits	23	17,648	16,600
Other non-current liabilities		8,683	6,417
Deferred tax liabilities	16	196,260	89,964
Total non-current liabilities		**336,094**	**192,146**

continued on following page

Table A1. Continued

Assets	Note	2006	2005
Bank overdraft	19	285	—
Loans and borrowings	22	526,083	578,105
Income taxes payable	10	309,470	60,864
Trade and other payables	26	579,421	530,875
Due to related parties		6,844	6,180
Deferred income	24	184,337	123,613
Provisions	25	29,234	32,993
Total current liabilities		**1,635,674**	**1,332,630**
Total liabilities		**1,971,768**	**1,524,776**
Total equity and liabilities		**6,089,735**	**5,215,097**
Revenue	7	4,700,307	4,527,980
Direct cost of revenues		(2,627,890)	(2,701,565)
Gross profit		**2,072,417**	**1,826,415**
Other income		8,050	15,403
Selling and marketing expenses		(827,516)	(700,501)
Administrative expenses		(154,917)	(154,035)
Other expenses		(6,467)	(4,901)
Results from operating activities		**1,091,567**	**982,381**
Finance income	9	184,015	167,472
Finance expenses	9	(108,038)	(191,199)
Net finance income / (costs)		**75,977**	**(23,727)**
Share of profit of equity accounted investees		78,616	68,234
Profit before gain on net monetary position		**1,246,160**	**1,026,888**
Gain on net monetary position, net		—	11,037
Profit before income tax		**1,246,160**	**1,037,925**
Income tax expense	10	(413,242)	(290,472)
Profit for the period		**832,918**	**747,453**
Attributable to:			
Equity holders of the Company		875,491	772,246
Minority interest		(42,573)	(24,793)
Profit for the period		**832,918**	**747,453**
Basic and diluted earnings per share (in full USD)	21	0.397951	0.351021

Source: Turkcell FORM 20-F, SEC, April 23, 2007

Table A2. U.S. GAAP-balance sheet and income statement

Turkcell Iletisim Hizmetleri as and its Subsidiaries Consolidated Balance Sheets As at 31 December, 2005 (Prepared in accordance with U.S. GAAP) (Amounts expressed in thousands of US Dollars unless otherwise indicated except share amounts)			
Assets	**Note**	**2004**	**2005**
Current Assets			
Cash And Cash Equivalents	6	763,821	795,091
Available For Sale Securities	3, 7	—	12,948
Held To Maturity Securities	3, 7	45,329	10,191
Trade Receivables And Accrued Income, Net	8	271,792	324,611
Due From Related Parties	3, 9	103,948	67,327
Inventories	3	13,007	9,198
Prepaid Expenses		23,685	38,029
Other Current Assets includes $110,166 and $34,105 of restricted cash as of December 31, 2004 and 2005, respectively	10	325,741	106,453
Deferred Tax Assets	3, 20	277,589	192,731
Total Current Assets		**1,824,912**	**1,556,579**
Due From Related Parties	3, 11	65,971	80,906
Prepaid Expenses		6,482	13,879
Investments	12	197,760	266,198
Held To Maturity Securities	3, 7	10,266	—
Fixed Assets, Net	3, 13	1,061,268	1,224,543
Construction In Progress	14	230,191	389,375
Intangibles, Net	3, 15	881,511	871,362
Goodwill	3	1,349	—
Other Long Term Assets	3	1,624	2,440
Deferred Tax Assets	3, 20	80,163	306
Total Assets		**4,361,497**	**4,405,588**
Liabilities And Shareholders' Equity			
Current Liabilities			
Short Term Borrowings	16	549,079	564,503
Trade Payables	17	616,816	137,775
Due To Related Parties	3, 18	6,711	5,774
Taxes Payable	20	99,939	60,864
Other Current Liabilities And Accrued Expenses, includes $111,718 and 123,613 of deferred income as of December 31, 004 and 2005, respectively	19	523,475	564,188
Total Current Liabilities		**1,796,020**	**1,333,104**

continued on following page

Table A2. Continued

Assets	Note	2004	2005
Long Term Borrowings	21	266,447	82,848
Trade Payables	17	213,740	—
Long Term Lease Obligations		3,284	9
Retirement Pay Liability	3	12,875	16,707
Deferred Tax Liabilities	3, 20	11,757	185,297
Minority Interest	3	64,044	62,427
Other Long Term Liabilities		7,813	7,623
Shareholders' Equity			
Common Stock			
Par Value TRY 1; authorized, issued and outstanding 1,854,887,341 Shares in 2004 and 2005	22	636,116	636,116
Additional Paid in Capital		178	178
Legal Reserves		42,501	92,414
Accumulated Other Comprehensive Income	3	2,244	5,549
Retained Earnings		1,304,478	1,983,316
Total Shareholders' Equity		**1,985,517**	**2,717,573**
Total Liabilities and Shareholders' Equity	27	**4,361,497**	**4,405,588**
Revenues	3, 23	3,200,765	4,268,492
Direct cost of revenues	3	(2,001,223)	(2,390,977)
Gross profit		**1,199,542**	**1,877,515**
General and administrative expenses	24	(137,315)	(152,025)
Selling and marketing expenses	25	(349,249)	(488,659)
Operating income		**712,978**	**1,236,831**
Income from related parties, net	26	1,919	1,145
Interest income		152,751	138,918
Interest expense	3	(121,500)	(147,367)
Other income, net		7,113	5,183
Equity in net income of unconsolidated investees	3, 12	43,646	67,599
Minority interest in income of consolidated subsidiaries	3	7,466	24,335
Translation loss	3	(11,192)	(8,320)
Income (loss) before taxes		**793,181**	**1,318,324**
Income tax benefit (expense)	3, 20	(281,360)	(407,397)
Net income		**511,821**	**910,927**
Basic and diluted earnings per common share	3, 22	0.275931	0.491096
Weighted average number of common shares outstanding	3, 22	1,854,887,341	1,854,887,341

Source: Turkcell FORM 20-F, SEC, April 13, 2006

Chapter 18

Measuring Service Quality of Commercial Banks in an Underdeveloped Economy:
A Study in Assam of North East India

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ABSTRACT

In the post-reform era, quality delivery of the services has acquired centre point of the service industry around the globe. The banking sector being purely a service-related industry has been influenced more by the issue of providing quality service. With the entry of private banks, the banking sector has gone through many transformations including the way services are extended. In a backward state like Assam, this has arrived a little late, but the changes are gradually visible. The chapter captures the service quality standard of the Scheduled Commercial Banks (SCBs) and also for the different bank groups in order to make a comparison. The SERVPERF scale is used to study the replies of the customers in two cities, Guwahati and Tezpur, and some econometric tools are used to analyse the data. The study reveals that the private sector banks are far ahead of the public sector banks in terms of quality of service. The private banks influence the service quality of the SCBs the most among all the bank groups. Overall, the public sector banks, which are the dominant market players, will have to work hard to catch the level of the private banks.

1. INTRODUCTION

In today's globalised world of fierce competition, providing a quality service to the customers is the key for existence and success of any business. Service quality or quality of service is said to be a function of three variables, viz., expectation, perception and performance. The earlier literatures have defined service quality as a comparison of what a customer feels a service provider should offer (customer's expectation) with how the provider actually performs and service quality is a measure

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of how well the service level delivered matches customer expectation (Sudhahar & Selvam, 2007). Wisner and Corney (2001) have defined service quality as a global judgment on attitude, relating to the superiority of service. Delivering a quality service means satisfying customer expectations on a continuous basis.

The concept of service quality has been very extensively studied during the last thirty years. Several models have also been developed to measure the service quality across the different service segments. Parasuraman, Zaithaml, and Berry (1985, 1988) have conducted the most famous study on the service quality measurement model which leads to the development of the SERVQUAL scale. They have identified ten determinants or dimensions of service quality which characterise the perception of service quality of a customer. The technique can be used for performing a gap analysis of an organisation's service quality performance against customer's service quality needs. Cronin and Taylor (1992) have developed a new model to measure service quality called SERVPERF scale. Their conceptualisation of service quality model is based on the performance component only and has discarded the disconfirmation paradigm containing the expectations component used by the SERVQUAL scale. They have also supported their works by empirical evidence across four industries. Being a variant of SERVQUAL scale, the SERVPERF scale also uses the same five service quality dimensions. But since it is a single item based model, it has able to reduce the number of variables by 50 percent to 22 only. But the SERVQUAL method has failed to adapt and validate in a retail store environment (Dabholkar et al., 1996). It was argued that the dimensional settings of a retail store are different from that of a pure service industry. A new model called Retail Service Quality Scale (RSQS) was developed using qualitative as well as quantitative research methods. They have viewed retail service quality as a higher order factor and used five primary dimensions, i.e., physical aspects, reliability, personal interaction, problem solving and policy. The five dimensions have six sub dimensions as well, viz., appearance, convenience, promises, doing it right, inspiring confidence and courteous. Sharma and Mehta (2004) have made a comparative study about the quality perception of customers among commercial banks. They have included four major commercial banks in India which are State Bank of India (SBI), Corporation Bank, Axis Bank (formerly known as UTI Bank) and Jammu and Kashmir Bank using SERVQUAL scale. The study has shown that there is a difference in the service quality perception of customers of private sector banks and the public sector banks. The results indicate that on the tangibility dimension Axis Bank topped the list followed by SBI, Corporation Bank and J & K Bank. Public sector banks score over the private sector banks in case of the reliability dimension. Corporation Banks tops the group in responsiveness dimension over the other three banks. Corporation Bank again is the topper regarding the empathy dimension followed by the Axis, SBI and J & K Bank. The results have also brought in to light that the public sector banks are ahead of the private sector banks in case of assurance dimension. Bhat (2005) has made a study about the service quality of Indian banks and service quality variations across the demographic variables. The study covers four North Indian states of Jammu and Kashmir, Punjab, Haryana and Delhi and is restricted to five banks such as State Bank of India (SBI), Punjab National Bank (PNB), Jammu & Kashmir Bank (J & K Bank), CITI Bank and Standard Chartered Grindlays Bank (SCGB) using the SERVQUAL method. The results prove that the foreign banks are relatively closer to the expectations of their customers compared to the Indian domestic banks. He has also marked that the poor service quality among the domestic banks is because of the deficiency in tangibility and responsiveness. Further, the service quality of Indian banks as perceived by the customers varies with the level of income whereas these variations are less among the customers of the foreign banks. The analysis also indicates that the service quality is better among the higher age groups of the customers. It is also disclosed by the study that the service quality is higher in those states where the competition among the banks is more. This vindicates the point that competition leads to the better and higher service quality by the commercial banks. Islam (2005) has measured service quality of banks in Dhaka city of Bangladesh. He has used the SERVQUAL methodology using the seven point scale. Correlations between the factors and age, educational background, profession, length of involvement, and types of service obtained are identified to know the relationships. Results show that the most important service quality factor of banks is personal attention to the clients followed by error-free records, safety in transaction, and tangible physical facilities of the bank. Perceived service quality factors have significant relationship with the overall service quality of the banks located in Dhaka City which indicates that the factors identified have strong influence on the overall service quality. Joshua and Moli (2005) have made an intra and inter comparison of old and new private sector banks in the South Canara Region of India using the SERVQUAL method. After the factor analysis of the data they have concluded that the new generation banks performed better across all service quality dimensions than the old generation banks. Further it is also clear that the ICICI Bank has outperformed the other three banks, viz., Karnataka Bank, Corporaton Bank and Axis Bank. Vanniarajan and Anbazhagan (2007) have measured the service quality among the private sector banks, public sector banks and the co-operative banks in Madurai using factor analysis based on SERVPERF scale. They use all total 17 attributes of service quality distributed among the four dimensions, viz., reliability, responsiveness, assurance and tangibles. A comparative study of customers' perceptions of the service quality among the three bank groups is also conducted. The highly perceived service quality of retail banking in public sector banks are feeling safe during transactions, up to date equipments and neatness of employees. In private sector banks, these are delivery of service at promised time, up to date equipments and physical facilities. The study suggests a significant difference among the customers of these bank groups about their SERVPERF score on reliability and responsiveness.

2. MATERIALS AND METHODS

Data Type and Source

The sample survey is carried out in two cities of the state, viz., Guwahati and Tezpur. Therefore, the respondents of the survey are the urban dwellers. Guwahati is selected for the survey because besides the public sector banks all the private sector banks operating in the state have their branches there. Likewise Tezpur is selected as a good concentration of both public and private sector banks can be seen there.

Primary data is collected through direct personal interview method from the retail customers of the commercial banks using a structured questionnaire. The units of the sample are selected through judgment sampling based on the requirements of the study. Every possible care is taken to include a proper and adequate representation of the population in to the sample. For that matter data is collected from different types of retail customers comprising service holders, businessman/traders, professionals, home makers, students, etc. Effort is also put to get a proper inclusion of sample in terms of gender. Primary data is collected from the customers of both public sector and private sector banks operating in the two cities of Guwahati and Tezpur.

The sample survey has covered 12 (twelve) banks in total with 7 (seven) from public sector and 5 (five) from private sector. The seven public sector banks are State Bank of India, Assam Gramin Vikash Bank, United Bank of India, Central Bank of India, Punjab National Bank, Allahabad Bank and Uco Bank. Similarly, the five commercial banks selected from the private sector are ICICI Bank, HDFC Bank, Axis Bank, Indusind Bank and Federal Bank.

Service Quality Model

Investigation of service quality in the financial services industry is difficult as well as interesting. It can only be assessed during and after consumption of the service (Vaniarajan & Anbazhagan, 2007). The study follows the SERVPERF method advocated by J. Cronin and S. A. Taylor. Being a variant of SERVQUAL, this method has also taken five service quality dimensions, viz.,

- **Reliability:** Ability to perform promised service dependably and with accuracy.
- **Responsiveness:** Level pf willingness to help customers and ability to provide prompt service
- **Tangibles:** Existence of physical facilities, equipment, personnel and communication materials.
- **Assurance:** Knowledge and courtesy of employees and their ability to convey trust and confidence.
- **Empathy:** Care and individualised attention to its customers.

The SERVPERF scale is comprised of 22 attributes covering 5 dimensions. A higher perceived performance implies higher service quality. In equation-

$$SQ_i = \sum_{j=1}^{k} P_{ij}$$

where,

SQ_i = Perceived service quality of individual "i ."
K= Number of service attributes/items.
P= Perception of individual "i" with respect to performance of a service from attribute "j."

The present study has adopted the SERVPERF model but with certain modifications. Measuring service quality on a definite scale, i.e., either five points or seven points scale makes the whole process of measurement somewhat subjective. That is why efforts have been made to make the measurement more objective one by recording the actual experiences of the customers. Therefore, efforts have been made to capture revealed preference statement of the customers instead of stated preference. Hence a slightly modified version of the SERVPERF method is used in the study. Three dimensions 'Reliability', 'Responsiveness' (called as Employees' Behaviour) and 'Tangible' are taken out of the five used by SERVPERF scale. Two new dimensions like 'Service Efficiency' and 'Use of Technology' are added in the current study. This is done because efficiency in service delivery is a major determining factor in evaluating the service quality of a banking institution or any financial institution for that matter. Another dimension named 'Use of Technology' is introduced as technology has been playing a pivotal role in efficient, timely and quick delivery of banking services to the customers in modern time. It has become also very important, especially in India, because the RBI and the government have given much emphasis on the use of modern banking technology while delivering services to the customers by the banks. The number of variable used here to measure the service quality is 31 which is slightly more than that of 22 used by the SERVPERF.

Here two dimensions Assurance and Empathy, used by SERVPERF method, are left out. Assurance, measuring the knowledge and courtesy of employees, can be judged by the efficient delivery of services which is taken care of under Service Efficiency dimension as well as through the Reliability dimension. The "courtesy" part of the Assurance is covered under the Employees' Behaviour dimension. Again what a customer generally looks for from the bank is the quick, efficient and accurate response to their requests. If the bank can satisfy the customer in these counts then he or she requires no special and individual attention from the bank. Hence, the Empathy dimension used by the SERVPERF method has got relatively low level of relevance as a dimension of service quality measurement. Hence the adopted model will be called as "Modified SERVPERF" or the "MSP" model.

Indexing Service Quality

In order to study the service quality of the commercial banks, service quality index for the banking sector as a whole and for each of the five service quality dimensions are constructed. The index has been constructed by using the formula used by the United Nations while constructing Human Development Index which is as given below-

$$\text{Index} = \frac{\text{Actual score} - \text{Minimum score}}{\text{Maximum score} - \text{Minimum score}}$$

Indices have been constructed for public sector banks, private sector banks and the scheduled commercial banks. Further, service quality index has been also constructed for SBI group, Nationalised banks group, Regional Rural Banks, new private sector banks and old private sector banks. The MSP values for the individual banks included in the sample have been calculated and compared. The study has taken the help of regression model using dummy variable to find out the variations in the index due to the impact of different categories of banks and certain variables like gender, location and occupation.

3. SERVICE QUALITY ANALYSIS

In the following discussions a preliminary analysis regarding the service quality of SCBs of the state has been presented. Here the mean scores of the variables included in the five dimensions are studied and the results are presented bank group wise so that a comparison can be made.

Service Efficiency

Efficient delivery of service is the core expectation of a customer from any service provider organisation. Efficiency of service refers to the timely, quick and error free delivery of service. To capture this phenomenon ten variables are taken and responses from the customers are recorded. The mean scores of the variables are calculated for two bank groups and are presented in the Table 1. It is clear from the above table that the private sector banks are far better in all the ten service efficiency variables compared to the public sector banks. The mean scores of the private sector banks are found higher than that of public sector banks in all the service efficiency variables. The highest mean difference of a service efficiency variable has been found in case of "number of days required to get loan" followed by "number of visits required to get loan" and "to get a new cheque book." The "t" test has been administered to find out whether the mean differences are significant or not. This has helped to identify the discriminant service efficiency variable among the two groups of banks. This is very important as it will indicate the variable in which the respective bank has to make improvement. It will also help towards the planning and policy making process. The "t" test result has indicated that there is significant difference in the mean scores of private sector upon public sector banks in all the variables except for the variable "to withdraw cash without teller." In other words, all the nine variables with significant mean difference have the discriminant power affecting the service efficiency comparison in favour of private sector banks.

Use of Technology

The study has chosen three technology based services of the SCBs while measuring the use of technology dimension of banking services. These services are ATM service, Internet banking facility and credit card service. The customers are asked to record their experiences while using these services and also about the status of the availability of them. The mean scores of the private sector banks in the entire seven variables, used to study the use of technology dimension of the service quality of banks, are higher than that of public sector banks (Table 2).

The highest difference of mean scores between private and public sector banks can be seen for the variables "time required to complete an ATM transaction" followed by "availability of cash" in the ATM. The "t" Test has indicated that the mean differences of five variables are significant at 0.01 level and mean difference of one variable each is significant at 0.05 and 0.10 levels. It implies that the private sector banks are better than the public sector banks in offering technology based services to the customers. The private sector banks are adopting information technology in banking operations faster and in more meaningful manner than their counterparts in the public sector. Another important finding of the study is that majority of the customer of the private sector banks have revealed that they avail the services of Internet banking and the credit cards. But a large portion of the customers from the public sector banks do not avail such facilities. It is also found that almost every customer except from the Regional Rural Banks uses the ATM services. Again, the Regional Rural Banks of the state do not offer any of the three services viz., ATM card, interne banking and credit card and it may have been reflected in the smaller mean scores of the public sector banks.

Reliability

The study has tried to record the perceptions of the customers regarding the reliability factor of the commercial banks. Four questions are put to

Table 1. Mean scores of variables of service efficiency dimension

Variables	Mean Scores		Mean Difference
	Private Sector Banks	Public Sector Banks	
	1	2	3 (1-2)
Time required to withdraw cash with teller	4.1386	3.4793	0.6593***
Time required to withdraw cash without teller	3.0000	2.7769	0.2231
Time required to deposit cash in account	4.0100	3.3941	0.6159***
Time required to get a new cheque book	4.4286	3.5074	0.9212***
Time required to get pass book updated	4.6139	4.1765	0.4374***
Time required to purchase a demand draft	3.5556	2.8421	0.7134***
Time required to get credit for local cheque	4.2151	3.9710	0.2440***
Time required to get credit for outstation cheque	4.1471	3.8022	0.3449***
Number of visits required to get loan	2.9208	1.0235	1.8973***
Number of days required to get loan	2.8218	0.1418	2.6800***

Note: ***Significant difference of mean at 0.01 level as per "t" test

Table 2. Mean scores of variables of use of technology dimension

Variables	Mean Scores		Mean Difference
	Private Sector Banks	Public Sector Banks	
	1	2	3 (1-2)
Availability of ATM Service	1.0000	0.6568	0.3432***
Time required to complete an ATM transaction	4.2871	2.2882	1.9989***
Availability of cash in ATM	2.4158	1.1588	1.2570***
Availability of cash in ATM in last three visits	1.8812	0.9706	0.9106**
Availability of Internet banking service	0.9540	0.4123	0.5417***
Impact of Credit Card on purchase	0.6931	0.1412	0.5519*
Credit Card related problem	1.2178	0.1588	1.0590***

Note:***, ** and * mean significant at 0.01, 0.05 and 0.10 levels as per "t" test

the customers and are asked to rate them. The "t" test results show that mean difference of the three variables out of four are significant indicating a clear difference of perception of customers regarding them between private and public sector banks (Table 3). The only variable in which the mean difference has been insignificant is about safety of money. This reflects the fact that customers feel that their money is safe irrespective of ownership status of bank. This is against the popular belief of the people that the safety of their money is more in the public sector banks in comparison to private sector banks. But the study has revealed that the customers think that their money is equally safe with the private sector banks also.

Employees' Behaviour

The behaviour of the employees of a bank constitutes a crucial part of the overall service quality of the bank. Since banks deal with service and not with goods so the behaviour part becomes more important. The behaviour part of the employees is measured from three perspectives of higher officer, clerk and sub-stuffs. All total six variables are studied covering the above mentioned three groups of employees (Table 4). The "t" test reveals that the mean differences are significant at 0.01 levels regarding the variable 'attending request' by higher officers, clerks and sub-stuffs. Again, the mean difference of the variable 'presence of clerk during office hour' is significant at 0.10 level. The mean differences of the two variables referring the presence of higher officers and sub-stuffs are found to be insignificant. The reason for this may be because the retail customers of banks, generally, deal with the clerks for their day to day transactions and occasionally they required the services of the higher officer and sub-stuffs.

Tangibles

The four aspects of tangibility measured in the study are space inside, fan and lighting, toilet and drinking water and equipment and machineries. The mean scores of the tangibility variables show that the scores are much higher for the private sector banks than that of public sector banks (Table 5). When the 't' test is administered upon the mean score difference of the two bank groups over the tangibility variables it shows that there are significant differences of the mean scores of all the variables at 0.01 level. This indicates that the private sector banks are much superior to the

Table 3. Mean scores of variables of reliability dimension

Variables	Mean Score		Mean Difference
	Private Sector Banks	Public Sector Banks	
	1	2	3(1-2)
Passbook entries are correct	4.8317	4.6765	0.1552**
Received important information in time	4.7228	4.3018	0.4210***
Properly advised by the employees	4.6733	4.3824	0.2909***
Safety of the money	4.8317	4.7530	0.0787

Note:*** and ** mean Significant at 0.01 and 0.05 levels as per “t” test

Table 4. Mean scores of variables of employees’ behaviour dimension

Variables	Mean Scores		Mean Difference
	Private Sector Banks	Public Sector Banks	
	1	2	3(1-2)
Attending request by higher officer	4.5347	3.9545	0.5801***
Attending request by clerk	4.4356	3.6529	0.7827***
Attending request by sub-stuffs	4.3861	3.6118	0.7744***
Presence of higher officer during office hour	2.0000	1.9941	0.0059
Presence of clerk during office hour	2.0000	1.9824	0.0176*
Presence of sub-stuffs during office hour	2.0000	1.9880	0.0120

Note:*** and * mean Significant at 0.01 and 0.10 levels as per “t” test.

Table 5. Mean scores of variables of tangibles dimension

Variables	Mean Scores		Mean Difference
	Private Sector Banks	Public Sector Banks	
	1	2	3(1-2)
Space inside	3.5347	2.9706	0.5641***
Fan and lighting	3.4653	2.8824	0.5830***
Toilet and drinking water	3.3556	2.1404	1.2152***
Equipments and machineries	3.4455	2.6845	0.7610***

Note: *** means Significant at 0.01 level as per “t” test.

public sector banks in physical appearance and possessions. This also implies that the better tangibility of private sector banks is really helpful in offering better services to the customers.

Service Quality Index: The MSP Value

Service quality index or the MSP (Modified SERVPERF) value is prepared for all five service quality dimensions individually and for overall banking sector. These service quality indices are also prepared for public sector banks, private sector banks and all scheduled commercial banks (Table 6). The overall service quality index for the scheduled commercial banks has been 0.7161. Similarly, the overall service quality index for public sector banks is 0.6311 and that is for private sector banks is 0.8098. The service quality index of private sector banks is much higher than that of public sector banks which implies that the service quality of the former is much better than that of the later. If one looks at the indices of the individual service quality dimensions of the two groups of banks then it is clear that the private sector banks have an edge in all the five dimensions over the public sector banks. The maximum difference of indices between the two bank groups has been found in case of 'Use of Technology' dimension followed by 'Tangibles' dimension. The private sector banks are always very strong in case of physical appearances and also in front while adopting new technology in banking operations and it has been reflected in the higher index for both of them. The least difference in index between private banks and public banks can be seen in case of 'Reliability' factor. This means that in case of reliability there is nothing much to choose between public sector banks and private sector banks. In other words the customers' perception regarding the reliability of the two bank groups does not differ much.

Results of Regression Analysis of Service Quality Index

A regression has been carried out between service quality index and the five categories of banks, gender (male and female), location (Tezpur and Guwahati) and occupation (salaried, self employment and not in employment) of the customers of the banks. The five categories of banks are SBI group, Nationalised Banks group, Regional Rural Banks, new private sector banks group and the old private sector banks group. The model is written as

SQI= f(Bank category, Gender, Location, Occupation) ---------- (1)

Since the dependent variable (Service Quality Index) is bounded between zero and one ($0<Y<1$), a linear specification of the relation defined in Equation (1) will not be appropriate. Because predicted value of Service Quality Index from a

Table 6. MSP values for different bank groups and for SCBs

Service Quality Dimension	Bank Group		All SCBs
	Private Sector Banks	Public Sector Banks	
Service Efficiency	0.7065	0.5699	0.6244
Use of Technology	0.7380	0.4641	0.6464
Reliability	0.8713	0.7623	0.8031
Employees' Behaviour	0.9165	0.8028	0.8459
Tangibles	0.8168	0.5565	0.6606
Overall	**0.8098**	**0.6311**	**0.7161**

linear regression model will not be necessarily confined between zero and one. Hence, the following logistic functional form has been adopted for detail specification of the relation.

$$Y_t = \frac{1}{1+e^{-Z_t}} \qquad (2)$$

Where,

$$Z_t = \alpha + \beta_1 D_1 + \beta_2 D_2 + \beta_3 D_3 + \beta_4 D_4 + \lambda_5 G_5 + \delta_6 L_6 + \mu_7 C_7 + \mu_8 C_8 + u_t \text{ ---} \qquad (3)$$

$t = 1, 2 \ldots 271$

D_1, D_2, D_3, D_4, G_5, L_6, C_7 and C_8 are the dummy variables.

where,

Z = Service Quality Index
α = Intercept (constant)
D_1= '1' for SBI and '0' for others
D_2= '1' for RRB and '0' for others
D_3= '1' for new private sector banks and '0' for others
D_4= '1' for old private sector banks and '0' for others
G_5= '1' for male and '0' for female
L_6= '1' for Tezpur and '0' for Guwahati
C_7= '1' for self employment and '0' for others
C_8= '1' for not in employment and '0' for others
u_t = Disturbance term

$\beta_1, \beta_2, \beta_3, \beta_4, \lambda_5, \delta_6, \mu_7$, and μ_8 are the coefficients of the dummy variables.

It can be seen that although Y is bounded between zero and one, Z can vary from $-\infty$ to $+\infty$. Hence the parameter of the model can be estimated applying linear regression technique to Equation (3). For this purpose the variable Z has been constructed from the values of Y using the following conversion formula[1].

$$Z = \ln \{Y/(1-Y)\}$$

The results of the regression analysis are shown in Table 7. The value of R^2 is fairly high which implies that the model gives a good fit. Moreover, the large F value implies the high overall significance of the fitted regression. As far the coefficients of the independent variables are concerned, 3 variables are significant at 0.01 level and 2 others at 0.10 level. Among the dummies for the occupation categories, the dummy for the 'not in employment' category is significant but negative. This means that to this category service quality is inferior compared to those in salaried category (for which all occupation category dummies are zero). The coefficient of the dummy variable 'Gender' is significant and negative. In other words, the service quality of the commercial banks, as perceived by the male customers is significantly inferior compared to the service quality perceived by the female customers. The coefficient of the dummy variable 'location' is insignificant and positive which reveals that the service quality of banks does not differ significantly for Tezpur and Guwahati. This implies that the service quality of banks in a large city is similar to that of in a small town.

But the primary interest of the exercise is, however, to study the difference in service quality across the bank categories. Here, out of the four dummies of the group three are statistically highly significant. The dummy for the SBI group, though positive is not significant. This means that there is no significant difference in service quality of SBI from the service quality of Nationalised Banks group (the category for which all bank category dummies take the value zero). The dummy for RRB is negative and significant which means that compared to the Nationalised Banks group the service quality of the RRB is inferior. Finally, the dummies for the new and old private

Table 7. Results of regression analysis between service quality index and bank categories, gender, location and occupation

Variables/Items	Co-Efficients/ Values	Standard Error	t Value (df=262)
Constant (α)	0.259	0.058	4.499***
SBI (D_1)	0.049	0.059	0.830
RRB (D_2)	-0.631	0.065	-9.731***
NPSB (D_3)	0.784	0.050	15.794***
OPSB (D_4)	0.456	0.095	4.806***
Gender (G_5)	-0.085	-0.066	-1.721*
Location (L_6)	0.052	0.042	1.257
Self employment (C_7)	0.027	0.044	0.608
Not in employment (C_8)	-0.113	0.063	-1.812*
R^2	0.691		
$F(\gamma_1=8, \gamma_2=262)$	73.114***		

Note: *** and * mean significant at 0.01 and 0.1 levels respectively.

sector bank groups are positive and significant revealing that service quality of these two groups of banks is significantly superior to that of Nationalised Banks group. Among the bank categories, the new private sector banks group has the highest positive significant impact upon the overall service quality of the commercial banks in the state followed by the old private sector banks group.

4. CONCLUSION

The study above has clearly reflected that the private sector banks' service quality is relatively better than that of public sector banks. The private sector banks have a higher index for all the five service quality measuring dimensions as well as in the overall service quality index or MSP value. The government and the concern authorities should take note of this as the sector is overwhelmingly dominated by the public sector banks in the state but in terms of service quality they are behind their counter parts in private sector. While studying the mean difference of the reliability dimension, one important finding has appeared. It is found that the customers think that their money is safe irrespective of the ownership types of bank. This is certainly against the popular belief of the general public that money is relatively safer in the public sector banks compared to private sector banks. This can be considered as a big achievement of the private banks as they have able to generate trust of people upon them.

The superiority of the private banks obviously put a question mark upon efficiency in delivering services by the public sector banks. The public banks must try to improve the things as quickly as possible in order to compete with the private banks. It has also been clear from the study that in terms of reliability also people has given preference to the private banks making them the first choice. This has been a strong point of the public sector banks for long as they are always backed by the government and people feel that in case of any eventuality the government will take care of their wealth. But the study has revealed that people do have same kind of belief on the private sector banks as well. The RBI must try to improve the service quality of the public sector banks by following the same kind of service procedures and techniques as followed by the private banks. This is required as majority of the customers is still with the public sector banks and more importantly in an underdeveloped state like Assam the role of the public sector banks in the process of economic development is very crucial.

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KEY TERMS AND DEFINITIONS

Service Quality: A comparison of expectations with performance. A business with high service quality will meet customer needs whilst remaining economically competitive. Improved service quality may increase economic competitiveness. This aim may be achieved by understanding and improving operational processes, identifying problems quickly and systematically, establishing valid and reliable service performance measures, and measuring customer satisfaction and other performance outcomes.

SERVPERF: The performance component of the Service Quality scale (SERVQUAL), which has been shown to measure five underlying dimensions corresponding to Tangibles, Reliability, Responsiveness, Assurance, and Empathy.

Chapter 19
Food Tour of India

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ABSTRACT

A food tour of any country is not generated overnight. It is the result of increasing taste of tourists while visiting any destination. No one carries food for the longer tour to any destination. On the spot encounters with foods of the region makes a tourist remember and pass on the information to his acquaintances. Thus, food tourism develops, and the stakeholder becomes proud of their regional foods. It exists in all the places of India, which is varied with vast variety. Culture of a particular region is maintained due to the prevailing food, which reflects in terms of other social activities. This chapter is an attempt to focus food as a destination development in India. Various Indian foods by different communities are an attraction for food lovers and connoisseurs.

INTRODUCTION

India's cuisine is as rich and diverse as her people. Indian Cooking derives from a 4000 year old timeline, during which culture has changed; geographical boundaries have changed significantly leading to confusing terms such as sub-continental cuisine while other parts of a region want a separate culinary identity. Unfortunately since India's root cuisine precedes the subsequent subdivisions trying to distinguish between modern India's cuisine and that of its neighbors, is not really feasible.

Indian Cooking has however evolved significantly over time and the varying influences brought into the country by the various rulers and travelers, it has not lost its original identity, rather become richer with the assimilation of the myriad influences. This is very apparent in some of the unique regional cuisines.

2000 BC and Earlier: Most people believe that the origins of Indian history and therefore the cuisine are as old as mankind itself. Most people believe that the Ayurvedic tradition of cooking which is a complete holistic approach to cooking evolved at this point in time. This lays the foundation of the concept that everything we eat affects both our body and mind; therefore food should be pure, from nature, and balanced. The core balance consists of balancing the six tastes – Sweet. Sour, Salty, Pungent, Bitter, and Astringent. These tastes relate to the attributes of Essence and Effect.

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1000 BC: At this point we see the first movement of outsiders into the country; this forms the origins of the Indus Valley Civilizations. The Mohenjo-Daro people are believed to have been pushed to the Southern Part of the country and the cuisine there is still largely vegetarian. The roots of Hinduism are shaped at this point; the Vedas or the religious texts are developed at this point as is the Mahabharatha. The caste system is developed at this point in time, dividing food habits of people broadly by caste, for example the Brahmins for the most part were vegetarians while the *Khatriyas* were non-vegetarian.

600 BC: We see the emergence of Buddhism and Jainism, the later has a marked influence on the cuisine in some parts of the countries. Jains were strong believers in non-violence, traditional Jain cuisine apart from being cooked without meat was also cooked without onion and garlic. During the Vedic period (1500-500 BC), the priestly castes sacrificed animals to appease and gain boons from the gods, after which the flesh was consumed. But the trend of meat-eating shifted with the times. The anti-meat_eating sentiment was already felt at the end of the Vedic period. This period also saw the rise of Buddhisln and Jainism, the founders of which abhorred the practice of sacrificing and consuming the flesh of animals, preaching the principle of *ahimsa* or ''non-harming''. To win back these converts into their fold, the Hindu priests advocated against killing, their public appeal beginning around the 1st century BC.

400 BC: Parts of India were ruled by Alexander the Great, in the 326 BC period, but generally this period was the period of the Mauryan Dynasty. The Mauryan dynasty especially King Ashok was responsible for the further development of Buddhism, this period also saw the development of Buddhism outside India, which would lead people to people there must have been some cross-pollination with food. There are references to the development and production of several varieties of natural liquor that were consumed for recreation. The Mauryan economy was also agriculture driven which resulted in the base of all the grain cuisine in India.

AD –1200: This period was the period of several North Indian dynasties, including the Gupta Dynasty which was noted for its love of the arts and there were several visiting travelers during this time. This was also known as the Golden Age of India Art, there were several travelers who visited India and carried with them knowledge and products like tea and spices. In the South of India notable dynasties were the Hoysala Dynasty. But from a culinary perspective there are still no significant external influences brought into the country.

1200-1500AD: This period is the period of Muslim Invasions and the first entry of several foreign invaders into the country. Vasco Da Gama arrived in India in 1498 to explore opportunities for trade which later resulted in colonization of parts of India by the Portuguese, the most notable example of this influence is seen in the cuisine of Goa, in Western India. The Khilji Dynasty ruled in Northern India during a significant period of time, an interesting travelogue of this period is provided by Ibn Batuta a Moroccan traveler in the court of Mohamed Bin Tughluk. In one instance he describes a meal served to him where is outlines the use of ghee, yogurt, pickles, and that it comprised of several courses including a milk-based dessert.

1500-1800 AD: This is the period of the Moghul empire and the emergence of the Moglai cuisine that people now associate with India. It includes the addition of several seasonings like saffron, the addition of nuts and cooking in the "Dum" or sealed pot method of cooking. In the South of India, you have the Sultan dynasty in Hyderabad where the similar influences are permeated into the region. There is a continuation of other European influences in parts of South India such as Kerala where you see the beginning of the Syrian Christian cuisine.

1800 – 1947 AD: This was the period of the British rule in India and the love affair of the English with Indian food. This generally was hardly a glorified period in Indian history, but the British loved the general elaborate way of eating and adapted several of the food choices to their taste and developed the "curry" as a simple spice to help them cook Indian spice. This period resulted in the emergence of the Anglo-Indian cuisine and the emergence of certain "Raj" traditions like that of "high-tea" an elaborate late afternoon meal served with tea.

1947AD: This is the post-independence period which changed Indian cuisine to sub-continental cuisine since the Indian land mass was divided into several countries most notably Pakistan and Bangladesh, that inherited the following ancient history that has developed into today's culinary tradition.

Literature Review

Reynolds (1993) discussed the importance of preserving traditional foods as an essential part of sustainable tourism. There is now a growing recognition, in many parts of the world, of the importance of food to the overall tourism experience. There is also an acceptance that food is not always a mere supporting act in the tourism product. Sometimes it can, and does, play a starring role. Indeed, in certain situations around the globe, the promise of an exciting food and drink culture, or experience, can be the driving force that motivates and enthuse people to visit certain holiday destinations.

Telfer and Wall (1996) commented on the linkages that exist between tourism and food production. The concept that 'local' food can form an essential and innovative part of a regional tourism marketing strategy and this argument is now gaining ground. There are a growing number of public and private initiatives that demonstrate this commitment to this idea.

According to Beardworth and Keil (1997), eating out, for example, in certain circumstances has more symbolic aspects than eating in. It can transform emotions into commodities which are sold back to use, i.e. a romantic dinner for two or a celebratory dinner,. while restaurants are a 'place ballet' where both the provider and the consumer act in a highly choreographed and symbolic manner (Bell & Valentine, 1997).

Studies by Beardsworth and Keil (1996) and Mennell, Muriott, and Otlerloo (1992) suggested that since human eating is not merely adaptive but also a cultural phenomenon. Neophobia and neophylia among human are engendered by both biological and cultural influences. There are considerable differences between cultures in the extent to which they encourage neophylic tendencies. The neophylic tendencies of modern westerners led to an accelerated addition of new foodstuffs and dishes form even more remote cuisines (such as the Chinese and the Japanese) to their daily fare.

Both Finkelstein (1989) and Wood (1995) have argued that these attributes of a restaurant, collectively gave the restaurant its particular identity and character, which directly or indirectly intervene in the act of dining and post purchase behavior, i.e. return or non-return.

Peters (1997) also links the concept of wine tourism to the land and suggests that when viticulture is successful, it transforms the local landscapes into a combination of agriculture, industry and tourism. Peter (1997) refers to such wine regions as 'winescapes'.

In wine and food, risk is closely related to the concepts of neophilia and neophobia. In wine, for example, Dodd (1997) and Mitchell suggest that there are neophilic tendencies within individuals with an advanced level of wine knowledge that mean that are constantly seeking new wine experiences (i.e. visiting new wineries, tasting new wines and matching new wines with different foods). Neophilia is also widely discussed within food literature, where it is suggested that human omnivorous behavior is a paradox between neophilic and neophobic tendencies

According to Beardworth and Keil, 1997 this paradox occurs at three levels: -

1. Pleasure versus displeasure (seeking new flavors but the fear of unpalatable flavors.)
2. Health versus illness (ensuring a varied healthy diet without encountering toxins), and
3. Life versus death (to maintain our life other organisms must die)

Tuorila et al. (1994) suggest that neophobia in food consumption results in those in with neophobic tendencies disliking novel looking, smelling and tasting foods.. In contrast Bell and Valentine (1997) have suggested that the development of 'new cuisines' and the globalization of national cuisines around the world has relied on neophilic tendencies and that travel has long involved food neophilia as an important motivator (e.g. Grand Tours). Neophilia and involvement are, therefore, important concepts in the discussion of the food tourism experience. They provide an insight into some of the experiential differences observed in food tourism consumer behavior.

Hall and Macionis (1998) suggest that, "Wine and food can be expressive of a regional culture as well as regional environment. Such a relationship is extremely significant for tourism because of the possibilities of utilizing wine and the associated vineyard landscape as a means of establishing strong regional identity in the tourism marketplace" (p. 199).

Rimmington and Yuksel, (1998) found that food was the fourth most important contributor to the satisfaction of visitors, and the most important reason why tourists return to Turkey.. Food is believed to rank alongside climate, accommodation and scenery as important destination attributes and an important activity during holiday (Jenkins, 1999). Consumers are becoming increasingly interested in cuisine and visiting destinations for culinary experiences (Faulkner et al., 1999). In the light of emerging trends, various tourism industry bodies have become progressively more aware of the need to market, develop and promote the restaurant industry as part of the tourism product

Sparks et al. (2000) aimed to develop a better understanding of the contribution of restaurant sector to tourist destination attractiveness. Besides serving excellent food, good service, the location of the restaurant, its décor and intangible aspects such as the ambience and atmosphere were reported to be important factors essential to enhance patrons' culinary experiences.

Fischler has pointed out; eating involves the concrete "incorporation" (ingestion) of stuff from the environment into the body swallowing every bit of food constitutes, in principle, an irreversible decision. Taste is the principal regulator of this ecological exchange between the bodies and routinized in the individual's everyday life; but it increases in importance in the often novel, unaccustomed, and strange situations in which tourists find them on a trip.

Any study of the place of food in tourism will indeed have to analyze its role as an attraction. Tourist may forego a sightseeing trip on his program if he finds it unattractive or intimidating, but he can't avoid eating (and drinking), even if the food is unfamiliar to him. At an International Conference dedicated to "Local Food and Tourism" held in Cyprus in November, 2000, majority of papers ware dedicated to local food as an attraction in different destinations. (Len, 2000; Van Westering, Poria, & Liapis, 2000). "... Every tourist is a voyeuring gourmand…" (Lacy & Douglass, 2002, p. 8).

Hall and Mitchell (2000) debate the roll of cuisine as a factor in globalization and localization and Hjalgar and Corigliano (2000), examined the development of food standards for tourists.

Food has become an important element in the marketing of tourism (Hashimoto & Telfer, 1999) and in determining visitor satisfaction (Nield, Kozak, & Le Grys, 2000; Rimmington & Yuksel, 1998), as well as an important component of hospitality studies (Wood, 2000).. However, as pointed out by Mitchel, Hall, and McIntosh (2000) in relation to wine tourism, "profiles of wine tourists in one region should not automatically be assumed to be the same as in another, or even from one winery to another" (p. 123). Understanding the differences between visitors becomes very important for marketers and operators in targeting potential food tourists.

Richards (2000) found that tourists often place considerable emphasis on how they feel at a destination and how they experience what the destination offers, by carefully selecting that special restaurant and/or food that might fulfill a particular personal desire.... Some travel organizations (Intrepid Travel, 2004) regularly offer gourmet or culinary holidays to Asia, Italy and France; holidays with cooking and wine appreciation classes in Tuscany and Provence, Melbourne and Sydney, in Australia, are often marketed as food and wine and restaurant destinations; and wine regions of France, the Barossa Valley in Australia, and Napa Valley and Sonoma Valley in California have become premier wine tourism destinations.

As Ferguson (2000) suggests, the "food ways of every country are a direct reflection of everything else about the country- its geography, history, culture, people," and hence provide a special sensory windows into the culture of a country for tourists who are willing to taste (p. 9). Hall (2002) argues that wine food and tourism industry rely on regional branding for market leverage and promotion and thus the appellation, or the regional 'brands' become an important source of differentiation and value added for rural regions. However, while food is an important part of regional identity and food production does have a substantial impact on the landscape it is very difficult to separate 'foods capes' from broader concerns surrounding agricultural areas, by their nature, are landscapes of food production.

Mitchel, Hall, and Mcintosh (2000, p. 118) suggested that consumer research is important for stakeholders in wine tourism because it can help provide important insights into who the wine tourist is, what motivates them to visit a winery, take a guided tour, attend a wine festival or purchase wine and why, thus allowing marketers and managers to effectively target and develop markets. As per Kivela and Chu (2001), the destination's restaurant's ambience and cuisine, and/or vineyards, are legitimate sources of pleasure that generate emotions and experiences, it is hoped pleasant ones, that they are supposed to be having while on holiday. It must be said, however, that pleasure does not always have an enduring effect and that it does not diminish over time. Also, although tourists often dine out in search of new taste and culinary experiences, or when they discover a new vineyard, they may also encounter disappointment from time to time.

Hjalager (2002) concluded that an increasing number of tourists' destinations are very sought after because of their unique gastronomy. These destinations are also known as the "Foodie" and/or wine holiday destinations, for example, cooking holidays in Tuscany and Lyons in France, Melbourne's restaurant and wine scene, Munich's Oktoberfest, wine-tasting tour of Bordeaux, and so on. For this gastronomy is a central feature of the tourist attraction.

Destination portfolios consist of a variety of tangible and intangible goods and services. Food (including beverages) can form one of the most important of these elements. It can act as either a primary or secondary motivator (Quan & Wang, 2004) that adds value to the image of a destination (Boniface, 2003; Boyne, Hall, & Wialliams, 2003; du Rand, Heath, & Alberts, 2003; Long, 2004). Food is one of the most enjoyable activities that tourist undertake during their holiday (Ryan, 1977), .and interestingly, is the item that they are least likely to consider reducing expenditure to consume (Pyo, Uysal, & McLellan, 1991).

More and more people are now traveling for reasons of gastronomy (Bessiere, 1998; Hall & Sharples, 2003; Long, 2004). As a result, food tourism, in its broadest sense, has gained a higher profile as a pull factor in destination marketing (Boniface, 2003; Cohen & Avieli, 2004; Hall & Sharples, 2003; Hjalager & Richards, 2002).

A growing body of literature suggests that food can play an important role in tourist's destination choice (Bessiere, 1998; Boniface, 2003; Cohen & Avieli, 2004; Frochet, 2003; Hjalager & Richards, 2002; Long, 2004) and, most significantly, in visitor satisfaction (Bessiere, Hall, & Sharples, 2003; Ryan, 1997). The desire to try different foods may be a primary motivator for some or part of the bundle of secondary motivators for others (Hall & Sharples, 2003; Quan & Wang, 2004).

Hall (2002) argues that wine, food and tourism industries rely on regional branding for market leverage and promotion and thus the appellation, or the regional 'brands' become an important source of differentiation and value added for rural regions. One of the key components of the relationship between food and tourism and regional development is that of the promotion of local food (Hall, 2002). As well as direct purchase by consumers, the use of local food by restaurants is also significant in enhancing local food production, while branding menus in terms of their local food content may also be significant in marketing the menu and the restaurant as well as potentially leading to ongoing purchase of regional food stuff by consumers (Henchion & McIntyre, 2000)

As per Boyne et al. (2003), there is one available technique to create an image of 'safe exoticism' is to highlight unique tangible and intangible products and services, with local cuisine(s) as one such potential point of differentiation. While food tourism is relatively new field of academic enquiry, a growing body of literature suggests that trying authentic food may be the main or an important reason for traveling (Bessiere, 1998; Boniface, 2003; Long, 2004; Quan & Wang, 2004) and, most significantly, an important source of visitor satisfaction (Bessiere, 1998; Ryan, 1997).

Food related tourism can allow tourists to achieve desired goals of relaxation, excitement, escapism, status, education and lifestyle (Frochot, 2003). For example, Hu and Ritchi (1993) found that food was the fourth most important attribute in the way tourists perceive the attractiveness of a destination, after climate, accommodation and scenery. Similarly, Jenkins (1999) ranked food in the ninth position. In their comparative research among Turkey, Egypt, Greece, and Italy, Bagloglu and McCleary (1999) found that visitors rated Italy as having appealing local cuisine.

Hall and Mitchell (2000) defined food tourism as visiting food exhibitions, food festivals, restaurants and specific locations for which food tasting and experiencing are the primary factor for travel. Boniface (2003), Hall and Sharples (2003), and Long (2004) also provide similar destinations for food tourism which is often called as culinary, gourmet and gastronomic tourism.

The Enteleca Research and Consultancy (2000, p. 3) segmented the tourist market into five groups:

1. Food Tourists.
2. Interested Purchasers.
3. The Un-reached.
4. The Unengaged.
5. Laggards.

The study concluded that food has an important role in the purchase decision for tourists surveyed. "Food Tourists" are the most committed group, but, as with other true special interest populations, represent only between 6% and 8% of the sample. Local food has an important role in their destination choice.

"Interested Purchasers" represent about one-third of the population. Food to them contributes to holiday satisfaction they sample local food when the opportunity arises. A third group, the "Un-reached tourist" (15 – 17%) believes food can contribute to the enjoyment of their holiday, but they seldom buy local foods. The "un-engaged" (22-24%) and "laggards" (17-18%) are those who have limited or no intention to try local food.

Telfer (2000) found that the Tastes of Niagara Programmed in southern Ontario, Canada, generated positive outcomes by forming strategic alliances among food producers, processors, distributors, hotels, restaurants, wineries and chefs to raise the profile of the regional cuisine.

Remington and Yuksel (2001) found that food was the fourth most important contributor to the satisfaction of the visitors, and the most important reason why tourist return to Turkey. Elsewhere Yuksel (2001) found that both the first time and repeat visitor commonly regard quality of food as one of the main reason to go back to turkey.

Scarpato (2002) opines that gastronomy as a contemporary cultural resource satisfies all the conventional requirements of cultural tourism. It is a viable alternative for new destinations that cannot benefit from sun, sea, and sand or that lack natural or historical resources. Gastronomy can add value to the tourist experience and is associated with quality tourism for travelers in search of new products and experiences that yield a high level of satisfaction, wine tourism being a good example.

Similarly, Boyne, Williams, and Hall (2002), in a study in Scotland, determined that visitors who had read a guidebook were ready to more money on meals consisting of locally produced food, preferred eating out more often and would buy local groceries. Nicholson and Pearce (2000), further, found that two food festivals in the south Island of New Zealand attracted a significant number of young female tourists. "According to du Rand et al. (2003) the way that restaurants are highlighted is an important indication about how well experiences of food are promoted in a destination.

A number of studies indicate that both Hong Kong (Au & Law, 2002; Enright & Newton, 2004, 2005; McKercher, Ho, & du Cros, 2004) and Turkey (Bagloglu & Mngaloglu, 2001; Kozak, 2001; Yuksel, 2001; Yuksel & Yuksel, 2001) could be classified as culinary destinations, at least in part, and that both offer a rich diversity of foods.

Food should be considered explicitly or implicitly when marketing local and regional destinations. Frochot's (2003) analysis of the contents of regional brochures in 19 regions in France showed that country dishes and raw products dominated images of food, while images of procedures of preparing food, chefs, restaurants and the presence of people in the pictures were under represented. By contrast images of food relating to communicating/sharing or to statement on status/lifestyle were not used in regional brochures in France.

A number of academic and consulting studies (Boyne et al., 2003; Lang Research, 2001) have concluded that a continuum of food tourists exists, based on the centrality of food in the travel decision making process. A segment of the market represents the sophisticated culinary tourist who travels to a destination with the primary intention of trying various foods, visiting specific types of restaurants, or visiting food markets and wineries. Nearly all activities and experiences are food or drink related.

A second group sees food is an important part of their decision making process, but not as the only or necessarily most important consideration. Movement through the continuum identifies progressively less committed tourists who engage in culinary activities, including a group of incidental food tourists for whom food and /or drink play no role in their decision making process. These findings correspond closely to other market studies of special interest tourists that also conclude a continuum of tourists exist (Acott, La Trobe, & Howard, 1998; D. K. Shifflets & Associates, Ltd., 2003; Silberberg, 1995).

Food has been regarded as not only being basic necessity foe tourist consumption but also an essential element of regional culture (Jones & Jenkins, 2002). Since food has been proven to be an important means of selling the identity and culture of a destination, food consumption is regarded as one of the important factor in destination marketing development. The other reason is that food consumption enables local food producers to add value to their products by creating a tourist experience around the raw materials (Hjalgar & Richards, 2002a) .

Moreover, it is important to recognize that food consumption is not only a means of generating revenues for a destination, but also an important part of tourist experience (Dttermer, 2001, pp. 356-357; Hjalgar & Richards, 2002b; Williams, 1997). Although there is still little literature in foods in tourism, there is much that can be borrowed from the literature on foods in unusual and non-daily contexts such as restaurants (Martens & Warde, 1997; Warde & Martens, 2000) and festivals (Humphrey & Humphrey, 1991).

The spectrum of Indian cuisine can be said to lie between two dietary extremes: vegetarianism and meat-eating. India is well-known for its tradition of vegetarianism which has a history spanning more than two millennia. But the adherence to vegetarianism or a *sattvik* diet was not restricted to the Brahmins. From northern India, orthodox Brahminical values and hence vegetarianism made its way beyond the Vindhya Mountains establishing itself in the south. Here, it gained immense popularity even amongst the non-Brahmins who deemed it as leading a meritorious lifestyle. The Brahmins continued their vegetarian fare for different reasons, excepting garlic and onions which were thought to arouse passions. A vegetarian diet for them meant that their minds would be pure to conduct the necessary rituals. However not all Brahmins are vegetarians. A classic example would be the Kashmiri Brahmins who continue to pride themselves on their mutton dishes. There are also the Brahmins of Bengal who eat fish. Thus vegetarianism became more linked with the cuisines of southern India rather than the north.

This general demarcation in food patterns persists in present-day India and can be explained. As India has been the crossroads of many peoples and cultures over centuries, foreign elements have invariably seeped into its culinary culture, sometin1es displacing or modifying local cuisines. One such foreign influence was the Muslims from western Asia whose culture swept across much of northern India in the 16th century. The invasion brought changes in many aspects of everyday life in India, including the palates of the Indian people which became tempered by a foreign taste.

CULTURE: Muslim infiltration into the subcontinent caused a gastronomic revolution. In fact, it created a marriage between the non-vegetarian fare of the Middle East and the rich gravies that were indigenous to India, creating what is known as Mughlai cuisine. Spices were added to cream and butter, rice was cooked with meat, and dishes were garnished with almonds, pistachios, cashews and raisins. India was also introduced to *kebabs* and *pilafs* (or *pulaos*). There was a variety of sweetmeats; the idea of ending the meal with a dessert being of Arabic origin. Most of these sweets were made of almonds, rice, wheat flour or coconut, sweetened with sugar and scented with rose-water.

The Mughal Emperors were of course great patrons of this style of cooking. Lavish dishes were prepared especially during the reigns of Jahangir (1605-27) and Shah Jahan (1627-58). In miniature paintings of this period it can be seen that the vessels used in court banquets included ones of jade, silver and Chinese porcelain. Relations between Muslims and Hindus were cordial especially during the early Mughal period. Converts to Islam changed their diet but the majority of the Hindus tended to be vegetarian excepting the Kshatriya castes and royal families who relished meat. Besides being vegetarian, the Hindus also prepared their foods differently. While the Muslims enjoyed *naans* cooked in an oven and *chapatis* prepared on griddles, the breads of the Hindus consisted of *puris* (made from whole wheat flour and oil) and *bhaturas* (made from white flour, yeast and oil). The latter were deep-fried in a pot resembling a wok called the *karhai*. Ideally such breads were deep-fried in *ghee* as it was a *pucca* or pure food. But *ghee* was only used by the rich; the poor had to be content with using sesamum or mustard oil. Dhal curry or *sambar*, was popular and has survived to this day. In the areas where rice was a predominant cereal, pancakes called *dhosakas* or *dosas* were made.

Styles of eating differed between the Hindus and the Muslims. In contrast to the Muslims, the

Hindus usually took their meals individually, a feature that may have developed as a result of rules regulating eating practices across castes. The Muslim stress on brotherhood spilled into the dietary arena as communal eating was the norm. A *dastur khan* consisting of a fine white calico cloth was spread on the floor, over which was placed the various dishes of the meal. It was customary to eat with the fingers which were washed in a*sailabchi* before and after eating. But for serving and carving, there were spoons and knives. To end a hearty meal, the Muslims, like their Hindu countrymen, chewed *paan* or the betel quid. This postprandial habit symbolizes hospitality extended by the hosts to the guests.

Although the Mughals did not sustain power for long, their food habits have continued to this day. Mughlai cuisine, although emphasizing meat, co-exists with vegetarianism. Like all other facets of life, India's culinary tradition is constantly changing in relation to vegetarianism and non-vegetarianism whereby adherence to a specific food habit becomes a powerful symbol of caste, ethnic group and religious orientation.

FOODS: In North India cuisines are well-known by the proportion use of high dairy products; milk, *paneer, ghee*, and yoghurt are all common ingredients. Other common ingredients are chilies, saffron, and nuts. North India use utensils like the *"tawa"* flat thick disk for baking flat breads like *roti* and *paratha,* and "*tandoor*" for baking breads such as *naan* and *kulcha*. For them their main meal might be tandoori chicken and a type of bread. The *samosa* is a popular North Indian snack, and commonly found around other parts of India,, Middle East and, Asia, and North America. A general variety is filled with boiled, fried, or mashes potato. Other fillings include minced meat, cheese, mushroom, and chick pea. Mostly to sum it up popular snacks,

East Indian cuisine is famous for its desert, in particular sweets like rasagolla, *chumchum, sandesh, rasabali, chhena poda, chhena gaja,* and *kherri*. Rather than just deserts East India offer delights such as poppy seeds. Traditional Bengali cuisines aren't spicy or faint. Like South India, rice is the staple grain in Eastern India also. A regular meal for them would consist of many side dishes made of vegetables. The most popular vegetables dishes of Orissa are *Dalma* and *Santula*. Traditional Bengali breakfast includes *pantabhat, doi-chirey, doodh-muree* with fruits with fruits.

Indian foods are mostly known for their soulful spices. There are so many different spices to Indian foods. Some of them are; almond, basil, bay leaf, and black mustard seeds. Many Indian vegetables are made with spices to give it a great taste. In India, pungent and strong spices are better. Herbs are also used in Indian foods, coconuts and mints are two main herbs that are mixed with spices to give Indian foods the taste. Herbs really help to balance out the spices against certain foods that may not need just spices in them. Tea is a staple beverage around India the finest varieties are grown in Darjeeling and Assam. It is normally prepared as *masala chai*, wherein the tea leaves are boiled in a mix of water, spices like cardamom, cloves, cinnamon, and ginger, and large amounts of milk to create a thick, sweet, milky mixture. Different varieties and flavors of Tea are prepared to take interest for people with different tastes all over the country. Another popular beverage is coffee, which is mostly served in South India. One of the finest varieties of Coffea arabica is grown around Mysore, Karnataka. Indian filter coffee, or *kaapi,* is also especially popular in South India. Other beverages include *nimbu pani* (lemonade), *lassi, chaach, badam doodh* (milk with nuts and cardamom), *sharbat* and coconut water.

The food available in India is as diverse as its culture, its racial structure, its geography and its climate. The essence of good Indian cooking revolves around the appropriate use of aromatic spices. The skill lies in the subtle blending of a variety of spices to enhance rather than overwhelm the basic flavor of a particular dish. These spices are also used as appetizers and digestives.

Besides spices, the other main ingredients of Indian cooking and Indian meals are milk products like *ghee* (used as a cooking medium) and curd or *dahi* Lentils or *dals* are also common across the country and regional preferences and availability determine the actual use in a particular area. Vegetables naturally differ across regions and with seasons. The style of cooking vegetables is dependent upon the main dish or cereal with which they are served. Whereas the *Sarson ka saag* (made with mustard leaves) is a perfect complement for the *Makke ki Roti* (maize bread) eaten in Punjab, the *sambhar* (lentil) and rice of Tamil Nadu taste best eaten with deep-fried vegetables.

Although a number of religions exist in India, the two cultures that have influenced Indian cooking and food habits are the Hindu and the Muslim traditions. Each new wave of settlers brought with them their own culinary practices. However, over time they adopted a lot of specialties and cooking methods from the Indian cuisine and blended the two to perfection. The Portuguese, the Persians and the British made important contributions to the Indian culinary scene. It was the British who started the commercial cultivation of tea in India.

A typical North-Indian meal would consist of *chapatis* or *rotis* (unleavened bread baked on a griddle) or *parathas* (unleavened bread fried on a griddle), rice and an assortment of accessories like *dals*, fried vegetables, curries, curd, *chutney*, and pickles. For dessert one could choose from the wide array of sweetmeats from Bengal like *rasagulla, sandesh, rasamalai* and *gulab-jamuns*. North Indian desserts are very similar in taste as they are derived from a milk pudding or rice base and are usually soaked in syrup. *Kheer* a form of rice pudding, *shahi tukra* or bread pudding and *kulfi*, a nutty ice-cream are other common northern desserts.

South Indian food is largely non-greasy, roasted and steamed. Rice is the staple diet and forms the basis of every meal. It is usually served with sambhar, rasam (a thin soup), dry and curried vegetables and a curd preparation called pachadi. Coconut is an important ingredient in all South Indian food. The South Indian dosa (rice pancakes), idli (steamed rice cakes) and vada, which is made of fermented rice and *dal*, are now popular throughout the country. The popular dishes from Kerala are *appams* (a rice pancake) and thick stews. Desserts from the south include the *Mysore pak* and the creamy *payasum*.

A meal is rounded off with the after-dinner *paan* or betel leaf which holds an assortment of digestive spices like aniseed, cloves, arecanut, and cardamom. Paan' is served as a digestive after some meals. The dark-green leaf of the betel-pepper plant is smeared with a little bit of lime and wrapped around a combination of spices like crushed betel-nuts, cardamom, aniseed, sugar and grated coconut. It is an astringent and is believed to help in clearing the system. Mumbai is known to be a good place for connoisseurs of paan.

In the arid areas of Rajasthan and Gujarat, a great variety of *dals* and preserves (*achars*) are used to substitute the lack of fresh vegetables and fruits. Tamilian food uses a lot of tamarind to impart sourness to a dish, whereas Andhra food can be really chili-hot. It is believed that a hot and spicy curry may be one of the best ways to combat the flu virus! From, ancient times Indian food has been on principle, divided into the *Satwik* and *Rajsik* kinds. The former was the food of the higher castes like the Brahmins and was supposed to be more inclined towards spirituality and health. It included vegetables and fruits but, not onions, garlic, root vegetables and mushrooms. The more liberal *Rajsik* food allowed eating just about anything under the sun, with the exception of beef. The warrior-kings like the Rajputs whose main requirements were strength and power ate this food. Many Indian dishes require an entire day's preparation of cutting vegetables, pounding spices on a stone or just sitting patiently by the fire for hours on end. On the other hand, there are simple dishes which are ideal for everyday eating.

Eating from a *'thali'*(a metal plate or banana leaf) is quite common in most parts of India. Both the North Indian and South Indian *thali* contain small bowls arranged inside the rim of the plate(or leaf), each filled with a different sort of spiced vegetarian food, curd and sweet. At the center of the *thali* you would find a heap of rice, some *puris* (wheat bread rolled into small circular shapes and deep-fried in hot oil) or *chapathis* (wheat bread rolled out into large circular shapes and shallow-fried over a hot '*tava*). Indians wash their hands immediately after and before eating a meal as it is believed that food tastes better when eaten with one's hands.

An everyday meal of a Punjabi farmer would be centered around bread, corn bread, greens and buttermilk (*lassi).* Buttermilk is whipped yogurt, and can be had sweetened or with salt and is usually very thick. Wheat is the staple food here. Shredded vegetables mixed with spices and stuffed into the dough, which is then rolled and roasted to make the delicious stuffed *parathas.* Some Punjabis also eat meat dishes, an Indian cottage cheese called *paneer, pilaus* garnished with fried onions and roasted nuts like cashew and topped with silver leaf and rose petals.

In the beautiful and rich valley of Kashmir, all dishes are built around the main course of rice. A thick-leafed green leafy vegetable called *'hak'* grows in abundance here and is used to make the delicious *'saag'.* The boat-dwelling people use the lotus roots as a substitute for meat. Morel mushrooms called '*gahchi*' are harvested and consumed around summer time. The tea drunk in

Kashmir is not orange pekoe or Twinning, but a spice-scented green tea called *'kahava'*, which is poured from a large metal kettle, called 'samovar'. Fresh fish found in the many lakes and streams here are also consumed with relish. Lamb and poultry are cooked in the Mughlai style. The Kashmiri equivalent of the *thali* is a 36-course meal called the '*waazwaan'.*

Bengalis eat a lot of fish and one of the delicacies called the 'hilsa' is spiced and wrapped in pumpkin leaf and cooked. Another unusual ingredient used in Bengali cooking is the bamboo shoot. Milk sweets from this region like the *Roshgolla, Sandesh*, *Cham-cham* are world famous. In the south of India, rice is eaten for breakfast, lunch and dinner. Raw rice, parboiled rice, *Basmathi* rice are some of the different types of rice eaten here. Parboiled rice is raw rice treated through a process wherein the ingredients and aroma of the husk are forced into the rice. Steamed rice dumplings or *idlis,* roasted rice pancakes or *dosais* are eaten along with coconut chutneys for breakfast. A *dosai* stuffed with spiced potatoes, vegetables or even minced lamb constitutes the famous '*masala dosai'.* Coconut, either in a shredded, grated or blended form is a must in most dishes here. Tender coconut water is drunk for its cooling effect(now available in most supermarkets in cartons) on the system. The Chettinad dishes from Tamil Nadu consist of a lot of meat and poultry cooked in tamarind and roasted spices.

Most Andhra food tends to be quite hot and spicy. Eating a banana or yogurt after such a meal can quench the fires raging within the system. Hyderabad, the capital city, is the home of the Muslim Nawabs (rulers) and is famous for its superb *biriyani*, simply delicious grilled *kababs, kurmas* and rich desserts (made with apricots).

In Mumbai, the food is a happy combination of north and south. Both rice and wheat are included in their diets. A lot of fish is available along the long coastline and the Bombay Duck and Pomfret preparations are delicious. Further down south along the coast, in Goa, a Portuguese influence is evident in dishes like the sweet and sour *Vindaloo,* duck *baffad, sorpotel* and *egg molie.* In Kerala, lamb stew and *appams*, Malabar fried prawns and *idlis*,*fish molie* and *dosai,* rice *puttu* and sweetened coconut milk are the many combinations eaten at breakfast. *Puttu* is glutinous rice powder steamed like a pudding in a bamboo shoot.

Sweets are very popular all over India and are usually cooked in a lot of fat. '*Jalebis*', luscious spiral shaped loops fried to a golden crisp and soaked in saffron syrup can be had from any street vendor in North India. *'Kheer'* or '*payasam'* are equivalents of the rice pudding and *'Kulfi'* is an Indian ice cream made in conical moulds and frozen.

Tea is drunk as a beverage in India. Tea from the hills of Darjeeling and Kalimpong are boiled in milk and water and served with a liberal dose of sugar. Filtered coffee is a favorite among South Indians and is a very sweet, milky version of coffee.

Prohibition has been imposed in some states like Gujarat. Among the local spirits available here is the famous *'Feni'* from Goa concocted from cashew and coconuts (an ideal beach drink). '*Toddy'* is tapped from coconut palms and is best drunk in the early hours of the morning. Most of the spices used in Indian food have been used for their medicinal properties in addition to the flavor and taste they impart. It is these complexities of regional food in India that make it a so very fascinating try.

FUTURE RESEARCH DIRECTION

Different packages should be designed keeping in mind consumer segmentation. Like North Indian Food Tour, Coastal Food Tour, Tribal Food Tour, Community Food Tour, Religious Food Tour, Festival Food Tour and alike. Any Food Tour organized should have support of local population for effective promotion and cost effectiveness. It should have coordination with other businesses that are either directly or indirectly linked to tourism. Constant revaluation is required to stay on top with improved ideas and innovations. The food handlers should focus only on their regional specialty alone and not bring something that does not fit into the geographical and cultural profile of that location. The infrastructure and facilities have to be simple, yet comfortable. The tourists should feel safe and have easy access to those dining facilities. Good planning is needed where community is inter-dependent in a small village for community support and encouragement.

CONCLUSION

In order to know the details about the foods of India one must visit to north, south, east and west part of the country in the slowest possible way and get himself involved in much of the eateries to dine out. A whirlwind tour to a particular place yields the dominant food of the region only but not the peoples' food. Similarly having food in a fine dining restaurant at any location can give best services to the tourists for the money spent but not the authentic way of service of the same. Food tour should be done in a relaxed mood but not hurriedly at all. Food not only gives satisfaction to a hungry tourist but also the culture of the community automatically gets reflected through that. Through the food of the region one can have a glance of the history and geography of the region too to some extent.

Development of food-tourism could be the best option for India, which has a huge population dependent on preparing and selling of foods on day to day basis. Also, 50% of people still live in villages and village foods are unaltered in spite of the modern ingredients used in urban foods. It is important for the urban people to have fair knowledge about authentic and traditional foods. Food tourism improves awareness among children regarding human dependence on nature, environment, processing of food and hard work put in by farmers. Tourists will have different experience depending on the location of the agricultural land. The crops in a hill station could be pepper, cardamom, peaches whereas in the lower regions crops could be rice, coconuts, mangos, vegetables and fruits. Thus, the tourist has a wide choice.

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KEY TERMS AND DEFINITIONS

Ayurveda: The ancient Hindu science of health and medicine.

Culture: The characteristics of a particular group of people, defined by everything from language, religion, cuisine, social habits, music, and art.

Dessert: A usually sweet course or dish, as of fruit, ice cream, or pastry, served at the end of a meal.

Food Tourism: Traveling to a destination to try some food of the region and experience the service, entertainment, and drinks, if any.

Regional Cuisine: Culinary products of any region for which it is famous, be it a single item or a combination of several items or dishes.

Thali Meals: Dollops of many preparations served together in one single platter in small mounds or in small service wares.

Traditional Foods: Foods consumed by the local population for a long time without any alteration in their composition, preparation, ingredients, and serving styles.

Chapter 20

Analysis of Human Resource in India over Last Three Decades in the Perspective of Society, Inequality, and Poverty

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ABSTRACT

The ideological aspects relating to the social framework of the Indian society have a tremendous appeal for the majority of the people. Some modifications occasionally have been the cause of unequal and uneven distribution of social causes, natural resources, national scopes, benefits, and opportunities. The population demography has a mixed nature of composition consisting of weaker to stronger in respect of education, affluence, cast construct, political and social status, etc., and consequently, it created two groups of people in the society – a group under the umbrella of exploitation, poverty, and insecurity, and the other being the reverse. This weaker section lying under the envelope of poverty developed because of this inequality, and it has been a permanent cause of adversities in Human Resource prospects in India. Human Resource is not an ordinary resource like money or material, but a resource to make all other resources usefully usable. This Human Resource needs to come through suitable scopes and opportunities so that they can develop themselves as required in the process of Human Resource planning. This chapter is an attempt to identify the real-life situation in this respect in India during the last three decades.

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1. INTRODUCTION

Indian society is one of the oldest and most complex one. Opinions of the scholars and historians differ regarding its antiquity. Some scholars have even said that it is as old as 500 B.C. Any study of Indian society and its history and culture cannot help recognizing one supreme characteristic of the Indian people. It is their vitality as a distinct type, with a distinct civilization of their own and mind as active as ever in the past. This mind had its uniqueness and this unique identity is because of its sense of value, attitude, norms, behavioral pattern etc. which in turn are the constructs of culture. Indian society on its own had its own societal culture as well as culture of the people who belong to this society. Since the society had undergone several phases of changes it had been subjected to changes in its cultural constructs. As observed by S. C. Dube (1990), "in accordance with several popular estimates it has covered a span of five thousand years since the period of its first civilization. During this long period, several waves of immigrants representing different ethnic strains and linguistic families have merged into its population to contribute to its diversity, richness and vitality.' This merging has emerged a heterogeneous mixture of different demographics of people in the society. Consequently, it had multiple impact and consequences in the society in the unequal distribution of property, uneven share of natural generating consumables and non consumable resources and also a differentiation of living and societal status.

The result of such phenomena had been deprivation, exploitation, class and caste consciousness in the society. These disparities had generated inequality in the society and inequality had given the birth of a section of people in the society which, as happens to be significant in number in any society, had been subject to victimization, oppression, deprivation etc. These had been the reason behind the generation of a class which had not seen anything else than darkness of the society or mankind.

The role of this adverse situation had been very much instrumental in creating large section human beings which as human resource was far from generating a healthy economy in the country because of their inadequacy in education, desired skill and expertise. They had very little to contribute for a developmental economy as in India.

However, presently there appear to be a turn in the situation. Since spread of literacy and education are responsibility of state governments in India, state governments with financial aids from central governments are taking measures to come out the adverse societal effect upon human Resource.

2. INDIAN SOCIETY THROUGH THE AGES

Indian society is one of the oldest and most complex one. Opinion of the scholars and historians differ regarding its antiquity. Some scholars are of the opinion that it is as old as 5000 B.C.

Study of the Indian society and its history and culture recognize one supreme characteristic of Indian people. It is their vitality as a distinct type, with distinct civilization of their own and a mind as active as ever in the past. As stated by Sir Jadunath Sarkar (1979), "The Indian people of today are no doubt as composite ethnic product; but whatever their different constituent elements may have been in origin, they have all acquired a common Indian stamp, and have all being contributing to a common culture and building up a common type of tradition, thought and literature." Sir Herbert Risley, a British ethnographer who was very skeptical about India's claim to be considered as one people, had also been forced to admit this commonness of Indian culture. He acknowledged it when he wrote, "Beneath the many fold diversities of physical and social type, language, custom and religion which strikes the observer in India, there can still be discerned a certain 'underlying uniformity of life from Himalayas to Cape Camorin."

Indian society has withstood the waves of foreign invasion, political onslaughts, religious experiments, natural disasters, and the shocks of centuries. Its best right to live is its vital power displayed through many thousand years of shocking changes in our land.

2.1. Impact of the West

The impact of the Western culture and civilization on the Indian socioeconomic system can be analyzed in the following manner:

1. **Impact on Institutions: Establishment of New Institutions:** Western contact brought about changes in the institutional systems. Old institutions either modified or gave place to the new ones.
   a. **Impact on Education:** Western education broadened the vision and outlook of the people which made them to be conscious over their rights and freedom. In place of *traditional educational institutions,* the western type of formal educational institutions such as schools, colleges, technical institutes, research centers, universities etc. were established. English became the medium of language in these institutions and it also initiated spread of English culture.
   b. **Impact on the Economic System:** The modern capitalist mode of economy introduced by British gave a fatal blow to the economic self reliance of the village and also to the existing "*Jajmani system" [**Jajmani System** refers to a system of distribution whereby high caste land owning families, called Jajmans, are provided services and products by various lower casts such as carpenters, barbers, potters, blacksmiths, washermen etc. It is a system governed by relationships based on reciprocity in inter-caste relationships in villages.* – Ram Ahuja's (1999) "*Indian social system.*
   c. **Impact *on* the Legal System:** Due to British contact, India came under one system of common law and legislation. In place of the tradition, caste *panchayts* and the village *Nyaya Panchayats;* the modern law, legislation, court, police and other legal systems came to stay.
   d. **Introduction of New Systems:** In place of joint families, local communities, caste fraternities etc. there came new institutional arrangements, such as social welfare schemes, life insurance schemes, social security schemes, etc. in order to provide protection and security to people whenever required.
2. **Miraculous Changes in Field of Technology:** The modernization of the age old Indian technology, agriculture, entrepreneurship, and industry led to economic advancement of the country. The new and large scale industries of the country introduced by the British exposed Indians to the influence of Western technology. The process of industrialization is normally associated with the growth of towns and cities which started attracting people from rural areas.
3. **Selection of New Values and Ideologies:** The process of Westernization implies "*certain value preferences"* also. These are as followings:
   a. **Humanitarianism:** It includes in itself various other values and it implies "*an active concern for the welfare of all human beings irrespective of caste, economic position, religion, age, and sex."*
   b. **Egalitarianism:** Which upholds the principle of equality that is equality of sex, caste, class, color, creed, race and religion.

c. **Rationalism:** It means a system of belief regulated by reason not authority.

d. **Secularism:** This is an ideology which believes that the state, morals, education etc. should be independent of religion.

These ideologies and values had a great impact on Indians. These changed the traditional outlook and attitude of people. Educated Indians came under the heavy influence of these values. They realized the importance of reasoning.

4. **Creation of Intense Desire to Increase the Standard of Living or Material Life:** The use of Western technology and the scientific equipment and gadgets and acceptance of the Western model of industrialism created new aspirations and ambitions in the minds of people. The pull of spiritualism became weakened and the attractions of comforts and luxuries of life got strengthened. The craving towards more and more material pleasures and economic prosperity increased.

2.2. Negative Effects of Western Contact

Though the processes of westernization in the beginning brought along with a number of positive effects, it also led to some negative effects. Western way of life became so attractive that it made some educated Indians to imitate the West indiscriminately. In their eagerness to imitate the West, these Indians blindly picked up even the deficiencies, weaknesses, vices, and evil practices of the West. In their attempts to show themselves as more forward and progressive, they started ignoring and criticizing Indian cultural heritage, way of life and living. This also hampered the development of the spirit of nationalism in India.

According obtained through Western contact. ng to Sir Jadunath Sarkar (1979), **"**The British policy served to encourage all separatist tendencies that oppose national union and helped to widen the lines of cleavage. British policy consistently negated everything that could make the Indians strong in the modern world."

2.3. Trends towards Modernity and Tradition

Present day Indian society is experiencing strong contrary pulls towards - modernity and tradition. On the one hand, the country has adopted and promoted the ideology of democracy, egalitarianism, secularism, and social justice; on the other exploitative structures have never been seriously challenged, the sentimental longing for tradition is tapped for political gains. Also religious revivalism and, later fundamentalism have not been dealt with adequately. Also problems of economic backwardness, poverty, rural indebtedness, unemployment, caste conflicts, communal disharmony, shortages of capital, religious conservatism, lack of technically skilled workers, imperfect means of mobilizing human and material resources etc. have not been handled with knowledge and experience obtained through the impacts and influences of West.

2.4. Society as Observed in Present State of Affair Reached through Successive Social Upheavals

The observation can be summarized with the remarks of S. C. Dube (1990) in his work "Indian Society. The author observes, "The politicalization of Varna and *Jati* has led to diverse forms of atrocities on the lower *Jatis*, who are being prevented from using their electoral strength to improve their lot. In some areas the hold of *Jatis* has weakened, but in others it has fortified and strengthened itself. India's society, economy and polity have paid only lip service to the cause of the degraded, the weak, the vulnerable but they have not been able to find any viable solution to their problems. The clearly discernible results are resentment and resistance, both very understandable. Tradition has its uses, but regard for it cannot be made an alibi for the perpetuation of exploitation, inequality and injustice."

The society, as it is today, is the breeding nest of deprivation, inequality and poverty. This has penetrated in its root and its effect has cursed the nation with different adverse effects leading to irreparable harm upon humanity and its role in nation and its economy.

3. GROWTH OF INEQUALITY IN SOCIETY AND ITS ROLE

Economic growth has been an important motivator for individuals and policy makers to debate and initiate policies that would lead to an increase in aggregate national wealth. It is observed that in spite of economic growth, development of all components of the population is not taking place. Though these two terms are used interchangeably, social scientists have given different meanings to the two terms. Inequality refers to disparities in distribution in income and economic assets of individuals or households.

3.1. Development

The concept of 'development' has wider connotation than the concept of 'growth'. Economic development refers to the process of economic and social transformation that takes place in a country or in some part of the country. Factors like literacy, levels of income of the population, inequality and health care facilities are taken into consideration while talking about development.

Economic growth signifies the quantitative dimensions while economic development refers to qualitative aspects of progress being made. There are several factors which can improve quality of life. The most important ones are; improvements in literacy and skill formation, accessibility to basic needs such as food, drinking water, health care and housing facilities and availability of infrastructure such as roads, electricity and communication. Economists have emphasized both the productive capacity and the distributional aspects prevalent in an economy. It is often argued that economic growth might benefit some groups more and faster thus leading to divisions in the society. Steep inequality in an economy may stifle the uniform growth of humanity.

It is worth mentioning that growth in economy may take place with creation of inequality. It has been observed that policies of economic growth pursued in the past have not led to equitable development across countries or within countries. Within countries there have been pockets of prosperity surrounded by poverty and illiteracy. In most of these countries, growth is confined to small areas, particularly urban centers and some industrial areas. They most often have a wealthy minority with vast levels of inequality amongst the poor majority. These inequalities are visible in terms of deprivation of various kinds and a very low quality of life.

3.2. Income Inequalities

Total national income divided by the number of persons in a country gives the per capita income, which is an average figure of the total income of a country. This measure does not tell us about how the income is distributed amongst people. The income may not be equitably accessible to the entire population. Hence an increase in national income or per capita income does not tell us the real condition of an average person in society.

The pattern of distribution of income in an economy informs us of the likely pattern of consumption. Hence, the study of consumption pattern is linked to the study of incomes and savings. Long term trends in income influence the expenditure pattern. Extreme inequality in income leads to a shift in the investment behavior in an economy.

Income inequalities are also further accentuated by other social deprivations that low income earners experience. They have low level of skill and end up getting employment in low productivity jobs with low levels of wages. This reduces their chances of skill up gradation thereby keeping them in low wage jobs. Low income means bad housing, negligible health care and bad nutrition. This is then the vicious circle in which the poor are compelled to live.

3.3. Inverted –U Hypothesis

It was argued by Simon Kuznets (1955) that a country's industrialization process in the initial phases could lead to higher income inequalities. The process gets reversed as the level of industrialization goes up. Kuznets gave the example of developed countries to prove his argument. He hypothesized that the relationship between the level of economic development and income inequality takes the form of an inverted – U curve. This hypothesis is commonly referred to as the inverted –U hypothesis and the curve is called the Kuznets' curve. Kuznets postulated that the intersectoral shifts which occur in the early stages of economic development accentuate inequality.

The possible reason behind Kuznets curve is that in early stages of development, when investment in physical capital is the main engine of economic growth, inequality spurs growth by directing resources towards those who save and invest the most. Moreover, inequality impedes growth by hurting education because the poor people cannot fully finance their education.

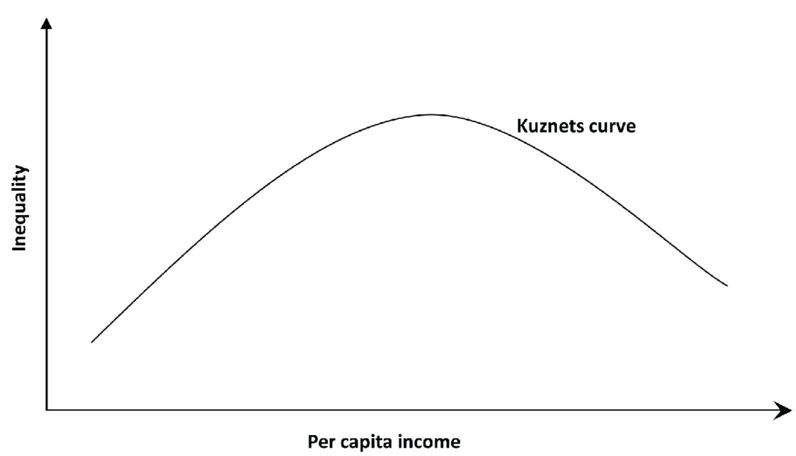
In India many studies have shown the implication of inverted –U to justify the slow growth rate or adverse growth rate among a section of people.

1. High income inequality may exist and increase absolute poverty which may, in turn adversely affect the quality of health, education, nutrition etc. resulting in poor quality of human capital.
2. Rising inequality in favor of a small minority of the population may heighten social and political tension and threaten a country's long run development process.

3.4. Inequalities in India

India is a good example of growth with inequalities. With an average growth rate of 6%, the level of deprivation in terms of nutrition, healthcare, and education is extremely high at more than 50% of the total population not being able to access reasonable levels of education and healthcare. India has pockets of advanced and modern industry

Figure 1. Inverted –U Hypothesis



and agriculture. These coexist with large areas of unorganized industrial sector and subsistence agriculture. India has the largest number of people living on less than $1 a day. Indicators like the proportion of population below the poverty line, the extent of malnourishment, illiteracy, lack of health care point towards high level of inequality in the country.

4. POVERTY AND ITS INTERPRETATION AS IN INDIA

Poverty is often defined in terms of income levels of a set of population. The income criteria are preferred as an indicator of poverty as it is easy to establish the income earned by a person or household. A number of other indicators can be added to these measurements based on their money value to arrive at a comprehensive measurement of poverty.

Poverty refers to different forms of deprivation that can be expressed in a variety of terms (i.e. income, basic needs and human capabilities).

Per Capita Income Concept

Per capita income can be used as a measure of household welfare. A threshold level of income is used to differentiate the poor from the non poor.

Basic Needs Concept

This approach measures welfare of individuals or households on the basis of certain basic needs such as food, clothing, housing, education and simple medical treatment. It define poverty as the deprivation of requirements, mainly material for meeting basic human needs.

Food Ratio Concept

The Engel coefficient derived from Engel curve proposes that the ratio of food to non-food expenditure could serve as a useful welfare indicator. Studies have shown that households with higher levels of income usually spend a smaller fraction of their total income on food while the reverse applies to households with lower income.

Per Capita Food Consumption

This approach hinges directly on a family's propensity to consume food items. In this approach welfare is measured strictly in terms of per capita food consumption.

Calories Concept

This definition of poverty focuses on calorie intake instead of expenditure on food items and

Figure 2. Poverty line in India

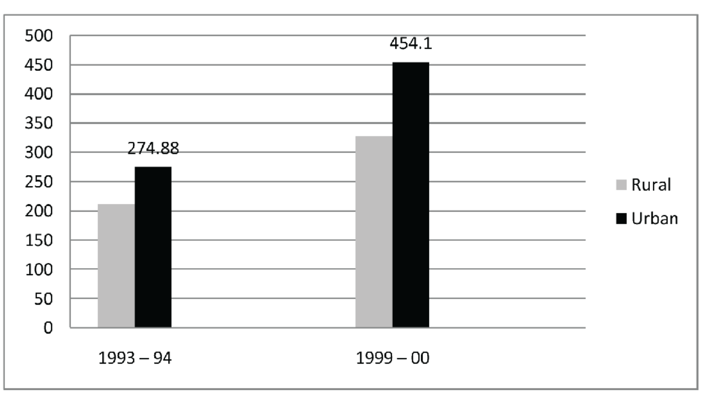
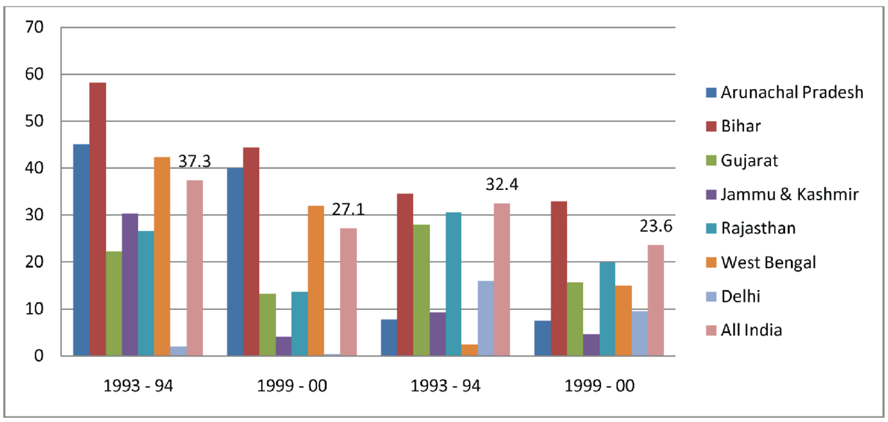


Table 1. Poverty line in India (Rupees per capita per capita per month)

Year	Rural	Urban
1993 – 94	211.3	274.9
1999 – 00	327.6	454.1

Source: Planning Commission of India

Figure 3. Poverty ratio at the state level – selected states (in percent)



therefore is based on nutritional requirements of human beings. Once there is an agreement on the acceptable calorie intake, the measure allows for comparison across time and space.

Medical Data Concept

Medical indicators and data on nutrition can also be used as an indicator of welfare. This approach is especially important when the focus of the study is on young children.

Per Adult Equivalence Consumption

This approach to defining poverty uses total consumption expenditure, adjusted for household equivalent scales, as a measure of household welfare. Equivalent scales control for differences in household composition based on age and gender.

Poverty Estimates in India

Globally the decade of 1990s is considered a decade of jobless growth, which means economic growth, has taken place, but employment growth has stagnated. This has forced a large number of people to stay unemployed or to take up low paying jobs on the unrecognized sectors.

In recent years in India it has been observed that large sections of people in developing countries are facing increased joblessness, lack of health care facilities and food security. Malnutrition, illiteracy, and lack of livelihood appear to have become crucial issues to resolve the problem of deprivation and poverty.

Poverty Level in India

The prevalence of a large proportion of population which can be called absolute poor is overwhelming in India. The process of development

Table 2. Poverty Ratio at the State level – Selected States (in percent)

State	Rural		Urban	
	1993 - 94	1999 - 00	1993 - 94	1999 - 00
Andhra Pradesh	15.9	11.2	38.3	26.6
Arunachal Pradesh	45.0	40.0	7.7	7.5
Assam	45.0	40.0	7.7	7.5
Bihar	58.2	44.3	34.5	32.9
Gujarat	22.2	13.2	27.9	15.6
Haryana	28.0	8.3	16.4	10.0
Himachal Pradesh	30.3	7.9	9.2	2.0
Jammu & Kashmir	30.3	4.0	9.2	4.6
Karnataka	29.9	17.4	40.1	20.3
Kerala	25.8	9.4	24.5	25.3
Madhya Pradesh	40.6	37.1	48.4	38.4
Maharashtra	37.9	23.7	35.2	26.8
Meghalaya	45.0	40.0	7.7	7.5
Nagaland	45.0	40.0	7.7	7.5
Orissa	49.7	48.0	41.6	42.8
Rajasthan	26.5	13.7	30.5	19.8
Tamil Nadu	32.5	20.6	39.8	22.1
Uttar Pradesh	42.3	31.2	35.4	30.9
West Bengal	42.3	31.9	2.4	14.9
Delhi	1.9	0.4	16.0	9.4
All India	37.3	27.1	32.4	23.6

Source: Planning Commission of India

is implemented over the past three decades does not appear to have benefited these people. As a result, rural and urban poor exist in large numbers.

According to the *World Resource Report 2005,* published by World Resource Institute, in the year 1999 – 2000 the percentage of population living on less than $1 per day is 8 percent. If that had been considered $2 per day, the percentage of population living on less than $2 per day would have been 35 percent.

Poverty and Nutrition

The basic requirement for survival is sufficient nutrition which not only enables a person to live a healthy life but also enables him/her to participate actively in improving his economic and social well being. Chronic diseases due to malnutrition put a heavy toll on creative abilities of people. In particular, childhood malnutrition hampers proper growth of children, which finally becomes an impediment to their physical, intellectual and emotional development.

Table 3. Population below Poverty Line in India

States	No of Persons In Lakhs			Poverty Ratios (% of Population)			Poverty Reduction	
	1987-88	1993-94	1999-2000	1987-88	1993 - 94	1999 - 2000	87-88 to 93 - 94	93 – 94 to 99 - 00
Punjab	25.2	25.1	14.5	13.2	11.8	6.2	1.4	5.6
Himachal Pradesh	7.5	15.9	5.1	15.5	28.4	7.6	-12.9	20.8
Haryana	25.4	43.9	17.3	16.6	25.1	8.7	-8.5	16.4
Andhra Pradesh	160.4	154.0	25.4	25.9	22.2	15.8	3.7	12.1
Kerala	88.5	76.6	41.0	31.8	25.4	12.7	6.4	6.3
Gujarat	122.4	105.2	67.9	31.5	24.2	14.1	7.3	6.8
Rajasthan	142.9	128.5	81.8	35.2	27.4	15.3	7.8	7.5
Assam	75.8	96.4	94.6	36.2	40.9	36.1	-4.7	4.8
Karnataka	158.6	156.5	1o4.4	37.5	33.2	20.0	4.2	13.2
All India	**3070.5**	**3203.7**	**2602.5**	**38.9**	**36.0**	**26.1**	**2.9**	**9.9**
Maharashtra	296.3	305.2	228.0	40.4	36.9	25.0	3.5	11.9
Uttar Pradesh	536.5	604.5	529.9	41.5	40.9	31.2	0.6	9.7
Madhya Pradesh	264.3	298.5	298.5	43.1	42.5	37.4	0.6	5.1
Tamil Nadu	231.1	202.1	130.5	43.4	35.0	27.0	8.4	13.9
West Bengal	283.6	254.6	213.5	44.7	35.7	42.6	9.0	8.7
Bihar	420.9	493.4	425.6	52.1	55.0	47.1	-2.9	12.4
Orissa	165.9	160.6	169.1	55.6	48.6	17.1	7.0	1.5

Note: States have been arranged in the ascending order of poverty ratio in 1987 – 88.
Source: Planning Commission of India

Table 4. Calorie Intake at Different Expenditure Levels (1999 – 2000)

Rural					Urban				
Expenditure Class [MPCE] Rs.	Proportion of persons %	Cumulative %	Calorie Intake/ Capita/ Day	Expenditure on Food %	Expenditure Class [MPCE] Rs.	Proportion of persons %	Cumulative %	Calorie Intake/ Capita/ Day	Expenditure on Food %
0 - 225	5.1	5.1	1388	67	0-300	5.0	5.0	1398	64
225-255	5.0	10.1	1609	67	300-350	5.1	10.1	1854	64
255-300	10.1	20.2	1733	66	350-425	9.6	19.7	1729	62
300-340	10.0	30.2	1868	65	425-500	10.1	29.8	1912	60
340-380	10.3	40.5	1957	65	500-575	9.9	39.7	1968	58
380-420	9.7	50.2	2054	64	575-665	10.0	49.7	2091	56
420-470	10.2	60.4	2173	63	665-775	10.1	59.8	2187	54
470-525	9.3	69.7	2289	62	775-915	10.0	69.8	2297	52
525-615	10.3	80.0	2403	60	915-1120	10.0	79.8	2467	49
615-775	9.9	89.9	2581	58	1120-1500	10.1	89.9	2536	45
775-950	5.0	94.9	2735	55	1500-1925	5.0	94.9	2736	41
950 and above	5.0	100.0	3778	46	1925 and above	5.0	100.0	2938	32
All	99.9		2149		All	99.9		2156	

Source: Nutritional intake in India NSS 55th Round. Report No. 471 in Alternative Economic Survey (2004).

5. INEQUALITY AND POVERTY IN SOCIETY AND ITS EFFECT IN HUMAN RESOURCE DEVELOPMENT

The principal resource of an organization is 'human resource' that according to **Jucuius (1976)** may be regarded as the 'human factors', which refers to "a whole consisting of inter-related, inter-dependent and inter-acting physiological, psychological, sociological and ethical components. According to Likert (1967), **"**All the activities of any enterprise are initiated and determined by the persons who make up that institution, plants, offices, computers, automated equipment and all else that make a modern firm uses are unproductive except for human effort…."

Hence Human Resource is the resource that makes an organization, an institute, a society, a country or nation what it should be. The real need herewith is to develop the human resource, as is necessary, in different fields in an ideal environment giving it freedom from all evils of inequality and poverty that exist in a society. Once these constraints and evils of society remain in it, it leads to situation being adverse in nature for growth of Human Resource in its suitable form with respect to quality.

6. CONCLUSION

Society, as in India in last three decades, as discussed here still is not free from the hazards which different social scientists have pointed. Still the outcome of these adversities is deprivation, exploitation, hunger, malnutrition and mountainous want of basic needs of live. All these are being the causes of hindrances towards growth of human resource which can adequately contribute towards t he cause of country, nation and its all round development.

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KEY TERMS AND DEFINITIONS

Human Resources: The set of individuals who make up the workforce of an organization, business sector, or economy. "Human capital" is sometimes used synonymously with human resources, although human capital typically refers to a more narrow view (i.e., the knowledge the individuals embody and can contribute to an organization). Likewise, other terms sometimes used include "manpower," "talent," "labour," or simply "people."

Human Resources Planning: A process that identifies current and future human resources needs for an organization to achieve its goals. Human resources planning should serve as a link between human resources management and the overall strategic plan of an organization. Aging worker populations in most western countries and growing demands for qualified workers in developing economies have underscored the importance of effective Human Resources Planning.

Population Dynamics: The branch of life sciences that studies short-term and long-term changes in the size and age composition of populations, and the biological and environmental processes influencing those changes. Population dynamics deals with the way populations are affected by birth and death rates, and by immigration and emigration, and studies topics such as ageing populations or population decline.

Chapter 21
Organisational Justice Perception:
A Work Attitude Modifier

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ABSTRACT

The mutual relationship between employer and employee develops at the workplace on the premise of reciprocity of expectations from each other. Fulfilment of these expectations is the perception of either of the two. When an employee perceives prevalence of justice in the organization, he correlates the perception with all organisational stimuli. This chapter shows that work attitude varies in employees as a result of the difference in perceived justice in the organization. It also hypothesizes the relationship among justice perception, responses to organisational facilities, and interpersonal interactional opportunities. The chapter is a correlation analysis of variables through a self-administered questionnaire consisting of responses in Likert's scale. Some of the responses and attitudes in the study significantly correlated with the perceived level of a component of organisational justice. The study re-establishes significance of non-pecuniary means in determining work attitudes.

INTRODUCTION

Perception is a process by which people select, organize and interpret external sensory stimuli and information impression in terms and categories which were consistent with their own frames of reference and personal views of the world in order to give meaning to their environment (Kakabadse et al., 1987). The interpretation is influenced by three categories of factors.

1. The target along with its relevant background.
2. The situation, time and ambience.
3. Attitudes, interests, values, past experiences and expectations of the perceiver himself.

Apparent characteristics of an individual are influenced by his perceptions and categorization of the people he interacts with. When an individual joins an organisation both the member and the organisation hold certain mutual expectations

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which may or may not be in congruence with each other (Kakabadse et al., 1987, pp. 77, 86). The expectation motivates voluntary actions of individuals (and organisations) in a process of social exchange (Blau, 1964). An organisation expects loyalty and sincerity form its members and on the other hand, the member expects reciprocal fairness in outcomes of their efforts for the organisation. This expectation of fairness is fulfilled when they perceive fairness in amount and allocation of rewards.

Scope of justice refers to the group of people who affects one's belief for getting fair treatment. This group is described as an individuals' social identity group (Brockner, 1990). When people perceive that members of their identity group experience unjust outcomes, they judge themselves being unfairly treated even though they were observers rather than victims of the injustice.

The scope of justice is an important consideration in enhancing individuals' fairness perceptions and the commitment to justice (Lerner, 1981). Direct experience of the justice may not be a prerequisite for perceptions of fairness; it depends on one's scope of justice (Mollica et al, 1999).

Dimensions of Organisational Justice

An act is defined as just in organisational sciences if, on the basis of empirical research, most individuals perceive it to be so (Cropanzano & Greenberg, 1997). Thus, one of the first questions they ask in the wake of decisions is "what is fair" (Colquitt, 2001). The importance of these decisions is due to their economic and Socio-emotional consequences (Cropanzano & Schminke, 2001). Naturally, justice of decision outcomes attracted researchers first, referred to as Distributive Justice (Adams, 1965; Deutsch, 1975; Homans, 1961; Leventhal, 1976). More recent work has focused on justice of the processes that lead to decision outcomes, termed Procedural Justice (Leventhal, 1980; Thibaut & Walker, 1975).

Interactional Justice is fostered when decision makers treat people with respect and sensitivity and explain the rationale for decisions thoroughly (Colquitt, 2001). Interactional Justice has been considered a separate justice from procedural justice (Aquino, 1995; Barling & Phillips, 1993; Bies & Shapiro, 1987; Skarlicki & Folger, 1997; Tata & Bowes-sperry, 1996). Moorman (1991), Niehoff and Moorman (1993), and Tyler and Bies (1990), however, argued that it is a subset of Procedural Justice. Some others (Mansour-Cole & Scott 1990; Skarlicki & Latham, 1997) found high inter-correlations in Procedural and Interactional Justice.

Interactional Justice, more recently, has been refined into Interpersonal Justice (Greenberg, 1990, 1993,a, 1993b) and Informational Justice that focuses on dissemination of information about why procedures were used in certain way or why outcomes were distributed in certain fashion (Colquitt et al., 2001).

Distributive Justice

Adams (1963) used the social exchange theory framework to evaluate fairness of outcomes. According to the theory, accepting something of value from another obligates the receiver to reciprocate. Overtime, the role making process augments voluntary exchange interactions by producing enhanced functional interdependence based on trust and fairness (Graen, 2003; Sanchez & Byrne, 2004). According to Adams (1965) people are more concerned about fairness of outcome than the absolute level of outcomes that is determined by applying mainly three rules:

1. Equity rule.
2. Equality rule.
3. Need rule (Leventhal, 1976)

Equity rule of fair distribution of outcomes suggests that people perceive the degree of equity or inequity in major inputs into job performance and resultant outcomes of their performance. The inputs consist of age, sex, education, social status, organisational position, qualifications, and sincerity in efforts for the organisation. Outputs, on the other hand, are perceived in terms of pay, promotion, status, and intrinsic interest in the job. Equity occurs when an individual perceives the ratio of his outcomes (receiving) to inputs (giving) and that of a relevant other's outcomes to inputs were equal. Luthans (2008) schematically present this as follows:

$$\frac{\text{Person's outcomes}}{\text{Person's inputs}} = \frac{\text{Relevant other's outcomes}}{\text{Relevant other's inputs}}$$

Four propositions of equity theory (Adams 1963, 1965) predict the manner how individuals compare their input-output ratio with that of others:

1. Individuals assess the ratio of their outcomes from and inputs to the relationship against the outcome/input ratio of comparison other.
2. If the outcome/input ratios of the individual and comparison others were perceived to be unequal then inequity exists.
3. The greater the inequity the individual perceives, the more distress the individual feels.
4. The greater the distress an individual feels, the harder he/she will work to restore equity and thus to reduce the distress.

Research on individual differences (Sex, age, nationality, personality traits, and interpersonal orientation) indicates that equity sensitivity is individually different; they were classified as benevolent, equity sensitive and entitled individuals in accordance with their preference for equity.

Benevolent individuals are those, who think more of giving than receiving (Rychlak, 1973, p. 116); they are altruistic in nature as they expect little in return of their inputs. Rushton (1980) finds social responsibility as opposed to equity is the potential motivating force for benevolent people. Many researchers (Blau, 1964; Homans, 1961), however, conclude that these individuals prefer social approval or have a strong desire for enhancement in self-image.

Equity sensitive individuals are most content with their outcome / input ratio when equal those of the comparison other. They feel distress when under rewarded and guilty when over-rewarded (Huseman et al., 1987).

Greenberg and Westocott (1983) described entitled employees as having high thresholds for feeling indebted: "Whatever aid (out comes) they receive is their due, and therefore they feel little or no obligation to reciprocate. They exist in a world where all but one are debtors" (p. 105). Mosak (1959, p. 194) identifies over-permissing child rearing practices encourage such behaviour. Researches reveal that the youngest, the ill, the handicapped, or the only child expects as more as they get; and future uncertainties also encourage us to get as much as we can. The entitled ones subscribe to the exploitive equity relationship (Hatfield & Sprecher, 1983).

Equality rule advocates for equal outcomes irrespective of individual contributions (Kohn, 1969; Lane & Coon, 1972; Pruitt, 1972; Sampson, 1969). Equality norm of distribution have some inherent benefits. Equality of rewards foster harmony and solidarity (Bales, 1950); it produces satisfaction and harmony in group members (Deutsch, 1953; Julian & Perry, 1967; Smith & Cook, 1973; Steiner, 1972); it helps in resolving problems in the group's interpersonal environment (Collins & Guetzkow, 1964; Homans, 1950). Equal distribution, moreover, reduces negative socio-emotional behaviours like dissatisfaction and antagonism (Leventhal, 1976).

Nevertheless these benefits, equality rule does not foster productivity (Leventhal, 1976). Lerner (1974) found no preference for equal distribution in superior performers. Shapiro (1975) and Brickman and Bryan (1975) confirm Lerner; they observe unfavourable reactions to an allocator who equalizes rewards at his co-recipient's expense.

Each contributor, according to this rule, is rewarded or resourced based upon their legitimate needs. Higher reward is allocated to recipients with greater need for reward (Berkowitz, 1972; Lerner, 1974; Leventhal et al. 1973; Pruitt, 1972). The operation of need rule is backed by Marxian justice (Pruitt, 1972, p. 147) and the social responsibility norm on allocation justice (Berkowitz, 1969; Berkowitz & Connor, 1966; Berkowitz & Daniels, 1963, 1964; Leventhal & Weiss, 1975).

Allocation of resources according to recipient's need requires consideration of its efficient use (Leventhal, Weiss, & Bultrick, 1973). Sometimes there is a difference in recipient's perception of need and allocator's assessment recipient's true need; or it is not possible to fulfil his/her need because of pragmatic considerations (maintaining harmony and maximizing productivity) (Schopler, 1970). Moreover, Overlapping allocation norms enhance the complexities in adhering to need rule of resource reward distribution (Leventhal, 1976).

Allocation decisions were considered as instrumental acts that were guided according to certain norms, such as equity, equality and needs rules of distributing rewards and resources (Lerner, 1974; Leventhal, 1976; Pruitt, 1972). These three allocation norms favour different, often conflicting allocation decisions. On the allocator's side, it is his duty to reconcile these conflicting rules and to decide which norm or weighted combination of norms to follow. Socially approved prevailing practices are there to dispose the allocator to follow the norms in practice. Yet the diversity in social environment offers a variety of alternative cues and rules to follow (Bandura, 1969) that allow considerable flexibility in behaviour. Thus, notwithstanding the influential models and conformity pressures on allocator, he has considerable freedom in deciding which norms to follow even when the norm is not widely accepted but best compatible with his commitment to treat the recipients fairly and justly (Leventhal, 1976).

Power of such norms, however, stems from the benefits they produce, rather than the allocator's desire for fairness and justice. In any allocation situation there is considerable potential for conflict between the allocator and recipients, or between the recipients themselves. If a recipient had poor performance but is needier than the other, the allocator may ignore the performance. Though the allocator is sincerely committed to justified distribution, the recipients perceive it unjust (Leventhal, 1976).

Simerson et al. (2000) identifies five underlying principles of distributive justice. In accordance with the frequency of citation rationality comes first; which states that an outcome is perceived fair or unfair on the basis of logical sense involved in the outcome. Equity principle states that the fairness is perceived after a meaningful comparison other or compared to the system; it also includes personal gain as a result of the event. The third one may be termed as possibility principle because, it suggests that an outcome is perceived fair or unfair on the possibility of a worse or a better one. External attributions for the reasons compelling a negative decision also affect fairness perception of an individual. Anticipation of outcome influences the distributive justice perception by way of prior preparation for it.

A large number of researchers (Berkowitz et al. 1987; Folger & Konovsky, 1989; Martin & Bennatt, 1996; Oldham et al., 1986; Ronen, 1986; Summers & Hendrix, 1991; Sweeney, 1990) concede the strong linkage between pay satisfaction and distributive justice perception. Empirical studies on distributive justice and benefit satisfaction testify that employee perceptions of distributive justice are important predictors of benefit satisfaction (Davis & Ward, 1995; Greenberg, 1996; Martin & Bennett, 1996).

Procedural Justice

Procedural justice is referred to the perception of fairness in the process used to determine the allocation of rewards. Two key points of Procedural justice are process control and explanation. Process control is the opportunity to present one's view about desired outcomes to decision makers. This notion has later been developed as instrumental and non-instrumental voice. Explanations are the reasons given by the management for its decisions and their outcomes (Leventhal, 1980; Tremblay et al., 2000).

Thibaut and Walker (1975) are credited for introducing procedural justice literature. They viewed third-party dispute resolution procedures (mediation and arbitration) as having both a process stage and a decision stage. Their research suggested that disputant viewed the procedure as fair as they perceived that they had control over the presentation of their arguments and sufficient time to present their case.

Research on effects of procedural justice establishes the significance of procedural justice in organisational behaviour. Job satisfaction, organisational commitment, and citizenship behaviour are some of attitudinal responses to fair treatment perceptions; retaliatory behaviour, however, is an implication of unfair treatment perceptions (Konovsky, 2000; Skarlicki & Floger, 1997). Procedural justice perception becomes more important especially when distributive justice is lacking; when we don't get what we want; we focus on *why* (Robbins et al., 2009, p. 214). Cohen-Charash and Spector (2001), in their meta-analysis of procedural justice, found it to be a better predictor of job performance than was distributive justice. Korsgaard and Colleagues (2002) and Paterson et al. (2002) conceded Procedural justice to be particularly significant in successful implementation of organisational change.

Involvement in compensation decisions, existence of an appeal process in the determination of pay is some procedural justice components that influence pay satisfaction of the employee (Folger & Konovsky, 1989; Jenkins & Lawler, 1981; Martin & Bennett, 1996). However, the influence of process justice perception on benefit satisfaction is also evidenced in Mulvey (1992), Martin and Bennett (1996), and Tremblay et al. (1998). Mulvey (1992) finds positive relation in possibility of appealing pay related decisions and constancy in the application of pay policies with employee benefit satisfaction. Martin and Bennett (1996) find a weak relationship between procedural justice regarding benefits and benefit satisfaction. Tremblay et al. (1998), however, advocated for accurate benefit communication programme being an antecedent of benefit satisfaction in employees.

Concept of procedural fairness was initialized in terms of structural elements including opportunities for voice (Greenberg, 1990; Lind & Tyler, 1988). Early research on structural elements showed that opportunity for voice leads to higher perceptions of procedural justice than no opportunity for voice. Voice has an impact on perceptions of procedural justice even when there is no opportunity for decision control (Lind, Kanfer, & Earley, 1990).

Interpersonal Justice

Interpersonal justice focuses on the quality of interpersonal treatment received by people when procedures were implemented. It reflects the degree to which people were treated with politeness, dignity, and respect by authorities and third parties involved in executing procedures or determining outcomes (Colquitt et al. 2001).

Bies (2001) identified elements indicating perceived interactional injustice; it is distinct from procedural (in)justice. These include derogatory judgments, deception, and invasion of privacy, inconsiderate or abusive actions, also public criticism and coercion. Bies and Moag (1986) argued that people draw on interpersonal justice perceptions when deciding how to react to authority figures, whereas procedural justice perceptions are used to decide how to react to the overall organisations. Graen and Scandura (1987) discriminate procedural justice with interpersonal justice on the basis of its effect on other variables; procedural justice affects other variables by altering organisational support perceptions, whereas interpersonal justice by altering leader member exchange perceptions.

Research conclusions suggest the significance of interpersonal relationship in employee-attitudes. Leung et al. (2001) find positive and fair interpersonal relationship minimizes negative attitudinal reactions towards the critic on the organisation. They identified the importance of effective organisational communication regarding pay differentials in institutional member and their reactions to pay policies (Lee et al. 1999, Miceli, 1993).

Konovsky (2000) reported that perceptions of interactional justice have stronger effects on attitudes about institutions or authorities representing them than that about contextually specific outcomes. Others (Alexander & Ruderman, 1987; Folger & Konovsky, 1989; Martin & Bennett, 1996; Scarpello & Jones, 1996; Sweeney & McFarlin, 1997) conceded interactional justice regarding pay to be a significant factor for loyal behaviour.

Tremblay et al., (2000) Considered gender, age, number of dependents, level of education, seniority, pay level, and proportion of employee benefits in the overall compensation package as control variables of individual difference in perceptions.

Greenberg (1993a, 1993b) found interactional fairness as a moderator of negative employee behaviour such as theft. Skarlicki and Folger (1997) demonstrated the interactive effects of distributive justice, procedural justice, and interactional justice on employee retaliatory behaviour.

Informational Justice

Informational justice refers to the amount, quality and timing of the information received (Sitkin & Bies, 1993). The construct was derived from interactional justice, which acts primarily to alter reactions to procedures. It entails explanations provided to evaluate structural aspects of the process (Greenberg, 1993b, 1994). Bies and Shapiro (1988) are among the first to distinguish the role of structural justice (i.e., voice) from that of Informational justice. They identified the independent effect of justifications on procedural fairness judgments.

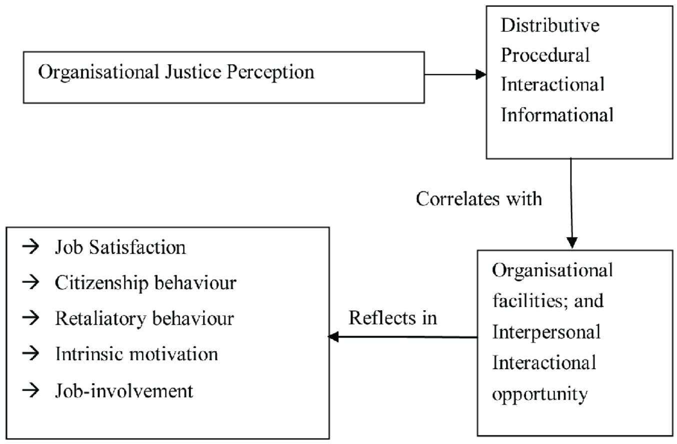
Although informational justice is commonly conceded an aspect of interactional justice, its unique effects warrants its distinct identity from interactional justice (Greenberg, 1993b, 1994; Cropanzano & Greenberg, 1997). Shapiro and colleagues (1994) find no significant relationship between communicator's style (interactional justice) and perceptions of explanation adequacy (informational injustice). They, however, identified explanation-specificity as the most important determinant in increasing fairness perceptions.

It may be drawn from analysis of organisational justice literature gone through till this point that perception of organisational justice is affected by the organisational stimuli recognized by the member. Value to voice of individual member and interpersonal respect has implications for procedural and interpersonal justice perception of the individual and his/her colleagues as well. Information provided for explaining the decision taken by the management and in the organisation influences the perceived informational justice of all who were related with the organisation in anyways. The present study is based on the rationale of these pieces of literature. It may be depicted through the following diagram:

Objective of the Study

The objective of analyzing organisational justice perception as one of the determinants of attitudinal responses to organisational stimuli is to examine the influence of justice perception on attitudinal responses.

Figure 1. Analysis of organizational justice



Hypotheses

On the basis of literature on organisational justice perception, it may be hypothesized that:

Hypothesis 1: Perceived justice (distributive, procedural interactional and informational) in the organisation affects attitudinal responses to common stimuli in the organisation.

Hypothesis 2: Perceived justice (distributive, procedural, interactional and informational) in the organisation is associated with employee's response to organisational facilities.

Hypothesis 3: Perceived level of justice in the organisation correlates with employees' attitudinal response to interpersonal interactional opportunities.

METHOD

Questionnaire

The four dimensions of justice, namely distributive, procedural, interactional and informational were measured using Colquitt's (2001) 20 items scale for organisational justice. The study selected only 16 items which appropriately matched the administrative set-up of the research unit. Three items were selected for each of the three dimensions except procedural justice for which four items were selected.

Job-Satisfaction

Job-satisfaction in employees was measured with the ten item scale developed by Hackman and Lawlar III (1971). The scale is sub-divided into two groups for measuring general and specific satisfaction with one's job. General job-satisfaction scale, comprises of two items, does not relate to any particular aspect of the job. Eight items measuring Specific satisfaction, on the other hand, cover different aspects such as self-respect, personal growth, prestige inside the organisation, amount of close supervision, opportunity for independent thought, participation in goal determination, opportunity for promotion, and dignity of treatment from boss.

Achievement Orientation

Achievement orientation in employees was measured with activism and occupational orientation measuring scales developed by Kahl (1965). The scale, however was subdivided into two sub-scales measuring activism and occupational primacy consisting of four and three items respectively.

Higher Order Need Strength

Higher order need strength in an employee has been measured in the study with the four items' scale suggested by Hackman and Lawlar III (1971) for the purpose.

Organisational Citizenship Behaviour

Citizenship behaviour in an employee has been evaluated with scale developed by Organ and Konovsky (1989). The original scale comprises of 16 items but, for the present study, we selected only 9 items with higher factor loading in their study. The scale measures altruism and compliance aspects of the behaviour.

Altruism suggests helping a specific other person with work related problems. Compliance, however, is further divided into two separate factors. One relates with conscientious use of work-time and attendance related factors (reversed scored), whereas the other factor of the behaviour suggests positive connotation to compliance behaviour through negative statements, for example do not spend time in idle conversations.

Retaliatory Behaviour

Skarlicki and Folger (1997) develop a scale for evaluating retaliatory behaviour in employees; the 14 items' scale has been adopted for the present study with minor adaptations in order to fit the scale into it.

Cognitive Evaluation of Pay and Job

Organ and Konovsky (1989) coined the term 'cognitive appraisal of pay and job' that connotes evaluation of pay and appraisal of job in comparison to that of the reference group. This appraisal is positive when an employee perceives prevalence of fairness in allocation and implementation activities.

Cognitive evaluation of pay by an employee in comparison to his job and qualification in respect to the pay of his colleagues was elicited in the study with the scale suggested by Organ and Konovsky (1989). We applied eight items that suit the most to the organisation.

Intrinsic Motivation

The level of intrinsic motivation in employees has been measured with the three items' scale suggested by Hackman and Lawler III (1971).

Job-Involvement

Again Hackman and Lawler III (1971) were referred to for the scale that measures job-involvement in employees. All the three items suggested by them have been taken in the study.

Interpersonal Interactional Opportunity

Interpersonal interactional opportunity at work was measured with the three items suggested by Hackman and Lawler III (1971) for the purpose.

Organisational Facilities

System (organisational) facilities available to the staff-members of the Bank were selected from the in-house literature. These six facilities namely, training, medical, reimbursement for books and for expenses, special loan scheme, and financing for pursuing professional courses all staff-members on the basis of their hierarchical position.

Procedure

The study adopted self-administered questionnaire method. Respondents were requested to tick the option that seems to be the most appropriate to them. Respective scores of individual items were added to arrive at the score of a particular element of organisational justice and attitudinal response. Each individual element of justice was given weight in order to bring the highest possible score at par. Sum of weighted scores of individual dimensions was taken as organisational justice score. Scores on the questionnaire items were obtained on a Likert-scale ranging from 1 (strongly disagree) to 5 (strongly agree). Scales used for measuring attitudinal responses are also in five-point Likert scale.

Results

59.6 percent (168 out of 282) employees awarded organisational justice score between 161 and 240 (Table1); remaining 40.4 percent (114 out of 282) perceived it between 81 and 160. However, no employee awarded a score between zero and 80. The employees within the age group 26 and 45 years perceived lower level of justice in the organisation, though the difference is insignificant in the sample (x^2=3.22; df = 2; P>0.05).

Perception of organisational justice was found significantly different in the three age groups (Higher level: *X^2=39.0; df=2;P<0.001; Lower level: X^2=80.46; df=2; P<0.001) (Table1).*

Gender-wise difference in perceived level of justice in the organisation was significant (OJ Group 2: x^2 =7.71; df=1; P=0.005; OJ Group 3: x^2 =7.9; df=1; P=0.005 (Table1).

Marital status of the employees did not significantly affect their perception about justice in the organisation (x^2=2.20; df=1; P>0.05). Unmarried employees, however, were equally distributed into two groups of scores (Table1)

Table 1. Characteristics of sample according to their perception of organisational justice

Category	Sub-Category	Perception of Justice in the Organisation		
		OJ Group 2 (Score 81 – 160)	OJ Group 3 (Score 161 – 240)	Total
Age	≤25	15	9	24
		62.5%	37.5%	100%
	26-45	45	42	87
		51.7%	48.3%	100%
	46-60	108	63	171
		63.2%	36.8%	100%
Gender	Male	102	72	174
		58.6%	41.4%	100%
	Female	66	42	108
		61.1%	38.9%	100%
Marital Status	Married	144	90	234
		61.5%	39.5%	100%
	Unmarried	24	24	48
		50.0%	50.0%	100%
Total		168	114	282
Percentage		59.6	40.4	100%

Note: No respondent in the study were found in OJ Group 1 (score 0 to 80)

Response to Autonomy

Quality Concern

Distributive justice perception in employees did not significantly affect (F=1.22; P>0.05) their quality concern at work; the average concern ranged between 9.00 (S.D.=1.07) to 9.31 (S.D.=0.09) (Table 2).

Procedural justice significantly affected the quality concern score in respondents (F=17.61; P<0.001). Those respondents who scored between 41 and 60 on procedural justice measuring scale were significantly higher (Mean=9.73; S.D.=0.58) than other two groups in their concern for qual-

Table 2. Attitudinal responses to organisational stimulus according to respondents' perception of distributive justice in the organisation

Sl. No.	Dependent Variables	Perception of Distributive Justice in the Organization											
		DJ Gr 1 (41-60) (N = 108)			DJ Gr 2 (21-40) (N = 147)			DJ Gr 3 (1-20) (N = 27)			Total (N = 282)		
		Range	Mean	S.D.	Range	Mean	S.D.	Range	Mean	S.D.	Range	Mean	S.D.
1	Response to Autonomy	33-52	44.28	4.70	36-54	44.27	4.28	38-49	44.22	3.78	33-54	44.27	4.39
	a. Quality Concern	7-10	9.31	0.09	7-10	9.24	0.87	7-10	9.00	1.07	7-10	9.24	0.91
	b. Self-efficacy	17-30	23.50	2.94	20-30	23.65	2.37	18-24	21.00	2.20	17-30	23.34	2.69
	c. Personal Initiative at Work	4-19	11.47	3.66	2-20	11.37	4.28	8-20	14.22	3.52	2-20	11.68	4.06
2	Job-satisfaction	15-30	24.83	3.87	13-30	22.73	4.46	16-25	22.46	2.59	13-30	23.52	4.21
	a. General	2-6	5.22	1.11	2-6	4.61	1.62	4-6	5.0	0.83	2-6	4.88	1.40
	b. Specific	10-24	19.61	3.42	11-24	18.12	3.30	12-20	17.56	2.36	10-24	18.64	3.35
3	Achievement Orientation	20-27	23.56	1.84	19-29	23.59	2.47	19-25	21.89	2.52	19-29	23.41	2.30
	a. Activism	9-15	12.31	1.42	9-19	12.92	1.97	9-16	13.11	1.89	9-19	12.70	1.80
	b. Occupational Primacy	7-15	11.22	1.92	6-15	10.69	2.39	6-12	8.78	2.39	6-15	10.71	2.32
4	Higher Order Need Strength	6-12	10.19	1.46	6-12	9.53	1.67	8-11	9.56	1.19	6-12	9.79	1.58
5	Organizational Citizenship Behaviour	28-41	34.53	2.98	27-41	33.61	3.7	21-37	31.44	5.02	21-41	33.76	3.69
6	Retaliatory Behaviour	14-32	20.50	5.21	14-36	19.18	5.97	14-27	17.44	3.99	14-36	19.52	5.58
7	Cognitive Evaluation of Pay and Job	15-50	32.39	5.84	9-40	25.8	7.39	8-33	22.56	7.21	8-50	28.01	7.68
8	Intrinsic Motivation	11-15	13.75	1.28	04-15	13.08	2.39	07-15	11.89	2.17	04-15	13.22	2.08
9	Job-involvement	7-15	11.33	2.18	4-15	10.63	2.55	6-10	9.44	1.28	4-15	10.79	2.37

ity at work. Those who scored least on procedural justice perception measuring scale (1 to 20) also scored significantly less (Mean=8.64; S.D.=1.9) in quality concern (Table 3).

Interactional justice perception again did not significantly influence quality concern in employees (t=0.28; df=280; P>0.05). All the respondents scored above 21 in interactional justice perception measuring scale and their average quality concern ranges between 9.20 (S.D.=0.14) and 9.25 (S.D.=0.06) (Table 4).

Informational justice perception did not significantly affect quality concern level in employees (F=2.54; P>0.05). Average score of the construct ranged between 9.05 (S.D.=1.01) and 10.00 (S.D.=0.0) (Table 5).

Organisational justice perception, however, significantly affected the quality concern score (t=2.96; df = 280; P<0.01) in the two groups of employees (Table 6).

Self-Efficacy

Distributive justice perception in employees significantly affected their self-efficacy (F=12.3; P<0.001). Those employees who scored the

Table 3. Attitudinal responses to organisational stimulus according to respondents' perception of procedural justice in the organisation

Sl. No.	Dependent Variables	Perception of Distributive Justice in the Organization											
		PJ Gr 1 (41-60) (N = 45)			PJ Gr 2 (21-40) (N = 195)			PJ Gr 3 (1-20) (N = 42)			Total (N = 282)		
		Range	Mean	S.D.	Range	Mean	S.D.	Range	Mean	S.D.	Range	Mean	S.D.
1	Response to Autonomy	33-52	45.60	5.01	36-54	44.46	4.09	33-49	41.93	4.27	33-54	44.27	4.39
	a. Quality Concern	8-10	9.73	0.58	7-10	9.26	0.83	7-10	8.64	1.19	7-10	9.24	0.91
	b. Self-efficacy	19-30	25.07	2.77	17-30	23.26	2.41	18-27	21.86	2.88	17-30	23.34	2.69
	c. Personal Initiative at Work	6-16	10.80	3.03	2-20	11.94	4.18	4-20	11.43	4.41	2-20	11.68	4.06
2	Job-satisfaction	16-30	24.33	4.56	13-30	24.02	3.74	14-28	20.36	4.57	13-30	23.52	4.21
	a. General	2-6	5.00	1.43	2-6	4.94	1.35	2-6	4.50	1.61	2-6	4.88	1.41
	b. Specific	14-24	19.33	3.46	11-24	19.08	3.01	10-22	15.86	3.48	10-24	18.64	3.35
3	Achievement Orientation	20-27	23.87	1.98	19-29	23.38	2.22	19-29	23.07	2.90	19-29	23.41	2.30
	a. Activism	9-19	12.87	2.15	9-18	12.48	1.69	11-16	13.57	1.56	9-19	12.70	1.80
	b. Occupational Primacy	6-14	11.00	2.15	7-15	10.92	2.04	6-15	9.43	3.19	6-15	10.71	2.32
4	Higher Order Need Strength	8-12	10.27	1.35	6-12	9.94	1.50	6-11	8.57	1.61	6-12	9.79	1.58
5	Organizational Citizenship Behaviour	31-41	35.33	3.08	27-40	33.57	3.22	21-41	32.93	5.51	21-41	33.76	3.69
6	Retaliatory Behaviour	14-32	18.8	6.2	14-30	19.28	4.73	14-36	21.43	7.88	14-36	19.52	5.59
7	Cognitive evaluation of pay and job	26-50	34.53	5.56	09-40	27.68	6.74	08-40	22.57	8.88	08-50	28.01	7.68
8	Intrinsic Motivation	12-15	14.07	1.14	4-15	13.40	1.75	7-15	11.50	3.12	4-15	13.22	2.08
9	Job-involvement	6-15	12.00	2.45	4-15	10.71	2.30	6-15	9.86	2.16	4-15	10.79	2.37

Table 4. Attitudinal responses to organisational stimulus according to respondents' perception of interactional justice in the organisation

Sl. No.	Dependent Variables	Perception of Interactional Justice in the Organization											
		IJ Gr 1 (41-60) (N = 252)			IJ Gr 2 (21-40) (N = 30)			IJ Gr 3 (1-20) (N = 0)			Total (N = 282)		
		Range	Mean	S.D.	Range	Mean	S.D.	Range	Mean	S.D.	Range	Mean	S.D.
1	Response to Autonomy	33-54	44.31	4.51	10-51	43.90	3.20	-	-	-	33-54	44.27	4.39
	Quality Concern	7-10	9.25	0.06	8-10	9.20	0.14	-	-	-	7-10	9.24	0.05
	Self-efficacy	17-30	23.36	2.79	21-27	23.20	1.69	-	-	-	17-30	23.34	2.69
	Personal Initiative at Work	2-20	11.70	4.00	4-20	1.50	4.62	-	-	-	2-20	11.68	4.06
2	Job-satisfaction	13-30	23.83	4.13	15-27	20.90	4.05	-	-	-	13-30	23.50	4.21
	a. General	2-6	5.00	1.36	2-6	3.90	1.47	-	-	-	2-6	4.88	1.41
	b. Specific	10-24	18.83	3.34	11-21	17.00	3.02	-	-	-	10-24	18.64	3.35
3	Achievement Orientation	19-29	23.50	2.21	19-27	22.70	2.95	-	-	-	19-29	23.41	2.30
	a. Activism	9-18	12.74	1.69	9-19	12.40	2.50	-	-	-	9-19	12.70	1.79
	b. Occupational Primacy	6-15	10.76	2.28	7-15	10.30	2.65	-	-	-	6-15	10.71	2.32
4	Higher Order Need Strength	6-12	9.88	1.56	6-12	9.00	1.57	-	-	-	6-12	9.79	1.58
5	Organizational Citizenship Behaviour	21-41	33.92	3.68	27-40	32.4	3.53	-	-	-	21-41	33.76	3.69
6	Retaliatory Behaviour	14-36	19.52	5.72	14-26	19.5	4.39	-	-	-	14-36	19.52	5.58
7	Cognitive evaluation of pay and job	08-50	28.24	7.86	16-32	26.1	5.71	-	-	-	08-50	28.01	7.68
8	Intrinsic Motivation	4-15	13.23	2.15	12-15	13.20	1.27	-	-	-	4-15	13.22	2.09
9	Job-involvement	4-15	10.83	2.45	8-14	10.40	1.59	-	-	-	4-15	10.79	2.37

least (1 to 20) in distributive justice perception also scored significantly less (Mean=21.00; S.D.=2.20) than the other two groups (Table 2).

Self-efficacy variance was significant among employees who perceived different procedural justice levels in the organisation ($F=17.55$; $P<0.001$). Those employees who perceived that procedural justice in the organisation lied in between 41 to 60 scored significantly higher in self-efficacy (Mean=25.07; S.D.=2.77) than the other two groups who perceived less procedural justice (Table 3).

Average self-efficacy score in those employees who perceived procedural justice between 41 and 60 was 23.26 (S.D.=2.79), whereas in the other group it was 23.20 (S.D.=1.69). There was no respondent in the sample who had awarded interactional justice between 1 and 20 (Table 4). The difference in the average self-efficacy in the two groups, however, was not significant ($t=0.3$; $df = 280$; $P>0.05$).

Table 5. Attitudinal responses to organisational stimulus according to respondents' perception of informational justice in the organisation

Sl. No.	Dependent Variables	Perception of Informational Justice in the Organization											
		INFO J Gr 1 (41-60) (N = 03)			INFO J Gr 2 (21-40) (N = 57)			INFO J Gr 3 (1-20) (N = 222)			Total (N = 282)		
		Range	Mean	S.D.	Range	Mean	S.D.	Range	Mean	S.D.	Range	Mean	S.D.
1	Response to Autonomy	42-42	42.0	0.0	37-52	44.21	4.32	33-54	44.31	4.44	33-54	44.27	4.39
	a. Quality Concern	10-10	10.0	0.0	7-10	9.05	1.01	7-10	9.28	0.88	7-10	9.25	0.91
	b. Self-efficacy	24-24	24.0	0.0	20-30	23.95	3.15	17-30	23.18	2.56	17-30	23.34	2.69
	c. Personal Initiative at Work	8-8	8.0	0.0	4-20	11.21	4.84	2-20	11.85	3.84	2-20	11.68	4.06
2	Job-satisfaction	16-16	16.0	0.0	14-29	23.47	3.96	13-30	23.89	4.17	13-30	23.52	4.21
	a. General	2-2	2.0	0.0	2-6	4.84	1.47	2-6	4.93	1.36	2-6	4.88	1.41
	b. Specific	14-14	14.0	0.0	12-23	17.63	2.88	10-24	18.96	3.40	10-24	18.64	3.35
3	Achievement Orientation	27-27	27.0	0.0	20-27	23.47	1.86	19-29	23.35	2.38	19-29	23.41	2.30
	a. Activism	19-19	19.0	0.0	9-16	12.53	1.77	9-18	12.66	1.66	9-19	12.70	1.79
	b. Occupational Primacy	8-8	8.0	0.0	6-15	10.95	2.44	6-15	10.69	2.28	6-15	10.71	2.32
4	Higher Order Need Strength	8-8	8.0	0.0	6-12	9.21	1.69	6-12	9.96	1.51	6-12	9.79	1.58
5	Organizational Citizenship Behaviour	33-33	33.00	0.00	27-41	33.63	4.29	21-41	33.8	3.55	21-41	33.76	3.69
6	Retaliatory Behaviour	18-18	18.00	0.00	14-35	19.47	6.04	14-36	19.55	5.51	14-36	19.52	5.58
7	Cognitive evaluation of pay and job	29-29	29.00	0.00	12-40	27.89	7.95	08-50	28.03	7.68	08-50	28.01	7.68
8	Intrinsic Motivation	15-15	15.0	0.0	7-15	12.89	2.40	4-15	13.28	1.99	4-15	13.22	2.08
9	Job-involvement	11-11	11.0	0.0	6-15	11.26	2.42	4-15	10.66	2.37	4-15	10.79	2.37

Average self-efficacy in employees segregated according to their informational justice perception was found insignificantly variant ($F=1.79$; $P>0.05$). It ranged between 23.18 (S.D.=2.56) and 24.00 (S.D.=0.0) (Table 5).

Overall justice perception of employees also did not affect their self-efficacy ($t=0.53$; $df=280$; $P>0.05$) though it varied between 23.24 and 23.41 (Table 6).

Personal Initiative at Work

There was a significant variance found in personal initiative of employees at their workplace ($F=6.08$; $P<0.01$). Those who scored least (1 to 20) on distributive justice scale scored highest (Mean=14.22; S.D.=3.52) and significantly different from other two groups (Table 2). Procedural justice perception, however, did not significantly affect employees' personal initiative at work place

($F=1.54$; $P>0.05$). Average score of the construct ranged between 10.80 and 11.94 (Table 3). When employees were segregated according to their interactional justice perception, it was found that personal initiative was insignificantly influenced by the justice perception ($t=0.26$; $df=280$, $P>0.05$) (Table 4).

Informational justice perception also did not significantly affect personal initiative of employees at their workplace ($F=1.82$; $P>0.05$). However the average ranged between 8.00 and 11.85 (Table 5). It was inferred from the analysis that organisational justice did not affect the personal initiative of employee ($t=0.82$; $df=280$; $P>0.05$) (Table 6).

Convergent Response to Autonomy

Distributive justice perception has insignificant effect on the variance of response to autonomy ($F=0.01$; $P>0.05$). Average response varied between 44.22 and 44.28 (Table 2). However, procedural justice perception significantly varied employees' response to autonomy ($F=8.67$; $P<0.001$). Those employees who perceived least procedural justice in the organisation also responded to autonomy in significantly weak manner ($F=11.41$; $df=2$; $P<0.001$) than the others. Variance (F) is 1.3 and 0.95 with first and second groups respectively; Level of significance (P) is less than 0.001 in both the cases (Table 3).

Interactional justice perception again, had no significant bearing on employees' response to autonomy ($t=0.48$; $df=280$; $P>0.05$); the average varied within 43.90 and 44.31 (Table 4). Similarly, Informational justice perception also did not significantly influence the response to autonomy by employees ($F=0.42$; $P>0.05$). Average score ranged between 42.00 and 44.31 (Table 5).

Overall perception of organisational justice in employees also did not significantly influence their response to autonomy ($t=0.07$; $df=280$; $P>0.05$). Average score ranged between 44.21 and 44.30 (Table 6).

Job Satisfaction

Each individual element of organisational justice and the construct collectively bore significant influence on employees' job–satisfaction. When respondents were segregated according to their distributive justice perception, it was found that general ($F=6.16$; $P<0.01$), specific ($F=8.07$; $P<0.001$), and overall job-satisfaction ($F=9.01$; $P<0.001$) varied significantly along with the groups. Job satisfaction was significantly high ($Mean=24.83$; $S.D.=3.87$) in them who perceived highest distributive justice in the organisation; remaining two groups, however, did not significantly differ inter-se (Table 2).

General job-satisfaction in those employees who perceived highest distributive justice in the organisation ($Mean=5.22$; $S.D.=1.11$) was found significantly higher than those who award 21 to 40 points to distributive justice in the organisation ($Mean=4.61$; $S.D.=1.62$). This group, however, did not significantly differ from those who perceived least distributive justice in the organisation (Table 2). Further, specific job satisfaction was significantly less ($Mean=17.56$; $S.D.=2.36$) in those employees who perceived least distributive justice in the organisation. Other two groups, however, did not significantly differ from each other (Table 2).

Implication of procedural justice on job satisfaction in employees was significant ($F=15.48$; $P<0.001$). General job-satisfaction, however, did not bring upon significant variance in the sample ($F=1.87$; $P>0.05$). Specific job satisfaction, on the other hand, was significantly affected by procedural justice perception in employees ($F=19.30$; $P<0.001$). Job satisfaction in those employees who perceived least procedural justice in the organisation ($Mean=20.36$; $S.D.=4.57$) was significantly less than the other two groups ($Mean=24.33$ and $Mean=24.02$) respectively. Same trend was also observed in specific job satisfaction where average satisfaction (specific) was 15.86 ($S.D.=3.48$) in comparison to 19.33 and 19.08 (Table 3).

Table 6. Attitudinal responses to organisational stimulus according to respondents' perception of organisational justice in the organisation

Sl. No.	Dependent Variables	Perception of Justice in the Organization											
		OJ Gr 1 (1-80) (N = 0)			OJ Gr 2 (81-160) (N = 114)			OJ Gr 3 (161-240) (N = 168)			Total (N = 282)		
		Range	Mean	S.D.	Range	Mean	S.D.	Range	Mean	S.D.	Range	Mean	S.D.
1	Response to Autonomy	-	-	-	26-52	44.21	3.87	33-54	44.30	4.72	33-54	44.27	4.39
	a. Quality Concern	-	-	-	7-10	9.05	0.98	7-10	9.38	0.84	7-10	9.24	0.91
	b. Self-efficacy	-	-	-	18-30	23.24	2.54	17-30	23.41	2.80	17-30	23.34	2.69
	c. Personal Initiative at Work	-	-	-	2-20	11.92	4.45	4-19	11.52	3.78	2-20	11.68	4.06
2	Job-satisfaction	-	-	-	14-29	22.58	4.03	13-30	24.16	4.22	13-30	23.52	4.21
	a. General	-	-	-	2-6	4.66	1.58	2-6	5.04	1.26	2-6	4.88	1.41
	b. Specific	-	-	-	12-23	17.92	2.97	10-24	19.12	3.52	10-24	18.64	3.35
3	Achievement Orientation	-	-	-	19-27	23.08	2.64	20-29	23.64	2.02	19-29	23.41	2.30
	a. Activism	-	-	-	9-19	12.74	1.98	9-18	12.68	1.66	9-19	12.70	1.79
	b. Occupational Primacy	-	-	-	6-15	10.32	2.62	6-15	10.98	2.05	6-15	10.71	2.32
4	Higher Order Need Strength	-	-	-	6-12	9.42	1.56	6-12	10.04	1.55	6-12	9.71	1.58
5	Organizational Citizenship Behaviour	-	-	-	21-40	32.92	4.06	28-41	34.32	3.31	21-41	33.76	3.69
6	Retaliatory Behaviour	-	-	-	14-36	19.66	6.24	14-36	19.66	6.24	14-36	19.52	5.58
7	Cognitive evaluation of pay and job	-	-	-	8-40	25.13	7.51	9-50	29.96	7.18	8-50	28.01	7.68
8	Intrinsic Motivation	-	-	-	7-15	12.84	2.41	4-15	13.48	2.00	4-15	13.22	2.08
9	Job-involvement	-	-	-	6-15	10.24	2.05	4-15	11.16	2.51	4-15	10.19	2.37

Job satisfaction in employees when segregated according to their interactional justice perception was found significantly variant ($t=3.69$; $df=280$; $P<0.001$). Same was the result of t-test on general ($t=4.16$; $df=280$; $P<0.001$) and specific ($t=2.87$; $df=280$; $P<0.001$) job satisfaction (Table 4).

Informational justice perception of employees also bore significant impact on their job satisfaction ($F=7.76$; $P<0.01$) including general ($F=6.71$; $P<0.01$) and specific ($F=6.72$; $P<0.001$) aspects of satisfaction. Job satisfaction was significantly higher in those employees who perceived least informational justice in the organisation (Mean=23.89; S.D.=4.17). Other two groups (who awarded 21 to 40 and 41 to 60 points) were also significantly distant from each other. In respect to general and specific job satisfaction also the least perceived informational justice group was highest satisfied group; though the difference in specific job satisfaction was not significant in between the second group (21 to 40) and the third group (1 to 20) (Table 5).

It is evident from the above findings that organisational justice perception significantly affected employees' job satisfaction ($t=3.14$; $df=280$; $P<0.01$) along with the constituents namely, general ($t=2.28$; $df=280$; $P<0.05$) and specific ($t=3.01$; $df=280$; $P<0.01$) job satisfaction. Higher the justice perceived in organisation, higher was the satisfaction with job (including general and specific) (Table 6).

Achievement Orientation

Distributive justice perception in employees of the organisation significantly affected their achievement orientation ($F=6.84$; $P<0.01$) along with its constituents namely, activism ($F=4.52$; $P<0.05$) and occupational primacy ($F=13.05$; $P<0.001$). Achievement orientation and occupational primacy in the group that awarded least points to distributive justice in the organisation was found significantly less achievement oriented in comparison to other groups. Activism, however, was the exception. The group who perceived least distributive justice scored significantly higher (Mean=13.11; S.D.=1.89) than the highest perceived group (Mean=12.31; S.D.=1.42) (Table 2).

Although various groups of employees who perceived different levels of procedural justice in the organisation did not significantly vary in their achievement orientation ($F=1.35$; $P>0.05$) but activism ($F=6.93$; $P<0.01$) and occupational primacy ($F=7.97$; $P<0.001$) significantly varied in them. Average activism in those who perceived procedural justice lied between 1 and 20 was significantly higher (Mean=13.57; S.D.=1.56) than those who perceive the justice lied between 41 and 60 (Mean=12.87; S.D.=2.15). Occupational primacy, however, showed an opposite trend where least procedural justice perceived group scored significantly less (Mean=9.43; S.D.=19) than other two groups (Table 3).

Average achievement orientation according to interactional justice perception groups did not vary significantly ($t=1.81$; $df=280$; $P>0.05$) nor activism ($t=0.98$; $df=280$; $P>0.05$) and occupational primacy ($t=1.03$; $df=280$; $P>0.05$) was significantly variant in these groups (Table 4). Informational justice perception of employees, however, significantly affected their achievement orientation ($F=3.81$; $P<0.05$ and activism ($F=21.55$; $P<0.001$) but not their occupational primacy ($F=2.38$; $P>0.05$).

Achievement orientation was found least (Mean=23.35; S.D.=2.38) among those who perceived least informational justice (1 to 20). The F score of inter-group variation in activism was 21.55 ($P<0.001$) and the third group in the study differs significantly from other two groups. $F=6.34$ and 6.47 respectively when variance measured in respect to first and second group; level of significance was less than 0.001 in both the calculations (Table 5).

Overall justice perception in the organisation significantly affected employees' achievement orientation ($t=2.03$; $df=280$; $P<0.05$) and occupational primacy ($t=2.39$; $df=280$; $P<0.05$); whereas activism was not significantly affected by the justice perception ($t=0.27$; $df=280$; $P>0.05$). Higher the justice perception, higher was found the score of achievement orientation and occupational primacy (Table 6).

Higher Order Need Strength

Higher order need strength was found significantly variant amongst different groups who differently perceived distributive justice in the organisation ($F=6.03$; $P<0.05$). Average higher order need strength in those employees who perceived highest distributive justice (41 to 60) was found significantly higher (Mean=10.19; S.D.=1.46) than those who evaluated it between 21 and 40 (Mean=9.53; S.D.=1.67) (Table 2).

Procedural justice perception was also found significant on higher order need strength in employees ($F=17.18$; $P<0.001$). Those employees who perceived the least procedural justice in the organisation (1 to 20) were found significantly less in higher order need strength (Mean=8.57; S.D.=1.61) than other two groups (Mean=9.94 and Mean=10.27) respectively as per their justice perception (Table 3). Higher order need strength in those employees who awarded 21 to 40 point for interactional justice in the organisation was found significantly less ($t=2.93$; $df=280$; $P<0.01$) than those who perceived it between 41 and 60 (Table 4). Informational justice perception was found having significant impact on employees' higher order need strength ($F=7.36$; $P<0.01$). The employees who perceived highest informational justice (41 to 60) scored significantly low in higher order need strength when compared to other two groups (Table 5).

Higher order need strength amongst organisational members was found significantly varied according to their justice perception in the organisation ($t=3.26$; $df=280$; $P<0.01$). It varied in direct relation with justice perception (Table 6).

Organisational Citizenship Behaviour

When sample of employees selected for study were segregated according to their perception of distributive justice in the organisation, it was found that average score of organisational citizenship behaviour varied significantly amongst employees ($F=8.18$; $P<0.001$). Those employees who perceived the least distributive justice (1 to 20) were significantly less in organisational citizenship behaviour in comparison to other two groups. Again, those employees who scored (21 to 40) in distributive justice perception (Mean=33.61; S.D.=3.7) were significantly less than them who scored the highest (41-60) (Table 2). There was a significant difference ($F=5.60$; $P<0.01$) in citizenship behaviour among those who perceived least procedural justice (Mean=32.93; S.D.=5.51) and other groups (Table 3). Difference between PJ Group 1 (41-60) and PJ Group 2 (21-40), however, was not significant. Citizenship behaviour in IJ Group 2 (21-40) was significantly less ($t=2.14$; $df=280$; $P<0.05$) than that in IJ Group 1 (41-60) (Table 4). Informational justice perception amongst employees, however, did not create any significant difference ($F=0.11$; $P>0.05$) among respondents in different groups (Table 5).

Overall justice perception in the employees, however, was significantly different in the respondent employees ($t=3.18$; $df=280$; $P<0.001$). It was directly related to score of organisational justice perception (Table 6).

Organisational Retaliatory Behaviour

Distributive justice perception in employees and their retaliatory behaviour showed a positive relation (Table 2). The group of employees who perceived least distributive justice (1 to 20 points) scored significantly less that those who were at the opposite end ($F=3.87$; $P<0.05$). Procedural justice perception among employees showed a reverse relationship with their retaliatory behaviour (Table 3). Those who perceived the least justice (1 to 20 points) in implementation of organisational decisions scored significantly higher on retaliatory behaviour scale than the other two groups. As a result of this variation, the behaviour significantly varied in different groups of the sample ($F=3.06$; $P<0.05$). Interactional justice perception in employees did not significantly affect their retaliatory behaviour in the organisation ($t=0.03$; $df=280$; $P>0.05$); it was, however, ascending along with justice perception (Table 4). Similarly, informational justice perception also did not significantly affect employees' retaliatory behaviour ($F=0.12$;

P>0.05), though it increased with decrease in perceived level of informational justice in the organisation (Table 5).

Overall justice perception in the employees did significantly differentiate their retaliatory behaviour (t=0.34; df=280; P>0.05). Average retaliatory behaviour in the sample was found the same in both groups (Table 6).

Cognitive Appraisal of Pay and Job

Cognitive appraisal of pay and job among employees when segregated according to distributive justice perception was significantly distinct (F= 38.63; P<0.001). Those who perceived least distributive justice (1 to 20 point) scored average 22.56 (S.D.=7.2) in comparison to 25.8 (S.D.=7.39) and 32.39 (S.D.=5.84) in other two groups in ascending order (Table 2).

Procedural justice perception variation in employees significantly affected their cognitive appraisal of pay and job (F=38.1; P<0.001). Procedural justice perception and comparative satisfaction showed the same pattern of relationship as was observed in distributive justice. Average satisfaction score in employees significantly increased in each next higher perception group (Table 3).

Cognitive evaluation score in employees did not significantly vary in groups of employees segregated according to their interactional justice perception (t=1.45; df=280; P>0.05). The score, however, showed the same inclining pattern as in preceding two elements of justice (Table 4).

Informational justice perception was also not found to be a significant factor affecting employees' cognitive appraisal of pay and job (F=0.03; P>0.05). This element of organisational justice perception did not follow the consistent increasing pattern as was observed in preceding elements (Table 5).

Overall perception of organisational justice, however, significantly varied employees' cognitive appraisal of pay and job (t=5.44; dt=280; P<0.001). It also corroborated the positive relationship between justice perception and comparative satisfaction (Table 6).

Intrinsic Motivation

Intrinsic motivation in employees was found significantly affected by their distributive justice perception (F=9.98; P<0.001). Average intrinsic motivation was significantly different in each group; it increased along with increasing perception of distributive justice (Table 2). Procedural justice perception was also a significant variable affecting intrinsic motivation in employees (F=21.63; P<0.001). Level of average intrinsic motivation was significantly less in the least perceiving group (1 to 20 point) in comparison to other two higher justice-perceiving groups. The job-attitude showed a significant increase in each higher group of justice-perceiving employees (Table 3). Intrinsic motivation in employees, though slightly increased with Interactional justice perception (Table 4), but did not vary significantly (t=0.07; df=280; P>0.05).

Intrinsic motivation among those employees who perceived informational justice between 21 and 40 was found the least among the three groups (Table 5). It also did not support a definite pattern of variation as was obvious in preceding elements of organisational justice. The difference among the intrinsic motivation level of various informational justice perception groups, however, was not significant (F=1.92; P>0.05).

Organisational justice perception in employees positively affected their intrinsic motivation level (Table 6). Average intrinsic motivation increases significantly along with enhanced justice perception (t=2.56; df=280; P<0.05).

Job-Involvement

Job involvement among the employees was significantly affected by their distributive justice perception level (F=7.86; P<0.001). Involvement increased significantly along with improvement in employees' perception of justice (Table 2).

Procedural justice perception among the employees also affected their job involvement in a significant manner ($F=9.7$; $P<0.001$). The resultant attitude among the respondents was positive in relation to procedural justice and significantly increased with increasing perception of the justice (Table 3).

Interactional justice perception though not significantly affected job-involvement employees ($t=0.95$; $df=280$; $P>0.05$), it increased with perceived justice in interactions among members (Table 4). Informational justice perception in employees, however, was an exception in two maters; it did not follow any specific pattern of effect on job involvement as other elements of justice did (Table 5). Secondly, it was not a significant factor in job involvement of employees ($F=1.47$; $P>0.05$).

Organisational justice perception among the respondent members was found a significant factor affecting their job involvement ($t=3.26$; $df=280$; $P<0.01$). It also supported the positive relationship between the construct and organisational justice perception (Table 6).

Effect of Organisational Facilities on Work Attitudes

There was significantly high correlation coefficient between organisational facilities provided for employees and level of job satisfaction, organisational citizenship, intrinsic motivation, and job-involvement in them, albeit it was negative in retaliatory behaviour among the respondents of the sample (Table 7). The difference in the correlations between the two constructs was insignificant in all work related attitudes except job involvement (Table 9).

Effect of Interpersonal Interactional Opportunity on Employees' Work Attitudes

Interpersonal interactional opportunity significantly affected correlation between organisational justice score and job satisfaction in the both groups; retaliation and intrinsic motivation in higher perception group of employees (Table 8). Job involvement in lower perception group (81 to 160) was found significant and negatively correlated ($r=-0.403$; $P<0.001$) with justice in the organisation. It was also negative, but insignificant in citizenship behaviour ($r= -0.068$; $P>0.05$) in the higher perception group (161 to 240). Difference among the correlation scores of the two groups was found insignificant except in job involvement (Table 9).

DISCUSSION

The primary purpose of the study was to identify the impact of perception of organisational justice on employees' work attitudes. The study selected nine attitudinal responses and two organisational stimuli for assessing the impact of the perception. Gender and age are observed as the modifiers of justice perception in the study; however, marital status does not play a significant role in influencing justice perception.

Table 7. Correlation between organisational facilities and attitudinal responses

Org. Justice Groups	N	Attitudinal Responses				
		Job-satisfaction	OCB	ORB	Intrinsic Motivation	Job-involvement
OJ GR2	114	0.824***	0.278**	-0.330***	0.460***	0.229*
OJ GR3	168	0.838***	0.166*	-0.155*	0.405***	0.496***

Table 8. Correlation between interpersonal interactional opportunity and attitudinal responses

Org. Justice Groups	N	Attitudinal Responses				
		Job-satisfaction	OCB	ORB	Intrinsic Motivation	Job-involvement
OJ GR2	114	0.322***	0.076	0.133	0.029	-0.403***
OJ GR3	168	0.400**	-0.068	0.182*	0.170*	0.021

Table 9. Significant difference in correlation between selected organisational stimuli and attitudinal responses

Organisational Stimuli	Attitudinal Responses (Z Score)				
	Job-satisfaction	OCB	ORB	Intrinsic Motivation	Job-involvement
Organisational Facilities	0.37	0.96	1.52	0.55	2.53*
Interpersonal Interactional Opportunity	0.73	1.18	0.41	1.16	3.65***

The study negates any causal impact of organisational justice perception on employee's response to autonomy. If one considers variation in an attitude as a result of a particular perception assuming all others inoperative, quality concern in an employee can be taken as an acknowledgement of the procedural fairness in the organisation. It can be inferred that a staff-member can be made more alert to the quality of work through enhancing his/her perception of fairness in implementation of decisions; and mere interactional gimmicks do not replace the requirements of procedural fairness.

Distributive and procedural justice has been found a significant determinant of self-efficacy in employees. The present study concedes the earlier findings that suggest fair distribution of resources boosts belief in own capabilities. The variance in the attitude positively moves along with these justice perceptions. It can be inferred from the findings of the study that low level of distributive justice cause dampen self confidence and they (who perceive it low) blame themselves for the unjust distribution of resources. Similarly, not getting opportunity to keep voice during a decision making or implementing a decision may give them a feel of lacking in their own capabilities. The study reveals that distributive injustice is a catalyst to employees' activeness in the organisation. They try to restore justice in allocation of resources and hence, take personal initiative towards that.

Job satisfaction has been found to be a positive function of justice perception. It is quite rational that an employee does feel contented with his work environment when he finds the things go logically. In the present study again, it was found that the manner of deciding emoluments is more important than amount of pay. Further, quality of treatment received by an employee brings a great impact on his satisfaction with job. Certainly, interactional fairness is a daily phenomenon, whereas pecuniary matter is monthly. The study fails to discover the logic for negative functional relation between informational justice perception and job satisfaction in respondent employees.

While analysing achievement orientation in the respondents, it was found that poor justice in distribution and decision implementation instils activism in employees. Although the exact reason is yet to be searched out, it may be argued that injustice in distribution of resources arouse a strong desire to master over environment through emphasising planning for a controllable future. On the other hand, the same unjust allocation reduces the significance of job and success in current occupation; the ambition driven efforts are no more attached to the present occupation. Occupational primacy also shows negative trend with procedural injustice. Timely dissemination of information to all staff-members was found a significant influencer of achievement orientation in employees. It may be construed from the results of the present study that those who seek for control over environment lose their heart on not getting a free informative environment. It is also inferred that achievement orientation in employees can be improved through enhanced perception of justice.

The other attitudes, such as higher order need strength, organisational citizenship behaviour, retaliatory behaviour, job involvement and intrinsic motivation were also found significantly varying along with distributive and procedural justice perception. Information justice score analysis, however, gives a contradictory inference; it was found that highest scorers of informational justice were the least scorers of higher order need strength. Healthy interactions amongst employees may be a measure to build a good soldier for the organisation. The study reveals that retaliation in an organisation is not directly caused by distributional but by procedural unfairness. Surprisingly, retaliation is aggravated along with perceived distributive justice.

The present study aimed at analysing intervention of organisational stimuli on attitudinal response but, it was very difficult to individually recognise a stimulus for its respective impact. Even then the correlational measure was adopted for establishing relationship pattern in the two phenomena. The work attitudes were found significantly correlated with organisational facilities and interpersonal interactional opportunities; the relationship is however, negative with retaliatory behaviour. The difference in correlation was found significant only in job involvement.

It can be concluded on the premise of the empirical findings and above mentioned discussion that attitudinal responses of employees to the organisational stimuli can be modified by individual perception of prevalent justice in the organisation. The modification, certainly, is not uniform always. Hypothesis 1is statistically accepted as perceived justice (distributive, procedural interactional and informational) in the organisation affects attitudinal responses to common stimuli in the organisation. And Hypothesis 2 is also conceded since perceived justice (distributive, procedural, interactional and informational) in the organisation is found associated with employee's response to organisational facilities. Again, perceived level of justice in the organisation correlates with employees' attitudinal response to interpersonal interactional opportunities but there are exceptions to this hypothesis. Citizenship behaviour, retaliatory behaviour and intrinsic motivation when perceived justice is low, and job involvement when perceived justice level is high interactional opportunity facility does not significantly affect work attitudes.

The study would have given a more generalisable result had it was inferred from a larger sample, but due to financial and time constraints the sample size had to kept within 300. Moreover, it would certainly be better had it been a comparative study but, again the study was confined in a single corporate office of a nationalised bank for the sake of uniformity in organisational stimuli.

The present study furthers scope for study on non-pecuniary incentives to improve long term productivity in employees. Of course finer analysis of all the factors is essential. It may open new avenues for organisational study.

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KEY TERMS AND DEFINITIONS

Distributive Justice: An individual's cognitive evaluation regarding whether or not the amount and allocation of rewards in a social setting were fair; these rewards and resources include pay, promotion, money, office space, and equipment.

Interactional Justice: Interactional justice is fostered when decision makers treat people with respect and sensitivity and explain the rationale for decisions thoroughly; it is a subset of procedural justice and refined into interpersonal justice and informational justice that focuses on dissemination of information about why procedures were used in certain way or why outcomes were distributed in certain fashion.

Procedural Justice: The perception of fairness in the process control used to determine the allocation of rewards and explanation given by the management for its decisions and their outcomes.

Work Attitudes: The most dominating attitudes in all employees that are grouped into cognitive and affective components; in other words, collective term for job satisfaction, organisational citizenship, intrinsic motivation, and job-involvement.

Chapter 22
Export Marketing Communications of Public Sector in Promoting Tourism Destination of a Greek Island

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ABSTRACT

The purpose of this chapter is to evaluate the effectiveness of marketing communications in promoting tourism on the Greek island of Myconos. The research evaluates the effectiveness of the marketing communications used by public bodies to promote Myconos in Europe. The research location was the airport at Myconos. The researchers used a probability sampling technique in the form of stratified random sampling, since the population used for the research was multinational. Four-hundred questionnaires were gathered from a research population of 8000. The percentage of arrivals pertinent to each subset (tourist population divided by nationality) was compared with the total number of tourists who arrived on Myconos from the countries constituting the sampling frame, and the number of questionnaires to be given to each of the subsets was calculated. The study shows that marketing communications had a positive effect on the overall business performance and improved it noticeably. Marketing communications used by public bodies to promote Myconos were effective as they increased tourism arrivals and influenced the majority of the tourists to visit it. In addition to this, the study shows that there are factors such as tourists' origin, age, and annual income that affect the effectiveness of marketing communications. It also identified that tourists value a marketing strategy that involves analytical information about the tourism destination, as they stated that brochures, guidebooks, and the Internet influenced them to a great extent.

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1. INTRODUCTION

Marketing communications has been researched extensively in the last decades and it is very important because it affect the marketing performance. Marketing communications are the promotional components of the marketing mix that involve the communications among an organization/firm and its target audience that have a direct impact in the organization's marketing performance (Drucker, 1975; Jobber, 2004).

Marketing is an essential part of tourism services (Borden N, 1964). Marketing communications play a crucial role in Tourism. An analytical and broad marketing communications strategy is necessary for a successful and sustainable tourism activity (Gummesson, 2007).

According to Kreag (2001) tourism expands very rapidly and is one of the largest economic sectors in the world. Moreover tourism has a great economic impact at state, local and national levels. That impact can be translated in employment opportunities, Town's tax revenues and so on (Haralambopoulos and Pitzam, 1996).

Tourism also affects directly the economy of a country. According to Nilanjan (2012) tourism has emerged as a new mantra for alternative economic development. Tourism concept has been tested and already applied for alternative development of a nation and proved to give positive result. Greece's economy is highly dependent on tourism, as tourism is major source of foreign exchange and also provides the 16% of the Gross National Product. Due to increased competition and limited financial resources, the public sector needs to utilise marketing strategies in order to satisfy the needs of their markets (Kitchen and Schultz, 2001).

Despite the importance of the issue, the majority of studies concerning the effectiveness and the impact of marketing communications in tourism industry are conducted in a theoretical and not in a practical level (McCarthy,1996). In addition to this they focus only in one marketing communication tool and its effect. Moreover, while there are studies that focus on the economic impact of tourism there is a lack of studies that examine the effectiveness of marketing communications used by the public sector(Ministry of Tourism, Municipalities and Prefectures) (Haralambopoulos and Pitzam, 1996).

Therefore, it will be valuable to examine the effectiveness of the marketing communications in Tourism industry as important insights will be provided to both practitioners and researchers. Furthermore, feedback will be provided regarding the effectiveness and the choice of the marketing communications used that will allow the re-evaluation of the marketing communications strategy.

The overall objective of this research is the evaluation of the effectiveness of the marketing communications used by the public bodies in order to promote Myconos Island as a tourism destination in Europe. An amount of more specific aims derive from this overall objective in order to examine the profile of visitors, to examine the effectiveness of the marketing communications used the public bodies in order to promote the Island of Myconos in Europe. Finally the research provides a comparison of perceived effectiveness of marketing communications between Central Europe (Holland and Germany) and Scandinavian tourists.

2. LITERATURE REVIEW

2.1. Marketing Communication Tools

Due the technological advance, a new marketing communication tool has emerged. As the number of its users grows every day and its access is significantly improved all over the world it is a very important marketing communication tool. It is a key tool for tourism marketing and its role is to share information about the tourism destination in order to create awareness and desire to the audience

(Delozier W, 1976). Internet has a crucial role in developing a successful and sustainable tourism. The selection of marketing communication tools varies between the different markets. Consumer markets tend to spend more on advertising, sales promotion followed by personal selling and public relations (Kotler, 2003). On the other hand in business markets the most used tools are personal selling and sales promotions, followed by advertising and public relations. (Kotler, 2003)

All marketing communications used by marketers can then be evaluated of whether are effective, efficient and economic (Eusebio et al., 2006). They can be evaluated in terms of the effect and action that they produce and in terms of the sales effect they produce (Ambler and Kokkinaki, 1997).

2.2. The Hierarchy of Effects Models

The hierarchy of effects models presents the step-based process by which people move after an exposure to marketing communications (Amanda, 2004).

It has three different steps: the thinking (cognitive), the feeling (affective) and the doing (conative) (Amanda, 2004).

The most recognised hierarchy of effects model is the AIDA (Awareness, Interest, Desire, Action), presented by Lewis (Amanda, 2004). He suggests that consumers move from one step of the model to the other on their path to consumption (Amanda (2004).

However, it is being criticised for being too simplistic because it assumes that consumers reacts and moves through the steps of the model as a result of a cause (marketing communications) without having the ability of being pro-active or interactive (Amanda, (2004; Harlow et al, 1995).

According to Keller (2001) Marketing communications should be evaluated regarding the interest that they have created and regarding the influence they had in target audience decision. According to Kotler (2003), the target audience must be questioned to answer in what extend a particular promotion influenced his final product or service (tourism) decision. However, the majority of the organizations and agencies spend more money on pretesting the marketing communications (e.g. advertising) and less in the important task of their effectiveness evaluation. (Kotler, 2003). According to Pickton and Broderick (2005), sales effect can be used in order to evaluate the effectiveness of marketing communications. In the case of Tourism Industry, sales will be translated in tourisms arrivals in the tourism destination (Keegan and Schlegelmich, 2001).

Companies may evaluate marketing communications impact on sales by comparing past marketing communications and sales results with current marketing communications and their results. (Kotler, 2003) This method is called historical approach. (Kotler, 2003)

However, this method has also limitations as there are other factors except marketing communications that affect the sales volume (Amanda (2004)). Those factors are competition, price, the service offerings and its availability. (Kotler, 2003)

2.3. The Importance of Tourism Marketing

After taking into consideration the impacts of tourism it is very important for companies and organizations to develop a successful marketing strategy and use the appropriate marketing tools to take advantage of tourism benefits. This is strengthening by the fact that the tourism sector will draw more attention as both the goods and the agricultural sector are declining. Marketing has a crucial role in developing a successful and sustainable tourism. As tourism is a service industry, the basic products that the tourism businesses provide to their customers are hospitality and recreational experiences. (Mahoney and Warnell, 1987).

Nilanjan et al (2012) state that in order to achieve competitive advantage tourism marketers must clearly identify and understand what their travels perceive a challenging set of offerings of a travel destination (such as tourist activities and attractions (Javalgi, Thomas and Rao, 1992).

Tourism industry includes many components such as transportation, entertainment, accommodation, special events and shops which all together create the final travel experience for the tourists (Mahoney and Warnell, 1987). It is very difficult for a tourism destination to involve all the elements that their visitors desire in order to satisfy them and that create a difficulty not only for controlling but also for maintaining a high level of quality of the final travel experience (Mahoney and Warnell, 1987). Marketing communications should provide accurate information at the right time to the target audience in order to assist them to decide whether to select the destination or not. (Mahoney and Warnell, 1987) Misrepresentation will have a long-term negative result as it will lead in very dissatisfied visitors and that in return in poor recommendation (Mahoney and Warnell, 1987). It also very important that the marketing communications developed is practical and also cost effective (Yilmaz and Bititci, 2006).

3. RESEARCH METHODOLOGY

3.1. The Sampling Technique

After taking consideration the nature of the research's questions and objectives, a probability sampling technique was used.

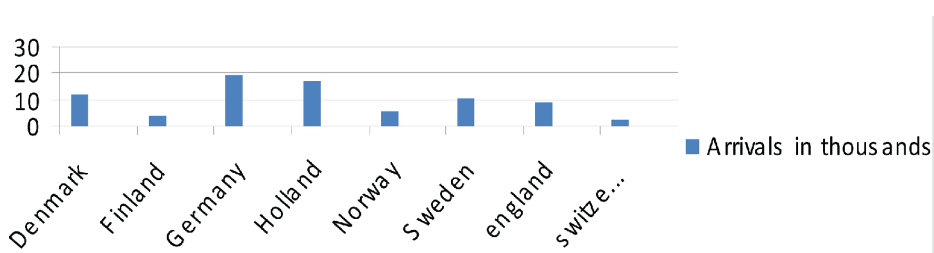
As the population of the research is divided in nationalities, a stratified random sampling technique was required. Stratified random sampling divides the total population (tourists) into a number of subsets based on one or more attributes (nationality) (Kinnear and Taylor, 1996). First the sampling frame is divided into smaller subsets and then a random sample by using either simple or systematic technique is drawn from each subset. By using that technique the sample is more representative as the researcher is able to ensure that each of the created strata is proportionally represented within the sample (Yin, 1993).

The countries of origin that the research targeted are the following:

1. Denmark, Finland, Norway, Sweden (Scandinavian)
2. Germany, Holland, Switzerland (Centre Europe)
3. England

Those countries were grouped in the above groups in order comparison between them to be made. As mentioned before the research begun in the 15 of September and finished in the 30 of the same month. According to the tourist arrivals data during that period arrived 10000 tourists from all Europe. From the countries that participate in the research approximately 8000 tourists visited the Myconos Island. According to the data that the Airport provided to us Figure 1 presents all the visitors that visited Myconos Island in the season from 1 of January 2010 till 30 of August 2010 from the countries that the sampling frame consists of.

Figure 1. Tourists arrivals



Those arrivals from the above countries represent 85% of Myconos tourism industry. Tourists from countries that did not involve in the research sampling frame excluded from the table.

The minimum sample size required for a population of 8000 at the 95% level of certainty and a marginal error of 5% is 370. It was decided that a number of 400 questionnaires will first developed and then distributed to tourists among those countries according to the percentage they have.

The Table 1 presents the percentages of visitors that arrived to Myconos from each country compared to the total number of tourists that came to Myconos from the countries that consists our sampling frame (Denmark, Finland, Norway, Sweden, Germany, Holland, Switzerland and England) during the same period.

Under taking into consideration the percentage that each subset (tourist population divided by nationality) had by the records that the Airport of Myconos provided to the researcher, the number of questionnaires that should be given to each of the subsets was calculated.

To tourists from Denmark were given 60 (15% of 400) questionnaires, to tourists from Germany 96 (24% of 400), to tourist from Finland 24 (11%) of 400), to tourists from Holland 84 (21% of 400), to tourists from Norway 28 (7% of 400), to tourists from Sweden 50 (12, 5% of 400), to tourist from Switzerland 14 (3,5% of 400) and to tourists from England 44 (11% of 400).

The sample of the research corresponds to the 5% of the total population.

After the population of the research was divided into smaller subsets, a random sample was drawn from each subset by the use of the simple random technique.

3.2. The Research Tool

In order to collect the required data and after taking into consideration the boundaries of cost and time, used a structured questionnaires. The questionnaires were completed by the tourists (Self-administered questionnaires). They were given by hand by the researcher and when they were completed by the tourists they were returned back to the researcher who was waiting in the same place (departure station of the airport of Myconos).

The questionnaire consisted of 20 questions followed by the demographics at the end of it. From those nine were category-type questions, four were list-type questions and seven were rating-type questions. In order to support the flow of our survey two filter questions were included. They intend to identify the respondents for whom the questions followed were not applicable and they enabled them to skip them.

The questionnaire had 6 sections. The first section aims to identify the profile of visitors of Myconos Island. It involved the opening questions which was designed in a way that did not required much thought by the respondent. The second section involved questions intended to evaluate the marketing communications used by public bodies in order to promote Myconos Island in Europe. Those questions required more thinking from the respondents. The third section involved questions that intended to identify whether there were other reasons except marketing communications that influenced their decision to visit Myconos Island.

The fourth section involved questions that tested whether the marketing communications for Myconos Island transferred the correct message to the respondents. The fifth section intended

Table 1. Myconos tourist's arrivals 2010

Denmark	Finland	Germany	Holland	Norway	Sweden	England	Switzerland
15%	6%	24%	21%	7%	12,5%	11%	3,5%

to evaluate the visitor's satisfaction and loyalty. Finally the last section included the demographic questions that are required in order to make comparisons.

4. RESULTS

4.1. Visitors Characteristics

Myconos Island attracts visitors mainly from Europe. Figure 2 presents the tourists from Europe (Scandinavia, Centre Europe and England) that visited the Island of Myconos's the summer season of 2011.

The number of questionnaires drawn from each country that was based on tourist arrivals till August was verified as the percentages did not change with the arrivals that occurred in the next two months of the period. The most important market for Myconos is Germany, 24% of total followed by Holland (21%) and Denmark (15%). 58% of Myconos visitors were female while male were the remaining 42%. 37.3% of visitors of Myconos are aged between 40 and 55 years followed by the group of 55 and more that has a percentage of 31, 8%. Visitors that their age is between 25 and 40 years old are the 24% of the total visitors in Myconos Island. The lack of services that Myconos's Island provides to the young people has resulted in a low percentage (7%) of visitors that their age is between 18-25 years old.

The majority (36, 5%) of tourists have an annual wage ranged between 25000 to 40000 euro followed by those (30, 5%) earning an annual wage ranged between 15000 to 25000 euro. Tourists that belong to the more wealthy category are the 18, 8% of the total. Finally tourists that earn less than 15000 euro per year are equal to the 14, 3% of the total. A small percentage of them are students and unemployed. Tourists that work as senior executives and freelancers/self-employed are the 9% and 12% of the total. Finally the third largest category (15, 3%) is the pensioners.

4.2. Past and Current Consumer Behaviour

As described in Figure 3 the majority of tourists (73, 3%) visited Myconos the last period for the first time of their lives. A 13, 3% of the total answered that they have been to the island more than three times, 6, 3% of the total have visited Myconos more than six times and finally 6, 8% have been to the Island more than ten times.

93, 8% of the tourists answered that they visited Myconos Island for holidays, 4% came in order to visit friends and relatives during the summer and the remaining one percent came either for business or to attend a conference/exhibition. The majority of them selected to spend one week on the island. Approximately 40% spend two weeks while only 4, 5% chose to stay in the island for more than two weeks.

Figure 2. Scandinavian, Centre European and English arrivals to Myconos

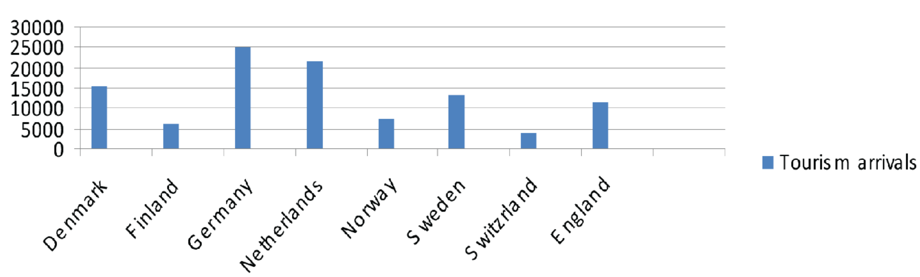


Figure 3. Tourists' visits to Myconos

The majority of tourists selected to stay in moderate quality and standard hotels. Only 9, 3% of the total selected to stay a luxury hotel. A significant number (15%) decided that it was more appropriate for them to rent a flat. Finally 5% of the total tourist handled the costs of renting a yacht for their accommodation while the rest 10% was stayed either with friends/relatives or in a guesthouse

Regarding their booking behaviour the 46, 5% of Myconos's tourists booked their trip to Myconos by a travel agent, 38, 3% of them used internet and only 15, 3% of them through a tour operator. In addition to this, Figure 4 presents the time that they booked their trip.

More than the 40% of the tourists that visited Myconos last summer were early booker as they have booked their tickets more than 12 weeks before their arrival to the island. One quarter of Myconos's tourists booked their tickets 5-8 weeks before their trip and about the same percentage (28, 5%) answered that they booked their tickets 1-4 weeks before their visit to the Island. Finally only a small percentage of them (3%) purchased a last minute ticket.

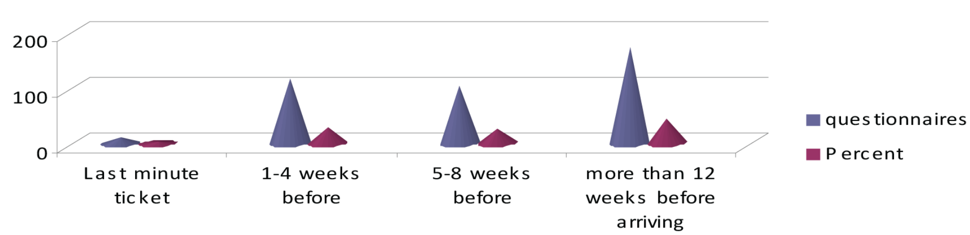
4.3. Customer Satisfaction and Loyalty

According to the research the majority of tourists that visited Myconos Island the summer season were satisfied by their over travel experience. The majority of them (80, 6%) rated their overall travel experience in Myconos with 8 and more in a rating scale from1 to 10 in which 1 describes the worst travel experience and 10 the maximum satisfaction for their holidays. Negative customer satisfaction (rating <5) appears to be only in a small amount of the total visitors (3, 3%). Regarding customer's loyalty more than 80 percent of tourists states that is very or quite likely to visit Myconos again. On the other hand 8% of them are not willing to visit the island again and also 3, 3% of total states that there is no possibility to do so. Finally 8% of tourists are not sure for their answer.

4.4. Effectiveness of Marketing Communications

From the total number of tourists that visited Myconos during the summer season of 2007 the 78, 5% were informed about the island. A minority

Figure 4. Time of booking



of them 21, 5% have not been informed about the island. In addition to this 19, 5% of them stated that they were very good informed about the island. A big number of tourists (39. 5%) considered the information they had about the island of a very good level. A quarter (25, 6%) of the total tourists suggested that their level of information was basic, and the rest stated that either was wrong or not informed at all. The marketing communications message was that Myconos Island offers relaxing holidays to its visitors. Respondents answered what was their perception of the type of holidays that the island offers after all the promotional activities that have been exposed.

The majority (79%) of tourists stated that after all the promotional activities for Myconos that have been exposed, they expected that the island will offer to them relaxing holidays. 11, 5% of the total was expecting Romantic holidays, followed by a 8% of the total who had the perception that the Island offered Family holidays. Finally a small (1, 5%) number of tourists visited Myconos Island because the mc created the perception to them that the island offers party holidays. The majority of tourists stated that their holidays in the island met in a great extent the expectation created to them by B2B (public sector and tourism agent) Myconos's promotion. A very small percent (4, 3%) stated the opposite.

4.5. The Effect of Export Marketing Communications on Tourist's Decision

In this section marketing communications will be evaluated in terms of the awareness and interest that they have created in the target audience in order to visit the island.

While there is a big percentage (31, 8%) of tourists whose decision was influenced (major or some influence) by Adverts in magazines the majority (54, 6%) of them was influenced either in a small percent or not influenced at all. The 37, 1% of tourists stated that their decision to visit the Island was influenced by Myconos's adverts in newspapers. However 26, 3% answered that the particular form of marketing communications was not much of an influence to them. Finally, a small percent (28, 3%) was not influenced at all by those adverts in newspapers.

The majority of tourists (75, 8%) that visited Myconos Island influenced in a great extent by that form of marketing communications. 35, 5% of the tourists answered that tourist brochures and guidebooks was a major influence to their decision to visit the island. 40, 8% of the total visitors suggested that the particular for of marketing communications resulted in some influence regarding their decision to visit Myconos. On the other hand a small percentage (7, 5%) answered that there were not much influence. Finally 9, 3% was no influenced at all.

According to the research from Myconos's total visitors 14,5% was influenced in a great extent by exhibitions and tradeshows that presented the island and 21% was influenced a lot. On the other hand 22, 5% of the total stated that they were not much influenced by that particular form of marketing communications. Almost on third of the total (29, 5%) was not influenced at all in his decision to visit Myconos by that type of marketing communications. Finally 12, 5% of the tourists did know if they were influenced or not.

According to the research while 45, 8% seemed to be influenced in a high or a low extent the rest 32, 3% was not influenced at all. Finally 22% of tourists answered do not know to the question.

Almost half of the tourists that visited Myconos the summer season were influenced by internet in their decision to do so from the web sites that promote Myconos Island. 15, 5% of the total answered that Myconos's promotion on the web did not much impact on them and a 30, 8% stated that they were not influenced at all.

4.6. Past Experience and Word of Mouth

According to the research those tourists that have been to Myconos Island before had influenced positively by their travel experience in order to visit the island again. From the total number of Myconos visitors in the summer season of 2007, 26, 7% of them have been visited the island for more than one time. A large percentage (79, 8%) of those tourists that have been visited the Myconos Island before was influenced by that visit and decided to travel to Myconos island again. 26, 3% stated that advices from friends and relatives influenced them in a great extent to visit the islands while the 22, 3% of the total was influenced in some extent by their advices. On the other hand 6, 8% of visitors' decision was not much influenced by those advices. Finally a large number of them 40% was not influenced at al by advices from friends and relatives.

4.8. Comparison of Perceived Effectiveness of EMC between Central Europe, Scandinavian and English Tourists

The percentages of those tourists who answered that marketing communications influenced them either in a Major extent or in some extent merged into one percentage of tourists that influenced in order to present the results of the cross-tabulations. All chi square result of the cross-tabulation executed was below 0, 05 a fact that certifies that the variables were associated each other.

Adverts in Magazines

According to the research results marketing communications of that type seems to have greater impact on tourists from England as the 47, 8% stated that their decision to visit the island was influenced by Myconos's adverts in newspapers. Approximately one of three (35, 8%) tourists from Scandinavia was influenced to visit Myconos by its ads in the newspapers.

Finally, that type of marketing communications had the smaller impact on tourists from Centre Europe as only one quarter (24, 8%) of them was influenced by Myconos's ads in newspapers.

Adverts in Newspapers

As presented in Figure 5 the results are similar to those of the previous type of marketing communications. Myconos's adverts in newspapers seem to have greater impact on tourists from England as the 52, 2% stated that their decision to visit the island was influenced by those adverts. 42% tourists from Scandinavia were influenced to visit Myconos by its ads in the newspapers. Finally, that type of marketing communications had the smaller impact on tourists from Centre Europe as only one quarter (29, 4%) of them was influenced by Myconos's ads in newspapers. Compared to adverts in magazines that type of marketing communications was more effective.

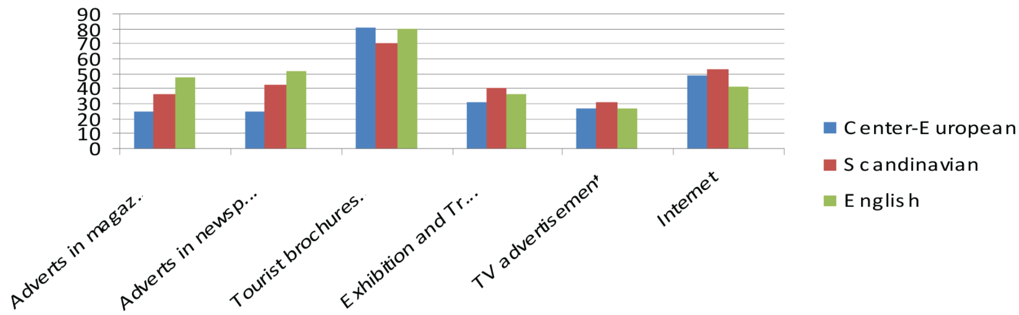
Tourist Brochures and Guide Books

According to the research results that type of marketing communications seems to be the more effective. Both tourist's from Centre Europe (80, 4%) and England (79, 6%) answered that their decision to visit Myconos was influenced in a great percent by Myconos's brochures and guide books. 70% of Scandinavian tourists were also influenced by that type of marketing communications.

Exhibitions and Tradeshows

That type of marketing communications had greater impact on tourist from Scandinavia (40, 7%). Approximately the decision of the one third (36, 4%) of English tourist was influenced in a great extent form that of marketing communications. Finally only 30, 9% of Centre European tourist was influenced to visit the Myconos Island.

Figure 5. Impact of Myconos MC to different tourist groups



TV Advertisement

The TV ads had almost the same impact among the three tourist groups. It influenced more tourists from Scandinavia (30, 9%) while had almost the same results on Centre European (27, 3%) and English (27, 3%) tourists. Centre European tourists had higher percentage of major influence compare to tourists from England

Internet

As presented in Figure 5 more than half (53, 2%) of the Scandinavian tourists were influenced to visit Myconos by the island's promotion on the web. Regarding tourists from England, 40, 9% of the total seems to be influenced by that type of marketing communication. Finally, 48, 4% of the Centre European tourists' decision to visit Myconos's was influenced in a great extend from that the Islands' promotion on the web.

5. CONCLUSION

The majority of Myconos tourists are from Europe. Its biggest market is Germany followed by Netherlands and Denmark. Moreover the majority of Myconos's tourists are female. The majority of them are more than forty years old. Therefore Myconos's tourism decision makers have two choices. The first option is to add more services in order to attract young people. The second one is to improve the quality of existing services in order to increase customer's satisfaction.

Due to the lower quality and quantity of services the majority of tourists that Myconos's attracts earn a medium annual wage. It can be assumed that tourists with medium annual wage spent less to their holidays compare to those that belong in the more privilege category, a fact that impacts on the effectiveness of tourism industry.

A major weakness is that the majority of tourists spend only one week in the island. Therefore they perceive that during that time they will be able to meet all the services that Myconos's will provide to them. The low duration that tourists spend on the island leads to less resources for the Tourism industry of Myconos. Fewer resources have negative impact on the budget that the public bodies of Myconos spend on marketing communications.

Despite the drawbacks that are presented in Myconos's tourism industry, due to high levels of hospitality the majority of tourists stated that is very likely that will visit the island again. Consequently they majority of them have rated their overall travel experience in the island with 8 and more, with 10 being the maximum satisfaction. That fact is reflected in the answers of tourists regarding the frequency of visits to Myconos as more than one quarter of them has visited the island for more than three times.

Myconos sufficient customer's retention is a very important asset. This is because for a firm or organization is relatively cheaper to retain its customers (tourists) than to acquire new ones. (Reichheld and Sasser, 1990) Furthermore customer retention decreases the costs of services as it is required less cost to service long-life customers compare to costs for servicing new ones. (Reichheld and Sasser, 1990)

According to the research findings the majority of tourists book their tickets to Myconos by using travel agencies. Therefore it would be valuable for Myconos's Tourism industry to strengthen the relationships with travel agencies. Long-last relations of mutual trust Myconos's public bodies and tourism agencies will have immediate positive results in tourism arrivals. A large percentage of the tourists favour the use of the internet in booking their trip to the Island. Therefore it will be valuable for Myconos public bodies to invest on the internet promotion and web site development in order to develop accessible, accurate and easy-used web sites.

Finally the majority of the tourists are early bookers. Most of them have booked their trip to Myconos more than two weeks before their arrival. That impacts on the selection of the marketing communications.

Those MC that attract customers that buy tickets of the last minute such as merchandizing at the point of sale (airport) seems to be less effective as the majority of the tourists book their tickets a long time ago. On the other hand mc such as advertising, exhibitions and internet seems to be more effective if they will be executed three months before the season starts.

5.1. Export Marketing Communication

According to the research there are no precise measurable objectives linked to EMC strategy apart from increasing the tourism arrivals.

According to the research's findings Myconos marketing communications main message is that the island offers relaxing holidays to its visitors. The unique travel experiences that Myconos' offers combines that type of holidays with culture, Ancient history and nature.

The place of Myconos's marketing mix is characterised by high accessibility that the location of the island and its infrastructure offers. Myconos's promotion is focused on the customer as it provides clear instructions to them in order to visit the Island by the use of internet, maps and guidebooks.

Myconos's pricing policy is affected from the intense competition; however the increased costs and decreased duration of the season are obstacles for offering a competitive price.

Regarding marketing communications their choice is based on what the competitors do and not on the target audience. The budget of the marketing communications is relatively low and the public bodies invest a lot on the relationships that are created between tourists and local people who participate in tourism.

The public bodies of Myconos use mainly traditional advertising by the form of adverts in newspapers, magazines and TV in order to create awareness and motivate the target audience. In addition to this, tourists' brochures and guidebooks aim to inform and influence the target audience.

Furthermore, tradeshows and exhibitions in key locations were operated. That in combination with advertising brochures is the only integration in mc that Myconos's public bodies undertook.

Moreover, internet as a marketing communication tool by the form of web-sites is used. Finally, sales promotions in forms of low-priced holiday packages were used only for a short period of type in order to increase off-season tourists' arrivals.

5.2. Evaluation of Marketing Communications

According to the research findings the overall marketing communications strategy was successful as the majority of tourists were not only informed but also the information was accurate and credible.

In addition to this mc were successful as they delivered correct the message to the target audience. Furthermore they created real expectations to tourists about the island.

After evaluating the mc used by the impact they have on sales effect (tourism arrivals) it is decided that they were successful as they increased the total number of visitors. In addition to this, during the season of 1999 Myconos's public bodies invested a lot into marketing communications and that resulted in a 30% of tourists arrivals.

Therefore, the existing theory of mc that suggests that marketing communications have a positive impact on the business performance applies in the Tourism sector.

Marketing communications influenced the majority of the target audience. According to the research's findings the most effective form of mc was those that included analytical information about the tourism destination and how to visit it such as tourist brochures, guide-books and internet promotion. On the other hand, the other traditional types of advertising and the tradeshows and exhibitions influenced in a lower extent the target audience's decision to visit the island.

Therefore, tourists seems to value and react more in mc that involve analytical information about the destination instead of mc that just aim to create awareness to them. Consequently its seems that internet as promotional tool should be used more as it provides that type of information and in a relatively lower cost from the traditional types of marketing communications.

Moreover, it was found that there are other factors that influence tourists such as advices from friends and relatives. Therefore, providing high level of services (e.g. hospitality) that will lead in a unique travel experience for tourists will increase customer satisfaction and therefore it will become the cheaper form of Myconos Island promotion.

5.3. Comparison of Perceived Effectiveness of EMC between Central Europe, Scandinavian and English Tourists

According to the research's results factors such as target audience origin, age and annual income affect the effectiveness of the marketing communications. Tourists from England are more influenced by adverts in newspapers and magazines compared to the other two groups of tourists. On the other hand internet promotion and exhibitions are more effective to Scandinavian tourists.

TV advertisement had almost the same medium impact to all tourists groups while tourist brochures and guidebooks influenced at the same extent the majority of them.

From the tourists groups that participated in the research the most difficult to be influenced are Centre Europeans. Therefore, a marketing research would be valuable to be conducted in order to identify what they perceive to be important for them.

Target audience's age also affects the effectiveness of the marketing communications. All marketing communication tools used except from the internet promotion were most effective in tourists that are more than 55 years old. Internet promotion had greater impact upon tourists that were from 40-55 years old. Tourists that were from 25 to 40 years old were the most difficult to be influenced. However, they seem to value brochures, guidebooks and internet promotion.

Income also affected the effectiveness of marketing communication tools. Different categories of tourists reacted in a different way to the mc. Traditional type of Advertising, Internet and Exhibitions were most effective in tourists that earn from 15000 to 25000. Therefore that group is more easily influenced compare to the other. On the other hand tourists with low annual income were influenced in a lower extent by mc communications compare to the other.

So, marketers must identify its target audience and its characteristics and then tailor the marketing communication mix in order to increase the effectiveness of the marketing communication tools.

5.4. Managerial Implications to Myconos's Public Bodies

In order to be able to evaluate the marketing communications used, the public bodies of Myconos must set specific objectives that the marketing communications should accomplish. In addition to this they have to undertake a marketing research in order to identify target groups' characteristics. That marketing research will also identify the tourism services that Myconos's tourists perceive to be important for them. Then public bodies will be able to tailor their marketing mix in order to meet target's audience expectations. Competition must also be taken under consideration.

Due to insufficient resources for marketing communications the public bodies of Myconos must select those types of mc that are cost-effective and at the same time successful. According to the research internet is a mc tool that influences in a great extent tourist travelling decision. So it combines efficient results in lower costs compare to other mc tools.

In addition to this by the use of public relations the relationship between Myconos' public bodies and key players in Myconos Tourism industry such as travel agencies will be improved and that will lead in increasing tourist arrivals.

Furthermore instead of using a standardized promotion strategy they need to tailor their marketing mix among different target markets (countries). Therefore it would be valuable to use the different marketing communications tools in different markets in order to increase their effectiveness.

Moreover market development would be valuable option for Myconos Tourism as big markets like China and USA could be also targeted. In addition to this product could also be developed in order to expand the season during the winter time.

Finally, people who participate in the tourism sector need to be trained in order to gain the appropriate business professionalism and tourism conscience. That will increase the provided services and increase customer's satisfaction and retention.

5.5. Implications to Theory

According to research's findings the theory of marketing communications is in a way applied in Tourism Industry as they have a positive impact on Tourism's industry performance. Despite the fact that the research is limited on Myconos's tourism Industry, general conclusions regarding the use of mc in Tourism may be provided. It seems that tourists value those marketing communications that involve analytic and precise information about the tourism destination such as brochures, guide-books and internet promotion.

In addition to this, factors such as the respondent's age, origin and annual income affect the overall effectiveness of mc. Therefore marketers should gather information about the target audience characteristics and then select those marketing communication tools that will be more effective for them. Despite the costs, by tailoring the marketing communication mix and select different mc for different target audiences, the overall effectiveness of marketing communications will be increased.

6. SUGGESTIONS FOR FURTHER RESEARCH

According to the research's findings tourists travelling decisions is influenced not only by marketing communications but also from other factors such as its origin, its annual income, its age and advices from friends and relatives. Therefore in order to measure the effectiveness of marketing communications in Tourism industry it would be valuable to identify-develop a model or technique that will include those factors. Moreover, it would be valuable to identify what tourists perceive important for marketing communication in Tourism.

6.1. Limitations of the Research Methods

The research was conducted in Myconos's Airport and although it is the centre of tourism in Myconos Island and the majority of tourists who visit the island arrive through the airport, limitation arises as the sample may not be representative for the whole Island of Myconos. In addition to this the research was conducted during September which is only one month of the total six that consist the summer season. Moreover, the research focuses in the marketing communications that are used by the public sector bypassing those used by the private sector. Finally, the effectiveness will be evaluated in terms of tourists' arrivals in Myconos and in terms of the awareness and interest that they created to the target audience. However there also other factors (e.g. economical, political, and target audience characteristics) that have an impact on tourists decision regarding the destination of their holidays.

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Chapter 23
Gap Analysis and Infrastructure Requirement for Tourism Development in the State of West Bengal:
Evidence from Bishnupur, West Bengal, India

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ABSTRACT

The rural tourism concept has become one of the vital issues of economic and social benefits to the society. This study identifies the problems and prospects of rural tourism in the state of West Bengal. The primary objectives of this study include an exploration of the development and emergence of rural tourism in the state of West Bengal, analysis of the tourism gap at Bishnupur, examination of the existing as well as future requirement of tourism infrastructure of Bishnupur, and the promotion and marketing of Bishnupur as an important rural tourism destination in Indian Scenario. For the fulfillment of the basic objectives, data for the study were collected through field survey. Information about the profile of tourism industry includes hotels, guest houses, number of rooms, number of persons employed, etc., as well as the profile of the tourists. The collected data has been analyzed using different statistical methods, Wilcoxon Pair Ranked Model used for Gap analysis. This study indicates how to develop and upgrade the rural tourism destinations by proper utilization of tourism infrastructural amenities in the area as well as active participation by public private initiatives and local resource utilization. This study is relevant for balancing the demand and supply of tourism infrastructural requirement indicators, which can offer service excellence.

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1. INTRODUCTION

Tourism turns the largest industry worldwide in terms of employment and gross domestic product. The tourism industry has been growing rapidly as well as changing at a fast pace. West Bengal is a land of splendid destination with rich cultural heritage, historical heritage, flora and fauna, spectacular beaches and mountains and wildlife. There are a few states in India with the variety that West Bengal has offered. Tourism has various dimensions in various aspects like economic, social, demographic, technological, geographical, cultural, natural, and so many fields. The attractions of tourists have been growing up on the above stated types of dimensions. Tourism now has laid down emphasis on the rural areas. In the context of socio-economic objectives it is necessary to take vital steps which are constructive and positive. Tourism is also an employment oriented sector. It is estimated that hotel and catering sector provide more than 10% of the total employment generated by the tourism industry. There is an opportunity which supplies various goods, needed for tourism product may be in the position to open avenues of employment. Rural parts generally following kinds of products are available viz. historical, heritage, natural based, medication based, religious based, cultural based and manmade. Which have got a great potential with respect development of tourism, also if certain constraint are removed this could be developed to their fullest excellent and there are certain great examples and certainly few countries where it will be showing public and political will these things have been made possible. All of them religious and historical type of rural tourism products are given much space for rural development. (Trivedi et. al., 2005). In India we observe that there is tourist congestion in urban, religious and historical sites and simultaneously innumerable tourist sites remain unknown and unnoticed in the rural belts of our country. This paper has observed that a tourist site, which was, once located in extreme rural location has come to limelight due to its historical importance or publicity by the local government and they have developed into a tourist village with variety of improvements in civic amenities, road and rail connection, hospitality and cottage industry. This has in turn bought immense change in the local economy in terms of growth of handicraft industry, employment, life style of the local population, etc.

2. LITERATURE SURVEY

Tourism studies turned its attention to ‘alternative’ forms of tourism, suggesting that these were more likely to overcome the exploitative dimensions of mass tourism in developing countries (Lea 1993; Brohman 1996; Khan 1997). The ‘pro-poor tourism’ (PPT) approach can be seen as an attempt to take these questions into account and to target the benefits of tourism more directly towards poverty reduction (Brown & Hall 2008). According to Negi (1990) the attractions in rural areas are enjoyment of rural scenery, the desire for open space, quiet and piece of mind, rural sports like hunting, fishing, ethnic attractions like folk life, custom, food, drinks, and festivals, educational and historical attractions like castles, churches, temples and monasteries etc. According to Jennet Hanshall (2000) “describes that Rural area is that rural tourism uses the country side as resources, which is associated with the search by urban dweller for tranquility and space for outdoor recreation rather than being specifically liked to nature.” Bramwell and Lane (1994) point out that “Rural tourism is a multifaceted activity. It is not just farm based tourism. It includes farm based holidays but also comprises special interest nature holidays and ecotourism, walking, climbing, riding, adventure, sports & health tourism, hunting, and angling, educational travel, arts & heritage tourism & in some areas ethnic tourism .”Tourists participate in creation of sales, profits, jobs, returns and income. Tourism is characterized by the fact that consumption takes place where the service is provided (Steenwegen, 2003), and the economic impact of tourism is an important factor of national, regional and public planning and economic development. Focusing on the demand side as several authors have pointed out (Page & Getz 1997, Sharpley & Sharpley, 1997), the recent trends in tourism lead to shift from standardized mass tourism to more individualistic patterns, which look for a more meaningful experience. In this sense the emergent rural tourist segment has varied motivations, which might include ecological uniqueness, cultural attractions, special adventures opportunities or the peace and quiet of the countryside. This represents a unique opportunity for rural operator, who can established network of different service providers to maximize opportunity and offer a diverse range of activities (Briedenhann & Wickens 2004).

In the hospitality industry, several studies have examined tourism attributes that guests may find important when evaluating the performed service quality. Literature review suggests that cleanliness (Atkinson 1988; Knutson 1988; Gundersen, Heide, & Olsson 1996), security and safety (Atkinson, 1988; Knutson, 1988; Gundersen et al., 1996), employees' empathy and competence (Atkinson 1988; Knutson 1988; Barsky & Labagh 1992; Gundersen, Heide, & Olsson 1996; Choi & Chu 2001; Markovi, 2004), convenient location (Knutson 1988; Barsky & Labagh 1992), value for money (Atkinson 1988; Gundersen, Heide, & Olsson 1996; Choi & Chu 2001) and physical facilities (Choi & Chu 2001; Markovi, 2004) are attributes that hotel guests perceive as being important. According to Oliver (1980) the customer satisfaction research literature concerns how well the service delivery occurs in comparison with expectations. Today customer satisfaction is an important subject and is also often discussed in marketing literature. Satisfaction can be described as a number of post experience decisions. One reason for the big interest in this area is that researches believe that customer satisfaction is crucial for all business organization. Researches also argue that satisfaction has positive impact on intention to repurchase.

Andreassen T W (2001) mentions that customer satisfaction can be viewed as an evaluation where expectations and actual experience is compared. A service failure is when the service delivery does not manage to meet customer expectations. Often service recovery begins with a customer complaint. The aim with service delivery is to move customers from a state of dissatisfaction to a state of satisfaction. Butcher and Heffernan (2006) discuss the relationship between customer and employees and that social regard plays an important role in service delivery, for example in a situation where a customer has to wait. A number of studies have shown the importance of friendly behaviour from the staff in order to improve service delivery and create long term relationships. Grönroos (1983) argues that when the service producer and the service consumer are in direct contact there are many factors that affect the level of satisfaction. In service production there is an extensive involvement of people which creates some level of non-standardization that do not exist in production of service. For example, it is difficult for a security brokerage to keep the service quality at the same level when they have thousands of entrepreneurs working out there. There are also a number of communication gaps that can occur between a service company and its customers:

- The company overpromises.
- A firm fails to stay in touch.
- The communication is not understood. The service provider sometimes have more knowledge than the customer and fails to communicate in a way that the customer can understand.
- The company does not listen. It happens that customers feel that their instructions to the company are not followed. (Grönroos, 1983).

3. OBJECTIVES AND METHODOLOGY OF THE STUDY

The objectives of the study are:

1. To study the growth, development and emergence of rural tourism in the state of West Bengal.
2. To study the rural tourism potentials of west Bengal in general and Bishnupur in Particular.
3. To analyze the tourism gap at Bishnupur.
4. To examine the existing as well as future requirement of tourism infrastructure of Bishnupur.

To fullfil the above objectives, this study is based on both primary data and secondary data. For fulfillment of the objectives this study, observation method and survey method are the technical tools. The instrument of survey included questions on different service satisfaction parameters. Information about the profile of tourism industry includes the tourism units (i.e. hotel, guesthouse, etc.), rooms number, number of local persons engagement, as well as the profile of tourists were the main elements of the survey. The Sample size was restricted to 100 respondents. Researchers distributed questionnaires to 100 respondents and asked what about your expectations at the first day of visit at Bishnupur and after three days researchers again distributed those particular respondents to fill same questionnaires to find whether their perceived services are up to the mark to their expectation or not . The questionnaire was prepared in Bengali and English because some respondents are not comfortable in English language. The data sources include an integrated household questionnaire about socio economic and health status; a survey of village infrastructure; detailed surveys of village infrastructure; detailed survey of private and traditional health facilities available to villagers. The collected data has been analyzed using different statistical methods like percentage; Willcoxon paired ranked model. Sources of secondary data collected were legal documents, local official statistics, reports, articles, and publications, reports of different government bodies and organizations Websites.

About Bishnupur

Bishnupur, the ancient capital of Mallabhum is rich repository of some excellent terracotta temples. Bishnupur subdivision of Bankura district in West Bengal is known as a temple city. Bishnupur is well known as a famous tourist heritage destination of West Bengal. It has been proposed to be declared as the National Heritage Site of the UNESCO in the year of 2000. The brick temples at Bishnupur built between the seventeenth and eighteenth centuries when terracotta had culminated to its zenith under the auspices of Malla Rajas are located in the ruined fort are and its neighborhood. Bishnupur with its glory of art, culture, music, gharana, and the patent craft of Baluchori Saree is always admired to be and place of tourism interest. There exists some important place of attraction around Bishnupur which are also worthy of being visited with reference to historical importance and heritages of some special art and culture. In the district there is an environment of peaceful co-existence of people with different religious faith such as Buddhist, Jain, Shaiba, Shakta, Baisnab, Muslim, Christian. Religious liberalism is the major characteristics of the district. Several personalities were linked with the geographical area of the district of Bankura, among the Babu Chandidas, Maa Sradadevi, Jamini Roy, Gopeswar Bandopahyay, are famous.

4. ANALYSIS AND DISCUSSION

This figure shows that Awareness of Rural Tourism, Heritage Tourism and Spiritual Tourism Concept .Respondents those who are interested to know about rural tourism they agree that this kind of tourism as well as heritage tourism may develop any rural or under develop region.

On the basis of awareness of tourism concept only 28% aware about rural tourism and 56% know about Heritage tourism,14% know about religious tourism. 58% respondents are interested to know about rural tourism and 52% respondents agree that heritage tourism is a vital key factor for development of socio-economic condition rather than rural tourism (See Figure 1).

Figure 2 depicts that visitors visited more at the time of festive occasion

Based on frequency of the visit at Bishnupur 42% respondents had visited for the first time, 10% had visited twice in a year, while the remaining 48% visited only in the festive seasons such as Bishnupur fair, and Durga puja(See Figure:2)

This figure shows that Bishnupur is dominated by intrastate tourists; visitors from abroad are very negligible due to until WBTDC (West Bengal Tourism Development Corporation) takes initiative to visit Bishnupur .

The above figure, in this study area is dominated by intrastate tourists with 70%. Only 10% tourists are from abroad. A majority of the intrastate tourists visiting the study area from Burdwan, Kolkata, South and North 24 Parganas, East & West Midnapore and Bankura Districts. In the case of interstate tourists Bihar, Jharkhand; Orissa is 10% while Delhi, Mumbai and Chennai are 8%. Tourists from Western part of India are very negligible. In the case of repeat visitors among interstate are relatively lower 7% (See Figure 3).

5. RESULTS AND DISCUSSIONS

For analysis the gathered data a 5 point Likert Scale was used. The range of ordinal scale starting from very good – 5(more than 80%), good- 4(more than 60% but less than 80%), satisfactory- 3(more than 40% but less than 60%), average – 2(more than 20% but less than 40%), unsatisfactory- 1(20% and less).The following tables depict that the highest score in the point of view of different infrastructural factors.

Table 1 depicts that, score of Historical Setting is high and art and folk lore belongs to the lowest score. The reason behind the lowest score of folk-lore is modern culture exploits the rural culture. According to few artists of folk-lore that due to lack of publicity, lack of Govt. initiative,

Figure 1. Awareness of rural tourism, heritage tourism, religious tourism
Source: Based on field survey conducted on December 2011 to March 2012

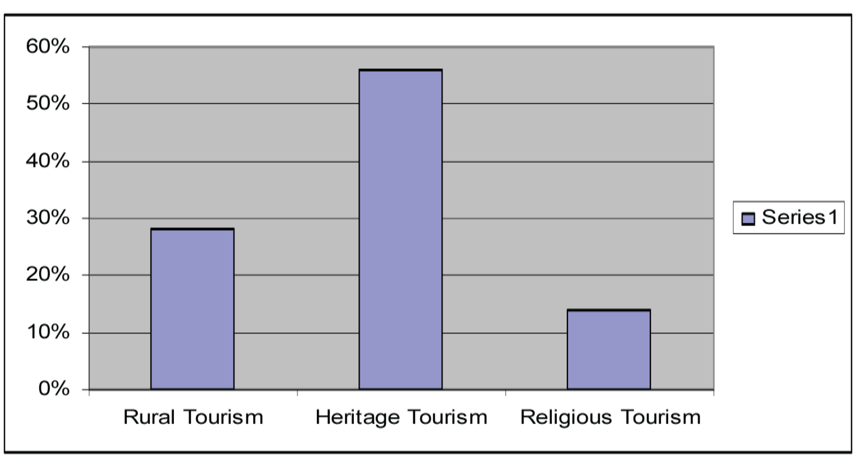
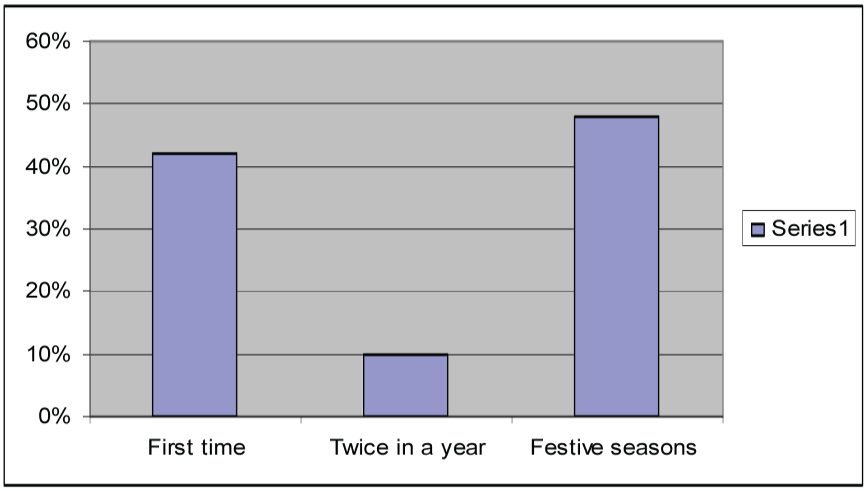


Figure 2. Frequency of visit at Bishnupur
Source: Based on field survey conducted on December 2011 to March 2012



lack of fund, they are migrated in other profession. Cultural activities at Bishnupur are very rich. Enjoyment of rural experience is the second option to the respondents popular activities at Bishnupur as activities bicycle rides, tree house recreation, yoga vacations, bush walking, farm holiday, horse cart rides, craft market, fishing, bird watching (See Table 2).

Table 5 revealed about the physical amenities infrastructure, where Room service facilities belong to highest score and sightseeing belongs to lowest score. Rural recreation infrastructure is moderately satisfied but according to respondent's car parking infrastructure is not too much satisfied they often complained that at the time of festival the parking problem occurred. According to respondents the entire atmosphere is very peaceful so it is ideal for meditation. The internal infrastructure of rest house should improve as per the opinion of respondents.

The above table depicts about the infrastructure of tourism related activities, where the religious activity belongs to high score and cultural activity belongs to lowest. The shopping outlets are situated around the heritage temples so it is very easy access to purchase the souveniour by the visitors. According some locals cultural activities are exploited by the modern culture when the different behavior pattern of tourists (See Table.4).

Table 5 revealed about destination infrastructure where peaceful place belongs to highest score and guide facility belongs to least score. Transportation Cost is comparatively high as per respondents. Most of the respondents shared their

Table 1. Tourists motivational infrastructure

Parameters	Score	Ranking
Cultural Infrastructure	3.5	2
Enjoyment of rural experience	3.1	3
Art and Folk lore	2.8	4
Historical Setting	3.8	1

Table 2. Infrastructures of physical amenities

Parameters	Score	Ranking
Rest house	3.1	3
Sight seeing	3.0	4
Room service facilities(lighting, bath, etc)	3.7	1
Car Parking	3.3	2

Table 3. Infrastructures of tourism activities

Parameters	Score	Ranking
Handcrafts and arts	3.7	3
Shopping	3.5	4
Festivals	3.9	2
Religious activity	4.4	1
Cultural activity	3.4	5

Table 4. Destination infrastructures

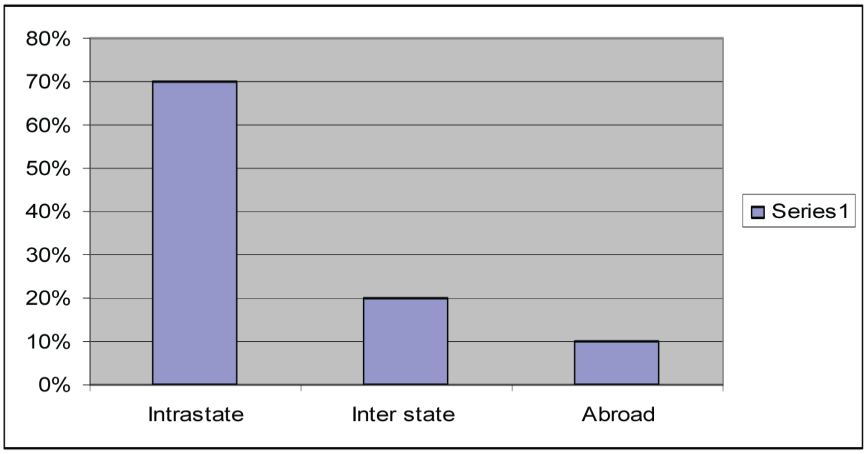
Parameters	Score	Ranking
Peaceful Place	4.6	1
Accessibility to the destination	4.1	2
Price consideration	3.1	5
Transportation	3.5	3
Safety and Security	3.4	4
Guide	2.8	6

Table 5. Descriptive statistics

		N	Mean Rank	Sum of Ranks
VAR00002 - VAR00001	Negative Ranks	51(a)	61.37	3130.00
	Positive Ranks	49(b)	39.18	1920.00
	Ties	0(c)		
	Total	100		

view in the context of handicraft that the price of handiwork at Bishnupur and outside Bishnupur quite same. Low prices would easily and quickly attract clients, but this is an inefficient way to seek for sustained success in the market (Vitkienë, 2002; Kotler, 2003). At Bishnupur there is no discount or rebate offer it implies that the price of the product is fixed. According to respondents safety and security should improve due to disturbance of some law and order.

Figure 3. Tourists inflow from intrastate, interstate & abroad
Source: Based on field survey conducted on December 2011 to March 2012



WILCOXON SIGNED TEST SAMPLES MODEL

H_o = There is no difference in the overall service satisfaction of tourists' expectations and perception

H_1= There are some reasons of difference in the overall service satisfaction of tourists' expectations and perception

To test the above Hypothesis statement whether null hypothesis is accepted or rejected, researcher has applied Wilcoxon Signed–Rank Test for Paired Samples through SPSS package.

The test statistics is given by:

T – n (n-1)/4

Z = --------------------

$\sqrt{}$n (n+1) (2n+1)/24

For a given level of significance ά, the absolute sample Z should be greater than the absolute $Z_{ά/2}$ to reject the null hypothesis. For a one sided upper tail test the null hypothesis is rejected if the sample Z is greater than $Z_ά$ and for a one sided lower tail test the null hypothesis is rejected if the sample Z is less than - $Z_{ά.}$

Table 6 depicts about the descriptive statistics of VAR00001 and VAR00002 of 100 numbers of respondents. From this table VAR00001 denotes the before visit at Bishnupur and VAR00002 denotes the after visit of tourists at Bishnupur.

1. VAR00002 < VAR00001
2. VAR00002 > VAR00001
3. VAR00001 = VAR00002

From the above table denotes test of Wilcoxon Signed Ranks, which depicts that three patterns of ranks (a) Negative ranks which denotes VAR00002 < VAR00001 (b) Positive rank which denotes VAR00002 > VAR00001 and (c) Ties which denotes VAR00001 = VAR00002.

a Based on positive ranks.
b Wilcoxon Signed Ranks Test

In Table 3, the Z value is -2.085 and has a p-value of .037 which is greater than the calculated value 1.96 at 5% level of significance there is not enough evidence to accept the null hypothesis,

Table 6. Wilcoxon signed ranks test

	N	Mean	Std. Div	Minimum	Maximum
VAR00001	100	86.55	4.4571	75.00	98.00
VAR00002	100	85.12	4.9793	70.00	98.00

Table 7. Test statistics

	VAR00002 - VAR00001
Z	-2.085(a)
Asymp. Sig. (2-tailed)	.037

thereby indicating that there are different aspects Gaps which is not standard up to the mark of tourist's demand or expectations.

6. FINDINGS OF THE STUDY

From the above analysis the alternative hypothesis (**H_1**) has been accepted by rejecting the null hypothesis. The findings of the study have been given below:

- The present study depicts in the point of view of tourism services infrastructure is quite better but according to respondent's car parking infrastructure is not too much satisfied they often complained that at the time of festival the parking problem occurred.
- According to respondents the entire atmosphere is very peaceful so it is ideal for meditation. The internal infrastructure of rest house should improve as per the opinion of respondents.
- In the context of destination infrastructure, it has been found that transportation cost is comparatively high as per respondents in rural area but moderately chip in urban area. But at the time of festive occasion or off season motor generated vans demands excessive amount from outside tourists because there is no fixed rate of transportation charge of rickshaws or such motor vans.
- Most of the respondents shared their view in the context of safety, tourist police is sufficient during festive occasion but law and order should strict.
- Local Govt. should look after about trained guide to provide better services for foreign as well as domestic tourists in rural area. But it has been found by field survey that few local untrained women bother tourists and they are not fluent in Hindi or English.
- Another important observation made by the researchers that particularly during rainy season water logging takes place causing the tourists more inconvenient to travel. So effort should be made by the concerned department of the state government to construct good drainage system to get rid of this problem of water logging.
- It is also observed that during any festivals and fairs in this destination, due to the increase inflow of the people, the transportation facilities at the destinations is not sufficient to meet the need of the people. As a result within a very short span of time, the rickshaw puller and generator operator van numbers are increasing at an alarming rate

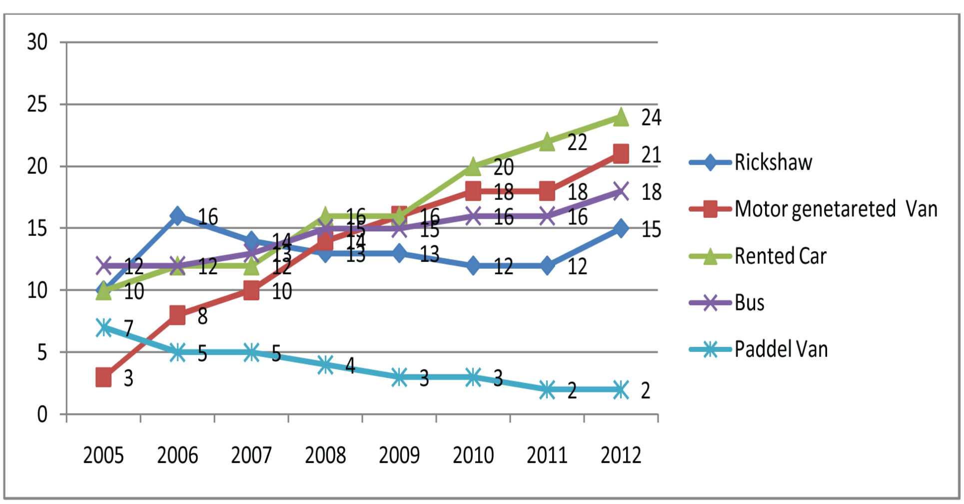
causing traffic problem as well as noise pollution (See Figure 4).

- Another possible gap observed by the researchers is the knowledge gap. It is the result of the differences in managing knowledge and real expectations. This gap can lead to allied different gaps in the process of service quality, caused by:
    - Lack of market information in terms of supply and demand analysis.
    - Incorrect interpretations of expected information.
- Local artists are also facing numerous other problems. Emergence of agents or middle man is one of them, availability of good raw materials and hike of price of raw materials are also huge problem.
- It has been also found through face to face survey, some negative socio economic and cultural impact from tourism in Bishnupur. Local people complained about the increase of like crime drug addictions in the locality. The price of land also increased after some tourism development. They also expressed their dissatisfaction about highly increase in price of the local foods and other items, after the influx of tourist in the locality. Other dominant issue was the presence of Maoism or terrorist activities within the district. In Bishnupur there is no such tourism development authority, Bishnupur Municipality and Subdivision office of Bishnupur conducted different types of tourism activities. According to the survey 18 persons considered about political problem, 25 persons considered about promotional gap, and 12 persons considered about communication gap between management bodies (See Table:8).

7. CONCLUSION

Bishnupur is having archaeological importance and the sites are in ruined condition, so effort should be made both by the Government as well as the Local authority for conservation and preservation of these sites. Establishment of 'Tourism Information Centre' at the destination and deployment of local educated youths should be trained and hired as guides and stress should be given to those having proper knowledge on Hindi and Eng-

Figure 4. Comparative chart of local transportations
Source: Based on field survey conducted from 2005 to 2012



lish to cater the need of the tourists coming from other states as well as countries. The emergence of organizing rural handicraft/ craft mela, Shilpa mela is highly felt to attract domestic tourist in a regular interval thereby attracting repeat visitors as well as showcasing the rural handicraft.

Improvement of transportation facilities and construction of drainage system should be provided by the local government body to avoid inconvenient for the tourist particularly during rainy season.The state tourism department should introduce package tour form Kolkata to Bishnupur to promote rural tourism in the state and thereby improving the economic condition of the local people by availing the local food and handicraft in the study area. The central government in coordination with the state tourism department should effectively use the Capacity Building for Service Providers Scheme (CBSP) to achieve sustainable tourism development in the place. No doubt the place can be easily developed as a Heritage tourism destination but lots of things needs to be done to promote and developed Bishnupur as a perfect heritage tourism destination in Indian Tourism scenario. Initiatives like adoption of PPP Model, organizing theme based fairs and festivals, providing guide training programe for the local youth etc are some of the few initiatives to develop socio economic life of the local people who are directly or indirectly related to tourism in Bishnupur.

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Table 8. Major problems encounter for development of bishnupur tourism

Nature of problems for tourism development	**No. of respondents agreed**
Political	18
Lack of tourism education awareness	27
Terrorism	18
Promotional gaps	25
Communication gap	12
Total	100

Source: Based on field survey conducted on December 2011 to March 2012 on 100 respondents

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KEY TERMS AND DEFINITIONS

Rural Tourism: Tourism that focuses on actively participating in a rural lifestyle. It can be a variant of ecotourism. Many rural villages can facilitate tourism because many villagers are hospitable and eager to welcome (and sometime even host) visitors. Agriculture is becoming highly mechanized and therefore, requires less manual labor. This trend is causing economic pressure on some villages, which in turn causes young people to move to urban areas. There is however, a segment of the urban population that is interested in visiting the rural areas and understanding the lifestyle. This segment in the tourism industry has been rapidly growing in the past decade, leading to rural tourism becoming not just a good business prospect, but a genuine vacation trend.

Tourism: A social, cultural and economic phenomenon related to the movement of people to places outside their usual place of residence. Tourism comprises the activities of persons travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes not related to the exercise of an activity remunerated from within the place visited.

Tourist: Someone who travels for pleasure and recreation and exchange of culture.

Chapter 24
Mutual Fund Performance and Investor's Perception:
An Indian Perspective

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ABSTRACT

The Indian mutual fund industry is playing a significant role in the development of capital market and in the growth of the Indian economy. It is considered to be a better opportunity where savings are collected from investors and diverted to the capital market to generate better returns for them with lower risk and volatility. Hence, it is of utmost significance to understand the mutual fund industry in India. As such, this chapter makes an attempt to review the various literatures available in regard to mutual funds to evaluate the performance of various mutual fund schemes and to study the investor's perception in selection of a mutual fund. The study shows that mutual funds have failed to offer advantages of diversification and professionalism to the investors and hence could not fulfil their scheme's objectives. It is also found that retail investors are still confused about the mutual funds as an investment avenue. In order to attain sustained profitable growth, the industry should focus on developing distribution networks, increasing retail participation and expanding the reach of mutual funds by conducting awareness programs and extending financial literacy.

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1. INTRODUCTION

A mutual fund is a mechanism of pooling together the savings of a large number of investors for collective investments with the objectives of attractive yields and appreciation in their value. It mobilises the savings, particularly of the small and household sectors, for investment in financial market instruments such as shares, debentures and other government securities. The income earned through these investments and the capital appreciation realized are shared by its unit holders in proposition to the number of units owned by them. The Securities and Exchange Board of India (Mutual Funds) Regulation Act, 1993 defines a mutual fund as "a fund established in the form of a trust by a sponsor, to raise money by the trustees through the sales of units to the public, under one or more schemes, for investigating in securities in accordance with these regulations" (Gurusamy, 2007). Retail investors are steadily banishing from the stock market and diverting savings into mutual fund sector. They acquire stocks or bonds through mutual funds at lower trading costs and get the benefit of diversification and risk minimization (Khare, 2007).

The mutual fund industry in India made its debut in 1964 with the establishment of Unit Trust of India (UTI), the largest public sector mutual fund in the world. The first unit scheme offered by UTI was the US-64. The main purpose behind introduction of UTI was effective mobilizing as well as channeling of small savings into productive sectors for economic acceleration of the country. Non-UTI mutual funds debuted in India in 1987 with the establishment of SBI Mutual Fund, bringing an end to UTI's monopoly in this sector. It was followed by many other public sector mutual fund set up by public sector banks, LIC and GIC. A tremendous growth has been witnessed in India in the financial market since 1991 with liberalization in India economy. Consistent with this evolution, Indian mutual funds industry has also witnessed a rapid growth. Foreign companies were also permitted to start mutual funds in India. The revolution was the outcome of policy proposal taken by the Government of India where by public sector banks, insurance sectors and foreign companies were permitted to enter the fund market (Gupta, 2000). In a short span of less than one decade, India has observed a changed in the investment pattern of small and medium investors. India's market for mutual fund has witnessed a CAGR of about 29% in a five year period from 2004-2008 as against global average of 4% which accounts as the most rapidly growing market in the world (Gupta, 2011). India has secured the best position among the top ten globally reputed mutual funds as far as growth of the funds are concerned. It has even moved India from 27th place to 26th place in the recent past. Mutual funds transactions on the stock exchanges have also witnessed an inspiring growth over the years. They indeed have been playing a stabilising role in the ever volatile stock markets (Chary & Masood, 2010-2011).

Retail investors face many hardships in stock market investment decision making. They are not familiar with market performance and lack knowledge about maximising returns by proper selection of securities and timing of investment. As such, mutual funds are the secured way for those investors to enter the capital market (Viramgami, 2009). Large market potential, rising income, high saving rate, growing risk appetite, comprehensive regulatory framework by SEBI, favourable tax policies, introduction of new products, increasing awareness etc have made mutual funds a preferred investment option (Rekha, 2012). The reason behind such a considerable attraction towards mutual funds was essentially due to assured returns along with security to investors' investment (Sanyasi, 2013). The regulating authorities namely Securities and Exchange Board of India (SEBI) and Association of Mutual Funds in India (AMFI) are trying to protect the investors in India by supervising and regulating mutual fund industry (Santhi & Gurunathan, 2011). Penetration of mutual fund market has been only 13.7%

unit holders from rural area and 38% from urban area. It portrays a very lethargic escalation in the industry. However, with a booming economy and 32.4% saving rate in India, there are lot of scope for favourable growth of mutual fund industry in India (Pandey, Rathore, & Khare, 2007).

2. THEORETICAL BACKGROUND OF MUTUAL FUND

A small investor saves a part of his earnings to meet future expenses as well as some unforeseen expenses. These diverse requirements are expressed in terms of investment purposes as safety and security, liquidity and elevated return. In fact, mutual funds have designed an extensive range of mutual fund schemes to meet the diverse needs of a multitude of investors. Investors have the option of choosing from the wide range of schemes depending upon their requirements. Schemes are generally classified in many forms. At the most initial phase, mutual funds may be close-ended or open-ended. The subsequent classifications of mutual fund is based on their characteristics with respect to the risk level of the asset invested, nature of asset invested, the fund's objectives, industry to which the invested assets belong, trading and investment strategies adopted, structure, frequency of dividend payment and so forth. Schemes based on an asset category of investment may be equity funds, debt funds, money market funds, gilt funds, real estate funds and so forth. Growth funds, balanced funds and income funds represent the extent of the combination of different asset categories in the investments. Industry specific funds focus upon specific industries or sector. Funds' investment portfolios are persistently evaluated and revised by a group of professional managers to closely match the fund's stated investment objective. In recent years, some innovative mutual funds have been launched in India to provide investors with greater access to markets like the gold market and art market. Thus, mutual funds adopt different strategies to achieve investors' objectives and accordingly offer different schemes of investments.

A mutual is a set up in the form of trust, which has sponsor, trustee, Asset Management Company (AMC) and custodian. Sponsor is the person who acts alone or in combination with another body corporate and establishes a mutual fund. Sponsor must contribute at least 40% of the net worth of the investment managed and meet the eligibility criteria prescribed under the Securities and Exchange Board of India (Mutual Funds) regulations, 1996. The sponsor is not responsible or liable for any loss or shortfall resulting from the operation of the schemes beyond the initial contribution made by it towards setting up of mutual fund. The mutual fund is constituted as a trust in accordance with the provisions of the Indian Trusts Act, 1882 by the Sponsor. Trustee is usually a company (corporate body) or a board of trustees (body of individuals). The main responsibility of the trustee is to safeguard the interest of the unit holders and also ensure that AMC functions in the interest of investors' and in accordance with the SEBI regulations, the provisions of the trust deed and the offer document of the respective schemes. The AMC is appointed by the Trustees as the investment manager of the mutual fund. The AMC is required to be approved by SEBI to act as an AMC of the mutual fund. The AMC if so authorized by the Trust Deed appoints the Registrar and Transfer Agent to manage the mutual fund. The registrar processes the application form, redemption requests and dispatches account statements to the unit holders. The Registrar and Transfer agent also handles communications with investors' and updates investor records.

An AMC is required to calculate the Net Asset Value (NAV) of a fund and publish it in a minimum of two national newspapers. The NAV at any point of time is the sum total of the market value of the assets that comprise its portfolio minus the liabilities at that time. In other words, the NAV of a fund is the amount that all the unit holders will receive if the fund is dissolved or liquidated after paying all its liabilities. For most funds, the NAV is determined daily, after the close of trading but some funds update their NAV multiple times during the trading day. Open-end funds sell and redeem their shares at the NAV and so process orders only after the NAV are determined. Closed-end funds may be traded at a higher or lower price than their NAV i.e. they are traded at a premium or discount, respectively. If a fund is divided into multiple classes of shares, each class will typically have its own NAV.

3. OBJECTIVES AND METHODOLOGY

Indian mutual fund industry is playing an important role to provide an alternative avenue to the entire gamut of investors in a scientific and professional manner. It has played a significant role in the development of capital markets and in the growth of the Indian economy. Though it is relatively new, it has grown at a dynamic speed, influencing various sectors of the financial market and the national economy. Thus, in this context, it has become significant to study the mutual fund market in India. The objectives of the study are to evaluate the performance of various mutual fund schemes by considering return and risk and to study the investor's perception pertaining to mutual fund investment. To fulfill the objectives of the present study, the researcher emphasized on various past literatures.

4. DISCUSSION

Mutual funds have attracted the attention of global practitioners and academicians in India and abroad to evaluate the performance of various schemes from time to time by considering return and risk of the investment. Attempt has also been made by researchers to draw sound conclusions on the factors responsible for the selection of mutual funds as an investment option. As there is a vast universe of companies in the field of mutual funds providing unlimited number of schemes, it becomes really hard to evaluate the performance of all companies as well as investors' perception towards mutual funds in a single study. A few of the studies conducted in this field were pioneered by Treynor (1965), Sharpe (1966), and Jensen (1968). It was followed by numerous other studies that have focused on mutual fund industry.

4.1. Fund Performance

Several researchers have undertaken studies from time to time on mutual funds and their performance evaluation in India. Most of the studies are related to benchmark comparison which is a significant fund performance measure. Benchmark comparison facilitates in signifying the efficiency level of the fund managers in generating better returns of managed portfolios compared to the market or index portfolios. An attempt has been made by the present researchers to provide a few reviews of those studies.

Sarkar and Majumdar (1995) assessed the performance of five close-ended growth funds for the period from February 1991 to August 1993. The performance of the funds has been proved to be statistically insignificant with high risk factor. Hence they concluded that the performance of the funds was below average when compared with the index fund.

Jayadev (1996) attempted to evaluate the performance of two growth oriented mutual funds namely Mastergain and Magnum Express on the basis of monthly returns and compared to benchmark returns. The study was carried out during the period from June 1992 to March 1994 using Jenson, Treynor and Sharpe ratio. The study concluded that the two funds disappointed in earning better returns. Mastergain performance was superior as per Jensen and Treynor measures and on the basis of Sharpe ratio, its performance was unsatisfactory when compared with benchmark.

The performance of Magnum Express was unsatisfactory on the basis of all these three measures. Both the growth oriented funds also failed to offer advantages of diversification and professionalism to the investors. Grubber (1996) studied the performance of mutual funds and put forward evidence of persistence of underperformance. He concluded that there has been a negative performance when compared to the market. He further concluded that in spite of inferior performance of actively managed portfolios there had been a fast growth of mutual funds industry in India.

Gupta and Sehgal (1998) evaluated performance of 80 mutual fund schemes over four years period (1992-96). The study has tested the proposition relating to fund diversification, consistency of performance, parameter of performance and risk-return relationship. The study has noticed the existence of inadequate portfolio diversification and inconsistency in performance among the sample schemes.

Gupta (2001) assessed the outcome of 73 selected schemes with different investment objectives, both from the public and private sector using Market Index and Fundex. NAV of both close-ended and open-ended schemes from April 1994 to March 1999 were also tested. The result depicted that the selected schemes has not been properly diversified and risk and return of schemes could not fulfil their scheme's objectives.

Ravinderan and Rao (2003) in his study made an attempt to evaluate the performance of Indian mutual funds in a bear market. The study was conducted for the period September 1998 - April 2002 on a sample of 269 open ended schemes by using performance index, risk-return analysis, Treynor's ratio, Sharp's ratio, Jensen's measure and FAMA's measure. The study observed that most of the sample mutual fund schemes couldn't generate excess returns over expected returns and further concluded that the funds were not adequately diversified and were not managed optimally.

Elango (2004) undertook empirical study for private sector and public sector schemes. His study indicated that private sector schemes have outperformed public sector schemes in terms of NAV, innovative products and in deployment of funds. However, public sector funds showed low volatility as against greater inconsistency for private sector.

Sondhi and Jain (2004) examined 26 equity schemes drawn from 26 AMCs belonging to public and private sector. They emphasized that equity mutual funds performance were inferior in comparison to risk and return. Sondhi and Jain (2005), in their another paper, made an attempt to study 19 private and 17 public sector mutual fund equity schemes during the period 1993-2002. There existed inconsistency in the performance of the funds. The returns were higher than the BSE 100 index. However, it was lower than the returns on 364 days treasury bills. Private equity schemes had outperformed due to its reputation, professional management, well-researched stock selection and timing skills. The study further underlined that more than three-fourth of public sector schemes couldn't attain better returns in spite of higher investor confidence and high safety.

Bodla and Garg (2005) reviewed 24 growth oriented schemes of mutual funds. They assessed the funds by applying risk adjusted performance measures as recommended by Sharpe, Treynor and Jensen. The conclusion drawn from the assessment showed that there were insignificant difference between market return and fund return.

Muthappan and Damodharan (2006) analysed 40 schemes for a period of 5 years from April 1995 to March 2000. The study observed that majority of the schemes have achieved superior returns compared to the market but have not performed better than 91 days Treasury bill. They further observed that 23 schemes have outperformed both in terms of total risk and systematic risk. 19 schemes performance were superior while growth schemes earned average monthly return. The average unique risk of 7.45% with an average diversification of 35.01% portrayed that the sample schemes were not adequately diversified.

Guha (2008) determined the return-based style analysis of equity mutual funds in India using quadratic optimization of an asset class factor model proposed by William Sharpe. The study identified the "Style Benchmarks" of each of its sample of equity funds as optimum exposure to 11 passive asset class indexes. A comparative study of the performance of the funds with that of their style benchmarks revealed that the funds' performance were inferior to their style benchmarks. Bhatt and Patel (2008) observed the performance of 10 mutual fund scheme using Sharpe index method. The study portrayed that fund with high index value has performed better than fund with low index value. Phaniswara and Rao (2008) analysed performance of 60 mutual fund schemes of 29 mutual fund companies operating during 2008. The fund were evaluated using risk adjusted performance measures and observed that there were mismatch of the risk return relationship in some schemes and most of the selected schemes failed to outperform the market.

Mehta (2010) evaluated the performance of 10 funds of the both UTI and SBI mutual fund schemes. The study was accomplished on the basis of portfolio evaluation techniques using Sharpe, Treynor and Jensen Index and FAMA during 2006-07 and 2007-08. The study depicted that SBI mutual fund schemes has outperformed UTI schemes in both the years and UTI and SBI mutual funds have superior returns in 2007-08 as compared to 2006-07.

Dharmraja and Santhosh (2010) conducted a study for a period of two years - Bull Run period from January 2007 to December 2007 and Bear Run period from January 2008 to February 2009 to examine 5 balance mutual fund and 5 Income mutual funds. The findings revealed that there was generation of maximum return accompanied by high rate of risk during Bull Run period. However, the performance of the balance mutual fund was inferior to the market during the same period. During the Bear Run period, income mutual fund has lesser risk compared to stock market. On comparing balance mutual funds and income fund, it was concluded that income funds have performed better than the balance mutual fund during Bear Run period and mutual fund investment were relatively risk free than stock market as the investment being managed by the professionals. Devi and Kumar (2010) focused on the performance of Indian and foreign equity mutual funds and has observed that among Indian equity funds, the returns are highest for equity tax savings funds (55.87%) followed by diversified funds (54.73%) whereas it is just the reverse in case of foreign mutual fund as equity diversified funds are the toppers in return (57.57%) followed by equity tax savings funds (55.82%). They have further identified that there was not much difference in the returns between Indian and foreign equity index funds and equity tax savings funds.

Dhume and Ramesh (2011) made an attempt to analyse the performance of the few sector specific mutual funds using different approaches of performance measures. The sectors considered for the study were banking, FMCG, infrastructure, pharma and technology. The study highlighted that all the sector funds have better performance than the market except infrastructure funds. Bawa and Brar (2011) identified a few selected growth mutual funds schemes of both public sector and private sector schemes during the period 1st April 2000 to 31st March 2010 to evaluate their performance. The study concluded that the returns of private sector growth schemes have been better than public sector growth schemes.

Sukhwinder, Batra, and Bimal (2012) examined 10 equity schemes for the period of two years and observed that out of all sample schemes only 4 schemes were able to give more reward to volatility than benchmark. Mannar (2012) conducted a study to evaluate the performance of the four equity funds during the period from 2002-03 to 2011-12. Two funds houses namely HDFC and ICICI Prudential were selected for the study. The funds selected were HDFC Top 200 (G), HDFC Capital Builder (G), ICICI Prudential Top 200 (G) and ICICI Prudential Top 200 (G). The study identified that the average performance of the HDFC top 200 scheme has been inferior by a large factor when compared to the other schemes under study. The Performance of all the funds was to an extent better than the market with only a few rare exceptions. Inder (2012) attempted to examine the performance of index funds in comparison to market index. The study showed that index funds have been replica of the market index as they always try to capture the market sentiment.

4.2. Investment Perception of Mutual Fund Investors

The researcher further made an attempt to review a few of the studies that have been focused on the investment perceptions of mutual fund investors. Singh and Chander (2003) pointed out that occupational status and age have immaterial influence on the choice of scheme. However, the important factors in the selection of schemes for retail investors were attributed to the past track record, safety and future growth prospects. Investors also expected prompt service, reliable information and also repurchase facility from the companies.

Devasenathipathi, Saleendran, and Shanmugasundaram (2007) in their study disclosed that 30% of the respondents in the sample group of 200 has awareness of mutual funds through consultant's advisory services, 46% respondents in the age group of 25-35 years has interest in mutual funds with substantial investments in the same and 31% of the respondents has invested in mutual funds for meeting future requirements. The study further unfolded that 49% of the respondents has given high preference for investment in equity fund when compared to debt and balanced fund. The study also disclosed that dividend has been the most preferred investment option for the respondents.

Parihar, Sharma, and Parihar (2009) focused their study on investment decisions of retail investors and revealed that majority of retail investors were still reluctant towards mutual fund investments

Rao and Parashar (2010) in his study made an attempt to identify the factors affecting the perception of investors regarding mutual funds investment. The study was conducted in three states namely Rajasthan, Gujarat and Madhya Pradesh. They concluded that tax incentive was one of the important factors affecting the retail investors while investing in mutual fund.

Rehman, Shaikh, and Kalkundrika (2011) assessed the investment decisions of retail investors with respect to mutual funds. Their study highlighted that the behaviour of retail investors were based on various demographic factors like age, gender, marital status, level of market knowledge, educational qualification of retails investors and the number of dependents. Shanmugsundaram and Balakrishnan (2011) determined the investors' behaviour on result announcement. It was observed that when there was announcement of favourable consequence by the company, 38% of the respondents inclined to invest substantially, 40% of the respondents desired to hold the securities and remaining 22% of investor inclined to book the profit. Kandavel (2011) investigated the factors which influenced the retail investors regarding preference for investment in the mutual funds. He identified that investment behaviour of retail investors do not have a high level of consistency due to the influence of different purchase factors. He further opined that negative perceptions about mutual funds can be overcome through proper induction of investor awareness programme. It was also recommended that proper segmentation and positioning of products by mutual fund companies are of utmost importance.

Rekha (2012) observed that even though there were encouraging factors contributing to the expansion of the industry, there were a few factors inhibiting its growth. The factors have been endorsed to low levels of customer awareness and lack of knowledge about mutual funds, limited innovation in product offerings, unwillingness to undertake even minimum risk, inaccessibility in smaller towns and cities due to lack of efficient distribution network and abysmal financial literacy. Singh (2012) argued that the majority of the respondents lack knowledge of the functioning of mutual funds. He further argued that demographic factors, gender, income and qualification have significantly influenced the investors' attitude towards mutual funds. However, two demographic factors namely age and occupation have not been found influencing the attitude of investors' towards mutual funds. As far as the benefits provided by mutual funds are concerned, return potential and liquidity have been perceived to be most attractive by the invertors' followed by flexibility, transparency and affordability.

5. CONCLUSION

Mutual fund industry in India is gradually marching towards upward phase. It is found that most of the studies have focused on estimation of the risk exposure and return of portfolios, estimation of NAV and comparison of fund with a benchmark. It is found that high competitions among the private and public players in the industry have affected its performance. Mutual fund has failed to offer advantages of diversification and professionalism to the investors and hence could not fulfil their scheme's objectives.Despite of the fact, there have been positive returns generated by mutual funds investments where private sector has outperformed public sector. Most of the funds in the market provided the returns equal to risk free rate. Moreover, over the last few years level of awareness and interest of investors on mutual funds has increased. But level of awareness has not yet reached to mass investors. The past studies have shown that retail investors are still confused about the mutual funds and have refrained themselves from considering mutual funds as an investment avenue. The important factors in the selection of schemes for retail investors were attributed to the past track record, safety and future growth prospects, tax incentive and also various demographic factors like age, gender, marital status, level of market knowledge, educational qualification of retails investors and the number of dependents. Chary and Masood (2010-2011) suggested that SEBI has to inspire the culture of mutual fund investment in the minds of the investors and even focused that asset managers should develop the forecasting skills in order to manage the portfolio of the fund effectively. There is an urgent need to streamline the regulation of mutual fund industry. Capital market itself is a complex activity regulated by SEBI. So, a separate regulatory body to regulate the operation and management of mutual funds should be set up (Pandey, Rathore, & Khare, 2007). In order to attain sustained profitable growth, the focus should be on developing distribution networks, increasing retail participation and expanding the reach of mutual funds to every nook and corner by conducting awareness programs and extending financial literacy (Rekha, 2012). Investment decision of retail investors in mutual funds can be encouraged by introducing special investment schemes and providing many offers or attractive prices (Mathivannan & Selvakumar, 2011).

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KEY TERMS AND DEFINITIONS

Mutual Fund: A type of professionally managed collective investment scheme that pools money from many investors to purchase securities. While there is no legal definition of the term "mutual fund," it is most commonly applied only to those collective investment vehicles that are regulated and sold to the general public. They are sometimes referred to as "investment companies" or "registered investment companies." Most mutual funds are "open-ended," meaning investors can buy or sell shares of the fund at any time. Hedge funds are not considered a type of mutual fund.

Retail Investor: An individual investor who buys and sells securities for their personal account and not for another company or organization.

Risk and Return: The principle that potential return rises with an increase in risk. Low levels of uncertainty (low-risk) are associated with low potential returns, whereas high levels of uncertainty (high-risk) are associated with high potential returns. According to the risk-return tradeoff, invested money can render higher profits only if it is subject to the possibility of being lost.

Chapter 25
Efficiency of Liquidity Management in Indian Tyre Industry:
A Study of Selected Companies during the Post-Liberalisation Era

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ABSTRACT

It is unanimously accepted that liquidity management is a very important facet of financial management in any kind of business. An overall control over liquidity of the firm can only ensure a smooth running of its business wheel. Like other manufacturing sectors in India, the Indian tyre industry has been facing fierce challenges due to intensified competition in the marketplace as a result of Liberalization, Privatization, and Globalization (LPG). In this backdrop, an attempt has been made to study the efficiency of working capital in maintaining liquidity of Indian tyre industry during the period 1998-99 to 2007-08. The data for the period from 1998-99 to 2007-08 used in this chapter have been collected from the Capitaline Corporate Database, the official of Capital Market Publishers (India) Ltd., Mumbai. While carrying out this study, suitable measures relating to financial statement analysis as well as relevant statistical tools and techniques have been applied at appropriate places. The overall findings of the study indicate that there was no proper trade-off between liquidity and profitability in the selected tyre companies during the study period.

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1. INTRODUCTION

Whatever be the size of a business, liquidity is always considered as one of its controlling nerve centre. Thus, liquidity management is a very important aspect of financial management. Both excessive liquidity as well as inadequate liquidity hurt the regular activity of the business firm. Excessive liquidity implies idle funds which fail to earn any profit for the firm. Paucity of liquidity not only impairs the firm's profitability but also results in business operation interruptions and inefficiencies. An overall control over liquidity of the firm can only ensure a smooth running of its business wheel. Like other sector the Indian tyre industry has been facing tremendous challenges due to massive competition in the market place as a result of liberalization, privatization and globalization (LPG). As a consequence, the Indian tyre companies have also been making necessary changes in their management of liquidity. In addition, recent collapse of big businesses of the world also makes these business houses more aware of their liquidity. In this background an attempt has been made to study the efficiency of liquidity management of Indian tyre industry.

The study has been presented in six sections. The First Section provides the Introduction of the study. The Second Section deals with the review of the existing literature relating to the concerned issue and also identifies the research gap. The Third Section presents the objectives of the study, its scope, the research methodology adopted in the study and the limitations of the study. The Fourth Section is concerned with the analysis of liquidity of the selected tyre companies. The comparison of liquidity position among different selected tyre companies is also made in this section. The Fifth Section highlights the liquidity-profitability relationship of the sample tyre companies. The Sixth Section provides concluding remarks.

2. LITERATURE SURVEY

Generally, survey of existing literature, while conducting a study, helps in finding out the gaps in the studies so far made in the concerned study area and locating the avenues for the study in the same area. The following paragraphs examine the recent studies relating to the liquidity management of Indian manufacturing industries carried out so far for identifying the research gaps.

A compressive study on working capital management which was conducted by Reserve Bank of India was published in the RBI Bulletin in July, 1976. While conducting this study, 1,650 medium and large, non-financial, non- governmental public limited companies having a paid up capital of at least Rs.5 lakhs each were taken into consideration. This study was made on the basis of the annual accounts relating to the year 1974-75. The study revealed that none of the industry group was able to reach the conventional standard current ratio of 2:1. A similar study of major industry groups in a family of 167 Government companies covering their operations for 1974-75 was published in the RBI Bulletin of April-May 1977. Both the studies concluded that poor liquidity was maintained by Indian corporate.

Banerjee (1982) carried out a study to examine the interrelationship between liquidity and profitability. More precisely, he investigated the relationship between liquidity and profitability by testing Gentry's hypothesis in the context of Indian corporate sector. The study accepted the hypothesis and concluded that profitability of Indian corporate was highly influenced by liquidity.

Khandelwal (I985) conducted a study on small scale industries in Jodhpur industrial estate for the period 1975-76 to 1979-80 to highlight their working capital management practices. In this study, 40 multi group units were selected on the basis of purposive sampling from 162 S.S.I units working in Jodhpur Industrial Estate at the end of 1974. The relevant data were collected from the secondary sources. The study revealed that the immediate liquidity position of the selected units was not at all satisfactory during the period under study. Furthermore, this study showed that the liquidity of inventory and also the quality of the receivables were also not at all satisfactory. The Industry-wise study disclosed that only textile industry was solvent. The study called for better inventory management.

Gangadhar (1988) conducted a study to assess the trend in the working capital management as well as the liquidity position of the Indian corporate sector during the period 1961 to 1976. While making this analysis, six major industries were taken into account. The data and information were collected from RBI bulletin. One of the significant finding of his study was that private limited companies maintained relatively greater short-term liquidity as compared to that of the public limited companies.

Vijayakumar and Venkatachalam (1995) conducted an empirical study to evaluate the relationship between working capital management and profitability in the sugar industry in the state of Tamil Nadu for the period 1982-83 to 1991-92. The study was based on thirty-one sugar companies in the state. The study revealed that liquidity was inversely associated with profitability whereas inventory turnover and debtors turnover, both possessed positive impact on profitability.

Chundawat and Bhanawat (2000) conducted a comparative study to assess the influence of working capital management practices on liquidity of IDBI assisted tube and tyre companies in India for the period 1993-94 to 1997-98. The relevant data were collected from the annual reports of IDBI and the industrial parameter was taken from the CMIE publication. The analysis and interpretation of different liquidity ratios indicated that the short term liquidity position of the IDBI assisted tube and tyre companies in India was not at all satisfactory. However, comparing with the industry standard, the liquidity status of the companies as a whole was healthier.

Prasad (2001) in his paper examined the position of the working capital management of paper industry in India for the period 1983-84 to 1992-93. The study considered the selected 21 large, medium and small scale paper mills. This study reported that all sample firms made huge investment in current assets and the working capital in most of the paper mills was not properly utilized. This study revealed that top-level management of the sample units failed to trade off between liquidity and profitability.

Sur (2001) in his empirical study, made a comparative analysis of liquidity management of four major companies in Indian power sector for the period 1987-88 to 1996-97. The selected companies were Ahmadabad Electricity Co. Ltd. (AEC Ltd.), Bombay Suburban Electric Supply Corporation Ltd.(BSES Ltd.), Calcutta Electric Supply Ltd.(CESC Ltd.) and Surat Electricity Co. Ltd.(SEC Ltd.). The relevant data were collected from Mumbai Stock Exchange Official Directory. The study showed that the average current ratio of AEC Ltd. and BSES Ltd. was satisfactory whereas the same was alarming in case of CESC Ltd. and SEC Ltd. The quick ratio of all the companies was not at all satisfactory in most of the years under study. The study revealed that the variation of investment in current assets out of total funds was the maximum in BSES Ltd. and that of, minimum in SEC Ltd. during the study period. The inventory management was the best in SEC Ltd. whereas the debt management was the most effective in AEC Ltd. The study disclosed a positive and significant association between liquidity and profitability in the two selected companies namely, BSES Ltd. and CESC Ltd. but the positive impact of liquidity on profitability was very low in AEC Ltd. and SEC Ltd. It confirmed the inefficiencies in liquidity management in AEC Ltd. and SEC Ltd.

Ghosh and Maji (2004) made an attempt to examine the efficiency of working capital management of the Indian Cement companies during 1992-93 to 2001-02. For assessing the efficiency of working capital management three index values, performance index, utilization index and overall efficiency index were calculated and the study indicated that the Indian Cement industry as a whole did not perform remarkably well during the study period.

Mallik, Sur, and Rakshit (2005) undertook a study to examine the interrelationship between working capital and profitability of some selected companies in Indian pharmaceutical industry during the period 1990-91 to 2001-02. The data were collected from the secondary sources. More specifically, the study assessed the impact of working capital on profitability by computing Karl Pearson's correlation coefficient between return on capital employed and each of the selected important ratios relating to working capital management such as current ratio, inventory turnover ratio, debtors turnover ratio etc. The study revealed that there was a positive influence of inventory management and debtors management on profitability in majority of the selected companies but no definite relationship was established between liquidity and profitability from the empirical findings.

Vishnani and Shah (2006) empirically examined the relation between liquidity and profitability in Indian Consumer Electronics Industry for a period of ten years from 1994-95 to 2004-05. For this study, 23 listed companies of the Indian consumer electronic industry were selected and relevant data were collected from the CMIE database. Out of 23 companies, nine companies showed negative association between liquidity and profitability whereas the remaining companies registered a positive association between two variables. The in-depth study further revealed the fact that a dull positive relationship between liquidity and profitability remained in most of the companies under study.

Azhagaiah and Gejalakshmi (2007) critically examined the performance of working capital management of Indian textiles companies during 1995-96 to 2005-06. The study was conducted on the thirty selected textile companies listed in National Stock Exchange (NSE) and the relevant data were collected from the 'CMIE' database. The study revealed the selected companies utilized their current assets efficiently during the study period and they possessed very strong liquidity position.

Kushwah, Garima, and Shivani (2009) in their study examined the liquidity position of five noted cement companies namely, ACC, Grasim, Ambuja, Prism and Ultra-Tech for the period 2007-09. The analysis of major liquidity ratios and activity ratios revealed that ACC performed well in maintaining its working capital as well as liquidity than other selected companies.

Kaur (2010) conducted a study which examined the liquidity of the four selected tyre companies namely, MRF Ltd., Apollo Tyre Ltd., J K Tyre Ltd. and Ceat Ltd and the impact of their working capital management on their profitability. The study covered a period of eight years (1999-2000 to 2006-07) and the data were collected both from primary as well as secondary sources. The study revealed that the immediate debt paying capability of J K Tyre and Ceat was not satisfactory whereas the remaining two companies (Apollo and MRF) maintained satisfactory liquidity to pay off their immediate obligations. The inventory management of all the selected tyre companies was not at all well-organized. This study also revealed that there was a stand-off between liquidity and profitability in the selected tyre companies.

In most of the studies, which have been examined here while preparing this paper, have failed to draw any meaningful conclusion. Moreover, there are many intricacies in measuring the efficiency of liquidity management. Thus, it is expected that the present study will be able to bridge the gaps found out in the studies so far made on the concerned issue.

3. THE STUDY

3.1. Objectives of the Study

The study has the following objectives:

1. To assess the liquidity of the tyre companies under study by using some traditional liquidity ratios.
2. To measure the liquidity of the selected tyre companies more rigorously by using comprehensive rank test.
3. To analyze the interrelationship between liquidity and profitability of the selected tyre companies by using appropriate correlation measures.
4. To assess the joint effect of the selected performance indicators of liquidity management of the selected tyre companies on their overall profitability using regression technique.
5. To examine whether the findings of the study conform to the theoretical arguments.

3.2. Scope of the Study

This study is mainly analytical and examining in nature. The measurement of a firm's short-run ability to pay its debts as they come due is very important aspect of financial analysis. This study focuses on the examination of the liquidity management of the selected tyre companies in Indian corporate sector. More specifically, the present study makes an assessment of the efficiency of the management of liquidity and indentifies the problems associated with it. The present study covers a period of ten years from 1998-99 to 2007-08 for analyzing the issues associated with the liquidity management of the selected tyre companies relating to the post-liberalization era.

3.3. Methodology of the Study

3.3.1. Company Covered

The study was based on five tyre companies which were selected by taking the top five companies (based on net sales revenue) from the Indian tyre industry. This selection was made by considering "BS 1000 India's Corporate Giants" published by Business Standard, New Delhi, February, 2008. The list of the selected tyre companies has been presented in Appendix-1

3.3.2. Period of the Study

The present study covered the period of ten years from 1998-99 to 2007-08. The main reason for selecting such period was that India started to adopt the policy of liberalization in the year 1991. The effects of the liberalization can be realized after a considerable time period. Thus the period 1998-99 to 2007-08 was considered in the present study.

3.3.3. Collection of Data

The data for the study were collected from the secondary sources, such as Capitaline Corporate Database of Capital Market Publishers (I) Limited, Mumbai, CMIE reports and Internet sites.

3.3.4. Analysis of Data

To carry out this research work, editing, classification and tabulation of the above-mentioned sources were done as per requirement of the study. For analyzing the data simple mathematical tools like ratios, percentages etc were used. The ratios relating to the measurement of the performance of liquidity management which were used in the study are: a) Current ratio (CR), b) Quick ratio (QR), c) Inventory turnover ratio (ITR), d) Debtors turnover ratio (DTR), e) Current assets to total assets (CATA) and f) Cash turnover ratio (CTR). For assessing the liquidity status of the selected tyre companies more precisely a comprehensive rank test considering both average and consistency measures through arithmetic mean and coefficient of variation respectively was applied. The profitability measure which was selected for this study is return on capital employed. The degree of relationship between the efficiency of liquidity management and profitability of the selected tyre companies was assessed through correlation coefficients between the selected measures of liquidity management and the selected profitability indicator taking into account their magnitudes (i.e. by Pearson's simple correlation coefficient), ranking of their magnitudes(i.e. by Spearman's correlation coefficient) and the nature of their associated changes(i.e. by Kendall's correlation coefficient). Multiple correlation and multiple regression techniques were used to carry out an in-depth analysis regarding the joint influence of the selected measures relating to the efficiency of liquidity management on the profitability. The multiple correlation coefficients were tested by F test and t test was used in order to examine whether the computed values of correlation coefficients and partial regression coefficients were statistically significant or not.

3.4. Limitations of the Study

The limitations of this study are as follows:

1. The researcher being an external analyst was dependent totally upon the data extracted from secondary sources. So, it is subject to all limitations that are natural in the ready-made published financial statements. Hence, grouping or sub-grouping and annualisation of data may slightly affect the results.
2. This study was mainly based on accounting ratio analysis. It can be considered as one of the limitations of this study as the technique of ratio analysis has its own limitations.
3. The study covered a period of ten years only.
4. The Inflation factor was not taken into consideration in this study.

4. ANALYSIS

In order to assess the liquidity of the selected tyre companies during the study period the following important ratios relating to liquidity management were analyzed:

4.1. Analysis of Major Liquidity Ratios

Current Ratio (CR): It expresses the relation of the amount of current assets to the amount of current liabilities. It is a traditional measure used in ascertaining the ability of a firm to meet its short-term obligations. The higher the CR, the larger is the amount available per rupee to meet short-term obligations and the greater is the security available to the creditors. Traditionally a current ratio of 2:1 is considered satisfactory for a firm and it is taken to represent a good short-term solvency position. But this standard ratio generally varies from industry to industry. Each industry has to develop its own standard or ideal ratio from past experience and this can only be taken as a norm (Sur, 1997, p.829). Table 1 demonstrates that the CR of Apollo was lower in all the years under study as compared to the conventional standard norm of 2:1. It fluctuated between 1.91 in 2005-06 and 1.46 in 2007-08. On an average, this ratio was 1.66 during the study period. It indicates that the company failed to meet its short-term obligations on time during the period under study. The CR of Balkrishna also registered a fluctuating trend. It was the highest in the year 1998-99 (i.e. the starting year of the study period) when it stood at 3.82 and the least in the year 2002-03 when it was 2.12. On an average, this ratio was 2.76. It implies that the short-term debt paying capability of the company was satisfactory. The CR of Ceat registered a declining trend in the first eight years of the study period. It was 2.41 in the year 1998-99 which gradually declined and reached the lowest level at 1.06 in the year 2005-06. It increased to 1.11 in the year 2006-07 and to 1.39 in the year 2007-08. The mean CR of Ceat was 1.77 during the study period. It reveals that the CR of Ceat failed to reach the traditional norm in the last six years under study. The CR of JKT varied between 1.76 in the year 1998-99 and 1.16 in 2005-06 with an average of 1.34 during the period under study. The CR of the company was far below the conventional standard of 2:1 throughout the study period. It implies that the liquidity position of the company was not satisfactory during the period under study. The CR of MRF exceeded the conventional standard in all the years under study. It ranged between 3.21 in the year 2001-02 and 2.23 in the year 2007-08. The mean CR of MRF was 2.81. It indicates that from the viewpoint of the traditional norm the liquidity of MRF was sound enough throughout the study period. The mean CR of the five selected tyre companies taken as a whole was 2.07 during the study period. As per the reports issued by the CMIE, the average CR of the tyre manufacturing sector in India for the period from 1998-99 to 2007-08 was 1.33. The study of CR of the selected tyre companies shows that the average CR values of all these companies were much higher as compared to the industry mean developed by the CMIE. It signifies that all the selected tyre companies proved themselves as excellent performers in respect of short term debt paying capability during the period under study.

Table 1 also shows that the values of CV of CR of Apollo, Balkrishna, Ceat, JKT and MRF were 9.64%, 20.29%, 27.68%, 12.69% and 11.03% respectively during the period under study. As per the reports issued by the CMIE, the CV for CR of tyre industry in India was 13.28% during the study period. Thus, in case of Balkrishna and Ceat, the values of CV for CR were much higher than the industry norm whereas the values of CV for CR of the remaining three selected tyre companies namely, Apollo, JKT and MRF were lower as compared to the industry average during the period under study. Therefore, Apollo, JKT and MRF were able to maintain consistency in short-term debt-paying capability at a satisfactory level.

Quick Ratio (QR): This ratio is a more rigorous measure of liquidity as compared to the current ratio. It is a refinement of CR as it excludes non-liquid current assets such as inventories, prepaid expenses etc. Thus by using it, the liquidity of a company can be judged more precisely. Conventionally, a quick ratio of 1:1 is considered as satisfactory. In other words, if a company has quick ratio of at least 100 percent it is considered to be in a fairly good liquidity condition. Table 1 exhibits that the QR of Apollo was more than the traditional norm of 1:1 in the first eight years under study and an insignificant disposition of this ratio was witnessed in the last two years of the study period. On an average, the QR of the company was 1.10 during study period. The study of QR in Apollo reveals that the company possessed adequate liquid assets to pay off very short-term debt during the study period. The QR of Balkrishna registered a fluctuating trend and was higher in all the years under study as compared to the conventional norm of 1:1. It was the highest (2.45) in the year 2005-06 and was the least (1.36) in the year 2002-03. On an average, this ratio was 1.85. Thus, the company's immediate debt paying capability was satisfactory during the period of study. The QR of Ceat followed an overall declining trend throughout the study period. In the last three years of study, the QR of the company was far below the traditional standard. It ranged between 0.69 in the year 2006-07 and 1.98 in the year 1998-99. The Mean QR of Ceat was 1.37 during study period. The analysis of QR of Ceat implies that the immediate debt paying capability of the company was highly satisfactory in the first seven years of the study period while the company failed to maintain this status in the last three years under the study period. The QR

Table 1. Major liquidity ratios of the selected tyre companies in India

Year/ Company	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	Mean	CV (%)	Actual Status (Based on Average)	Actual Status (Based on Consistency)
Current Ratio														
1.Apollo	1.83	1.74	1.77	1.47	1.67	1.61	1.59	1.91	1.50	1.46	1.66	9.64	A	a
2.Balkrishna	3.82	3.14	2.29	2.96	2.12	2.59	2.14	3.31	2.80	2.43	2.76	20.29	A	b
3. Ceat	2.41	2.32	2.25	2.02	1.81	1.71	1.59	1.06	1.11	1.39	1.77	27.68	A	b
4. JKT	1.76	1.45	1.28	1.35	1.34	1.34	1.20	1.16	1.27	1.32	1.34	12.69	A	a
5.MRF	2.82	3.10	3.11	3.21	2.76	2.96	2.68	2.83	2.40	2.23	2.81	11.03	A	a
Quick Ratio														
1.Apollo	1.20	1.14	1.18	1.09	1.12	1.09	1.01	1.24	0.97	0.95	1.10	9.09	A	a
2.Balkrishna	2.42	1.77	1.54	1.97	1.36	1.62	1.52	2.45	2.10	1.77	1.85	20.54	A	b
3. Ceat	1.98	1.89	1.79	1.69	1.45	1.41	1.32	0.70	0.69	0.79	1.37	35.77	A	b
4. JKT	1.18	1.00	0.79	0.90	0.99	0.98	0.92	0.81	0.81	0.71	0.91	15.38	A	b
5.MRF	1.69	1.94	1.92	1.82	1.60	1.74	1.45	1.50	1.38	1.24	1.63	14.11	A	b
Inventory Turnover Ratio														
1.Apollo	9.16	7.96	7.32	9.64	11.3	9.66	8.96	8.01	8.66	8.80	8.95	12.40	B	a
2.Balkrishna	4.44	5.02	5.64	7.15	7.50	6.84	7.72	6.95	7.74	6.41	6.54	17.58	B	a
3. Ceat	8.75	9.40	7.31	8.76	9.49	9.51	10.46	11.07	11.78	9.25	9.58	13.26	B	a
4. JKT	5.70	6.78	7.76	7.24	8.51	10.13	11.49	11.29	9.64	7.33	8.59	22.93	B	b
5.MRF	9.15	8.84	8.12	6.39	6.21	6.68	6.76	6.64	7.57	8.00	7.44	14.11	B	a
Debtors Turnover Ratio														
1.Apollo	5.98	9.97	9.22	9.89	16.66	23.76	19.19	18.10	19.96	23.71	15.64	40.92	A	b
2.Balkrishna	4.10	6.21	5.21	5.05	6.38	8.06	9.00	8.26	7.15	5.45	6.49	24.65	B	b
3. Ceat	6.79	7.09	6.04	7.23	7.94	7.59	7.36	7.97	9.26	9.12	7.64	12.96	A	a
4. JKT	5.56	6.26	7.07	6.73	5.72	5.35	5.19	5.54	6.64	7.00	6.11	11.78	B	a
5.MRF	8.16	7.63	6.70	6.00	6.37	6.74	7.53	7.99	8.45	9.23	7.48	13.64	A	a
Current Assets to Total Assets														
1.Apollo	0.54	0.52	0.56	0.54	0.56	0.51	0.50	0.57	0.50	0.52	0.53	5.66	A	a
2.Balkrishna	0.49	0.46	0.47	0.47	0.48	0.47	0.48	0.55	0.51	0.54	0.49	6.12	B	a
3. Ceat	0.56	0.53	0.54	0.55	0.55	0.58	0.57	0.39	0.41	0.49	0.52	13.46	A	b
4. JKT	0.38	0.29	0.30	0.31	0.31	0.34	0.34	0.35	0.44	0.46	0.35	17.14	B	b
5.MRF	0.54	0.59	0.63	0.63	0.64	0.65	0.63	0.63	0.63	0.62	0.62	6.45	A	a
Cash Turnover Ratio														
1.Apollo	15.69	23.80	20.29	20.76	16.48	17.97	20.25	11.30	19.09	13.91	17.95	20.50	B	a
2.Balkrishna	51.22	194.60	191.8	98.63	168.77	195.71	137.64	7.60	160.48	112.55	131.90	48.77	A	b
3. Ceat	14.14	15.33	15.34	24.00	18.21	36.18	49.05	44.03	52.60	55.97	32.48	52.09	B	b
4. JKT	38.69	26.14	57.26	19.79	46.93	66.09	50.22	57.56	65.86	95.66	52.42	41.51	B	b
5.MRF	39.82	38.28	35.85	48.28	52.33	52.91	69.00	64.88	69.85	60.04	53.12	23.80	B	a

Source: Compiled and computed from Capitaline Corporate Database of Capital Market Publishers (I) Ltd., Mumbai

'A' denotes 'average liquidity above the industry mean ' 'B' denotes 'average liquidity below the industry mean' 'a' denotes 'consistency in liquidity above the iindustry mean'. 'b' denotes 'consistency in liquidity below the industry mean'.

in JKT was found fluctuating between 1.18 in the year 1998-99(the initial year of the study period) and 0.71 in the year 2007-08 (the ultimate year of the study period). The mean value of QR in JKT was 0.91. The trend of this ratio in JKT clearly indicates that the very short-term liquidity of the company as a whole was not satisfactory. The QR of MRF was above the conventional standard of QR of 1:1 in all the years under the period of study. This ratio varied between 1.94 in the year 1999-2000 and 1.24 the year 2007-08. On an average, the ratio was 1.63. The immediate debt paying capability of the company was strong enough during the study period. The mean QR of the selected tyre Companies taken as a whole was 1.37 during the study period. Thus, Balakrishna, MRF and Ceat were placed in the category of above the grand average while Apollo and JKT failed to enter into that category. However, as per the CMIE Reports, the average QR of the tyre manufacturing industry in India for the period 1998-99 to 2007-08 was 0.50 and all the selected tyre companies maintained remarkably higher QR in all the years under study as compared to the industry average. It reflects that in respect of immediate debt paying capability, the performance of these tyre companies was highly satisfactory during the period under study.

Table 1 also discloses that the values of CV of QR of Apollo, Balkrishna, Ceat, JKT and MRF were 9.09%, 20.54%, 35.77%, 15.38% and 14.11% respectively during the period under study. As per the CMIE Reports, the CV of QR of the tyre industry was 11.29% during the period 1998-99 to 2007-08. Excepting Apollo, all the selected companies in the tyre industry maintained their CV of QR at a level above the industry average CV of QR as developed by the CMIE. It reveals that the higher inconsistency in respect of immediate debt paying capability in majority of the selected tyre companies during the study period was noticed.

Inventory Turnover Ratio (ITR): This ratio measures the efficiency of inventory management of a firm. If the inventory is efficiently managed, it will help in enhancing the liquidity of the firm. A high ITR indicates a high level of efficiency in inventory management and it is good from the liquidity point of view whereas a low ratio implies excessive inventory levels than warranted by volume of operation. There is no 'rule of thumb' for the ITR for interpreting the results. The norms may be different for different industries which actually depend upon the nature of industry and business conditions. Table 1 also displays that the ITR of Apollo maintained a mixed trend during the study period. It fluctuated between 11.30 in 2002-03 and 7.32 in the year 2000-01. The mean ITR of Apollo was 8.95 during the study period. The ITR in Balkrishna recorded an increasing trend in the first half of the study period while it registered a fluctuating trend in the second half of the same period. On an average, the ITR of Balkrishna was 6.54 during the study period. The ITR of Ceat attained its peak value at 11.78 in the year 2006-07 and this ratio was the minimum at 7.31 in the year 2000-01. On an average, the ITR of Ceat was 9.58 during the period under study. The ITR of JKT also marked a fluctuating trend during the period under study. The ITR of JKT ranged between 5.70 in the year 1998-99 and 11.49 in the year 2004-05 during the study period. On an average, the ITR of JKT was 8.59. The ITR of MRF recorded a decreasing trend in the first half of the study period whereas this ratio of the company maintained an overall increasing trend in the second half of the same period. It varied between 9.15 in the year 1998-99 and 6.21 in the year 2002-03. The mean ITR of the company was 7.44 during the period under study. The Mean ITR of the selected tyre Companies taken as a whole was 8.22 during the period under study. Thus, Apollo, Ceat and JKT were able to find place in the above grand average category while Balakrishna and MRF failed to enter into that category. However, as per the study conducted by the CMIE, the average ITR of tyre manufacturing industry in India for the period 1998-99 to 2007-08 was 13.72. Comparing with the industry average set by the CMIE, all the selected companies in tyre industry possessed remarkably lower ITR in all the years under study. It was an indicator of poor liquidity in respect of ITR. It signifies that the efficiency of inventory management of the selected tyre companies in India was not at all satisfactory during the period under study.

Table 1 also depicts that the values of CV of ITR of Apollo, Balkrishna, Ceat, JKT and MRF were 12.40%, 17.58%, 13.26%, 22.93% and 14.11% respectively during the period under study. As per the standard developed by the CMIE, the CV of ITR of the tyre industry in India for the period 1998-99 to 2007-08 was 17.98%. Excepting JKT, all the selected tyre companies maintained their CV of ITR at a level lower than the industry average CV of ITR. Therefore, a high level of consistency in ITR in most of the selected tyre companies was noticed. It indicates more consistency in the functioning of inventory management in most of the selected tyre companies as compared to the industry average.

Debtors Turnover Ratio (DTR): Debtors turnover ratio highlights credit and collection policy pursued by a firm. The quality of debtors influences the liquidity of a firm. It tests the speed with which debtors are converted into cash. The liquidity of a firm is directly influenced by this speed. Thus, debtors' velocity indicates the efficiency of receivables management in a company. A High DTR reflects the promptness of debtors' collectivity i.e. smooth flow of liquidity and a low DTR indicates longer average collection period i.e. shrinkage of liquidity and also proves inefficiency in credit management. There is no 'rule of thumb' which may be used as a norm to examine the DTR. Different standards are generally used for different industries in order to examine the DTR. Table 1 depicts that the DTR of Apollo increased in most of the years under study. The DTR of the company was the highest at 23.76 in the year 2003-04 and was the lowest at 5.98 in the year 1998-99. On an average, the DTR of Apollo was 15.64 during the period of study. It is also observed that the average DTR of Apollo in the second half (20.94) of the study period was much higher as compared to that in the first half (10.34) of the study period. It signifies that the efficiency of the receivable management of Apollo was higher in the second half of the study period as compared to that in the first half of the same period. The DTR of Balkrishna showed a fluctuating trend during the study period. It varied between 4.10 in the year 1998-99 and 9.00 in the year 2004-05. The mean DTR of Balkrishna was 6.49. The DTR of Ceat also marked a fluctuation trend during the period under study. It ranged from 6.04 in the year 2000-01 to 9.26 in the year 2006-07. On an average, this ratio was 7.64 during the study period. Table 4.4 shows that the average DTR of Ceat in the second half (8.26) of the study period was slightly better than that of the first half (7.02) of the same period. It reflects that the debtors management of Ceat improved its efficiency marginally in the second half of the study period. The DTR in JKT increased in six years and decreased in four years out of the ten years under study. The DTR in JKT varied between 5.19 in the year 2004-05 and 7.07 in the year 2000-01. On an average, the DTR of JKT was 6.11 during the study period. The DTR of MRF registered a declining trend in the first four years of the study period while it showed an upward trend in the remaining years under study. This ratio varied between 6.00 in the year 2001-02 and 9.23 in the year 2007-08. The mean DTR of MRF was 7.48 during the study period. The analysis of DTR in MRF reveals that the company improved its efficiency in respect of debt management in the second half of the study period. The average DTR of the selected tyre Companies taken as a whole was 8.67 during the period under study. Only Apollo maintained extremely higher DTR as compared to the above grand average while the remaining companies failed to reach the grand mean. However, as per the study conducted by the CMIE the average DTR of the tyre manufacturing sector in India for the period 1998-99 to 2007-

08 was 7.33. The study of DTR of the selected tyre companies reveals that Apollo maintained significantly higher DTR whereas Ceat and MRF kept their DTR marginally higher as compared to the average DTR of the tyre industry set by the CMIE during the study period. It reflects the tightness of collection efforts and efficient debt management of these three companies during the study period. On the other hand, two companies namely, Balkrishna and JKT maintained their DTR below the level of Industry average developed by the CMIE during the study period. It signifies the slackness of collection efforts and inefficient debt management of these two companies during the period under study. Unless the receivables are collected on time, the company will not be able to increase liquidity.

As per the CMIE Reports, the value of CV for DTR of the tyre industry for the period 1998-99 to 2007-08 was 13.90%. It is evident from Table 1 that the two selected tyre companies, namely Apollo (40.92%) and Balkrishna(24.65%) maintained higher CV for DTR as compared to the industry average whereas the remaining three tyre companies namely, Ceat(12.96%), JKT(11.78%) and MRF(13.64%) registered lower CV of DTR as compared to the same. It implies that the consistency in respect of DTR in Apollo and Balkrishna was not at all satisfactory during the study period whereas the credit management in Ceat, JKT and MRF registered higher consistency as compared to the industry practice.

Current Assets to Total Assets Ratio (CATA): It indicates the extent of total funds invested for the purpose of working capital and throws light on the importance of current assets of a firm. It should be worthwhile to observe that how much of that portion of total assets is occupied by the current assets, as current assets are essentially involved in forming working capital and also take an active part in increasing liquidity. Thus, this ratio should not be so large to ignore the application of the funds in fixed assets. Also care should be taken that principal investment of the firm should be in the operating items. This key ratio is important from the view point of liquidity. The higher CATA, the higher is liquidity and vice-versa. Here Table 1 displays that the CATA of Apollo fluctuated within a short range. It varied between 0.57 in the year 2005-06 and 0.50 in the years 2004-05. On an average, this ratio was 0.53. It implies that on an average 53% of the total investment of the company was made for the purpose of working capital and these investments were consistent enough during the study period. Hence, the liquidity in managing current assets of the company was satisfactory. The CATA of Balkrishna also fluctuated in a narrow band. It ranged between 0.55 in the year 2005-06 and 0.46 in the year 1999-2000 with an average CATA of 0.49 during the period under study. It indicates that on an average almost 1/2 of the total assets of the company were current assets. The CATA in Ceat was the highest at 0.58 in the year 2003-04 and was the lowest at 0.39 in the year 2005-06 whereas in case of JKT, the maximum value of CATA was 0.46 in the year 2007-08 and it was the minimum at 0.29 in the year 1999-2000. The mean percentages of current assets in relation to total assets in Ceat and JKT were 52 and 35 respectively. The CATA of MRF varied between 0.65 in the year 2003-04 and 0.54 in the year 1998-99. The average investment in current assets of the company was 0.62 during the study period. Considering all the selected companies as a whole, on an average the CATA was 0.50 during the period under study. All the selected tyre companies other than JKT and Balkrishna maintained CATA which was very much compatible with the industry average of 0.50. It reveals that during the period of study the major portion of total investment of JKT had not been made for working capital purpose whereas Balkrishna maintained its current assets on an average 49 per cent of its total assets during the study period which was marginally lower than the industry average.

Table 1 also discloses that the values of CV of CATA of Apollo, Balkrishna, Ceat, JKT and MRF were 5.66%, 6.12%, 13.46%, 17.14% and 6.45% respectively during the period under study. The overall average CV of CATA of the tyre industry was found to be 9.77%. The two tyre companies (Ceat and JKT) among the selected ones recorded the maximum variation in their investments in working capital out of total funds in different years under study as compared to the industry practice.

Cash Turnover Ratio (CTR): This ratio indicates the number of times the cash amount is turned over during the accounting period. It measures the efficiency of cash management. The higher CTR, the higher is the efficiency of cash management and vice-versa. It is difficult to develop any standard ratio in this respect. It can be only judged by a particular firm or industry only from his past experience. Table 1 shows that the CTR of Apollo fluctuated in a narrow band. It was the highest at 23.80 in the year 1999-2000 and was the least at 11.30 in the year 2005-06. On an average, it was 17.95 during the period under study which was the lowest among the mean values of all companies in this group. It signifies the company's inefficiency in its use of cash for generation of sales revenue. Except in the two years (the years 1998-1999 and 2005-06) of the study period, the CTR of Balkrishna was adequately high in the remaining years under study. The CTR of the company was the maximum at 195.71 in the year 2003-04 and was the minimum at 7.60 in the year 2005-06. On an average, the CTR of Balkrishna was 131.90 in the study period which was the highest among the mean values of all companies in this category. The study of CTR in Balkrishna reveals that the cash was efficiently used in the company to generate sales in most of the years under study. The CTR of Ceat ranged between 14.14 in the year 1998-99 and 55.97 in the year 2007-08 i.e. in the two extreme years under study with an overall CTR of 32.48. The average CTR of Ceat was lower in first half (17.40) of the study period as compared to that in the second half (47.57) of the same period. It signifies that the company maintained better cash position in the second half of the study period as compared to that in the first half of the same period. The CTR of JKT registered a mixed trend during the study period. The CTR of JKT was the highest at 95.66 in the year 2007-08 and was the lowest at 19.79 in the year 2001-02. The average CTR of the company was 52.42 during the period under study. The CTR of MRF varied in a narrow band during the period under study. It ranged between 69.85 in the year 2006-07 and 35.85 in the year 2000-01. The mean value of CTR of the company was 53.12 during the study period. The average CTR for the selected tyre companies taken as a whole was 57.57 during the period 1998-99 to 2007-08. The study of CTR of the selected tyre companies reveals that only Balakrishna maintained higher CTR as compared to the industry average and that in other companies was lower than the industry standard. It implies that Balakrishna maintained a high degree of efficiency in cash management during the study period whereas the other companies in this group were not good performers in effective utilization of cash resources. More specifically, the relation between sales and cash was not found to be encouraging in most of the selected tyre companies during the study period.

Table 1 also discloses that the values of CV of CTR of Apollo, Balkrishna, Ceat, JKT and MRF were 20.50%, 48.77%, 52.09%, 41.51% and 23.80% respectively during the study period. Considering all the selected tyre companies as a whole; the mean CV of CTR was found to be 37.33% during the study period. Only in case of Apollo and MRF, the values of CV of CTR were lower than the industry average. It implies that from the point of view of CTR these two selected tyre companies maintained more stability in cash management as compared to the industry average.

4.2. Analysis of Liquidity Ranking of the Selected Tyre Companies

For ascertaining the liquidity status of the selected tyre companies more precisely an effort was made in this study by assigning ranks to the companies on the basis of: (a) average, (b) consistency and (c) both average and consistency of the selected six parameters of liquidity namely CR, QR, ITR, DTR, CATA and CTR. While making such analysis three steps were adopted. In the first step, a comprehensive rank test considering the average values of the selected liquidity measures was made. In case of average the higher the value the greater is the liquidity and ranking was done in that order. In the second step, a composite rank test based on consistency was made following the principle that lower the value the more favourable is the liquidity position and based on this principle ranking was done . In both cases (average and consistency) ultimate ranking was done on the basis of the principle that the lower the aggregate of individual ranks the more favourable is the liquidity position and vice-versa. In the third step, final ranking was done by combining average and consistency aspects following the same principle. The major outcomes of this analysis are as follows:

Table 2 shows the assignment of ranks to the selected tyre companies on the basis of average of the selected parameters of liquidity. Based on the aggregate of individual ranks in the study period, MRF which possessed a combined score of 13 registered the first position followed by Ceat(16), Balkrishna(17), Apollo(18) and JKT(26) respectively in that order.

Table 3 depicts the assignment of ranks to the selected tyre companies on the basis of the coefficient of variation of the selected parameters of liquidity. Table 4.7.2B demonstrates that Apollo which possessed a combined score of 10 in the sum of ranks proved itself as the most consistent in terms of liquidity among the selected tyre companies during the study period and it was followed by MRF(15), JKT(20), Balkrishna(22) and Ceat(23) respectively in that order.

Based on the outcomes derived from the consideration of average and consistency of the selected liquidity ratios which shown in Table 4, it is revealed that MRF which had a combined score of 3 in the sum of ranks, was the best performer among the selected tyre companies in respect of managing liquidity during the period under study. Apollo (5) occupied the second position and it was followed by both Balkrishna(7) and Ceat(7) which secured the same rank. JKT which had a combined score of 8 was placed in the last rank.

Table 2. Liquidity ranking of selected tyre companies based on average value of the selected liquidity measures

Selected Ratio/ Company	C R		Q R		ITR		DTR		CATA		CTR		Sum of Ranks	Ultimate Rank
	Mean	RANK	Mean	RANK	Mean	RANK	Mean	RANK	Mean	RANK	Mean	RANK		
1.Apollo	1.66	4	1.10	4	8.95	2	15.64	1	0.53	2	17.95	5	18	4
2.Balkrishna	2.76	2	1.85	1	6.54	5	6.49	4	0.49	4	131.90	1	17	3
3.Ceat	1.77	3	1.37	3	9.58	1	7.64	2	0.52	3	32.48	4	16	2
4.JKT	1.34	5	0.91	5	8.59	3	6.11	5	0.35	5	52.42	3	26	5
5.MRF	2.81	1	1.63	2	7.44	4	7.48	3	0.62	1	53.12	2	13	1

Source: Complied and computed from Capitaline Corporate Database of Capital Market Publishers (I) Ltd., Mumbai

Table 3. Liquidity ranking of selected tyre companies based on consistency of the selected liquidity measures

Selected Ratio/ Company	C R		Q R		ITR		DTR		CATA		CTR		Sum of Ranks C V (%)	Ultimate Rank RANK
	C V (%)	Rank	C v. (%)	Rank	C v (%)	Rank	C v (%)	Rank	C v (%)	Rank	C V. (%)	Rank		
1.Apollo	09.64	1	09.09	1	12.40	1	40.92	5	5.66	1	20.50	1	10	1
2.Balkrishna	20.29	4	20.54	4	17.58	4	24.65	4	6.12	2	48.77	4	22	4
3.Ceat	27.68	5	35.77	5	13.26	2	12.96	2	13.46	4	52.09	5	23	5
4. JKT	12.69	3	15.38	3	22.93	5	11.78	1	17.14	5	41.51	3	20	3
5.MRF	11.03	2	14.11	2	14.11	3	13.64	3	6.45	3	23.80	2	15	2

Source: Complied and computed from Capitaline Corporate Database of Capital Market Publishers (I) Ltd., Mumbai

Table 4. Final liquidity ranking of selected tyre companies based on both average and consistency of the selected liquidity measures

Ranking/ Company	Based on Average	Based on Consistency	Total Ranks	Final Rank
1.Apollo	4	1	5	2
2.Balkrishna	3	4	7	3.5
3.Ceat	2	5	7	3.5
4. JKT	5	3	8	5
5.MRF	1	2	3	1

Source: Complied and computed from Capitaline Corporate Database of Capital Market Publishers (I) Ltd.,Mumbai

5. LIQUIDITY-PROFITABILITY RELATIONSHIP

5.1. Analysis of Relationship between Liquidity and Profitability

The issue in connection with the relationship between liquidity and profitability is an unsolved one. A considerable academic debate has always been persisting over this issue. Even the findings of the studies so far made in India and outside India on this matter are conflicting in nature. On this matter, the academic world is sharply divided into two schools of thought. One school of thought opines that liquidity plays a very significant role in profit generating process and the relationship between liquidity and profitability is a positive one while the other school argues that there is a negative relationship between these two. Mukherjee (1988) carried out a study to assess the working capital of public enterprises in India and this study revealed that liquidity and profitability were negatively correlated in eleven enterprises out of the selected twenty and in the remaining cases the positive correlation between two were found. The empirical study conducted by Vijayakumar and Venkatachalam (1995) showed that liquidity was inversely related with profitability in the selected sugar mills in the state of Tamilnadu. An identical study on this issue was also carried out by Mallick and Sur (1998) which observed that two major liquidity ratios namely, current ratio and quick ratio were negatively associated with profitability of the selected tea company in India. Mallick and Sur (1999) in their another study on the working capital management of Hindustan Lever Ltd. found a very high degree of positive association between liquidity and profitability. A significant positive relationship between liquidity and profitability was also found in the private aluminium producing companies in India in the study conducted by Sur et al, (2001). A similar observation was also found in the study on the liquidity management in SAIL, conducted by Bardia(2004). Mallick et al,(2005) in their study found that the liquidity was negatively associated with profitability in ten out of seventeen pharmaceutical companies under study and in the remaining seven cases, it was positive. Thus, it has not been able to establish any definite relationship between liquidity and profitability from these empirical results. However, it is found in the academic literature that both excess and shortage of liquidity have impact on the interest of the firm. Excess liquidity may hurt profitability whereas inadequate liquidity may also hamper profitability. But, whatever may be the relation between two, it is generally accepted that there should be flexibility and proper coordination between liquidity and profitability for the unbeaten business operation. That is why the planning and control of corporate liquidity is a fundamental aspect of any kind of business and it plays a pivotal role in keeping the wheels of corporate existence running.

The impact of liquidity management of the selected tyre companies on their profitability was made by using correlation and regression techniques. Here, the nature and degree of relationship between liquidity and profitability were assessed through correlation coefficients between the selected measures of liquidity management (namely, CR, QR, ITR, DTR, CATA and CTR) and the selected profitability indicator(ROCE) after taking into account their magnitudes (i.e. by Pearson's simple correlation coefficient), ranking of their magnitudes(i.e. by applying Spearman's correlation coefficient) and the nature of their associated changes (i.e. by taking Kendall's correlation coefficient). In order to examine whether the computed values of correlation coefficients are statistically significant or not, t test was used.

Table 5 exhibits that Out of fifteen correlation coefficients between CR and ROCE in the selected tyre companies, six coefficients were negative while nine correlation coefficients were positive and all these fifteen correlation coefficients were not found to be statistically significant even at 0.05 level. Thus, in majority of the cases, a low level of positive relationship between firm's liquidity and profitability was observed in the tyre companies under study. This table also demonstrates that out of fifteen correlation coefficients between QR and ROCE in the selected tyre companies, six coefficients were negative and nine coefficients were positive. All these correlation coefficients were not found to be statistically significant. It implies that although a insignificant impact of immediate debt capacity on earning capacity was observed in the selected companies but no definite relationship between immediate debt paying capability and profitability in the selected tyre companies was established during the period under study. Out of fifteen correlation coefficients between ITR and ROCE in the selected tyre companies, six coefficients were negative, out of which three coefficients in JKT were found to be statistically significant at 5 per cent level whereas the remaining nine correlation coefficients were positive and out of which four coefficients were found to be statistically significant either at 5 per cent or at 1 per cent level. It reveals that a positive association between the two variables, ITR and ROCE was observed in majority of the selected tyre companies during the period under study. This table also shows all the fifteen correlation coefficients between DTR and ROCE in the selected tyre companies were positive and out of which three coefficients in Balkrishna were found to be significant at 0.01 level. It reveals that a positive relationship between the management of receivables and overall profitability was observed in all the selected tyre companies. However, the relationship between DTR and ROCE was found notable only in Balkrishna. Out of fifteen correlation coefficients between CATA and ROCE in the selected tyre companies, five coefficients were negative, out of which only one coefficient was found to be statistically significant at 1 per cent level whereas the remaining ten correlation coefficients were positive and of these, none was found to be statistically significant even at 5 per cent level. . It implies that no definite relationship was established between the investment in working capital and profitability in the selected tyre companies during the period under study. This table also shows that Out of fifteen correlation coefficients between CTR and ROCE in the selected tyre companies, only five coefficients were positive but were not found to be statistically significant whereas the remaining ten coefficients were negative and of these, three coefficients were significant at 0.05 level.

5.2. Analysis of Multiple Correlation of ROCE on CR, QR, ITR, DTR, CATA and CTR

An attempt was made to explain the strength of the relationship between the dependent variable ROCE and all the independent variables (CR, QR, ITR, DTR, CATA and CTR) taken together, of the selected tyre companies. To assess the joint influence of the selected ratios relating to liquidity management on profitability of the tyre companies multiple correlation technique was used. In this analysis, it was assumed that ROCE=f (CR, QR, ITR, DTR, CATA, CTR) and that the relationship between dependent and independent variables was linear. The multiple correlation coefficients were examined by 'F' test.

Table 6 shows that the multiple correlation coefficients in the selected tyre companies were 0.891, 0.918, 0.947, 0.886 and 0.968 in Apollo, Balkrishna, Ceat, JKT and MRF respectively but out of these, none multiple correlation coefficient was found to be statistically significant. This study indicates that the profitability of the all selected tyre companies was not notably influenced by CR, QR, ITR, DTR, CATA and CTR. It is also evident from the values of R^2 in selected tyre companies that the independent variables CR, QR, ITR, DTR, CATA and CTR contributed 93.8 per cent of the variation in the profitability in MRF which was the maximum and this variation was lowest at 69.1 per cent in Apollo.

5.3 Analysis of Multiple Regression of ROCE on CR, QR, ITR, DTR, CATA and CTR

In Table 7 the joint influence of the selected ratios indicating the performance of liquidity management on the overall profitability of each of the selected cement companies was analyzed. The regression model which was used in this analysis is: ROCE= B_0+B_1CR+ B_2QR+B_3ITR+B_4DTR+B_5CATA+B_6CTR where B_0 is the constant, $B_{1,}$ B_2 $B_{3,}$ $B_{4,}$ B_5 and B_6 are the partial regression coefficients. In this study this ROCE was used as the overall profitability indicator. In order to examine whether the computed values of partial regression coefficients are significant or not, t test was used.

Table 7 discloses that for increase in CR, the ROCE increased in four selected tyre companies while it decreased in only one company. However, these changes were not found to be statistically significant. When QR increased, the ROCE increased in one out of the five selected tyre companies whereas it decreased in the remaining four companies but these increases and decreases were not found to be statistically significant. This table also discloses the effect of change in ITR of the selected cement companies on their ROCE. It is observed that the ratio of increase-decrease in ROCE for one unit increase in ITR was 2:3. However, the increase and decrease were not found to be statistically significant. Table 7 also discloses the effect of change in DTR of the selected tyre companies on their ROCE; here the ratio of increase-decrease in ROCE for one unit increase in DTR was 3:2. This table also shows the impact of CATA of the tyre companies under study on their ROCE. The ratio of increase-decrease in ROCE for one unit increase in CATA was 3:2. This table depicts that the effect of change in CTR of the selected companies on their ROCE, the ratio of increase-decrease in ROCE for one unit increase in CTR was 2:3. In all the cases these increases/decreases in ROCE due to one unit

Table 5. Correlation coefficient between different measures of liquidity and profitability of the selected tyre companies

Company	Correlation Coefficient		
	Pearson	Kendall	Spearman
CR and ROCE / I) Apollo	-0.225	-0.200	-0.248
II) Balkrishna	-0.326	-0.111	-0.152
III) Ceat	0.040	0.067	0.115
IV) JKT	0.477	0.449	0.559
V) MRF	0.124	0.067	0.103
QR and ROCE / I) Apollo.	-0.196	-0.180	-0.219
II) Balkrishna	-0.084	0.045	0.024
III) ICeat	-0.082	0.022	0.067
IV) JKT	-0.028	0.090	0.024
V) MRF	0.369	0.289	0.394
ITR and ROCE / I) Apollo	0.712*	0.244	0.358
II) Balkrishna	0.673*	0.378	0.503
III) Ceat	-0.095	-0.067	-0.188
IV) JKT	-0.658*	-0.511*	-0.673*
V) MRF	0.786**	0.467	0.661*
DTR and ROCE / I) Apollo	0.114	0.067	0.055
II) Balkrishna	0.837**	0.644**	0.794**
III) Ceat	0.496	0.156	0.261
IV) JKT	0.431	0.289	0.406
V) MRF	0.153	0.067	0.103
CATAand ROCE / I) Apollo	0.123	0.023	-0.006
II) Balkrishna	0.418	0.489	0.579
III) Ceat	0.035	0.135	0.134
IV) JKT	0.381	-0.023	0.006
V) MRF	-0.765**	-0.479	-0.575
CTR and ROCE / I) Apollo	-0.168	-0.156	-0.212
II) Balkrishna	-0.164	-0.200	-0.261
III) Ceat	0.058	-0.022	0.030
IV) JKT	0.352	0.022	0.006
V) MRF	-0.757*	-0.511*	-0.733*

Note: * Significant at 5 per cent level ** Significant at 1 per cent level

Source: Compiled and computed from ‘ Capitalline Corporate Database’ of Capital market Publishers (I) Ltd., Mumbai

Table 6. Analysis of multiple correlation of ROCE on CR, QR, ITR, DTR, CATA and CTR of the Selected Tyre Companies in India

Company	R	R^2	F
I.Apollo	0.891	0.691	1.119
4. Balkrishna	0.918	0.843	2.693
3.Ceat	0.947	0.897	4.358
4.JKT	0.886	0.786	1.832
5.MRF	0.968	0.938	7.560

Note: * Significant at 5 per cent level ** Significant at 1 per cent level

Source: Compiled and computed from ' Capitalline Corporate Database' of Capital market Publishers (I) Ltd., Mumbai

Table 7. Analysis of multiple regression of ROCE on CR, QR, ITR, DTR, CATA and CTR of the selected tyre companies in India

Regression Equation of ROCE on CR, QR,ITR, DTR, CATA and CTR: ROCE= $B_0+B_1CR+B_2QR+B_3ITR+B_4DTR+B_5CATA+B_6CTR$							
Name of Companies	Partial Regression Coefficient						Constant B_0
	B_1	B_2	B_3	B_4	B_5	B_6	
1.Apollo	35.350 (0.928)	-92.994 (-1.239)	4.360 (2.122)	-0.215 (-0.418)	157.641 (1.019)	0.216 (0.250)	-61.295 (-0.702)
2.Balkrishna	6.999 (0.394)	-17.097 (-0.640)	1.781 (0.511)	3.618 (2.162)	99.910 (0.760)	-0.043 (-0.729)	-47.173 (-0.579)
3.Ceat	14.480 (0.865)	-10.835 (-0.492)	-0.482 (-0.265)	4.815 (2.155)	15.507 (0.448)	-0.064 (-0.488)	-35.095 (-1.685)
4.JKT	0.694 (0.024)	-6.309 (-0.205)	-1.459 (-0.820)	-1.472 (-0.413)	-3.211 (-0.122)	0.073 (1.126)	32.975 (0.617)
5.MRF	-26.036 (-1.308)	25.511 (0.666)	-3.766 (-0.666)	2.015 (0.432)	-115.708 (-1.604)	-0.532 (-2.321)	158.841 (2.488)

Note: Figures in the parentheses indicate t values * Significant at 10 Percent level ** Significant at 5 Percent level *** Significant at 1 percent level

Source: Compiled and computed from ' Capitalline Corporate Database' of Capital market Publishers (I) Ltd., Mumbai

increase in CTR were not found to be statistically significant. The analysis of partial regression coefficients implies that all the five tyre companies failed to contribute their profitability by enhancing their short term debt-paying capability, immediate debt-paying capability, efficiency of inventory management, efficiency of credit management, extent of total funds invested in working capital and efficiency of cash management.

6. CONCLUSION

The ultimate objective of a business is to generate surplus. Inefficient management of liquidity hurts a business concern to earn a decent rate of return on the capital employed. Therefore, there is no alternative of efficient liquidity management for satisfying the objective of a business enterprise. In this study several attempts were made to examine the efficiency of liquidity management of the selected five tyre companies during the period

1998-99 to 2007-08. In any empirical study, the findings are to be considered no more than tentative. It can be said that it is next to impossible to generalize the findings derived from such study about liquidity. On the whole, the net outcome obtained from the analysis of CR of the tyre companies under study properly matches with that obtained from the analysis of QR during the study period which reveals that the general liquidity condition of all the selected tyre companies was satisfactory. The inventory management of the tyre companies under study was not satisfactory whereas the credit management was found moderately satisfied. However, the overall findings of the study indicate that there was no proper trade-off between liquidity and profitability in the selected tyre companies during the study period.

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KEY TERMS AND DEFINTIONS

Cash Turnover Ratio (CTR): This ratio indicates the number of times the cash amount is turned over during the accounting period. It measures the efficiency of cash management. The higher CTR, the higher the efficiency of cash management and vice-versa. It is difficult to develop any standard ratio in this respect.

Current Assets to Total Assets Ratio (CATA): It indicates the extent of total funds invested for the purpose of working capital and throws light on the importance of current assets of a firm. It should be worthwhile to observe that how much of that portion of total assets is occupied by the current assets, as current assets are essentially involved in forming working capital and also take an active part in increasing liquidity.

Current Ratio (CR): It expresses the relation of the amount of current assets to the amount of current liabilities. It is a traditional measure used in ascertaining the ability of a firm to meet its short-term obligations.

Debtors Turnover Ratio (DTR): Debtors turnover ratio highlights credit and collection policy pursued by a firm. The quality of debtors influences the liquidity of a firm. It tests the speed with which debtors are converted into cash.

Inventory Turnover Ratio (ITR): This ratio measures the efficiency of inventory management of a firm. If the inventory is efficiently managed, it will help in enhancing the liquidity of the firm. A high ITR indicates a high level of efficiency in inventory management and it is good from the liquidity point of view whereas a low ratio implies excessive inventory levels than warranted by volume of operation.

Quick Ratio (QR): A more rigorous measure of liquidity as compared to the current ratio. It is a refinement of CR as it excludes non-liquid current assets such as inventories, prepaid expenses etc.

APPENDIX

Table 8. List of selected Tyre companies

Serial No.	Names of the Companies	Abbreviation Used
i	Apollo Tyres Ltd.	Apollo
ii	BalKrishna Industries Ltd.	Balkrishna
iii	Ceat Ltd.	Ceat
iv	J K Tyres & Industries Ltd.	JKT
v	M R F Ltd.	M R F

Chapter 26
Analysis of Clearing Process Infrastructure in HDFC and SBI: A Comparative Study

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ABSTRACT

Clearing is the process of realization of proceeds of cheques drawn on other banks through intermediary RBI/SBI or any other bank that acts as a Clearing House. A clearing house established in any location helps in faster and efficient collection of the cheques. A few private banks have been authorized to run the clearing houses at few locations. HDFC Bank Ltd. is one such privileged private sector bank. The chapter analyzes the process set for clearing services in the HDFC and SBI. The study employs primary data collected through observation by spending time and watching people in the organization, though it has been supplemented by the secondary data as well. The results indicate the various types of clearing process present in HDFC Bank and SBI for providing better and fast services to their customers and set higher standards for performance. The bank is committed to increased use of technology to provide quick collection services to its customers. The banking sector, whether it is private or public sector banks, has immensely benefited from the implementation of superior technology during the recent past, which has given new shape to the nature of the services provided to customers. This chapter also compares the clearing-related banking services provided by HDFC and SBI on the basis of primary data collected through the questionnaire to provide the different aspects and drawbacks of services of the public sector bank (SBI) and private sector bank (HDFC).

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INTRODUCTION

In India, the clearing system is local and confined to a defined jurisdiction covering all the banks and branches situated in the area under a particular zone. The clearing house is a voluntary association of banks under the management of a bank where the settlement accounts are maintained. Clearing is the process of realization of proceeds of cheques drawn on other banks through intermediary (RBI/ SBI or any other bank which act as a Clearing House). Clearing house established in any location helps in faster and efficient collection of the cheques. Wherever RBI is established, it assumes the role of manager of the Clearing House. At other centre, either the State Bank of India or one of its associate Banks conducts the Clearing. At some centers, a few other nationalized banks have also assumed the responsibility of conducting the activities of clearing House. A few private banks like HDFC, ICICI, KOTAK and AXIS etc have been authorized to run the clearing houses at few locations. HDFC Bank Ltd. is one of such privileged private sector Bank.

As part of the government's liberalization of the Indian Banking Industry in 1994, Housing Development Finance Corporation Limited (HDFC) was amongst the first to receive an 'in principle' approval from the Reserve Bank of India (RBI) to set up a bank in the private sector.

In India there are about 1050 cheques clearing houses. HDFC Bank is one of them; these clearing houses clear and settle transactions relating to various types of paper based instruments like cheques, drafts, payment orders, interest / dividend warrants, etc. In 40 of these clearing houses, cheque processing centers (CPCs) using MICR (Magnetic Ink Character Recognition) technology have been set up. At 14 more clearing houses, MICR cheque processing systems are proposed to be set up. The Reserve Bank has issued the Uniform Regulations and Rules for Bankers' Clearing Houses (URRBCH) which has been adopted by all the clearing houses. These regulations and rules relate to the criteria for membership / sub-membership, withdrawal / removal / suspension from membership and the procedures for conducting of clearing as well as settlement of claims between members.

CLEARING

According to Jha and Sarangi (2011) clearing is the process of realization of proceeds of cheques drawn on other banks through intermediary (RBI/SBI or any other bank which act as a Clearing House). Clearing house established in any location helps in faster and efficient collection of the cheques. Wherever Reserve Bank of India has its office (and a banking department), the clearing house is managed by it. In the absence of an office of the Reserve Bank, the clearing house is managed by the State Bank of India, its associate banks and in a few cases by public sector banks. Also a few private banks have been authorized to run the clearing houses at few locations. HDFC Bank Ltd. is one of such privileged private sector Bank.

Types of Clearing

Outward Clearing: It refers to instruments deposited by the customers of HDFC Bank which are drawn on other banks that need to be presented in clearing for collection and the funds are credited to clients account by HDFC Bank.

Inward Clearing: It refers to the cheques issued by the HDFC Bank customers to their clients which are deposited by them with their own banks for collection and are presented to HDFC Bank through Clearing House.

For Instance: Mr. A has an account with HDFC Bank in Kamla Nagar in Delhi. He receives a crossed cheque from Mr. B for Rs. 50000 whose account with SBI, Moti Nagar in Delhi. Mr. A deposits this cheque with HDFC Bank which will present the same to SBI for collection through Clearing House, Delhi. On collection of proceeds from State Bank of India through Clearing House, HDFC Bank will credit the amount to Mr. A's account with him.

Here the cheque which is presented in clearing by HDFC Bank is outward clearing for HDFC Bank and the same cheque is inward clearing for SBI.

Now if Mr. A issues cheque from his account with HDFC Bank and gives to Mr. C and Mr. C deposits this cheque with PNB (Because Mr. C maintains account with PNB) for collection through clearing house, this cheque is outward clearing cheque for PNB and is inward clearing for HDFC Bank.

Process of Clearing

All banks send the cheques they have received from the customers, to the clearing house. The clearing house will forward them to the paying/ drawee banks for payment. The net amount of cheques received for payment and cheques sent for collection is paid/received to/from the clearing house on daily basis and bank wise accounting entries are passed by clearing house because the clearing accounts for each bank is maintained with RBI/SBI/Other Banks who manage clearing.

- **Payee:** Is Mr. A who receives the cheque from Mr. B.
- **Collecting Bank**: Is HDFC Bank who collects the payment on behalf of the payee.
- **Drawer:** Is Mr. B who signs the cheque and gives it to Mr. A.
- **Drawee Bank:** Is SBI who makes the payment by debiting Mr. B's account.

Modes of Clearing Processing

Non- MICR Clearing

In a Non-MICR Clearing House, the presenting banks have to segregate the cheques drawee banks-wise manually and the cheques are exchanged / delivered in the Clearing House physically. MICR means Magnetic Ink Character Recognition.

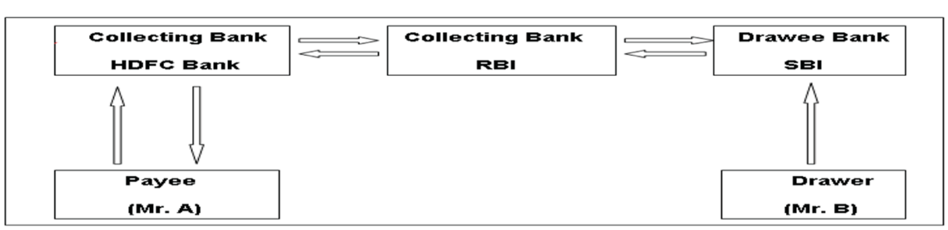
MICR Clearing

MICR is Magnetic Ink Character Recognition. It is a mechanism by which each cheque is given a unique code with magnetic ink which is recognized by machines for the purpose of processing. In a Magnetic Ink Character Recognition (MICR) Clearing, the cheques are delivered to the Clearing House in bunches of 200 cheques without sorting and the Clearing House segregates the cheques bank-wise by a MICR decoding machine and delivers the cheques to the drawee banks along with the soft copy of the details of the cheques captures through MICR technique. This enables the Bank in higher efficiency and more accuracy as the entire process is mechanized due to magnetic ink recognition.

MICR Band the stripe at the bottom of the cheque on which encoding is done with magnetic ink which comprises of**:**

- **Cheque No.:** It is unique 6 digit number allotted to each leaf of the cheque book allotted to the account holder of the Bank.

Figure 1. Clearing process



- **Routing Code:** This is unique 9 digit number allotted by RBI to each branch of the bank in which the first 3 digits are the city code of the bank branch. Next 3 digits are bank code and last 3 digits is the branch number of the particular bank of the city
- **Base Code:** Base Code is short code linked to the account number of the account
- **Transaction Code:** It is the code which denotes the type of the account. E.g.: Savings, Current, Cash Credit, Dividend Warrant etc.

Cheque Truncation System (CTS)

In the MICR process, the cheques are processed through physical movement. However, CTS is a process by which the physical movement of cheque is restricted between banks. The clearing process works through sending the image of the cheque along with the MICR Code to identify genuineness of the instrument.

In cheque Truncation process, instead of cheques moving manually, the image of cheque will be sent by Collecting Bank (also called Presenting Bank) to paying banks via Clearing House's gateway. The direct benefit of Cheque Truncation process is that cheques can be cleared on the same day when it is deposited with the Collecting Bank.

CTS are being implemented in phased manner. In Delhi it is fully implemented. Next are Chennai and then other centers.

New Clearing Mechanism

Reserve Bank of India has introduced a new clearing mechanism called "SPEED clearing". The new clearing mechanism facilitates clearance of outstation cheques at the source /deposit location itself and there would be no movement of physical cheques to the destination / drawee location. The complete process of payment including debits to client accounts and verification of signatures etc. is handled by the branch at deposit location. With effect from January 01, 2010 HDFC Bank has implemented the Speed clearing at all the locations.

Speed Clearing

Speed clearing refers to collection of outstation cheques through the local clearing. It facilitates collection of cheques drawn on outstation core-banking-enabled branches of banks. If they have a net-work branch locally

The collection of outstation cheques, till now, required movement of cheques from the Presentation centre (city where the cheque is presented) to Drawee centre (city where the cheque is payable) which increases the realization time for cheques.

Figure 2. HDFC cheque leaf

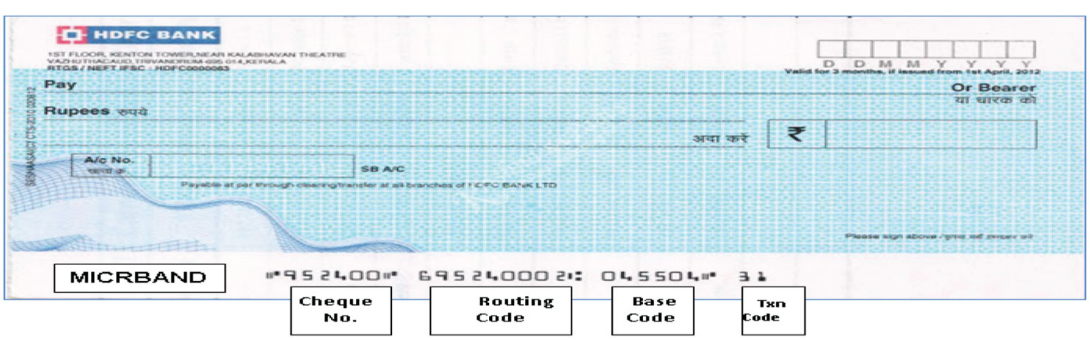
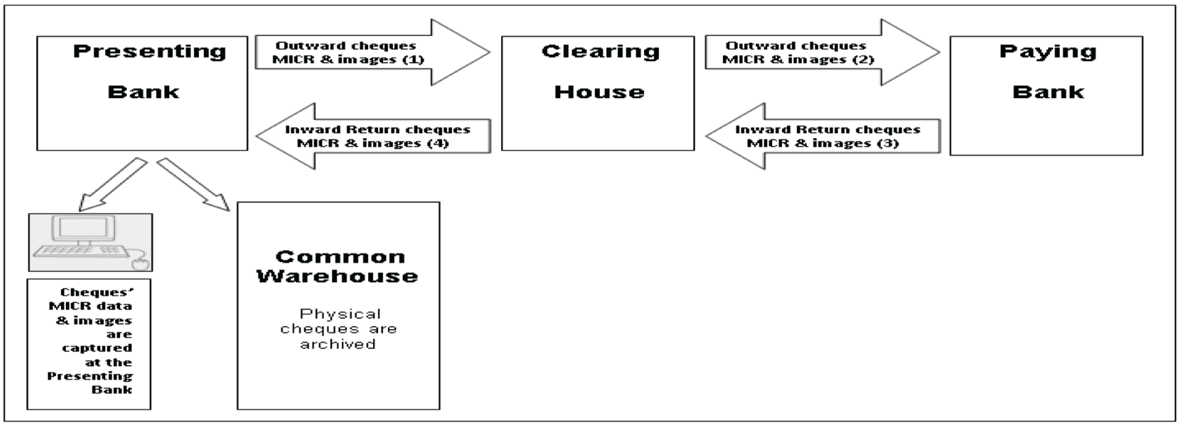


Figure 3. Cheque truncation process



Speed Clearing aims to reduce the time taken for realization of outstation cheques.

For Instance: Customer of HDFC Bank, Chandigarh sector 35 branch deposits a Bank of Baroda cheque payable at New Delhi in his a/c at Chandigarh. This cheque can be processed in the local clearing at Chandigarh under Speed Clearing Arrangement since Bank of Baroda has a presence in Chandigarh. The outstation cheques under Speed Clearing are paid on T+1 or 2 basis. 'T' denotes transaction day viz. date of presentation of cheque at the Clearing House.

Electronic Clearing Services (ECS)

It is additional facility which helps in utility payment by the customers by giving one time mandate for payment of their bills on regular intervals

ECS (Debit)

It can be used for payments like electricity, telephone bills, insurance and loan instruments etc.

In this system, we have Multiple Debits and Single Credit.

For Instance: HDFC Bank has given auto loan to a UCO bank customer. He has given a debit mandates to HDFC Bank to collect EMI from his a/c with UCO Bank every month in the form of ECS. On due date of EMI, every month, HDFC Bank will make a list of all such customers and pass it on to the clearing house. Customer's accounts with their respective banks will be debited and the funds will be received by HDFC Bank.

ECS (Credit)

This is a method of payment whereby a vendor makes a large number of payments directly into the accounts of the beneficiary, irrespective of the bank where customer holds the account. The scheme covers bulk payments transactions like dividend on shares, interest on bonds, etc.

In this system, we have One Debit followed by Multiple Credits.

For Instance: Let us presume Reliance Industries Ltd. (RIL) wants to pay dividend to its shareholders. RIL has an account with HDFC Bank. They will list our share holders registered for ECS, giving their A/c Numbers, Name, Banks Name, Branch particulars and Amount of Dividend. Presuming that one of the shareholders has given Vijaya Bank account for ECS Credit. Such credit will be remitted by HDFC Bank to VIjaya Bank through the clearing house

Whether it is ECS (Dr) or ECS (Cr), advance registration is mandatory.

Explanation: Mr. A is a customer of Canara Bank and wants to pay his monthly LIC premium through ECS.

The process flow will be as under:

Mr. A needs to secure a debit mandate form from his bank (Canara Bank) and after signing the same and he need to submit the same to LIC, who is called "USER".

LIC will then provide the soft copy of the account information of Mr. A (A/c No., Bank Name, MICR code, Amount and date of debit) to his banker, say HDFC Bank who is called the "Sponsoring Bank".

HDFC Bank will then forward this information to the local clearing house that further provides the same to client's bank Canara Bank who is called "Destination Bank"

Canara Bank will debit the funds to Mr. A's A/c and remit the same to the clearing who will pass on the same to HDFC Bank for credit to LIC'S A/c.

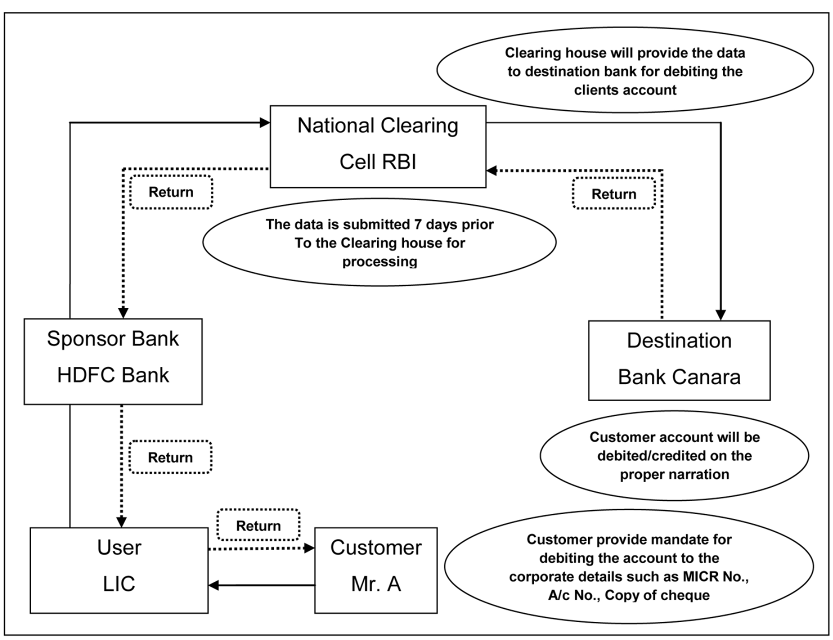
Real Time Gross Settlement (RTGS)

An RTGS payment system is one in which payment instructions between banks are processed and settled individually. It is an online fund transfer system, operated and maintained by RBI for interbank remittances within India. The transfer of funds takes place from one bank to another on real time basis. Transfers are settled individually without the netting of debits against credits as happens traditionally.

RTGS transactions can be carried out by the customers from branch as well as through Net banking. RTGS transactions can be done only when RBI window for RTGS is open. Minimum amount of the RTGS transaction is Rs 2 lacs and there is no upper limit.

According to Pandey (2004) while studying customer service and bank marketing, have observed that the need for computerization/bank automation has arisen because customers expect their cheques to be encashed within a reasonable time, prompt realization of clearing cheques, a

Figure 4. Process flow in ECS



quick transfer of funds and timely receipt of correct statements of their accounts etc. All this can be possible if banks are automated. IT strategies need to be in proper consonance with bank's marketing strategies. Sharad Bishnoi, Assistant Vice-president, Head, Business Process Reengineering Group, HDFC Bank says, "Banking services require a high level of customer engagement and understanding of the requirements for a quality value proposition.

OBJECTIVES OF THE STUDY

The specific objectives of the study are:

1. To analyze the process of new clearing mechanism used to reduce the time for collection of outstation cheques by leveraging the technological advantage arising out of implementation of Core Banking Solution (CBS) in Banks.
2. To provide the information regarding clearing process available in HDFC and SBI.
3. To compare the clearing related banking services provided by HDFC and SBI to their customers.

RESEARCH DESIGN AND METHOD

The analysis of this research divided into two sections. Section A includes the clearing process used in HDFC Bank and SBI, the study has been completed by rigorous analysis of primary data collected through observation method. Observations are used in nearly every scientific field and can be incredibly useful in gathering information. The observation was carried out in HDFC Bank Ltd. and SBI, Lucknow city in India during the month of May 2013. Observations involve taking organized notes about occurrences in the world. It provides insight about specific people, events, or locales and is useful when you want to learn more about an event without the biased viewpoint of an interview. Primary research involves collecting data about a given subject directly from the real world. The main data used is Primary in nature though it has been supplemented by the secondary data as well has been gathered through statistical bulletins, books, business magazines and relevant reports relating to Banking industry, finance, and economics available on the Internet, previous publications of the author, and some other publications for successful completion of the study.

Section B will represent the comparative study on clearing related banking services provided by HDFC and SBI to their customers. The study of this section based on primary data only which is collected through questionnaire. As the banking industry has been divided into two parts: Public sector bank group and Private sector bank group.

Questionnaire is prepared and distributed to the respondents of 2 banks: HDFC Bank (Private sector bank group) & SBI (Public sector bank group) which are selected on the basis of popularity and respondents were contacted on a personal basis as well as through email. After identification of bank, it was planned to select 20 customers randomly from each bank making a total of 40 customers as sample. Respondents are those who already have their account in that particular bank and are of different age, sex, religion, profession and family background. Field survey was conducted in the month of May 2013 at Lucknow city, Uttar Pradesh.

ANALYSIS AND DISCUSSION

Section A: Clearing Process in HDFC and SBI

The clearing process begins with the deposit of a cheque in a bank. The cheque (along with other cheques) is delivered to the bank/branch where it is drawn. The cheque is passed for payment if the funds are available and the banker is satisfied about the genuineness of the instrument. The cheques that are unpaid are returned to the presenting bank through another clearing called the Return Clearing. The realisation of the funds occurs after the completion of return clearing and by the absence of an unpaid cheque. Same Clearing process is available in every bank.

A.1 Outward Clearing

These are two kinds of processes followed for Outward Clearing in the Bank on the basis of the work allocation to the Retail Branches and Wholesale Banking Operations (WBO)

A.1.2 Decentralized Outward Clearing

In a decentralized outward clearing, all the retail branches in the city receives the cheques from the customers either through the drop box or through across the counter and after making the account entries in the client accounts (unclear funds), sends the cheques to WBO for collection through the Clearing House. Post settlement of the clearing house, WBO clears the funds which the client can use.

A.1.3 Centralized Outward Clearing

In a centralized outward clearing, all retail branches receives the cheques and send the same to WBO without posted the credits to the client's accounts. In a centralized outward clearing, WBO receives the cheques from clients directly as well. The account entries are also done by the WBO followed by the collection of the cheques through the Clearing House. Centralization of outward clearing is done only in selected cities with high volumes to take advantage of the economies of scale.

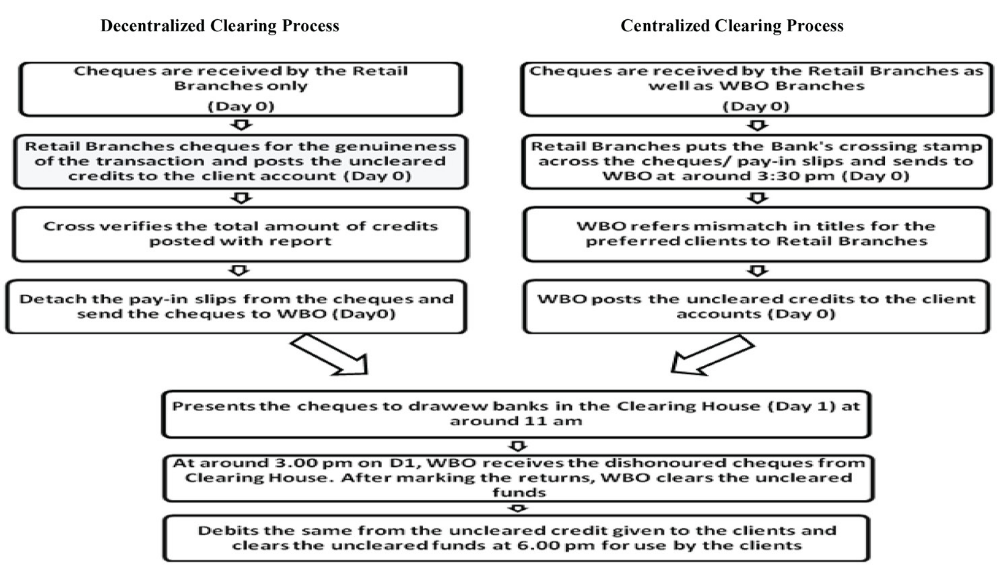
For Instance:

A.2 Inward Clearing

Inward Clearing in banks is centralized at all location which means cheques received in inward clearing for all the branches in a location/city are processed centrally at the Wholesale Banking Operations of that particular city.

For Instance:

Figure 5. Decentralized clearing process centralized clearing process



Section B: Comparison of Clearing Related Services Provided by HDFC and SBI

B.1 Clearing Related Services of Banks

Low service charges, cheque clearing status enquiry, stop payment facility of cheques are the most important reason behind dealing of respondents with nationalized banks (SBI) where as factors like effectiveness in the transaction and availability of ample of tech savvy services, utility payment services are the common reason behind dealing of respondents with private sector banks (HDFC). Almost all respondents in each bank were availing facility of cheque deposit and cheque clearing.

It can be concluded from the study of above table that cheque deposition and cheque clearance are the most popular banking services among the customers of both types of banks.

To ensure quick delivery of services, banks have introduced revolutionary technological changes like Electronic Fund Transfer (ETF), Electronic Clearing Service (ECS), Net Working the Service Branches, Automatic Teller Machines (ATM), modern and up-dated communication facilities. Now a day more and more customers are showing interest in using IT enabled services like ATM, internet banking, mobile banking, phone banking. An effort was made to know the awareness and to scrutinize different IT enabled services used by customers. ATM is the most widespread IT enabled service used by customers of public sector bank also. Customers of nationalized banks were using comparatively fewer IT enabled services as compared to private banks.

Figure 6. Inward clearing process

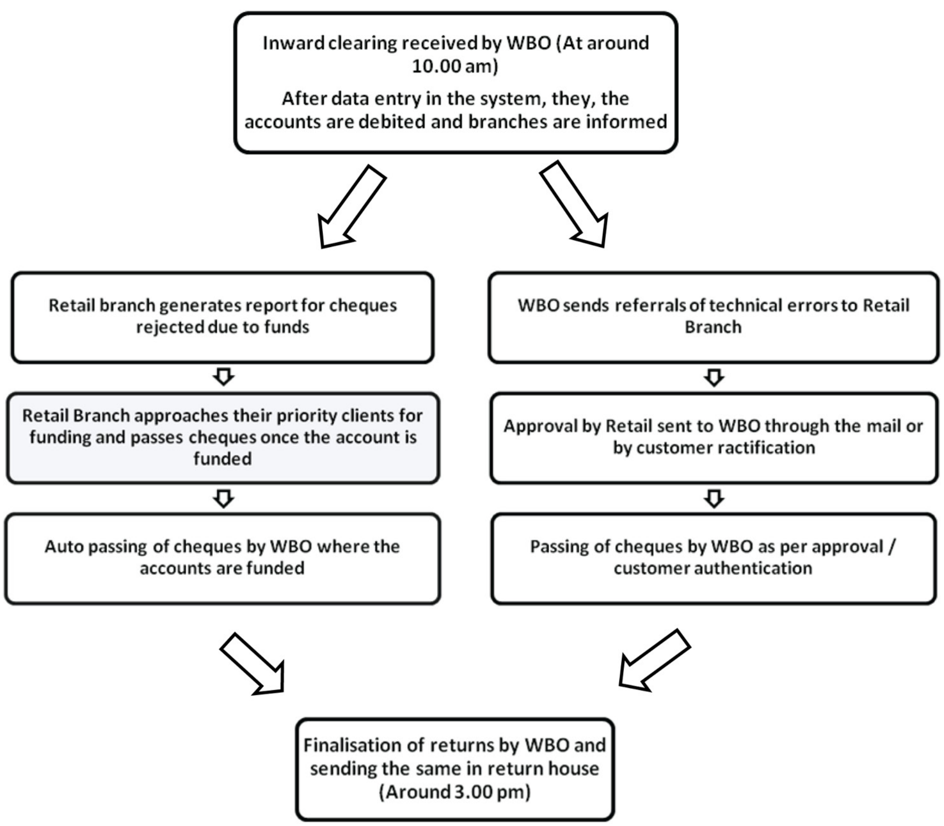


Table 1. Distribution of bank customers by availing different clearing related services of banks

Services	Public Sector Bank	Private Sector Bank
	SBI (n=20)	HDFC (n=20)
Cheque deposition	20	20
Cheque clearing	20	20
Cheques clearing status enquiry	3	
Stop payment facility of cheques	3	
Low service charges	6	
Effectiveness in transaction		14
Tech savvy services		5
Electronic fund transfer	1	10
ECS	2	11
Utility payment services	1	7
Credit card	10	18
ATM	10	19
Internet banking	4	14
RTGS		3
Mobile and phone banking	5	13
Accessibility		
Satisfied	18	15
Dissatisfied	1	4
Neutral	1	1
Ambience		
Satisfied	10	18
Dissatisfied	5	1
Neutral	5	1
Working hours		
Satisfied	7	16
Dissatisfied	7	2
Neutral	6	1

(Source of data: - Field survey results)

About half of the respondents were using credit card and debit card in SBI bank and very few (10 per cent) respondents were availing Electronic Clearing Services.

Majority of respondents in HDFC were using ATM, while more than half respondents were using credit card, ECS and internet banking. In HDFC bank more than 50 per cent respondents were availing ECS and EFT while 70 percent respondents are using Internet, mobile and internet banking. Few respondents that are 15 percent are using RTGS. The analysis of data reveals that a few respondents in Lucknow were availing IT enabled services other than ATM.

Information technology provides flexibility in performing financial transaction, fast and easy, however individuals are still reluctant to adopt the system because of the risk associated with it. Customers are not ready to take any risk on using the new system. Banks should create more awareness regarding all Information Technology enabled services among customers and should put more efforts in increasing security features of these services

Almost all the respondents, that is, 90 per cent were satisfied with the accessibility of SBI, while majority of the respondents, that is, 75 percent were satisfied with accessibility of HDFC. The reason of the above findings might be attributed that SBI has maximum number of branches and ATMs in Lucknow in comparison to the HDFC bank. HDFC has few Branches and ATMs in Lucknow so people have faced accessibility problem.

The analysis of data shows that half of the respondents were satisfied with the ambience of SBI. On the other hand, majority of the respondents, that is 90 percent were satisfied with the ambience of HDFC bank. This is the era of technological advancement and the banking is highly competitive. Well computerized private banks are beginning to compete seriously with the nationalized banks. Banks are trying to get customers' attention and good ambience would be the part of this competition.

Working hours are longer in the private banks than nationalized bank. Only 35 per cent, respondents were satisfied with working hours of the SBI. On the other hand, majority of respondents, that is, 80 per cent were satisfied with working hours of HDFC bank. Several aspects like availability of credit, word of mouth publicity, advice and recommendation, convenient location, ample of bank products, the quality of services, ease of use of ATM, satisfactory banking hours, Return on Investment, sociability of personnel, understanding women, and bank standing etc plays very crucial role for the customer to select particular bank

B.2 Complaints Made by Customer

Uppal (2010) concludes that the maximum complaints are in the public sector banks (SBI) and are continuously increasing, and as such, they adversely affected customers' satisfaction and performance. Each and every bank should establish a customer care centre to solve the complaints of the customers. Private sector and foreign banks are taking the lead in making customers happy. A few respondents, that is, only 20 per cent respondents made complain to SBI. A little respondent in HDFC bank made complain to their bank, that is, 25 per cent. The nature of complains in different banks were found to be Credit cards, Cheque delay, Demand draft delay, High/hidden charges, Loan delay, Misbehavior and harassment, poor customer service, High / Hidden bank charges and low interest, Delay in remittance / transfer of funds / transfer of A/Cs/ completion of passbooks or statement of A/Cs etc. Table 2 shows that customers had negligible complaints, out of which some are solved instantaneously and rest of the matters took some time to be sort out. 25 per cent complaints in SBI were solved instantaneously, while in HDFC banks 40 per cent matters were solved instantaneously It is also observed that sometimes respondents did not expect the matter to be solved, while sometimes they did not want to go for complaining.

RECOMMENDATION

Above analysis focuses on bank modernization needs along with expansion of networks, and persistent strive for information technological improvement for providing the better clearing services to their customers. As a part of such an evolving framework, the entire process of manual processing of cheques has undergone a sea-change when mechanised processing of cheques using Magnetic Ink Character Recognition (MICR) technology, Cheque Tuncation System (CTS),

Table 2. Complaints made by customers

Complaints	Public Sector Bank	Private Sector Bank
	SBI (n=20)	HDFC (n=20)
Have you ever made complain		
Yes	4	5
Never	16	15
Kind of complain made you		
Cheque delay	2	
Demand draft delay		
High/hidden charges		4
Credit card		1
Loan delay	2	
Status of complaints		
Solved	1	2
Unsolved		
Takes time	3	3

(Source of data: - Field survey results)

(Source of data: - Field survey results)

Electronic clearing services, online fund transfer system like Real Time Gross Settlement (RTGS) etc. In Public sector bank SBI, Customers needs prompt service, Working hours, bondage between Employee and customer should be improved so, that customer dissatisfaction level related to clearing related services can be decreased. According to Dhar and Jain (2004*) t*o overcome the growing customer dissatisfaction bank must have to emphasized on training and development of bank personnel, employee motivation, procedure and systems, customer education, analysis of individual customer behavior which implies the banker to have training in psychological and social aspects, and display of day to day changes in rules and regulation which will improve understanding between both staff and its customer. Customers of nationalized bank (SBI) were using comparatively fewer IT enabled services as compared to private bank (HDFC). The reasons behind not using IT enabled services by customers are security, no facility, no awareness and no need. To overcome growing this problem bank should create awareness regarding all information technology enabled services among customers and should put more efforts in increasing security features of these services. Bank should also adopt two fold strategies firstly, the creations of a wide range of services, suitable and beneficial to the customers and secondly, prompt and efficient delivery of these services by the front line staff. To ensure quick delivery of these services bank have to introduce revolutionary technological changes like Electronic fund transfer (EFT), Electronic clearing services (ECS), Net working the service branches, Automatic Teller Machines (ATM), modern and updated communication facilities. ATM is the most common IT enabled service used by customers of every bank.

In private sector bank HDFC, Clearing Charges for high value outstation cheques should be reduced and it should not be hidden, Reserve Bank of India asking banks to fix their charges on a "cost plus" basis. The central bank has said that lenders can no longer fix their charges as a percentage of the value of the cheque. "Banks were given a free hand to determine collection charges for cheques valuing above Rs. 1 lakh cleared through Speed Clearing and Outstation Cheque Clearing mechanism subject to such charges being levied in a fair and transparent manner. The term fair and transparent manner, inter-alia, included fixing the service charges on a cost-plus basis and not on the basis of an arbitrary percentage to the value of the instrument," said RBI in a circular. Opaqueness in the system and procedures, problems should be solved on the spot, separate account statement should be issued for credit cards transactions, continuous harnessing of power of information, grievance redresser mechanism should be set up.

CONCLUSION

An attempt is made here by authors to highlight the major findings of the study. It is found that the public sector bank, SBI needed to devise innovative ways of responding to the evolving challenges like IT enabled services in the area of clearing services. So, in the era of liberalization and globalization, the bank should adopt the latest framework. Banks now adopting the speed clearing mechanism to facilitates clearance of outstation cheques at the source /deposit location itself and there would be no movement of physical cheques to the destination/ drawee location. The complete process of payment including debits to client accounts and verification of signatures etc. is handled by the branch at deposit location. It helps in banks providing the better and fast services to their customers and set higher standards for performance. Above analysis shows that customer satisfaction varies according to the nature of the services. When HDFC Bank compared with SBI, HDFC Bank customers were more satisfied with their bank because of their better services and technology, which were not even seen in SBI. But when we talk about SBI, customers of this bank were satisfied with reputation, reliability and the charges which bank impose on services like cheque clearing service charges. HFDC must have to evolve cost reduction strategies even though bank is committed to increased use of technology to provide quick collection services to its customers. The Service is competitive in the Private Banking Business Market and is one of the strong points for the Bank. The Customers are satisfied in an acceptable way for the Service provided by the Bank. It is observed that there is a crucial need to shift from Brick & Mortar concepts of banking to new hi-tech banking. When we compare both the banks in terms of customer care service, HDFC Bank customers are favored more than SBI. Both the banks should concentrate on their weak areas in order to meet their customer expectations. This study may help the decision maker of the private and public sector banks to concentrate on banking activities and there by to increase the bank ranking by providing better services to their customers. It may help the management in formulating appropriate strategies for achievement of objectives. The present study can be extended further including more of private and public sector banks and their clearing related services can be compared with foreign banks to arrive at some concrete conclusions regarding satisfaction level of customers using clearing related services in private, public and foreign sector banks.

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Chapter 27

Overview of Venture Capital Avenues for Business Process Outsourcing Companies in India: Conceptual Approach

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ABSTRACT

India became a prominent destination for outsourcing in the services sector in the 1990s. Outsourcing to India started with the IT industry, which has responded to the changing market requirements by increasing the scale of operations and capability to handle complexity. Business Process Outsourcing (BPO) in India has grown rapidly as compared to software services as the advantages offered by the country (low cost and abundant talent pool) were well known and tested in IT outsourcing. Most of the infrastructure required was already in place, and companies needed to set the processes right to get BPO going in India. Funding is the essence of any corporate growth story, and the Indian corporate are spreading around the globe with some remarkable takeovers. Coupled with the fact that India has highly skilled manpower with leading global tech, companies are setting their ventures, research and developmental activities in India with the help of venture capital avenues. This chapter highlights some of the venture capital avenues and government policies that have proven very beneficial in the growth of the IT/BPO industry. These favorable government policies have gone a long way in making India an outsourcing/IT hub. Finally, this chapter conceptualizes the implementation of venture capital avenues and application in IT/BPO industry. The major limitation of this chapter is conceptual in nature, which will definitely form a base to test empirically.

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INTRODUCTION

After the success achieved in information technology, the time has come for seizing the ample opportunities in several other areas like bio-technology, pharmaceuticals and drugs, agriculture, food processing, telecommunications, call centers, business process outsourcing (BPO) and services. The vast pool of skilled and cost competitive manpower, technology and research institutes, and entrepreneurship need to be catalyzed through proper policy support and financing of risk capital for achieving this objective. Venture capital funding is critical in this context. In the life-cycle of almost every business, in any sector, venture capital funds can play a very useful role in solving the problem of the pre initial public offering (IPO) financing. Venture Capital funding is different from traditional sources of financing. Venture capitalists finance innovation and ideas which have potential for high growth, but with it, inherent uncertainties. This makes it a high-risk, high return investment. In addition to finance, venture capitalists also provide hands-on management support and other skills that help to convert the entrepreneurial vision into marketable products.

According to Bruton et al. (2003) A flourishing venture capital industry in India will fill the gap between the capital requirements of technology and knowledge-based startup enterprises and funding available from traditional institutional lenders such as banks. The gap exists because such startups are necessarily based on intangible assets. Traditional sources of finance are more comfortable with tangibles. Venture capital supported enterprises would convert into quality initial public offerings (IPOs) providing over-all benefit and protection to the investors. Additionally, judging from the global experience, this will result in substantial and sustainable employment generation. The spin off effects of such activities would create other support services and further employment. While success stories of Indians in US and other places abroad are abound, there are growing number of success stories of young, technically qualified entrepreneurs in India as well. Furthermore, a number of senior managers have been leaving established multinationals and Indian companies to start new ventures. The quality of enterprise in India is on an ascending curve. The atmosphere, thus, is ripe for creating the right regulatory and policy environment for sustaining the momentum for high-technology entrepreneurship. The Indians abroad have leapfrogged the value chain of technology to its highest levels. By bringing venture capital and other supporting infrastructure, this can be encouraged to happen at home too.

In this report, beginning with a consideration of the wide role of venture capital to encompass not just information technology, but all high-growth technology and knowledge-based enterprises, the endeavor of the Committee has been to make recommendations for changes in the legal framework and regulations that will facilitate the further development of a vibrant venture capital industry in India.

AIM OF THE PAPER

This paper is designed to provide a comprehensive picture of venture capital avenues for BPO companies. It tracing out the need of venture capital, kinds, its evolutionary stages in raising venture capital by BPO companies.

BACKGROUND OF THE STUDY

Between taking-up a job for salary and starting their own risky business venture, many educated youth prefer the former which, they think, will give them comfortable existence. Besides, people have become risk-averse, conditioned by their direct and indirect experiences. What is needed at present is change in the mindset at a faster rate never before seen in history. Every human behavior is positive, that is, goal-directed, backed by true-will. There is a passion and commitment to start their own venture and be on their own, provided there is high reward associated with high-risk new business projects. The internet and telecom revolutions are affecting life styles, personal interactions, societies and businesses in profoundly many ways. The changes in turn are being fueled by globalization, technology, knowledge and intellectual property.

However, for a substantial number of technocrats who seek to capitalize on their strengths and business opportunities, starting-up a new venture is a distant dream. There are a number of critical factors that contribute to its success or failure of new business. Experience, integrity, prudence and a clear understanding of the market are among the most sought after qualities of a promoter. Besides these, are other external factors which lie beyond the control of the entrepreneur. Prominent among them are the timely infusion of funds, technical skills, cost competitive manpower, etc. This is where the 'venture capitalist' comes in with money, business sense and a lot more.

CONCEPT

Venture capital financing means providing a proper mix of medium and long-term investments in high-risk industrial projects with high reward possibilities. It may be at any stage of implementation of the project or its production cycle viz., to start-up an economic activity or an industrial or commercial project or to improve a process or a product in an enterprise associated with both risk and reward. Medium-term refers to a period ranging between 3-5 years and 'long-term' covers a period of 5-15 years.

VENTURE CAPITAL-MEANING

Venture capital is a type of investment provided by external professionals into new, high-growth companies. Another study in Wright et al. (2002) The investment is in the form of cash in exchange for shares in the company. A venture capitalist is the person making the investment while a venture capital fund is a pooled investment vehicle often in the form of a partnership that invests the capital of third-party investors into investments that are considered too risky for normal financing like equity or bank loans. Venture capital also includes professional managerial advice as well as using networks and contacts of the professional investors to get business for the company. Venture capitalists generally target a huge rate of return due to the risk of investing in unknown companies, and generally go through a lot of business proposals before accepting a business proposal for funding.

TYPES OF PRIVATE EQUITY AND VENTURE CAPITAL

There are multiple forms of private equity or venture capital. These are primarily classified based on the stage the company is in.

1. **Angel Investors - Seed Capital:** Angel investors who are less of investors and are primarily helping out very early stage companies to start operations. Generally, these investments are done by wealthy individuals who have been entrepreneurs, or even by funds for socially useful projects.
2. **Early Stage Investors:** This is at a stage where company just has a core team, a business idea, and operations are just beginning. Early stage investments by Venture Capital funds generally become very profitable as they get much more chunk of equity at this stage.
3. **Private Placement or Strategic Investors:** This is done by established companies when they need to raise funds for projects but without taking funds from the general capital markets. Instead, they dilute equity to professional investors in return for money.

4. **Funding Rounds:** There are multiple stages of funding that are generally done by companies. The pay-off for the venture capital fund lies when company becomes public in an Initial Public Offering or is acquired by another company.

VISION OF VENTURE CAPITAL

The vision of venture capital is focused on new projects, seed capital, technology and innovation.

It aims at:

- Fueling ambitions and dreams.
- Breathing life into promising business ventures.
- Charting the course of incisive business ideas.
- Providing foresight with a free sense of direction.
- Helping in building enterprise vision.
- Guiding smoothly over rough passages.
- Partnering enterprises on to script thrilling success.

Development of Venture Capital Companies (VCCs) in India

At the behest of the Government of India, a high level team led by the United Nations Development Programme (UNDP) was formed in May, 1987 for examining the possibility of developing Venture Capital Companies (VCCs) in the private sector in India and to make appropriate recommendations. The 'Technology Policy Implementation Committee' of the department of science and technology also specifically recommended the need for venture capital organization in the private sector. ANZ Grindlays, a foreign bank, set-up the first private venture capital fund known as India Investment Fund in 1987. It subsequently came out with the second India Investment Fund in 1989. This is the only foreign bank with a venture capital fund operations in India.

Guidelines for Venture Capital Financing

The first serious efforts of the government to promote and regulate venture capital industry simultaneously took the form of venture capital guidelines. The Department of Economic Affairs, Office of the Controller of Capital Issues, by its notification dated November 25, 1988 finally issued the long awaited guidelines for venture capital financing to fulfill the promise of the finance minister. These guidelines delineated, a scheme of venture capital financing of new companies. The guidelines provide broad framework for the operation of the VCCs, covers establishment of VCCS/VCFs, their management, areas for venture capital assistance, size, debt equity ratio, underwriting, listing, and eligibility for tax concessions.

CONCLUSION: APPROACHING NEW FRONTIERS IN PE/VC

Private equity activity is increasing throughout the developing world as investors are finding better opportunities relative to the saturated market of developed economies. However, the expected stellar performance of economic superstars India has not yet occurred. Instability and uncertainty have thus far impeded successful VC investment in India. The unfamiliar environment of these countries, dominated by poverty, necessitates the ability for firms to correctly adapt to the local condition of these markets.

Investment focus should incorporate the BOP business strategy of providing low margin/high volume service through microfinance or gateway enterprise investing. Investment structure must be augmented to address the BOP business model's need for intensive risk management to encourage successful performance. Screening and monitoring of investment also requires firms to develop the capability of social embeddedness in order to best serve the local market and most effectively manage risky investment. Lastly, performance measures must incorporate the view of success through both financial and social returns, in order to promote sustainable development as a key to maintaining and increasing profitable operations.

Approaching these new frontiers of social development, one can only feel excited about the prospects ahead and encouraged by the possibilities that are within reach.

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Chapter 28
Industrial Disputes in Sugar Industry

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ABSTRACT

Labour and management conflict in numerous ways in the course of their day. The interests of the two are in many ways opposed to each other. Conflicts are inevitable in the course of interactions, and the labour management relationship is also not accepted. We cannot eradicate conflicts, as they are inherent in the system of industrial life. Marx considered industry conflict as a part of the broader social conflict between classes. Human relation specialists consider the source of conflict to be the tendency as industrial society to treat the workers as isolated individuals and deprive them of all control over their environments. Pluralists consider unequal distribution of power and privilege to be the source conflict. Whatever the source of conflict, all agree that until now we have failed to evolve any system free of conflict for the socialized industry. In addition, it has been commented that it presents problems no less stubborn than those of the old, and there is no system without "contradiction." In a system, conflicts are bound to take place; an early solution would be beneficial to us all. This chapter explores this conflict.

INTRODUCTION

In a bipartite and tripartite system of industrial relation like India the question for industrial peace has been a national goal, actively pursued by the government, trade unions and management ever since India attained independence. But despite genuine effort through various voluntary arrangements and legal enactments, the system has not reached where it should have today. In India, we have both preventive measures and methods of solution of disputes in practice. In a systematic manner, the Government is an essential third party conciliating between labour and management and adjudicating such disputes which cannot be conciliated. Either labour or management con approach the Government to set conciliation procedure in motion and the government can in additional act on its own even if not approached.

Conciliation is a process of persuasion. The conciliator can persuade labor and management to come to the terms, but cannot force to agree. Two courses are open if conciliation fails. The parties may submit their disputes to an arbitrator whose decision will be final and binding. The second course is adjudication, or of judicial decision

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by a labour court or tribunal. The government decides whether the dispute merits reference to adjudication.

Keeping these arrangements in view, the researcher has undertaken the present study in sugar factories of Uttar Pradesh with a view to examine how much the present arrangements have helped for peaceful resolution of disputes between labor and management in the sugar industry of Uttar Pradesh.

Methodology

While conducting the investigation into the working of the individuals' sugar factories, personal discussion, enquiries and contact will be made with the factory managements, trade union leaders, mass of labourers and other agencies concerned as a source of primary data. In Source of research the researcher intends to enquire about several problems pertaining to labour conditions, labour relations verbally and by mutual discussion. In this connection, the researcher had to resort to the veracity of the testimony of several persons and officials in authority. The information asked for and the primary data given would be tested and verified with the help of other agencies to reach a definite goal for the sake of assured facts and figures. Both types of data, primary and secondary will be analysed with suitable statistical techniques particularly to test the hypotheses.

Objectives of Study

One of the essential factors for unrestricted growth and functioning of sugar industry is a satisfied, committed and trained labour force. Achievement of this objective is possible only if the labour issues are analyzed empirically in the right perspective with minute details. In this respect the other objectives of this study are:

1. To present an anatomy of the multi-dimensional aspects of the industrial relations in sugar industry.
2. To focus its attention to the historical development of sugar industry and condition of labourers in pre-independence India and afterwards.

Hypotheses

The Following hypotheses would be tested in the study.

H_1: Failure to implement the collective agreements, labour legislations and the recommendation of the Wage Board are the vital cause of dissatisfaction.

H_2: Collective bargaining is not successful at plant level.

H_3: Outside leadership is more militant and effective at present in trade union movement in the sugar industry in Uttar Pradesh than the internal leadership.

Nature of Industrial Disputes in the Sugar Industry of Uttar Pradesh

Before 2009, most of the disputes in sugar industry were related to wages, dearness allowance, bonus, retaining allowance, categories of workers entitled to retaining allowance, provident fund and gratuity, status of seasonal workmen, retrenchment etc. In Uttar Pradesh, disputes were apprehended over the question of wages in all the sugar factories during the season 2003-2004. A reference was, therefore, made to the tribunal, of which Mr. Shiva Pujan Rai was the sole member, for adjudication. The Uttar Pradesh Labour Enquiry Committee recommended for the first time that "every unskilled and semiskilled employee, who has been employed in a factory for a full season, should be given an off-season allowance at 10 percent his wage rate on his re-employment in the next season.'' Since then there had been a continuous demand from the employees in the sugar industry for retainer for them during the off-seasons the sugar Factories Labour (wages) Enquiry committee (Bhatia Committee), United Provinces recommended in the case of unskilled workers, 25 percent for semiskilled workers and 50 percent for skilled workers as a total monthly wage during the season. However, the two Government of Uttar Pradesh and Bihar did not accept these recommendations of the Bhatia committee. Consequent upon introduction of uniform consolidated wages to unskilled workmen in both Uttar Pradesh and Bihar in accordance with the recommendations of the Bhatia Committee some of the sugar factories in Uttar Pradesh, particularly the Begg Sutherland group of factories, stopped the practice of paying retaining allowance to unskilled workers which they had been paying at the rate of 10 percent of the wages. During the crushing season 2003-2004 disputes were apprehended in all the sugar factories of Uttar Pradesh on various matters, including the payment of retaining allowance.

After regulation of wages according to the Wage Board Reports in sugar industry, the number of disputes relating to minimum wages, dearness allowance, retaining allowance, gratuity and bonus has declined considerably. Most of the disputes are concerned with termination, payment of wages, payment of bonus and implementation of agreements. Disputes have been raised to increase wages, in the cases of individual employees, if the employees are working at higher posts without being promoted at the post. These disputes are again related to non-implementation of the recommendations of Wage Boards properly as per Abraham(2011).

A classification of disputes in sugar factories of Uttar Pradesh on the basis of causes over a span of 5year from 2008 to 2012 is shown in the Table 4.1.

Total aggregate of industrial disputes between 2008 to 2012 had been 42 in 41 sugar factories of Uttar Pradesh. Out of 42 disputes, 19 (45.3%) had been raised due to non-implementation of agreements, 14 (33%) occurred due to termination, 3(7.1%) occurred due to wages had been not according to work, 2(4.7%) occurred due to payment of bonus and other causes, like Bonus, Political, Transfer and Employment of ward constituted only 1(2.20%) of total disputes in each cases separately.

In the private sector of the sugar industry industrial disputes are usually concern with confirmation of casual labourers. Implementation of agreements, termination, reinstatement, employment of dependents of retired persons and deceased persons, promotion, protest against employment of retired persons, promotion without consideration of seniority, in off-season taking work from seasonal workers at the place of daily wage labourers, suspension on incorrect charges, recognition of the union, failure of management in depositing the provident fund charged from the workers in the trust immediately, safety, transfer, repairing of union office, increase in retaining allowance, time scale promotion, house rent according to the old rates, payment of medical bill equal to one month salary, misbehavior of engineers with workers, retrenchment, pension, gratuity removal of contract system, regularization of semi-skilled, skilled workers etc.

Classification of Industrial Disputes

Industrial disputes can be classified as (a) Interest Disputes (b) Right Disputes (c) Disputes over Unfair Labour Practices and (d) Recognition Disputes. All the four categories of disputes are present in the sugar industry in Uttar Pradesh.

The disputes that arise out of deadlocks in the negotiation for a collective agreement and related to the establishment of terms and conditions of employment for the general body of workers concerned are popularly known as 'interest disputes'.

Table 4.1. Classification of Industrial Disputes by causes of selected Sugar Factories of Uttar Pradesh from 2008 to 2012

Cause	2008	2009	2010	2011	2012
1. Bonus	1	0	0	0	0
2.Payment of Bonus	1	0	0	0	1
3.Termination	1	3	2	1	0
4. Political	1	0	0	0	0
5.Wages not According to Work	1	1	0	1	0
6.Transfer	1	0	0	0	0
7.Employment Of Ward	1	3	9	8	6

Source: Information received from the Labour and Employment Department, Lucknow, Uttar Pradesh.

In most cases disputes originate from trade union demands or proposals for improvement of wages, fringe benefits, job security, or other terms and conditions of employment. In the past before implementation of recommendations of the First Wage Board for Sugar Industry (1960), labour unions and factory management had a vital role in setting the norms for wages, categories of workers entitled to optimum wages, dearness allowance and bonus in course of fixing and conditions of employment. After regulating wages according to the Wage Board Reports, by the agreements with state level trade union bodies, plant level negotiations have lost their role for setting a fresh norm for wages and dearness allowance. The interest disputes have been raised rarely, but at industry level by the trade union bodies in Uttar Pradesh. In pursuance to the call given by the state bodies plant level unions have also raised their voices. National Co-ordination committee, in which all the Central Trade Unions of the sugar industry are members, had given such a type of call, for modification of the recommendations of the Third Wage Board for Sugar Industry. This call had been responded by nearly almost all unions of Uttar Pradesh as per Amsden (2011).

Disputes that arise from day to day worker's grievances on complaints, popularly known as "Right Disputes". They involve individual workers only or a group of workers in the same group and correspond largely to what in certain countries are called "individual disputes''. These disputes typically arise on such questions as discipline and dismissal, the payment of wages, fringe benefits, working time, over-time off entitlements, promotion, demotion, transfer, rights deriving from seniority, rights of supervisors and union officers, job classification problems, the relationship of work rules to the collective agreement and the fulfillment of obligations relating to safety and health laid down in the agreement. Most of the disputes of the sugar industry in Uttar Pradesh fall in this category. They have taken place due to unfair management practices, non-implementation of the Wage Board recommendations properly, non-implementation of plant level agreement regarding solution of routine problems and failure of the management in the payment at right time.

The Third category of disputes is 'Disputes over unfair labour practices'. The disputes, the disputes that arise from acts of interference with the exercise of the right to organize are commonly known as disputes relating to unfair labour practices. Dispute over unfair labour practices include interference, restraint or coercion of employees from exercising their right to organize, join or assist a union, establishment of employer sponsored unions, refusal to bargain collectively in good faith with the recognized union, recruiting new employees during a strike which is not an illegal strike, failure to implement an award, settlement or agreement, including the acts of force or violence, etc. In the sugar industry of Uttar Pradesh, between 2008-2012, disputes relating to establishment of employer sponsored union, refusal to bargain in good faith with the recognized union, act of force and violence by management on employees and their unions, failure to implement an award, settlement or agreement, have taken place. However, in comparison to the right disputes, their number is small as per Desai(2012).

Recognition disputes arise when the management of an undertaking or an employer's organization refuses a trade union for purposes of collective bargaining. In a number of factories recognition disputes have taken place. A ten day strike took place in 2012 in Rampur sugar factory, when management refused to recognize the most powerful union of the factory.

Number of Disputes in Sugar Industry of Uttar Pradesh

The trade in industrial dispute over a span of 5 years from 2005 to 2009 is shown below:

There are 41 sugar factories working at present in Uttar Pradesh. Total number of disputes in 14 factories of Uttar Pradesh described above amount to 41 in number. On the basis of the data given in Table 4.2 dispute per factory is not more than three in number. As it seems that in 2005, the disputes had a bit abnormal growth, excluding its average dispute per factory comes down to two disputes. The average number of disputes does not seem to be high in sugar factories keeping in view the above data. Average number of employees per factory in Uttar Pradesh is 15,542. Two or three disputes at 15,542 employees are not very high. However, one should not forget that the grievances and complaints are comparatively high in sugar industry in Uttar Pradesh. Only a few among them are considered to be industrial disputes.

In absence of satisfactory conditions of settlement of disputes at the plant level, quite a large proportion of industrial grievances find their way to Conciliation Boards. There are two main reasons due to which industrial disputes are low in sugar factories. First cause of low industrial dispute in sugar industry is the seasonal character of the industry. In Uttar Pradesh the span of the season is very small in comparison to southern region and as the season lasts not more than 4 months in Uttar Pradesh, there are less chances of interaction between labour and management. Second cause of low number of industrial disputes in sugar factories is regulation of wages. After implementation of the recommendations of the Wage Boards in sugar industry, industrial disputes have declined considerably. Excluding the data available for 2005 of the Table 4.2 it is very difficult to state whether disputes have an increasing or decreasing trend. Numbers of disputes from 2006 to 2009 seem to have nearly a steady and undedicated trend either upward or downward.

According to the Table 4.3 total number of disputes was 80 in six sugar factories of Uttar Pradesh from 2010 to 2012. Out of 80 disputes, 28 disputes took place in 2010, 33 in 2011, 19 in 2012. Average dispute per factory on the basis of the data is nearly 26 during this period. Total numbers of disputes in the two factories of the public sector were 40 and hence the average dispute per factory becomes 20. In private sector coercive nature of management in some of the factories has prevented employees in raising the disputes. Employees pass through some sort of fear psychosis of facing the wrath of employers, if they engage themselves in trade union activities. Only a few dare to stand against the employers.

Table 4.2. Number of industrial disputes year wise 2005-2009 in selected sugar factories of Uttar Pradesh

Name of the Factory	2005	2006	2007	2008	2009
NyoliSugar Mills Nyoli, Etah	0	0	0	0	0
J.K.SugarMill Meerganj,Bareilly	0	0	2	0	1
U.P. State Sugar Corporation Ltd. Unit-Pipraich, Gorakhpur	1	0	0	0	0
U.P. State Sugar Corporation Ltd. Unit-Siswabazar, Maharajganj	3	1	1	2	1
Bajaj Hindustan Ltd. Gola Gakarn Nath, Khiri	0	1	0	0	0
U.P. State Sugar Corporation Ltd. Betalpur Deoria	1	2	2	1	1
U.P. State Sugar Corporation Ltd. Unit-Khadda, Kushinagar	2	0	0	0	0
U.P. State Sugar Corporation Ltd. Unit-Maholi, Sitapur	0	1	2	0	0
BajajHindustan Ltd.Kinauni, Mueerut	0	0	0	1	0
DalmiyaCM Jhawarpur Sitapur, Sitapur	3	0	0	2	0
U.P. State Sugar Corporation Ltd. Unit-Bijnore, Bijnore	2	0	1	0	0
U.P. State Sugar Corporation Ltd. Chandpur, Bijnore	2	0	0	0	0
U.P. State Sugar Corporation Ltd. Unit-Vidvi, Saharanpur	1	0	0	0	1
U.P. State Sugar Corporation Ltd. Unit- Rohanakala, MuzaffarNagar	1	0	0	1	1
Total	16	5	8	7	5

Source: Information received from the Department of Labour and Employment, Lucknow.

Table 4.3. Number of industrial disputes year wise (2010-2012) for selected sugar factories of Uttar Pradesh

Name of the Factory	2010	2011	2012
U.P. State Sugar Corporation Ltd. Unit-Bijnore, Bijnore	5	13	11
U.P. State Sugar Corporation Ltd. Chandpur,Bijnore	3	6	1
U.P. State Sugar Corporation Ltd. Unit-Vidvi, Saharanpur	1	1	1
NyoliSugar Mills, Nyoli Etah	5	3	0
J.K.SugarMill Meerganj, Bareilly	10	7	2
U.P. State Sugar Corporation Ltd. Unit-Pipraich, Gorakhpur	4	3	4
Total	28	33	19

Source: Information received from the Department of Labour and Employment, Lucknow.

Methods of Settling Industrial Disputes in Sugar Industry

There are two ways in which the basic parties to an industrial dispute can settle their dispute in sugar industry:

1. Without intervention of the state.
2. Under the influence of the state.

Methods of Settling Dispute without Intervention of the State

There are two important methods of settling the disputes without intervention of state these are:

1. Collective Bargaining.
2. Voluntary Arbitration.

Collective Bargaining as a Method of Settling Disputes in Sugar Industry

Collective Bargaining implies the following main steps.

1. Presentation of demands and grievances in collective manner to the employer.
2. Discussions and negotiations on the basis of mutual give and take for setting the grievances and fulfilling the demands.
3. Signing of a formal agreement or an informal understanding when negotiations result in mutual satisfaction.
4. In the event of the failure of negotiations, a likely resort to strike or lockout to force the recalcitrant party to come to terms.

In the sugar industry the tradition of collective bargaining has been fairly strong particularly so in Uttar Pradesh and Bihar where the standing orders in force were largely evolved by agreement between the parties. The bonus issues in Uttar Pradesh have been settled year after year mostly by agreements between the representatives of the parties appointed in a committee with the labour commissioner as the convener. Similarly, the fitment of employees in the grades devised by the First Wage Board was largely effected by agreements. However, at the plant level the collective bargaining has not been strong and the viruses of multi-unionism, as also intra-union rivalries are preventing the emergence of competent bargaining agent as per Papola,(2012).

Voluntary Arbitration

The parties, feeling that mutual negotiations will not succeed and realizing the futility and wastefulness of strikes and lockout, may decide to submit the dispute to a neutral person or a group of persons for arbitration. The neutral person hears the parties and gives his award which may or may not be binding on them. The Gandhian technique of resolving industrial disputes accord a high place to voluntary arbitration. The Five Year Plans have consistently emphasized its role. The need for wider acceptance to voluntary arbitration had been also recognized in the 1962 session of the Indian Labour Conference which held, "Whenever conciliation fails arbitration will be the next normal step, except in cases where the employer feels that for some reasons he would prefer adjudication. Some of the factors which have hampered the adoption of voluntary arbitration as a method of settling industrial dispute in India were highlighted in the evidence before the National Commission on Labour. These included: (1) Easy availability of adjudication in case of failure of negotiations. (2) Dearth of suitable arbitrators who command the confidence of both parties. (3) Absence of recognized union which could bind the workers to common agreements. (4) Legal obstacles (5) The fact that in law no appeal was competent against an arbitrators award (6) Absence of a simplified procedure to be followed in voluntary arbitration (7) Cost to the parties, particularly workers.

In sugar industry, arbitrations in matters of major disputes have sometimes been agreed to at the industry level and occasionally at plant level too. But as a regular method of settling disputes, the institution of arbitration has not made significant progress. There are several reasons for this. Absence of a strong bargaining agent form the side of workers has been main the obstacle of arbitration. At the same time there has been shortage of qualified persons willing to arbitrate. At present arbitrators usually receive remuneration for their labour.

The study group for sugar industry, National Commission on Labour (2009), recommended that the arbitrator's fee to be paid by the Government should be chargeable from the parties. A schedule of fees for various types of cases should be prescribed and list of arbitrators should be maintained by the Government. Notwithstanding the above if the parties find a mutually acceptable arbitrator willing to arbitrate without any fee, they should be free to choose them. Voluntary arbitration, in the sugar industry of Uttar Pradesh has not made any progress. There are few dispute solved with the help of voluntary arbitration.

Settlement of Disputes in Sugar Industry Under Influence of the State

There could possibly have been no escape from regulatory measures of the state if reasonable stability and peace has to be maintained in sugar industry. In our too frequent criticism of the existing system of industrial relations and extolling the virtues of collective bargaining, we often miss to bear in mind the fact that strikes and lockouts are the very sine-qua-non of free collective bargaining. An economically underdeveloped country in the throes of economic development could not afford to leave things to be settled exclusively by collective bargaining. It has to be a society accepting the vagaries of strikes and lockouts as the normal method of settling industrial disputes. Collective bargaining itself needs to be saved by means of regulations from degenerating into an instrument of oppression or social waste. India has launched upon vast programmer of economic development and has adopted planning, and it cannot afford frequent interruptions in production. Therefore, there is a growing tendency on the part of the state to intervene and to seek to promote peaceful ways of settling industrial disputes.

There are two important methods of setting the industrial dispute under the influence of state. These are: (1) Conciliation (2) Adjudication.

Conciliation as a Method of Settling Disputes in Sugar Industry

The institution of plant level consultation has not made any mentionable progress in the sugar industry. In absence of satisfactory conditions for settlement of disputes at the plant level, quite a large proportion of industrial grievances find their way to the Conciliation Boards. The proportion of settlement to the total number of grievances referred to the conciliation Boards has been showing diminishing returns. The conciliation officer himself is often burdened with too many cases. He does not have as much time as should be necessary to guide negotiation himself, with the result that for the most part of the disputes are treated as mere cases to be disposed off, in routine, on the basis of such versions of the parties as they may choose to make or contest.

The study group for sugar industry, appointed by National Commission on Labour observed that among various reasons responsible for declining figures of agreement before the conciliation board, one of the important facts was that conciliation officer had been burdened with too many cases and there had been considerable lowering of standards in the quality of conciliation officer's solutions. Adequate monetary reward was not made for attracting talents to the post of conciliation officers. The lack of proper industrial training and regular refresher courses had also adversely affected the efficiency. In light of above observations the study group for sugar industry recommended "if not technical, the job of handling industrial relations is of highly specialized nature. Competent persons are required to be remunerated at competitive rates. For these reasons, as also for the sake of demonstrable appearance of independence, it is recommended that there should be an India Labour Administration Service. The senior posts of Labour Department should be filled in by personnel belonging to the service.

One of the most important problems that cause frustration to the workmen in settling the industrial disputes through conciliation is the delay in conciliation process. Table 4.4 shows duration taken in conciliation process from 2009 to 2011 of 15 sugar factories of Uttar Pradesh.

The disputes settled within 15 days are 3 in number during 2009 to 2011. They are mostly settlements on demands with strike notices. Those disputes constitute 10 percent of the total disputes. There were 6 disputes that had taken duration of

Table 4.4. Duration taken in Conciliation Process from 2009 to 2011 for Selected Sugar Factories of Uttar Pradesh

Duration Taken in Conciliation Process	2009	2010	2011	Total
Less than 15 days	2	0	1	3
More than 15 days and less than 3 months	6	0	0	6
More than 3 months and less than 6 months	2	1	2	5
More than 6 months and less 9 months	3	1	2	6
More than 9 months and less than 1 year	2	0	0	2
More than 1 year and less than 1 year 4 months	1	2	0	3
Data Not Available	0	0	2	2

Source: Information received from the Department of Labour and Employment, Lucknow.

more than 15 days and less than 3 months. These disputes constitute 20 percent of the total disputes. Five disputes took duration of more than 3 months and less than 6 months. They are 16.5 percent of the total disputes. Six disputes have taken duration of more than six months and less than 9 moths. They are 20 percent of the total disputes. Two disputes took duration of more than 9 months and less than 1 year. They are nearly 6.5 percent of the total disputes. Three disputes took more than one year and less than one year four months. Data for 2 disputes are missing.

According to the Table 4.4 nearly 46.5 percent of the total disputes between 2009 to 2011 have taken more than six months in the conciliation process. The study Group for Sugar Industry appointed by the National Commission on Labour recommended that the disputes referred to conciliation Board should stand finally settled at least within six months of such reference. Causes of delay in conciliation process are non-responsiveness of the management, failure of the labour and management to appear at the given dates of conciliation, burden of the large number of cases on conciliation boards, lack of devotion and missionary zeal on the part of conciliation officers, etc. Some old officers and trade unionists are of the opinion that in per-Independence era and later on in the beginning of post-Independence era and later on in the beginning of post-independence era conciliation officer felt enthusiasm in settling the disputes. They worked hard and took proper care in settling the disputes. But after that as lack of commitment and devotion has become the way of life in the post-independence period, its impact could not be underestimated on conciliation officers. There is a lack of initiative, and officers make their move immediately only if a strike notice has been issued by the trade unions. Table number 4.4 shows that settlements had been made within 14 days, only, if a call of strike had been given by the union.

Reference of Disputes to Adjudication

The disputes not settled before the Conciliation Boards are examined by the respective appropriate Governments to see if they merit reference to adjudication. Where conciliation fails and arbitration is not acceptable, the only course open to conciliator is to submit a report of failure to the government. This report which sets out in detail the facts of the case, the specific reasons that no agreement was possible, and conciliator's own assessment of what steps can now be taken to resolve the dispute, forms the basis for a decision by the government on its subsequent course of action. Two kinds of criticisms are leveled against this system. From the workers side it is often urged that with various restrictions placed on strikes, the recourse of judicial determination of disputes should not be barred by the Government. Another major criticism against the working of this system is that the decision to refer disputes or to withhold reference is sometimes not made on any strict principle and the system is open to pressurization.

The reference for judicial determination of disputes in the present circumstances can be made only on selective basis. The reference to adjudication of claims which are without any reasonable basis could lead to no good result and would only add to the existing pressure of work with the Labour courts and thus cause delay in disposal of the genuine or really controversial claims. In case of making strict principles for particular types of cases, the main difficulty is that disputes appearing to be similar may not in fact be so. Most cases relating to the same matter turn on their own individual merits.

Total number of failure reports submitted to the Department of Labour, Government of Uttar Pradesh for sugar industry from 2009 to 2012 and total number of cases referred to Labou courts of all over Uttar Pradesh has been shown in the Table 4.5.

In 2009, nine failure reports had been submitted to the state Government. Out of one case, the parties signed a bipartite agreement. Four cases had been referred to labour courts and four cases had been rejected. In 2010 nine failure reports were submitted to the Government of Uttar Pradesh. Out of nine, tripartite settlement had been made in three cases, three cases had been rejected and three cases had been referred for adjudication to the labour courts. In 2011, eight failure reports had been submitted to the state Government. Out of eight, Labour Department referred only two to the Labour courts and rests of the six are still pending. Similarly in 2012, 10 failure reports had been submitted to the Government of Uttar Pradesh. Out of 10, the Labour Department referred three cases to the labour court and 7 cases are still pending.

In the course of referring the disputes to the labour courts, the Labour Department, Government of Uttar Pradesh takes more than six months in majority of the cases. Table 4.6 presents duration taken in referring the cases to the Labour courts.

During 2009 to 2012 only one case had been referred to the Labour court by the Labour Department, Government of Uttar Pradesh, within three months. In one case the Labour Department took more than three months and less than six months. In 5 cases the Labour Department took more than six months and less than one year. In two cases the Labour Department took more than one year and less than 1.5 year.

Out of than 9 cases, that had been referred by the Labour Department, Government of Uttar Pradesh to the Labour court from 2009 to 2012, in 6 cases the Labour Department took a duration of more than six months. This constitutes more than 80 percent of the total cases. The table number 4.6 presents a glaring example of inefficiency on the part of the Labour Department in course of referring the case to the Labour court.

Table 4.5. Failure reports submitted to the department of labour government of Uttar Pradesh for all the sugar factories of the state in during 2009 to 2012

Year	Total Number of Failure Reports Submitted	Bipartite Agreements Reached	Tripartite Settlements	Referred to Labour Court	Rejected	Pending
2009	9	1	0	4	4	0
2010	9	0	3	3	3	0
2011	8	0	0	2	0	6
2012	10	0	0	3	0	7

Source: Information received from the Department of Labour and Employment, Lucknow.

Table 4.6. Time Taken in Referring Disputes to the Labour Courts for Adjudication by the Department of Labour, Government of Uttar Pradesh from 2009 to 2012 relating to Sugar Industry in Uttar Pradesh

Duration	Number of Disputes Referred to Labour Courts
Less than three months	1
More than three month and less than six months	1
More than six months and less than one year	5
More than one year and less than 1.5 year	2
More than 1.5 year and less than two year	0

Source: Information received from the Department of Labour and Employment, Lucknow.

Adjudication

The Government may, at this discretion, refer a dispute to adjudication that is to a judicial decision which will naturally be binding on all concerned. The Industrial Disputes Act provides for an adjudication system composed of Labour Courts, Labour Tribunals and the national tribunal, Labour courts deal mainly with personnel disputes over matters such as dismissal and disciplinary action involving individual workers. The labour tribunal considers disputes which have a wider significance, such as wages, bonus, rationalization and dearness allowance. The national tribunal considers much the same questions as the labour tribunal, with the difference that they are still wider in scope, being of national significance or of concern to establishments in several states.

The labour court is a permanent institution, whereas a tribunal is generally appointed for a specific case or a specified period of time. Adjudication in labour disputes is quite unlike adjudication in civil and criminal ones, because it is not open to either party to bring a dispute before a labour court or tribunal. It is left entirely to the discretion of the government to decide whether a dispute merits reference to adjudication. Not all dispute which defy solution through conciliation may be so referred. The discretion of the government in this regard is absolute and beyond question. The government's decision is purely an administrative one and it does not have to justify either having referred or not having referred a dispute to any authority. Even the courts have held that they can only request the government to reconsider its decision, and it is beyond their power to direct it to change it. Once a dispute is referred to a court or tribunal, the only redress to the aggrieved party is to challenge its judgment in the Supreme Court, provided, of course, the Supreme Court grants it leave to appeal according to Sen (2012).

Most of the disputes in sugar industry are concerned with either to unfair labour practices or recognition or against an act of management that is considered to violate workers rights. As wages have become regulated in the sugar industry, rarely interest disputes relating to wages, bonus and dearness allowance do take place. Nearly all the disputes referred by the Labour Department, Government of Uttar Pradesh have been directed to labour courts.

For inspiring confidence of the workmen in constitutional methods of settling their disputes, the Study Group for Sugar Industry appointed by the National Commission on Labour felt that ordinarily, disputes before courts or tribunals should be disposed off within three months. In exercise of the powers conferred by subsection (2) A of Section-10 of Industrial Dispute Act 1947, the Governor of Uttar Pradesh has specified a period of three months from the date of receipt of Notification, within which the Labour Court should submit its award to the dispute to the State Government. However, data collected for

20 sugar factories of Uttar Pradesh from 2005 to 2012 reveal that not a single dispute referred by the Government of Uttar Pradesh has been settled within three months. Table number 4.7 presents a classification of awards given by Labour Court on the basis of time taken in disposal of cases for 20selected sugar factories of Uttar Pradesh.

According to the Table Number 4.7 no case had been finalized within three months. Only one award was given in more than three months and less than six months. The labour court give 5 awards in more than six months and less than one year, 9 awards in more than one year and less than two years, 6 awards in more than two years and less than three years, 8 awards in more than three years and less than four years, 2 awards in more than four years and less than five years, 7 awards in more than five years and less than six years, 2 awards in more than six years and less than 7 years, 2 awards in more than eight years and less than 9 years, 2 awards in more than nine years and less than 10 years.

Within 8 years from 2005 to 2012, 44 awards were given by the Labour Court, Lucknow. Out of 44 in 38 cases awards were given after one year. These awards constitution nearly 86 percent of the total disputes. In 23 cases awards were given after 5 years. These awards constitute nearly 29.5 percent of the total awards.

The biggest cause of delay in finalizing the cases, referred by the Labour Department to the Labour Courts, is the times taken by the parties of dispute either to search documents necessary for the trial or under the pretest of some other engagements. Management of the factory lingers the time to harass the workers concerned or workers themselves fail to appear on the dates of trial. Other causes of delay in giving the awards are burden of pending cases and transfer of judges at the time of enquiry. In the middle of the trial, if the judge is transferred, new comer takes times again to understand the case according to Unni et al. (2012).

Table number 4.8 presents cases of 20 sugar factories referred by the Government of Uttar Pradesh for adjudication from 2004 to 2012.

According to the table number 4.8 total numbers of cases referred by the Labour Department, Government of Uttar Pradesh to the Labour Court Lucknow of 20 sugar factories of Uttar Pradesh were 49. The cases referred in 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012 were 7, 2, 11, 15, 3, 1, 6, 1, 3 respectively. Out of 49 cases, the Labour Court gave awards in 40 cases upto 31st December, 2012. In rest of all the cases, 8 are still pending except one that had been stayed by the High Court.

An analysis of the time taken by the Labour Courts in finalizing the cases indicates clearly that too much time is consumed in the adjudication process. It is unbearable to the aggrieved party and causes intense dissatisfaction. Time taken in the process of conciliation makes the situation more deplorable. In a memorandum submitted to the Labour Minister, Government of Uttar Pradesh, Uttar Pradesh Sugar Workers, Federation (AITUC) in 2013, it has been suggested that to avoid duplication of the proceeding conciliation officers should be given the power of adjudication in certain cases. For example- implementation, termination etc. It will reduce the burden upto some extent on the Labour Court and will save time as the whole process is not going to be repeated.

CONCLUSION

The industrial disputes in sugar industry it also studies about the methods adopted in settling the industrial disputes in the industry and time taken in conciliation, reference to adjudication by the Labour Department, Government of Uttar Pradesh and in the process of adjudication.

There is complete absence of interest disputes at the plant level. Occasionally, the interest disputes have been raised at the industry level by

Table 4.7. Classification of awards on the basis of duration involved in adjudication process, year wise, from 2005 to 2012 for selected sugar factories of Uttar Pradesh

Duration Taken in the Process of Adjudication	2005	2006	2007	2008	2009	2010	2011	2012	Total
Upto three months	0	0	0	0	0	0	0	0	0
More than three months and less than six months	0	0	0	1	0	0	0	0	1
More than six months and less than one year	1	1	1	1	1	0	0	0	5
More than one year and less than two years	2	2	2	1	1	1	0	0	9
More than two years and less than three years	1	1	1	1	1	1	0	0	6
More than three years and less than four years	2	2	2	2	0	0	0	0	8
More than four years and less than five years	0	0	0	0	0	0	1	1	2
More than five years and less than six years	1	1	1	1	1	1	1	0	7
More than six years and less than seven years	0	0	0	0	0	2	0	0	2
More than seven years and less than eight years	0	0	0	0	0	0	0	0	0
More than eight years and less than nine years	1	1	0	0	0	0	0	0	2
More than nine years and less than ten years	0	0	0	0	0	0	1	1	2
Total awards year-wise									44

Source: Information received from the Labour Court, Lucknow, Uttar Pradesh.

the trade union bodies. Most of the disputes are right disputes. Disputes relating to unfair labour practices and recognition have been raised at the plant level, but they are comparatively lower in number.

Disputes in sugar factories in Uttar Pradesh show an increasing trend. Numbers of disputes are higher in public sector than private sector. Important causes of high number of disputes in public sector are irregular payment of wages due to poor financial condition of public sector factories, better trade union consciousness, modernization plan and unresponsive behavior of management in some of the factories.

At industry level in Uttar Pradesh, collective bargaining is fairly strong as a method of settling industrial dispute. However, at the plant level the collective bargaining had not been strong and the viruses of multi-unionism as also intra-union rivalries are preventing the emergence of competent bargaining agent. As a regular method of settling disputes, the institution of arbitration has not made any progress in Uttar Pradesh. The institution of plant level consultation has also not made any progress. The proportion of settlement to the total number of grievances referred to the conciliation Boards has been showing diminishing returns. One of the most important problems that cause frustration to the workmen is delay in the process of conciliation.

Nearly in 80 percent of the total cases, the Labour Department, Government of Uttar Pradesh takes more than six months in making reference to the Labour Courts. The authorities have no definite principle, which could provide them guideline to test the merit of the case for reference. There is considerable delay in adjudication process. Within 10 years, from 1979 to 2012 no case had been finalized within three months, as prescribed according to I.D. Act, 1947. In nearly 86 percent of the total cases awards had been given after five years.

Table 4.8. Cases of selected sugar factories referred by the government of Uttar Pradesh for adjudication from 2004 to 2012

Name of the Sugar Factory	2004	2005	2006	2007	2008	2009	2010	2011	2012
U.P. State Sugar CorporationLtd., Unit-Bareilly, Bareilly.	1	0	0	1	0	0	0	0	0
U.P. State SugarCorporation Ltd.,Unit-Munderwa,Basti.	2	1	0	1	1	0	1	0	0
U.P. State Sugar Corporation Ltd., Unit Nawabganj, Gonda.	1	0	1	0	0	0	0	0	1
U.P. State Sugar Corporation Ltd., JarwalRoad, Bahraich.	1	0	0	3	0	0	1	0	0
U.P. State Sugar Corporation Ltd.,Unit-Budhwal, Barabanki.	1	0	1	0	0	0	0	0	0
U.P. State Sugar Corporation Ltd.,Unit-Pipraich, Gorakhpur.	1	0	2	3	1	0	1	0	0
U.P. State Sugar Corporation Ltd.,Unit-Siswabazar,Maharajganj	0	1	0	0	0	1	0	0	0
U.P. State Sugar Corporation Ltd., Betalpur, Deoria.	0	0	2	2	0	0	0	0	0
U.P. State Sugar Corporation Ltd., Unit-Khadda, Kushinagar.	0	0	1	1	0	0	0	0	0
U.P. State Sugar Corporation Ltd., Unit-Hardai, Hardoi.	0	0	1	0	0	0	0	0	0
U.P. State Sugar Corporation Ltd., Unit-Maholi,Sitapur.	0	0	1	0	1	0	0	0	0
U.P. State Sugar Corporation Ltd., Unit-Sakoti Tanda, Meerut.	0	0	1	1	0	0	0	0	0
U.P. State Sugar Corporation Ltd., Unit Rampur, Rampur.	0	0	1	0	0	0	2	0	0
U.P. State Sugar Corporation Ltd., Chandpur, Bijnore.	0	0	0	1	0	0	0	0	0
U.P. State Sugar Corporation Ltd., Unit- Rohanakala, MuzaffarNagar.	0	0	0	1	0	0	0	0	2
U.P. State Sugar Corporation Ltd., Unit –Shahganj,Jaunpur.	0	0	0	1	0	0	0	0	0
U.P. State Sugar Corporation Ltd.,Unit-Maliana, Meerut.	0	0	0	0	0	0	1	0	0
Uttam Sugar Mill Neghoi,Shahjanpur.	0	0	0	0	0	0	0	1	0
DSCL Sugar Works Loni, Hardoi,Hardoi.	0	0	0	0	0	0	0	0	0
Nyoli Sugar Mills,Nyoli,Etah.	0	0	0	0	0	0	0	0	0
Total cases referred	7	2	11	15	3	1	6	1	3
Award given upto 31st December,2012	6	2	7	13	2	1	6	1	2
Pending	1	0	3	2	1	0	0	0	1
Stayed by High Court	0	0	1	0	0	0	0	0	0

Source: Information received from the Labour Court, Lucknow, Uttar Pradesh.

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Chapter 29

Managing Customer Knowledge in Service Economy: Proposing a Conceptual Model of CKM for Services

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ABSTRACT

In the age of service and knowledge economy, firms have realized that obtaining, managing, and sharing customer knowledge can be a valuable resource to have advantages over their competitors. However, the review of the literature of Customer Knowledge Management (CKM) area suggests that firms often fail in applying the true notion of CKM, thinking it only as a new technological innovation related to IT. Moreover, the terms Knowledge Management (KM), Customer Relationship Management (CRM), and Customer Knowledge Management (CKM) are not well differentiated in the extant academic literature. This chapter aims to present a conceptual differentiation between these terms by analyzing and comparing the various components of KM, CRM, and CKM. The effort has been made in the chapter to map CKM practices in the Indian service market by presenting case studies of two Indian commercial banks. The authors also made an attempt to propose a conceptual framework of CKM, which can be applied in service firms to successfully implement CKM practices in their organizations.

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1. INTRODUCTION

In the increasingly competitive economy, providing superior value to customers has become a hallmark of businesses all over. However, this task of providing superior value is not easy anymore as customers have become more informed and aware of the product and services at their disposal. To compete effectively in today's marketplace, organizations must seek innovative methods of doing business and quickly react to customer demand. Marketplace has become more competitive, complex and intense with the increase in globalization and opening of economy.

Successful organizations world over are relying heavily on knowledge as a critical driver of business success and possibly an essential asset of business survival in the age of globalization (Davenport & Prusak, 2000). Amongst the various emerging trends in businesses, managing customer knowledge for establishment of long term rewarding relationship with the customers is catching up thick and fast (Zhang, 2001). Companies have identified that customer knowledge is important for all businesses and it is at the origin of most improvements in customer value.

Companies know that relationships with the customers can be highly rewarding in case they are managed effectively and knowledge flow seamlessly between the customers and the organization. This will lead to co-creation of services maintaining a win-win situation for both the parties. To leverage on this resource i.e. knowledge from the customers, companies have started taking a leap forward from the normal path of customer relationship management by integrating customer relationship management and knowledge management. Resultant of this integration and organizational approach of co-creation of values is Customer Knowledge Management (CKM). CKM can be generally considered as the process of capturing, sharing, transferring and applying the data, information and knowledge related with customers for the benefit of organization as well as the customers.

Despite the growing awareness and interest in CKM, firms are grappling up with the issue of getting the things right and getting the desired outcome. The frameworks present in the literature do not sufficiently guide the organizational leaders and managers to collaborate with the customers in a manner to bring the desired value. Specifically, this research is an attempt to propose a comprehensive model to guide the managers on 'how' part of management of customer knowledge.

Describing further, the objectives of the research reported in this paper are (a) to define Customer Relationship Management (CRM), Knowledge Management (KM) and Customer Knowledge Management (CKM); (b) to bring out the difference between CRM, KM and CKM; and (c) to propose a conceptual model of customer knowledge management for services. The remainder of this paper is structured as follows. The next section presents the literature, definitions of the three key terms which form the genesis of this paper, CRM, KM and CRM are presented to develop an understanding among the readers. Section three elaborates the key differences in each of the three against the key differentiating factors such as vision, objectives, outcomes, etc. A conceptual framework is proposed in section four. Section five discusses two Indian case studies from service industry using customer knowledge management efficiently and effectively to gain competitive advantage. Following that, discussions and managerial implications are presented in section six.

2. DEFINITIONS: CUSTOMER RELATIONSHIP MANAGEMENT, KNOWLEDGE MANAGEMENT, CUSTOMER KNOWLEDGE MANAGEMENT

It is imperative that, prior to discussing the detailed model and dwelling into the role of customer knowledge management in services, the definitions of each of the concepts like customer relationship management, knowledge management and customer knowledge management is discussed in detail. This discussion will lead to a common understanding of each of these definitions and a summary of definitions from the literature will form basis of the proposed model.

2.1 Customer Relationship Management

Extant literature has proposed a number of definitions of customer relationship management over past two decades. Customer relationship management has garnered the interest of both academic and practitioner community with the emergence of thought that customers are the key drivers of business growth and gaining economic edge. Several of the these definitions as we observe from the literature define CRM from a technology point of few while authors like Payne and Frow (2005) have pointed out that CRM should be positioned in the broad strategic context. According to them a strategic and holistic approach to CRM should emphasize upon the selective management of customer relationship to create value for stakeholders (Payne and Frow, 2005). The above view is also present in the writings of other authors like Glazer (1997) and Swift (2001), where they argue that customer relationships should be managed selectively and strategically to bring rewards to the stakeholders.

The most comprehensive and widely accepted definition of customer relationship management is the one proposed by Payne and Frow (2005, p. 168); they define customer relationship management as

[…] a strategic approach that is concerned with creating improved shareholder value through the development of appropriate relationships with key customers and customer segments. CRM unites the potential of relationship marketing strategies and IT to create profitable, long-term relationships with customers and other key stakeholders.

CRM provides enhanced opportunities to use data and information to both understand customers and co create value with them. This requires a cross-functional integration of processes, people, operations, and marketing capabilities that is enabled through information, technology, and application. (p.168)

Authors like Payne and Frow (2005) and Parvatiyar and Sheth (2001) argue that CRM focuses on establishing, maintaining, and enhancing long-term relationships with attractive customers. Parvatiyar and Sheth (2001) also proposed that CRM is

[…]a comprehensive strategy and process of acquiring, retaining and partnering with selective customers to create superior value for the company and the customer.

Morgan et al. (2009) summarized that role of CRM is to

[…] identify attractive customers and prospects, initiate and maintain relationships with attractive customers, and leverage these relationships into customer level profits.

In consistent with broader marketing and strategic frameworks we define customer relationship management as a strategically motivated objective of a business to develop long term sustainable relationships with the customers which can bring rewards to the firm in the form of increased reputation, increased profit share and providing win-win situation for all the stakeholders.

2.2 Knowledge Management

Both, scholars and practitioners have realized that markets shift, technology proliferates, competitors multiply and products become obsolete overnight. This realization has brought the phenomenon of organizational knowledge management to the forefront of scholarly and practitioner attention. With this surge of interest in knowledge management lot of scholarly worked started appearing in academic journals. However, despite a huge volume of literature now available, there is no readily acceptable definition of knowledge management.

According to Jennex (2005), Knowledge management is

[…] the practice of selectively applying knowledge from previous experiences of decision making to current and future decision making activities with the express purpose of improving organization's effectiveness.

Definitions given by organizations are also suggestive of their efforts of management of knowledge. IBM and Lotus define knowledge management as

[…] a discipline that systematically leverages content and expertise to provide innovation, responsiveness, competency, and efficiency (Pohs et al., 2001).

Literature is replete with the definitions of KM, but if analyzed systematically these can lead to one common understanding. KM can be understood as a deliberate and systematic effort of an organization to enable effective planning, improved innovation, better decision making, improved problem solving and subsequently increasing organizational performance through identification, selection, capture, storage, dissemination and application of knowledge.

2.3 Customer Knowledge Management

In an age of stiff competition, there is little reason to doubt that customer knowledge is an important asset for all businesses (Rowley, 2002). Customer knowledge management (CKM) refers to the management of organizational knowledge on the customer side. To attain the objective of long term relationship of CRM companies need to capture the customer-related knowledge. Garcia-Murillo and Annabi (2002) advocated the need of knowledge management as the regular practices in CRM and marketing fail to acquire, transfer, and utilize customer knowledge.

Gebert et al. (2003), in their work, suggested that knowledge flows in customer relation management processes can be classified into three categories. These can be understood as three CKM strategies: management of knowledge for customers, management of knowledge from customers, management of knowledge about customers. Management of knowledge for customers refers to the strategies in which flow of knowledge from organization to customers is managed. Horovitz (2000) contends that continuous flow of knowledge from organization is required to help customers in making an informed buying decision. This will also lead to support in the usage of product or service. Management of knowledge from customers essentially refers to the strategies which help in the flow of knowledge from customers to the organization. This includes feedback and grievance reporting mechanism. Knowledge acquired from customers by means of this strategy is useful in enhancing the quality of services as well as in developing the new services (Garcia-Murillo & Annabi, 2002; Zanjani et al., 2008). Management of knowledge about customers refers to strategies that organizations use to manage knowledge about customers. This encompasses customers past transactions, buying preferences, future needs, change in buying behavior and ongoing trends (Gebert et al., 2003).

3. CRM, KM AND CKM: IDENTIFYING DIFFERENCES

Before proceeding further there is a need to understand how CRM, KM and CKM are different from each other. Summarily, CKM is said to be an integrated approach evolving out of customer relationship management and knowledge management. Customer approach to knowledge management with a motivation to establish long term relationship for the creation of value for all the stakeholders can be understood as CKM.

Where Customer Relationship Management emerged as an amalgamation of relationship marketing and information technology approach (Gebert et al., 2003) aimed at gaining the customer and establishing a long term relationship. Knowledge Management gained importance in the information age with the amalgamation of several disciplines (Pandey & Dutta, 2013) like philosophy, social science, management science, knowledge engineering, information systems, etc. (Kakabadse et al., 2003) to manage the knowledge within the employees, teams, company and group of company i.e. inter-firm management of knowledge. Customer knowledge management is an emergent theme in concurrent management literature evolving from the amalgamation of two practitioner disciplines of CRM and KM, this evolution is primarily focused on the management of customer experiences, creativity, satisfaction/ dissatisfaction with products or services (Gibbert et al., 2002). Differences on these are marked clearly in table 1.

4. IMPORTANCE OF CUSTOMER KNOWLEDGE IN BANKING SERVICES: CASE STUDIES OF

In this section we present case studies of two large commercial banks in India, one public sector and the other being a private sector bank. Private bank discussed in the case implemented Knowledge Management systems and practices at first and then slowly evolved with the integrated practices of Customer Knowledge Management. Public sector bank recently implemented the integrated KM system which is capable of addressing all the issues relating to the management of customer knowledge.

Case 1: ICICI Bank

ICICI is a large Indian multinational bank headquartered in Mumbai. It is the second largest bank in India by assets and third largest by market capitalization. Knowledge Management initiative in the bank started back in the year 2000 when the size of the bank and the customer base were small. With the growth that the bank was pegged to it was necessary to have a KM strategy in place to maintain the knowledge base. ICICI's KM intranet portal – WiseGuy came as an answer to be a one stop place to capture, disseminate, discuss and amalgamate all knowledge within the organization and best practices from outside. In order to maintain long lasting customer relationship, the bank started installing customer knowledge databases with the help of knowledge management initiatives.

With the increased importance of managing customer knowledge, top management inducted several other features. There is a daily update feature on the portal which is known as Daily Dose consisting headlines, market happenings and customer appreciation. Query board which is a central, interactive repository of frequently asked questions features customer credit queries, customer requirement queries. The interactive

Table 1. Differences between CRM, KM and CKM

Differentiating Factor	CRM	KM	CKM
Vision	To develop a long lasting relationship with the customers	To develop a culture of sharing, unlocking the knowledge present with the employees about processes, practices, customers, best practices, etc.	Co-creating value in tandem with the customers. Direct engagement of customers
Objective	Managing and nurturing customer base for the company	Managing knowledge of know-how, know-why and know-what essentially present within the organization for achieving competitive advantage	Collaborating with customer for greater value creation. Knowledge for customers, from customers and about customers come to forefront
Consequences	Customer retention	Cost saving in reinventing the things, build up to innovative products and services	Customer value addition to the company.
Information	Data – about customers, minimalistic value attached	Know how of processes and practices mostly on employee side	Customer experiences
Role of customers	Moderate or captive, mostly tied to product or service by loyalty schemes.	Very low or passive	High and active engagement. Partner in value creation
Role of Employees	Little, if it involves work like providing an information in catalogue or brochure upon request from the customer	Low, if the focus is on creation of knowledge within which is mostly the case.	High, active engagement with the customers in gathering knowledge through repeated and multiple conversations with the customers.
Role of Organization	Thrust on building long term relationship with the customers	Focus on encouraging and building a culture of knowledge sharing among the employees. Incentivizing sharing and learning outcomes	Encouraging customers to become partners in the creation of value for themselves and also the organization.

feature has made the communication a two way process. Customer service team and staff which are directly responsible for handling the customers can share almost everything related to customer complaints, service quality issues, and customer satisfaction terms. Customer satisfaction benchmarks and those achieving it are also a regular feature on the intranet.

Case 2: Union Bank of India (UBI)

Union Bank of India is one of the largest public sector banks in India. UBI started catching up with the current competition in the banking industry slowly with the repositioning exercise in the year 2008. Engagement with the young customers was not an easy exercise for the bank. It started with a huge marketing campaign to revive its identity as a trusted banker, maintaining its equity with the existing customers and gaining new customers.

The idea of having a KM solution to grab service preferences of customers as a form of customer knowledge came late to the UBI. Having implemented a comprehensive KM solution earlier this year (2013) in April, UBI has taken baby steps to develop a fully grown customer knowledge management processes and practices. The current system developed by Infosys Technologies as implementation partners allows the bank to effectively handle customer query and provide solutions as required. WebSphere Portal which is company intranet is now allowing the bank to handle more customer query more efficiently. More knowledge is made available for the customers about the services; more knowledge from the customers is being received about the customer satisfaction level, issues in using services, etc. This portal is also helping the bank in managing knowledge about customers by updating the choice of services made in the past, likelihood of usage of services in future and also preferences.

The cases presented above are from one industry but at a different maturity level. At one hand there is a private sector bank which has a decade old system in place to manage knowledge present inside and outside the bank. On the other there is a public sector bank which recently underwent a rebranding exercise and started taking cognition of factors like attracting and building long term relationships with the ever demanding young customers. The point that needs to be understood here is that the management of knowledge, especially from the customers is not an easy task. Establishing and maintaining a long term and rewarding relationship is a major challenge. Involving customers in co-creation of value should be dealt with high level of carefulness.

5. CONCEPTUAL MODEL OF CUSTOMER KNOWLEDGE MANAGEMENT

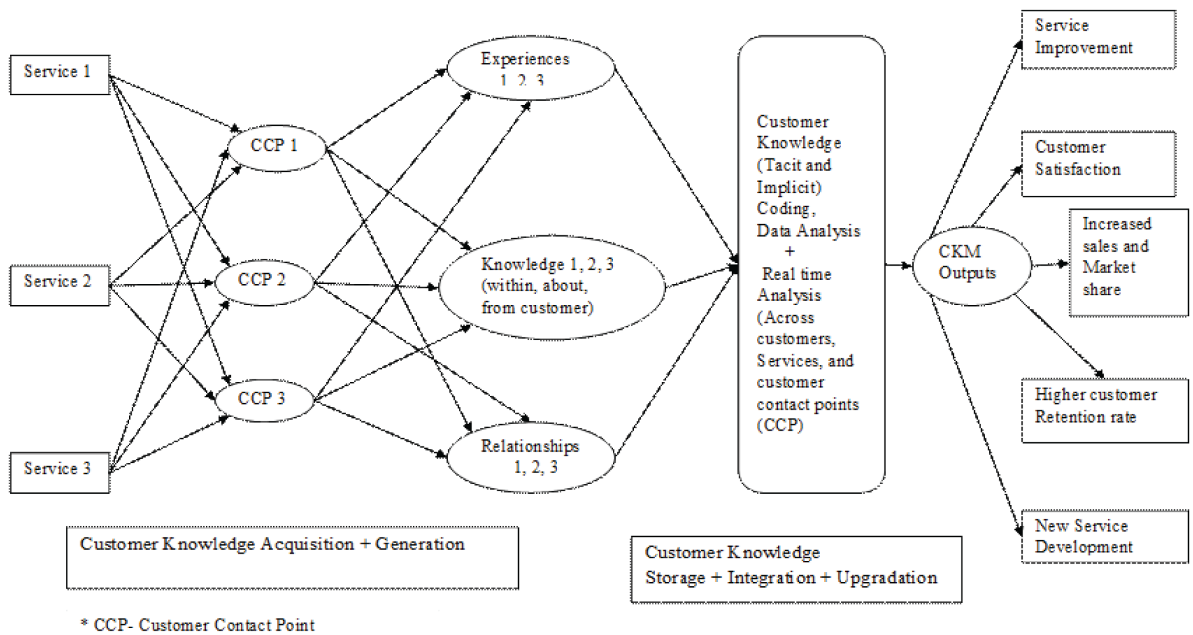
In light of the above two cases from Indian banking sector it can be said that the level of CKM maturity has not been attained which can said to be holistic. The processes are in nascent phase and need to be worked upon from the existing ones to achieve long term benefits. From the sections above, it is also clear that customer knowledge management is concerned with the acquisition, developing, sharing and maintaining of customer knowledge in order to maximize customer value. Whereas, customer knowledge can be referred as the experience, value (social, economical, and rational), situational information and relationships which are needed, produced or possessed to enhance the value perception of the customers with respect to service provider firms (Hualin & Zhongdong, 2010). Customer knowledge may also be seen as knowledge about customers whether it may be potential customers, customer segments or individual customers; and knowledge possessed by customers. It is different from customer data and customer information in a sense that it can be either explicit and structured or tacit in mind of employees and customers (Sedighi et al., 2007). However, effective utilization of all customer data, information is very much essential to gain the key insights about need, want and preference about customers and hence customer knowledge. Therefore in this section, we have proposed a conceptual model (see Figure 1) to understand the various processes or stages of customer knowledge management. The stages are discussed in the following subsections.

5.1. Customer Knowledge Acquisition

This is the first stage of CKM process: acquiring the customer knowledge. A customer may purchase a service from different contact points (for example, in the model it is CCP-1, CCP-2, and CCP-3) of a firm. Also he or she uses these contacts points for different services (in the model it is 1, 2, and 3).Therefore, when the customer and the service personnel at these contact points come together, they both bring their knowledge and experiences to the interaction. In some cases customers exactly know what they want from the service provider. However, there are cases when the service personnel have to provoke the customer to assess the actual needs of the customer.

In the context of customer knowledge management, the role of the service personnel changes considerably and, instead of just providing basic information about the enquiry or availability of a service, they have to listen the customers' need and interact with them to know more about their service choices and preferences with caring attitude (Garcia-Murillo & Annabi, 2002). Thus at each customer contact point, service personnel can gather knowledge from the customer about: service

Figure 1. Conceptual model for customer knowledge management



preferences and requirements; service attributes that appeal to the customer; and trends of service offerings of that particular service industry. The service firm must acquire the knowledge across customer contact points or channels, across service types and across customers.

5.2. Customer Knowledge Generation

Apart from acquiring customer knowledge, service firms must also try for customer knowledge generation. It can be done through primary as well as secondary data sources. Firms launch various awareness programs to make the customer familiar with the service offerings. While doing these activities, CKM requires getting the knowledge about choices and preferences of the customers for existing and proposed new service offering by own firm as well as service offerings by the competitors (Romano Jr. & Fjermestad, 2003). Offline as well as online surveys are also done to get insights of existing customers of the firm.

Text mining techniques also play an important role in customer knowledge creation through social media. In the era of Internet, firms garner great amount of information and knowledge about customers through blogs, tweets, and Facebook updates.

5.3. Customer Knowledge Storage and Integration

At this stage of CKM, firms store the customer knowledge gained from various sources and prepare vast databases of customer preferences, needs, wants, frequency of purchasing the service, switches of service users, competitor service offerings etc. on regional as well as national level. These databases are stored for the further analysis to achieve higher level of understanding about the customers. Data mining techniques are used to extract or detect the knowledge of hidden customer characteristics and behaviors from these large databases (Ngai, Xiu, & Chau, 2009). In data mining, a model is developed from the data (Carrier & Povel, 2003). During data mining the types of data modeling frequently used are association; classification; clustering; forecasting; regression; sequence discovery; and visualization (Carrier & Povel, 2003; Turban et al., 2007). The firm should choose data mining techniques based upon the data characteristics and business requirement.

Association model establishes relationships among items existing together in a given record (Ahmad, 2004). The examples of this type of data modeling are market based analysis and cross selling programs (Nagai et al., 2009). Classification model is used to predict future customer behavior by classifying the data into various classes based on certain criteria (Chen, Hsu, & Chou, 2003). The tools used in this data model may be decision trees and neural network analysis (Nagai et al., 2009). In clustering, homogeneous groups are formed from a heterogeneous population. A similarity of characteristics within the group and differences in the characteristics across the groups can be observed. Discriminant analysis and K-mean clustering are used in this type of modeling for customer segmentation. In forecasting, future value is estimated based on current records. Survival analysis is an example of this type of data modeling. Regression analysis is used for the modeling of causal relationships and testing the hypotheses regarding business models. Linear, logistic, probit, and LPM models are the some examples of regression analysis. Sequence discovery is nothing but a kind of trend analysis of a variable over time (Mitra, Pal, & Mitra, 2002). The tools used in it are plotting, graphical representation and set theory. Visualization technique is used to view the complex pattern of the data (Shaw et al., 2001). 3D graphs are an example of this type of data modeling. By these techniques firms successfully integrates the data from all the data bases and customer knowledge is stored for the further use.

5.4. Customer Knowledge Upgradation

In upgradation stage new knowledge from data analysis and other sources are updated in customer databases. These updates are conveyed to all the service centers and customer contact points for further verification. If these do not hold true in majority of the cases, these are resent to knowledge storage centers to check the abnormality of the data and used for niche services after confirmation of finding no abnormality. There are installed numbers of check points to analyze the authenticity of a data set.

5.5. CKM Outcomes

After all the process of customer knowledge management is done, a firm is in a position to successfully predict the behaviors and characteristics of service customer. Accordingly it can match and even take completive advantages over its rivals by adding new features or attributes to its service offerings that compel customers the most. Customer knowledge management helps in maintaining long lasting relationship with the customer by knowing his or her preferences better than the competitors. Thus the customer retention rates of the firm become high and the firm can now focus on acquiring new customer bases which in turn increase the market share of the firm. CKM also helps for the development of new service types which a firm lacks and for which there is a high demand in the market. Therefore, CKM helps the firm in service improvement, customer satisfaction, developing new service offerings and increasing customer retention rate and market share.

6. DISCUSSIONS AND MANAGERIAL IMPLICATIONS

Management of knowledge has become one of the most important issues for organizations to gain competitive advantage. The unprecedented change in the sophistication level of customer demand and ever changing preferences has led to a paradigm change in CRM and KM towards a dynamic customer centric approach leading to the evolution of CKM.

In practice, the management of knowledge is a huge managerial challenge. As pointed out by Davenport and Klahr (1998), customer knowledge is one of the most complex types of knowledge because it is taken from various sources, it has a contextual meaning, it is dynamic, and changes rapidly. Identifying this level of complexity associated with management of customer knowledge, this paper made an attempt to synthesize the literature on three parallel strands i.e. customer relationship management, knowledge management and customer knowledge management and distinguished the three based on some key differentiators. This research also made an attempt to propose a conceptual model of CKM for a better management of customer knowledge.

The proposed CKM model specifies the need of a cohesive process approach where customer knowledge can be acquired, stored, integrated and upgraded in a two way manner with participation from the company's employees and the customers. This kind of cohesion will lead to improved service quality, satisfaction level, retention rate and also bring in innovative services. This model demands for an increased coordination among the service personnel, because in the complex Web of managing knowledge the knowledge may already exist with another service personal and reinventing the wheel in such case will lead to reduced efficiency. Top management must understand that they need to champion the cause by providing support to the service personnel as well as those overseeing the operations of customer knowledge management. Effective reward and recognition policies should be devised to encourage the employees to co-create value in association with the customers. Finally, it should also be understood that the returns will be long term and provide competitive edge to the firm and hence sustained efforts are a precondition to achieve success with the CKM efforts.

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KEY TERMS AND DEFINITIONS

Customer Knowledge: Understanding your customers, their needs, wants, and aims. It is essential if a business is to align its processes, products, and services to build real customer relationships. It includes intimate and tacit knowledge such as that of key account managers, and distant or analytic knowledge including database information about sales, web-behaviour, or other analytical pieces of data.

Customer Knowledge Management: A strategic initiative employed by companies to acquire intelligence from their customers as it relates to their organization. Companies using CKM will effect organizational and behavioral changes based on knowledge obtained from their customers.

Knowledge Management: (KM): The process of capturing, developing, sharing, and effectively using organisational knowledge. It refers to a multi-disciplined approach to achieving organisational objectives by making the best use of knowledge.

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