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BOOK REVIEW

Understanding "India Way" From "Blue Ocean Strategy" .....Pg. 30

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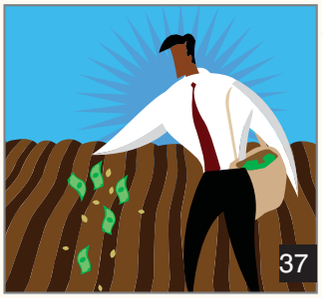

BOOK REVIEWS

From The Editor's Desk

I feel exhilarated in placing before you the 18th issue of DIAS Technology Review. It is a compendium of studies conducted on innovative and contemporary research issues in the corporate sector.

The stock markets across the globe have been extremely volatile and unpredictable in the past five years. The financial crisis in US and sovereign debt crisis in Europe has stuck the global economy in pothole which has stalled the decent recovery of the markets. Technological advancements have resulted in the inter-dependency and inter-linkage of markets witnessing a spill over effect of any and every incident taking place all over the globe. The recent steep fall in the gold prices in India largely due to unloading of gold stocks by the European countries, including Cyprus is a glaring evidence of the same. All major Indian stock indices responded optimistically to the fall of gold prices while shares of gold –loan and non banking finance companies plunged to a low of 21%. This erratic and volatile momentum requires an in-depth understanding of the non-linear stock market behavior. Dr. Swami P. Saxena and Ms. Sonam Bhadauriya have conducted a study to deal with the non-linear behavior of the stock markets and developed a non-conventional Neuro Fuzzy Model. With the help of this model authors have tried to establish a causal link between the real macroeconomic indicators and stock market indices.

In the highly challenging and complex market milieu relying only on statistical and mathematical models would not help the fund managers or investment analysts in predicting the non-linear behavior of the stock markets. To attain the benefits of the available opportunities it becomes imperative to grasp the overall economic scenario which depends on the expertise, knowledge and skills of the fund manager. The study undertaken by Ms. Rakumari Soni is an attempt to examine the market timing abilities of Indian mutual fund managers using Jensen and Mazuy Model, Henriksson and Merton Model. The study reveals that the Indian fund managers do not seriously engage in appropriate market timing activities and rely heavily on the stock selection skills, affecting the returns to the investors.

Effective forecasting in stock market and consumer durables market is not bereft of challenges. Attracting customers is just the beginning of the journey, culminating with their retention. Organizations are opting for ground-breaking and unique business strategies for creating new customers Blue Ocean Strategy adopted by Indian companies like Tata, ICICI and Reliance. This strategy focuses on creation of demand in an uncontested market space, or a "Blue Ocean", rather than emphasizing on the already cluttered market. Dr. Deepak Subedi in his article has analyzed the examples of Indian business practices with the framework of 'Blue Ocean Strategy' and 'Disruptive Innovation'. It is opined that merely creating customers is like winning one side of the battle with the other half being won only when the customers are retained. Customers in this high-tech era are not just quality conscious but also expect impeccable service quality. Various service quality scales have been developed by the academicians and researchers in the field of services marketing but its applicability in Indian context is still in a nascent stage. Dr. Sanjiv Mittal, Dr. Samridhi Tanwar and Dr. V.K. Kaushik in their study have tried to identify the applicability of Retail Service Quality Scale (RSQS) in Indian food retail. The results of the study indicate that the scale is reliable for use in this sector.

Accelerated growth of Indian economy in the past two decades is attributed to economic reforms that took place in 1991. LPG policies of government have pushed the growth of Indian industrial sector due to which the composition of Gross Domestic Product (GDP) has been changed. Mr. Sanjay Kumar Mangla and Dr. D. R. Agarwal have conducted an empirical study to examine the changes in GDP composition, to study sector-wise growth rates using compound average growth rate (CAGR), average annual growth rate (AAGR). The study also attempts to find the impact of Gross Capital Formation (GCF) and labour employed on economic growth.

Teaching is the only profession which crafts remaining professions of the world. Therefore, the importance of teacher in an academic institution cannot be ignored. Ms. N. Malati and Dr. Prakash Sharma have undertaken a very interesting study to identify and analyze the factors affecting the faculty intention to stay particularly at management institutions.

We believe that as usual the new edition of the Journal will prove to be all the more knowledgeable and fascinating to our valued readers. We also express our sincere gratitude and thanks to the honored reviewers and paper contributors for extending their continued warm patronage.

Regards,

Anju Batra

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Neuro Fuzzy Modeling

ABSTRACT

The modeling of stock market behaviour is one of the key areas of present financial research as stock market is the main determinant of economic development of a country. Worldwide a number of researches have been conducted on the modeling of relationship between macroeconomic indicators and stock market behaviour. But in the context of India not many researches can be traced in the literature. These are primarily based on statistical and econometric analysis, which are not much reliable because of lack of accuracy and non-linearity in the system. In the present study the researchers have made an attempt to develop the neuro fuzzy model, which is not been previously done by researchers in India. The model is based on the data for the period from April 1999 to March 2010. The study considered daily index of S&P CNX Nifty as an indicator of stock market behaviour and the real macroeconomic indicators (Gross Domestic Product, Index of Industrial Production and Inflation) as determining variables. The study finds that neuro fuzzy model developed for stock market behaviour is quite suited for this application.

Keywords: *Stock Market behaviour, Real Economic Indicators, Fuzzy Logic, Adaptive Neuro-Fuzzy*

of

The Impact Of Real Economic Indicators on Stock Market Behaviour:

Some Reflections From National Stock Exchange of India

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INTRODUCTION

The behaviour of stock market has been studied for many years and number of stylized facts have been applied. Since stock market is a complex dynamic system, it is difficult to deal with normal analytical methods. Many researchers (Abhyankar A et al., 1997) claim that the stock market is a chaotic system as it is a nonlinear process which can't easily be expressed. The existence of nonlinearity of stock market is propounded by many researchers and financial analysts. Most of them feel that to deal with system nonlinearity, non-conventional methods like artificial neural networks (ANN), fuzzy logic are considered best.

The impact of real macroeconomic indicators on stock market volatility has been studied extensively in finance literature. An illustrative list of studies includes Famma EF (1981), Ibrahim HM (1999), Ahmed MF (1999), Charkravarty S (2005), Mehr (2005), Chowdhary SS et al. (2006), Adam et al. (2008) etc. These studies identified macroeconomic factors such as gross domestic product, industrial production, inflation, trade balance, money supply and so on as being important in explaining stock market volatility.

In view of Corradi V & Distaso W (2009) studying the impact of real macroeconomic indicators on stock market volatility has important implications for both market practitioners and policy makers. Policy makers are interested in the main determinants of volatility and in its effects on real activity to conduct national macroeconomic policies without the fear of influencing capital formation and the stock trade process. Moreover, economic theory suggests that stock prices should reflect expectations about future corporate performance, and corporate profits generally reflect the level of economic activities. If stock prices accurately reflect the underlying fundamentals, then the stock prices should be employed as leading indicators of future economic activities, and not the other way around. Market practitioners are mainly interested in the direct effects time-varying volatility exerts on the pricing and hedging of plain vanilla options and more exotic derivatives.

Present research is focused on developing a neuro fuzzy model (a combination of fuzzy logic and artificial neural networks) for predicting stock market behaviour due to variations in real macroeconomic determinants. With a view to make the study specific and focused, researchers used only the real economic determinants. This paper consists of seven sections. First the introduction states the motivation and goal of the research by describing the importance of nonlinear modeling of stock market behaviour. In the second section, specific studies conducted on impact of macroeconomic variables on stock market behaviour are presented. Then a brief introduction of selected real economic indicators is described in section three. The fourth section deals with the aspects concerned with database and the neuro fuzzy modeling. The fifth section is the model development phase and comparison of results. In the last section conclusions are derived on the basis of developed models.

ITERATURE REVIEW

The relationship between macroeconomic variables and stock market returns is, by now, well-documented in the literature. Maysami RC et al. (2004) examined the long-term equilibrium relationships between selected macroeconomic variables and the Singapore stock market index. He concluded that the causal relations and dynamic interactions among macroeconomic determinants of the economy and stock prices are important in the formulation of the nation's macroeconomic policy. Leblebicioglu K & Aksoy H (2004) implemented a rule based fuzzy logic model to forecast the monthly return of the ISE100 Index by combining technical analysis, financial analysis and macroeconomic analysis.

Chowdhury SSH (2006) examined how the macroeconomic risk associated with industrial production, inflation, and exchange rate is related and reflected in the stock market return in the context of Bangladesh. He concluded that there is relation between stock market volatility and macroeconomic volatility. Engle RF & Rangel JG (2006) developed a model that allows long horizon forecasts of volatility to depend on macroeconomic developments, and delivers estimates of the volatility to be anticipated in a newly opened market.

Aguiar RA et al. (2006) presented empirical tests for the overreaction and under reaction hypothesis for petrol/petrochemical and textile firms in the Brazilian stock market. While, Humpe A & Macmillan P (2007) examined whether selected macroeconomic variables influenced stock prices in the US and Japan, Adam et al. (2008) in his study found that there is co-integration between macroeconomic variable and stock prices in Ghana indicating long run relationship.

Hassan R (2009) presented a novel combination of Hidden Markov Model (HMM) and Fuzzy model for forecasting stock market data. The experimental results clearly showed the improved forecasting accuracy compared to other HMM based forecasting model such as ARIMA and ANN. Hung JC (2009) derived a new application of fuzzy systems designed for a GARCH model and showed results by applying the method of functional fuzzy systems to analyze the clustering in the case of a GARCH model by using data from the Taiwan weighted index (Taiwan) and the NASDAQ composite index (NASDAQ). From the simulation results, researcher determined that the performance is significantly improved if the leverage effect of clustering is considered in the GARCH model. Othman et al. (2010) presented the use of fuzzy if-then rules for a decision support system in stock trading with the help of three linguistic variables namely view from the expert, earning per-share and price to earnings ratio. The purpose of the study was to assist investors in making a decision on their shares as the investors need to make a right decision to gain a high profit in stock trading. The study concluded that using the artificial intelligence application with the fuzzy logic can make it simpler as well as beneficial to investors. Most of the above reviewed research works show that fuzzy logic can work successfully within stock market environment.

JUSTIFICATION OF INDICATORS SELECTION

As, the present research is focused only on the real macroeconomic determinants of stock market environment, researchers have been selected various macroeconomic indicators from seven different published researches in order to find which were considered the most significant. The sources of selecting the variables and the variables used in them are listed below in the table 1.

Variables used by above studies belong to different sections of economy as FX Reserves, FX Rate, Balance of payments belong to forex economy. Repo Rate, Treasury Bills Rate, Interest rate are the money market indicators. But, researchers want to focus only on the Real economy, which is the physical side of the economy dealing with goods, services and resources. This side is concerned with using resources to produce the goods and services that make the satisfaction of wants and needs possible. For the present study the researchers have selected following indicators from several real macroeconomic indicators that reflect the stock market performance.

Table 1: Justification of Variables Base

S. No.	Source	Variables Used
1.	Ali I et. al. (2010)	Inflation, Money Supply, Industrial Production, Exchange Rate, Balance of Trade
2.	Corradi V & Distaso W (2009)	Inflation, Industrial Production
3.	Adam et. al. (2008)	Exchange Rate, Inward FDI, Oil Prices, Inflation, Interest Rate
4.	Diebold FX and Yilmaz K (2008)	GDP, Inflation, Real Consumption Expenditure
5.	Humpe A & Macmillan P (2007)	Industrial Production, Inflation, Money Supply, Interest Rate
6.	Maysami RC et. al. (2004)	Interest Rate, Inflation, Exchange Rate, Industrial Production, Money Supply
7.	Leblebicioglu K&Aksoy H (2004)	Gross National Product, Industrial Production, Capacity Utilization, Balance of Payments, FX Reserves, FX Rate, Budget Deficit, Repo Rate, Treasury Bills Rate

- Gross Domestic Product (GDP): GDP is the value of all goods and services produced in the economy in the given period.
- Index of Industrial Production (IIP): Index of Industrial Production is indices prepared by the government that provides a fixed weight measure of the physical output of the nation's factories, mines and utilities.
- Inflation Rate / Wholesale Price Index (WPI): Inflation rate is the percentage rate of increase of the level of prices during a given period, usually measured by the Consumer Price Index (CPI) and the Wholesale Price Index (WPI). WPI is considered as much better indicator of inflation rate because CPI measures monthly change in the prices of a defined basket of consumer goods, whereas WPI measures changes in prices in the manufacturing and distribution sector of the economy that tends to lead the consumer price index by 60 to 90 days. Researcher selected the data on WPI as the indicator of inflation for modeling.

DATABASE AND NEURO FUZZY MODELING

Database

It is generally said that data selection must be performed judiciously to avoid the "garbage-in, garbage-out" syndrome often associated with computers. So, the performance of fuzzy logic is also highly dependent on the quality & appropriateness of its input data. If relevant data inputs are not included, the performance will suffer needlessly. For modeling purpose, the daily S&P CNX Nifty daily index is taken as dependent variable. The data are collected from the website of the National stock Exchange (NSE) (www.nseindia.com). S&P CNX Nifty is a well-diversified 50-stock index accounting for 23 sectors of the economy (Saxena SP & Bhadauriya S, 2012). Three real macroeconomic variables, viz; Gross Domestic Product (GDP), Index of Industrial Production (IIP) and Inflation (Wholesale Price Index, WPI) are taken as the independent variables. Data of these variables are collected from the website of Reserve Bank of India (www.rbi.org). With a view to develop model for measuring the impact of selected macroeconomic indicators on variations in S&P CNX Nifty, eleven year data from 1999-00 to 2009-10 is taken. For training and testing purpose, data is divided into two sets. The first set is training set consisting of eighty percent of data, and the second one is testing set consisting of remaining twenty percent data. Data for testing is selected from the data series of selected variables by separating the value of every fifth item from the series. Keeping in mind the weaknesses of conventional analytical techniques and to measure the appropriateness of non-conventional analytical techniques, researchers applied neuro-fuzzy based model as a forecasting tool to predict the behavior of the stock market. To judge the accuracy of models on different points of time, researchers developed long term and short term models simultaneously. Annual and monthly mean average of variables is used respectively for long term and short term models. Detailed description of data compilation is mentioned in table 2.

Table 2: Data Compilation

Variable Name	Collected Data Cycle (Data Source)	Data Compiled for Short Term Model	Data Compiled for Long Term Model
S&P CNX Nifty (Base: 1995)	Daily (www.nseindia.com	Mother Average $=\frac{N_1+N_2+...N_k}{K}$ Where, n=S&P CNX Fifty	Yearly Average $=\frac{N_1+N_2+...N_k}{K}$ Where, n=S&P CNX Nifty
GDP (In Thousand Crore Rupees)	Quarterly (www.rbi.org)	Constant for all three months, we considered quarterly data	Yearly Average $=\frac{Q_1+Q_2+Q_3+Q_4}{4}$ Where, Q= Quarterly GDP
IIP (Base: 1993-94)	Monthly (www.rbi.org)	Monthly	Yearly Average $=\frac{M_1+M_2+M_{12}}{12}$ Where, M= Monthly IIP
WPI (Base: 1993-94)	Monthly (www.rbi.org)	Monthly	Yearly Average $=\frac{M_1+M_2+M_{12}}{12}$ Where, M= Monthly WPI

EURO FUZZY MODELING

Fuzzy Logic was initiated in 1965 by Zadeh A Lotfi, professor for computer science at the University of California in Berkeley. Basically, Fuzzy Logic is a multi-valued logic that allows intermediate values to be defined between conventional evaluations like true/false, yes/no, high/low, etc. Fuzzy logic is a superset of conventional (Boolean) logic that has been extended to handle the concept of partial truth - truth values between "completely true" and "completely false". But, it requires a sufficient expert knowledge for the formulation of the rule base, the combination of the sets and the defuzzification. In general, the employment of fuzzy logic might be helpful, for very complex processes, when there is no simple mathematical model, for highly nonlinear processes or if the processing of expert knowledge is to be performed. One another latest non-linear modeling technique, which is significantly applied by the financial researchers, is Artificial Neural Networks (ANN). An ANN model self discovers nonlinear relationship in the nonlinear relationship in the input data set without a priori assumption of thenknowledge of relation between the input and the output. They independently learn the relationship inherent in the variables (Hagen MT et al., 1996).So, neural network is also a better model than others for instudying the stock market behaviour.

Chaturvedi DK (2005, 2009) observed that neural networks and fuzzy systems have their own advantages and disadvantages. Both the systems are very different but they have a close relationship because both of them can work with imprecision in a space that is not defined by crisp, deterministic boundaries. The shortcomings of neural networks and of fuzzy systems may be overcome if both operate competitively and co-operatively. Fuzzy model requires large power in representing linguistic and structured knowledge by fuzzy sets and usually rely on the domain experts to provide the required knowledge for a specific problem. On the other hand, artificial neural networks models are particularly good for nonlinear mappings because these models are developed via training. Combination of fuzzy systems and neural networks is known as neuro fuzzy model. So, the neuro fuzzy approach of modeling has also been applied by the researcher to make the study more scientific, accurate, and logical. For developing fuzzy and neuro-fuzzy model of stock market behaviour, Fuzzy toolbox of MATLAB (7.0) is used. Steps followed by the researcher in the present study for developing neuro fuzzy modeling are as follows:

1. Identification of key variables and their ranges
2. Development of fuzzy knowledge base
3. Development of fuzzy rule base
4. Results of fuzzy logic modeling
5. Development of neuro fuzzy logic based model
6. Training and testing of neuro fuzzy model

Financial Modeling

In this phase of the study, researchers developed fuzzy logic based and neuro fuzzy logic based models for prediction of stock market behavior using previously stated six steps.

Step 1: The first step in model development is the identification of key variables and their ranges. Justification of selected real macroeconomic indicators (GDP, IIP, WPI) and

the selection of dependent variable (S&P CNX Nifty) is already discussed. To identify the range of selected variables, simply the minimum and maximum value of the data have been traced and the ranges have been decided and presented in table 3.

Table 3: Data Compilation

Variable Name	Variable Type	Range
S&P CNX Nifty (Base: 1995)	Dependent	830–6310
GDP (In Thousand Crore Rupees)	Independent	386–1546
IIP (Base: 1993-94)	Independent	128-368
WPI (Base: 1993-94)	Independent	116-276
Source: Researcher Own Experience (Judgement)		

Step 2: The second step in model development is concerned with development of fuzzy knowledge base, to divide the range of selected variables in several membership functions. First the researchers divide the data into five membership functions (very low, low, medium, high, very high) by taking the reference of Leblebicioglu K & Aksoy H (2004), they also divide the data in five membership functions (very bad, bad, neutral, good, very good). But the data set is too long in comparison to Leblebicioglu K and Aksoy H (2004), so the researchers decided to increase the number of membership functions of the variables for constructed a better model. And the allotted linguistic terms for these membership functions are: Extremely Low, Very Low, Low, Lowly Medium, Medium, Highly Medium, High, Very High and Extremely High. Membership values given to these membership functions are shown in following Figure 1. Zero denotes the minimum value of the input variables and one indicates the maximum value of the variables.

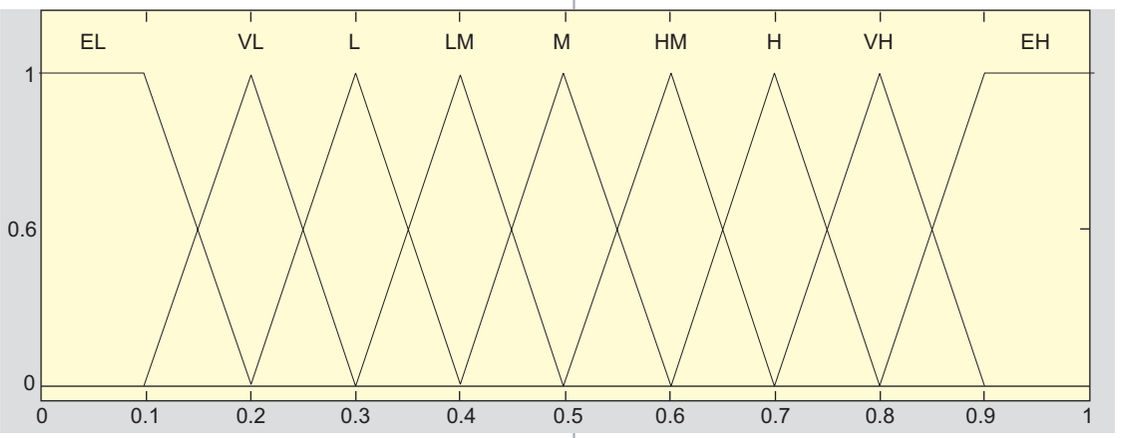

Figure 1 : Fuzzy Membership Functions of Input Variables

There are two important methods for developing fuzzy modeling viz. Mamdani Method introduced by Mamdani and Assilian, 1975 and Takagi-Sugeno-Kang Method introduced by Sugeno, 1985, which is popularized as Sugeno Method (Sivanandam SN et al., 2007). The main difference between these two is that the Mamdani output membership functions are also allotted by the model developer but the Sugeno output membership functions are established itself through the linear dependency of each fuzzy rules on the input variables. Sugeno method is considered ideal for acting as an interpolating supervisor of multiple linear controllers that are to be applied, respectively to differed operating conditions of a dynamic nonlinear system because of the linear dependence of each rule on the input variable of the system. The researchers used Sugeno method of fuzzy inference for fuzzy modeling because it has guaranteed continuity of the output surface.

Step 3: For the development of fuzzy rule based model the researcher established 93 rules on the basis of their intuition and collected data of variables. A large number of rules are framed because of high degree of variations in the stock market indices. These rules are defined on the basis of causal relationship between identified variables (Chaturvedi DK 2010). Causal links between the variables have been developed by System Dynamic methodology in the software Vensim PLE. The developed causal loop diagram is shown in Figure 2. The figure clearly shows positive causal links between the input variables and the output. So, some of the rules developed by the researchers are listed below:

- If GDP is EL, IIP is EL, WPI is EL then S&P CNX Nifty is EL.
- If GDP is VL, IIP is VL, WPI is VL then S&P CNX Nifty is VL.
- If GDP is L, IIP is L, WPI is L then S&P CNX Nifty is L.

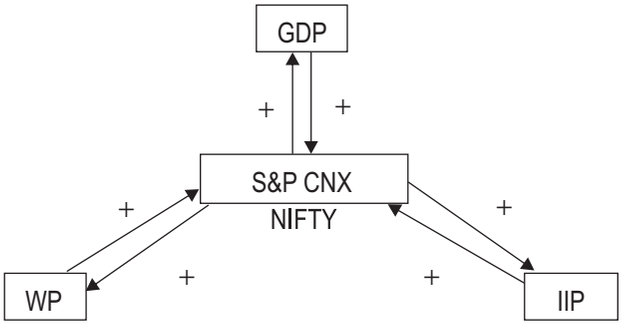

Figure 2 : Causal Loop Diagram for Stock Market Indices and Macroeconomic Determinants

Step 4: After developing fuzzy knowledge base and fuzzy rule base, the next step is to check the results by the defuzzification of the rules (get the value of output variable from the construct rule base). The weighted average method is adopted for defuzzification. The comparison of actual output and the fuzzy results are presented in Figure 7 and 8 for long-term and short-term models respectively. The results are very close to the actual outputs on some points of time but on some points it is far away from the actuals. In spite of, making a large number of fuzzy rules, the model is still failed in predicting actual output value. Because the fuzzy knowledge base developed in previous steps is fixed and does not have adaptability. Hence, the researchers used Neuro-Fuzzy approach to make it more flexible and adaptive.

Step 5: The Adaptive neuro fuzzy logic inference system (ANFIS) model is developed by Grid partition Method in the fuzzy logic toolbox of MATLAB. Block diagram of ANFIS model of Stock Market behaviour is depicted in following figure 3, which simply shows the combinations of fuzzy logic and artificial neural networks.

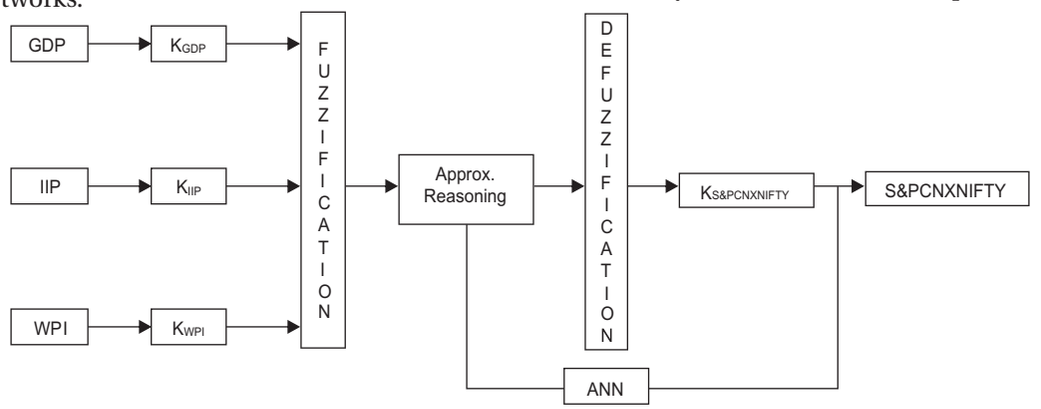

Figure 3 : Block Diagram of ANFIS Model of Stock Market Behaviour

In the figure GDP, IIP and WPI are the inputs, K is any value taken from the data series, and fuzzification means to use the fuzzy rule base. At the stage between fuzzification and the defuzzification the adaptability of ANN is also applied. Then the values of output are traced.

Step 6: In the above process, the researchers developed long-term and short-term models for predicting stock market behavior. For verification purpose, these models are trained and tested. The models are trained by using Hybrid method of measuring the deviation between the model responses and the actual responses. The training results are shown in figures 11 and 12, which show the diminishing value of the training error with the increasing number of epochs. The results of testing are presented in table 4.

Table 4: Testing Results

Model	Average
Long Term ANFIS Model	0.000004
Short Term ANFIS Model	0.076

The average testing errors for Adaptive neuro fuzzy models are very low as 0.000004 for Long term and for short term 0.076. So, the output results have been compared with the actual values of output with a view to recognize deviation between the results of simple fuzzy logic models and the adaptive neuro fuzzy logic models as shown in figure 9 and 10. Figures show that the ANFIS model proved much better of stock market behavior than the simple fuzzy logic based model for both the long-term and short-term model.

CONCLUSIONS

In nutshell, there is a positive causal links between the real macroeconomic indicators and the stock market indices, meaning that real macroeconomic fundamentals / news can be used to predict stock market behavior. Moreover, stock market indices can also be used to assess the macroeconomic movements in India. The graphical effects of Gross Domestic Product (GDP), Index of Industrial Production (IIP), and Inflation Rate (WPI) on S&PCNX Nifty are shown in Figure 4 to 6. The fuzzy and neuro-fuzzy based models developed for predicting stock market behavior due to real economic indicators show that both these models are quite suitable for application. However, the adaptive neuro-fuzzy model is more successful in predicting the stock market behavior, as it minimizes deviation between model responses and the actual responses.

The results of the study also indicate that both the modeling approaches are perfect for complex problems, which are highly nonlinear in nature and both the modeling techniques have their advantages and limitations. As a fuzzy logic based model possesses large brain power and time in representing linguistic and structured knowledge by fuzzy sets and membership functions but the behavior of fuzzy models can be understood easily due to their logical structure and step-by-step inference procedures. On the other hand, a neural network normally acts as a black box, without providing explanation facility but particularly well for non-linear mappings and for providing parallel processing facility to simulate complex system because these models are developed via training. Hence, it is quite natural to consider the possibilities of integrating the two paradigms, in order to utilize the desired strength of both types of models to produce improved results.

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APPENDICES

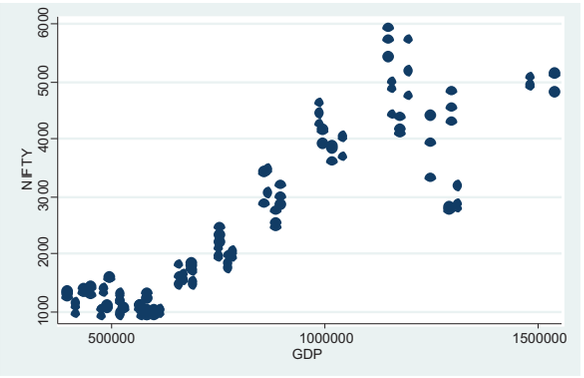

Figure 1 : Effect of GDP on S&PCNXNIFTY

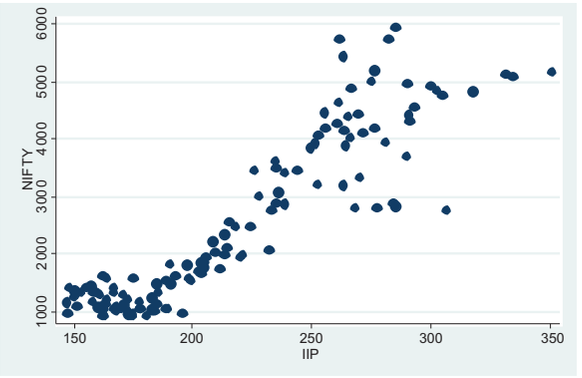

Figure 2 : Effect of IIP on S&PCNXNIFTY

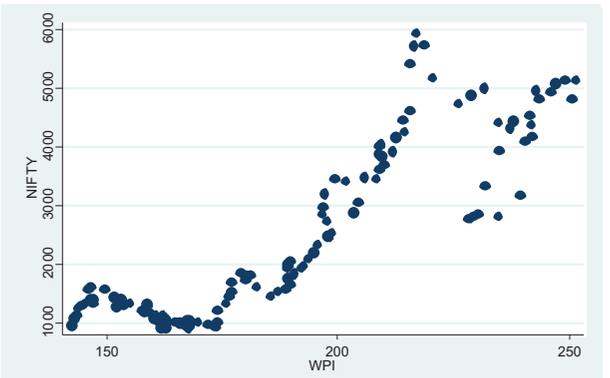

Figure 1: Effect of WPI on S&PCNXNIFTY

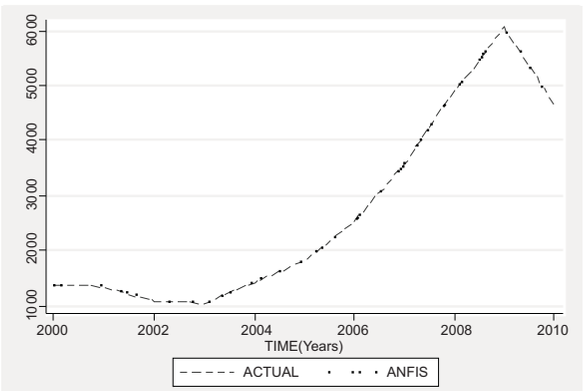

Figure 9: S&PCNXNIFTY (Long Term ANFIS Model)

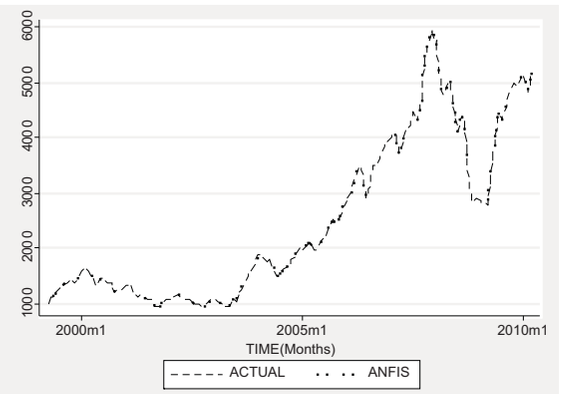

Figure10: S&PCNXNIFTY (Short Term ANFIS Model)

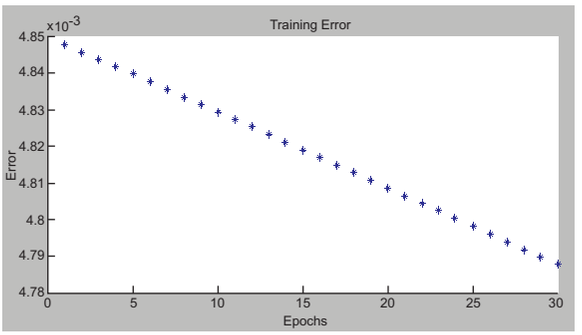

Figure 11: Training of Long Term Model

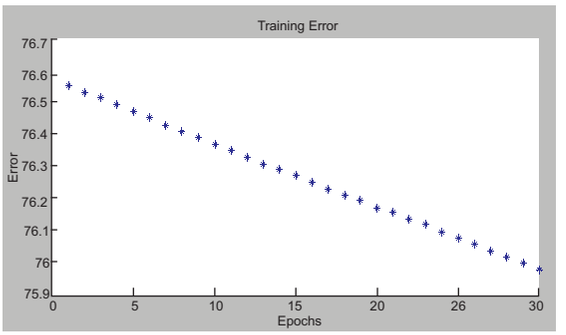

Figure 12: Training for Short Term Model

Measuring Retail Service Quality, Customer Satisfaction and Behavioural Intentions in Organised Retail Sector

Sanjiv Mittal,* Samridhi Tanwar,** V. K. Kaushik ***

ABSTRACT

To face the dynamic and volatile competition, retailers have to deliver high quality of services to its customers. Retail outlets offer the combination of product and services, but service quality is likely to have more impact on customers than product quality. This present paper aims to identify the applicability of RSQS in Indian food retail. Exploratory factor analysis has identified seven dimensions of retail service quality. The results of the study indicate that RSQS is not a generic scale. "Appearance" was the most important factor and the main determinant of behavioural intentions of shoppers (food outlets). The effect of demographic characteristics on various service quality dimensions was also identified.

Keywords: *Organized food retail, Service quality, Behavioural Intentions*

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INTRODUCTION

Non-stopping feast of Indians have made Indian food retail to enjoy a roller coaster ride. Though compared to other Asian Tigers India has been rather slow in joining the race of Organized Food Retail Revolution (www.on-line-foods.com). But the PEST (Political, Economical, Social and Technological) factors highlight that there is a paradigm shift in food sector especially heat-and-serve food, which is fuelled by increasing number of working women, large disposable income, progressive growth of aspirational consumer class and rise in use of plastic cards (www.ncap.res.in). That's the reason why big bosses of Indian corporate sectors are diversifying their portfolio, and prioritising establishment of retail chains across the country (www.on-line-foods.com).

The road side grocer shop, haats, kirana shops, vegetable vendor and mandis were the talks of yesterday. Organised food retailers are offering everything under the sun, from foreign gizmos to the very desi. Today the customer can inspect, select and pick food items in an air-conditioned outlet and still paying the price which suits his pocket.

India is the world's second largest producer of food next to China, and has the potential of being the biggest with the food and agricultural sector (Samajdar, 2009). In rural India the consumer spending on food is 52 percent while this number is 40 percent in urban India. It means the Indian consumer is spending a major part of wallet on food and beverages (www.nabard.org).

The organised retail which is just 5 percent is likely to touch the mark of 11 percent by 2020. 18 percent of this organised retail is contributed by agri-food retailing and in the coming years (2020) this share is likely to drop to 12 percent (Singh, 2011). A major share of the retail activities of organised retailers is food category consisting of 11% Food and Grocery and7% Food and Beverage (www.nabard.org).

During 2005-2009, food, beverages and tobacco segments has recorded an uptrend in consumption pattern and sales. According to a research report entitled "Indian Food and Drinks Market: Emerging Opportunities" the Indian food, beverages and tobacco market will expand at a CAGR of around 7.5 per cent during 2009-2013 to reach US$ 330 billion (www.india-reports.com).

Under mentioned are the different types of retail formats prevailing in Indian food market. Unorganised food retailers:

1. The road side hawkers and the mobile (pushcart thela variety) retailers.
2. The kirana stores (the Indian equivalent of the mom-and-pop stores of the US).

Organized food retailers:

1. Super stores and wide reach stores (Reliance Fresh, Spencer, Food Mart)
2. The home delivery (Fabmart)
3. The value-for-money store (Nilgiris, Big Bazar, Cooperative Stores)
4. The experience shop (Foodworld, Trinethra)
5. The discount chains (Subhiksha, Apna Bazaar, Margin Free, Reliance Fresh) (www.on-line-foods.com).

This research paper is designed to investigate the applicability of the Retail Service Quality Scale (RSQS) in India. RSQS is a reliable and validated scale used in a number of international studies. It would be quite interesting to know that a scale developed abroad can be used in a country like India where the organised retail has just started and making an insignificant contribution to total retail sales. Further, an attempt was made to identify the influence of demographic characteristics on perception of service quality. This research complements and adds to previous research by expanding the study of service quality on customer behavioural intentions in apparel retail, a sector that has been under-researched.

The paper is organized as follows. After the introduction, a review of literature on service quality is presented, which is followed by service quality measurement instrument and association between service quality and behavioural intentions. Next section describes the objectives of the study, research design, data collection process and design of survey instrument. Then, the results of data analysis are presented and discussed. Recommendations and contribution of the study is also highlighted.

EVIEW OF LITERATURE

Retail Service Quality

Service quality is a fundamental feature of services marketing (Gro¨nroos, 1990), relationship marketing (Morgan and Hunt, 1994), industrial marketing (Hakansson and Snehota, 1995), and consumer marketing (Kotler, 2000). Basically, service quality is a consumer attitude which reflects the perceived overall superiority and excellence in the process and outcome of a service provider (Parasuraman et al., 1988). Although there is general agreement that service quality has many dimensions (Gro¨nroos, 1990; Berry et al., 1985), but there is no consensus on the exact nature and content of these dimensions (Brady and Cronin, 2001). But, in 1989 Swartz and Brown attempted to synthesize the dimensions of service quality by illustrating the works of the service quality dimensions studied by Gro¨nroos (1982), Lehtinen and Lehtinen (1982) and Parasuraman et al. (1985). Their main contribution was categorization of service quality into "what" and "how" categories.

Delivering high quality of services is the basic strategy to face the dynamic and volatile competition (Reichheld and Sasser, 1990) and the same holds true in case of retailing. Today retailers are focusing on service quality to carve out an individual market niche for themselves and to lead over its competitors (Zeithaml et al., 1990). In retail setting like supermarkets, service quality was found to be an important element intensifying the customer's perception of merchandise quality (Siu and Chow, 2004). In retail outlets which are a blend of product and service, service quality plays more prominent role than on product quality (Dabholkar et al., 1996) in formation of favourable perception.

McKenzie (2006) found that how consumers interpret and perceive retail service quality is a relevant construct for examination as every consumer wants to exert their own shopping sense. Service quality related factors such as being consistently courteous to customers, instilling confidence in customers, knowledge to answer customers' enquires, and ability to handle customer complaints assist in the establishment of higher levels of trust (Wong and Sohal, 2006).

Even though service quality leads to competitive advantage but surveys have confirmed that retailers renders an inadequate level of customer service. A 1987 Washington Post survey highlighted that nearly half of all shoppers in the Washington area opined that store service was mediocre and diminishing (Mayer and Morin, 1987). Shoppers, surveyed in a national poll, believed that long queues, personnel with little or no product knowledge, unavailability of advertised goods and discourteous sales clerks were the reasons of poor services (Mayer and Morin, 1987) offered by retail outlets.

Measuring Retail Service Quality

Service quality is inherently intangible in nature and far more difficult to measure as compared to goods quality (Kandampully, 1997; Zeithaml et al., 1996). A topic of particular interest in service quality research is the issue of measurement. Some of the commonly used techniques of measuring service quality are SERVQUAL (Parasuraman et al., 1988), critical incident technique (Bitner, 1990), SERVPERF (Cronin and Taylor, 1994), and RSQS (Dabholkar et al., 1996).

Much of the research to date has focused on measuring service quality using the SERVQUAL instrument developed by Parasuraman, Zeithaml and Berry (1988). SERVQUAL is a multi-item instrument for quantifying the service expectation-perception gap using the five generic dimensions (Parasuraman et al., 1998). Cronin and Taylor (1992) advocated that expectation (E) component of SERVQUAL be discarded and instead performance (P) component alone be used. They advocated a scale which is an improvement over SERVQUAL and is known as 'SERVPERF' scale. SERVPERF is the performance battery of SERVQUAL (Kaul, 2007) and found to be superior to SERVQUAL as it shortens the number of items to be measured by 50 per cent (Hartline and Ferrell, 1996; Babakus and Boller, 1992).

Measuring service quality in retailing is difficult and complicated as service quality in retail settings. Thus, a need is felt for a measurement instrument which can accurately assess service quality in retailing where customers' expects that knowledgeable and helpful staff will assist them during patronising (Gagliano and Hathcote, 1994).

Dabholkar et al. (1996) used both qualitative and quantitative research methods to develop a five-dimensional scale measuring retail service quality (RSQS). The multi-item scale composed of five dimensions namely Physical Aspects, Reliability, Personal Interaction, Problem Solving and Policy, of which first three dimensions comprises two sub-dimensions each. Originated from and similar to SERVQUAL, RSQS is a performance-based measure of retail service quality.

In a replication of their study Dabholkar, Thorpe, and Rentz (1996) observed RSQS dimensions and sub-dimensions to be valid in the US. Researchers report highly encouraging results for the RSQS applicability in different retail outlets (Nadiri and Tumer, 2009; Leen et al., 2004; Boshoff and Terblanche, 1997). But on the same side, researchers reported non-universality of service quality dimensions across industries or across countries (Torlak et al., 2010; Ravichandran et al., 2008; Nhat and Hau, 2007; Parikh, 2006; Kaul, 2007; Kim and Jin, 2002; Mehta et al., 2000). Table 1 summarized different retail service quality studies undertaken by numerous researchers in different culture and retail outlets.

ERVICE QUALITY AND BEHAVIOURAL INTENTIONS

Although companies are realizing the value of keeping customers loyal, no one knows for sure how to do it. According to some observers, customer defection runs as high as 50 percent in many industries (Cannie, 1992). Thus recognising the determinants of consumer satisfaction and behavioural

Table 1: Summary of Several Studies On Retail Service Quality

Authors	Identified Dimensions	Study Sample(s)
Saini (2011)	Product Characteristics, Price factor, Physical aspects, Promotional schemes and Personnel interaction	Organised retail outlets (India)
Yaghi (2010)	Interaction Quality, Physical Aspects, Policy and Understanding and Caring	Retail college shop (Dubai)
Torlak, Uzkurt and Ozmen (2010)	Personal Interaction, Reliability, Physical Aspects and Store Policies	Grocery Store (Turkey)
Naik, Gantasala and Prabhakar (2010)	Tangibles, Recovery, Responsiveness and Knowledge	Department Stores, Speciality Stores and Format confined to food and grocery segment (India)
Nadiri and Tumer (2009)	Personal Interaction, Physical Aspects, Reliability, Policy and Problem Solving.	Stores of the largest retail chain (Northern Cyprus)
Ravichandran, Jayakumar and Samad (2008)	Physical Aspects, Reliability, Personal Interaction, Problem Solving and Policy	Food retail stores (India)
Das, Saha and Banik (2008)	Physical Aspects, Reliability, Personal Interaction, Problem Solving and Policy	Department Stores, Discount Stores and Supermarkets (Kazakhstan)

Authors	Identified Dimensions	Study Sample(s)
Nhat and Hau (2007)	Service Personnel, Physical Aspect, Policy and Reliability	Supermarket (Vietnam)
Kaul (2007)	Physical Aspects, Problem Solving and Store Policy	Apparel Specialty Stores (India)
McKenzie (2006)	Physical Aspects, Personal Interaction, and Problem Solving,	Retail Stores (Estonia)
Siu and Chow (2004)	Personal Interaction, Trustworthiness, Physical Aspect, Policy and Reliability	Supermarket (Japan)
Raven and Welsh (2004)	Tangibles, Reliability, Responsiveness, Assurance, and Empathy	Retail Stores (Kuwait and Lebanon)
Leen, Ramayah and Ma'ruf (2004)	Physical Aspects, Reliability, Personal Interaction, Problem Solving and Policy	Apparel Specialty Stores (Malaysia)
Kim and Jin (2002)	Physical Aspects, Reliability, Personal Interaction and Problem Solving	Discount Retail Stores (USA and Korea)
Vazquez, Rodriquez, Diaz, and Ruiz (2001)	Personal Interaction, Policy, Physical Aspects and Reliability	Supermarkets (Spain)
Sui and Cheung (2001)	Personal Interaction, Policy, Physical Aspects, Promises, Problem Solving and Convenience	Departmental Store Chain (Japan)
Mehta, Lalwani and Han (2000)	Service Personal, Physical Aspects, Merchandise, Confidence and Parking	Supermarkets and Electronic Goods Retailers (Singapore)
Boshoff and Terblanche (1997)	Physical Aspects, Reliability, Personal Interaction, Problem Solving and Policy	Hypermarket (South Africa)
Dabholkar, Thorpe and Rentz (1996)	Physical Aspects, Reliability, Personal Interaction, Problem Solving and Policy	Departmental Store
Gagliano and Hathcote (1994)	Personal Attention, Reliability, Tangibles and Convenience	Apparel Specialty Stores (United States)

intentions becomes very crucial for managers who are engaged in improving the organizational performance (Rust and Oliver, 1994; Bagozzi, 1992) in a long run.

Behavioural intention represents the instruction that people give to themselves to behave in certain way (Koornneef, 2006). Behavioural intentions in customers are built by producers through a positive differentiation that is usually achieved by providing superior customer service. Indeed, the quality of service is more significant than price in differentiating a service firm from its competitors and in fostering customer loyalty (Kandampully and Suhartanto, 2003). Generally a high level of service quality is anticipated to lead to customer satisfaction and eventually to positive behavioural intentions (Heskett et al., 1994) and higher profits (Ghobadian et al., 1994).

Behavioural intentions has been used as dependent variable in many studies (Bloemer et al., 1997; Zeithaml et al., 1996; Boulding et al., 1993) perhaps because of its robust ability to predict behaviour which is the central goal of behavioural intention models (Westaby, 2005). A number of studies (Naik et al., 2010; Nadiri and Tumer 2009; Siu and Cheung, 2001; Zeithaml et al., 1996; Boulding et al., 1993) found a positive relationship between service quality and repeat purchases and recommend intentions.

BJECTIVES OF THE STUDY

- To assess the applicability of the original five dimensions of the RSQS in Indian organised food retail.
- To analyse how customers perceive service quality in organised food retail setting.
- To study the effect of demographic variables on various retail service quality dimensions.
- To ascertain whether perceptions of retail service quality influence consumers' behavioural intention (intention to repurchase and intention to recommend).

ESEARCH METHODOLOGY

Research Design

Since the objective of the present study is to analyze the customers perception of service quality towards organised food retailers; active food shoppers from shopping malls is taken as the sample unit. Active food shoppers from shopping malls were selected as the respondent base because shopping malls include every type of retail format indulged in the selling of food and food products.

The samples were selected from the city of Delhi and Ghaziabad. Delhi and Ghaziabad are the part of National Capital Region (NCR), which accounts for the highest market share in retail spending in the entire northern belt. The total cumulative stock of mall space in Delhi-NCR is about 17.87 mn sq. ft. Out of the total mall space in National Capital Region (NCR); Delhi has the largest share of about 36 percent and Ghaziabad with a share of 12 percent (http:// online. wsj.

com/ public/ resources/ documents/ indiaretail_q12010.pdf). Not only this, Delhi and Ghaziabad were among the pioneer cities in North India where the culture of organized retail was introduced. Hence the findings from this study are not very 'short-term' retail evolution stage specific (Kaul, 2007).

Saunders et al. (2009) advocated that the generalizations will reflect a true picture of the population, if the researcher has taken a large sample size. Sample size more than 100 is required for factor analysis (Hair, 2006). Keeping this in mind, the researchers targeted 204 retail shoppers. At the time of study there were 27 shopping malls in Delhi and Ghaziabad. On the basis of Simple Random Sampling 12 shopping malls were selected and out of each shopping mall 17 respondents were selected on the basis of Judgemental Sampling. Thus the total number of respondents came out to 204. Out of the 204 respondents, 189 questionnaires were received at a response rate of 92.65 per cent. This response rate ensures the validity of the data as the rate is higher than the acceptable limits (Miller, 1991).

Design of Survey Instrument

The primary data were collected by means of a structured comprehensive questionnaire. The questionnaire consists of close-ended questions as these questions save a lot of time in data entry and analysis in the later stage (Brace, 2004).

Evidences exists that perception-only measures have a stronger predictive power than the gap analysis (Kotler and Keller, 2009) that is why, the researchers has used perception-only scores to measure the retail service quality. The research was carried out with 26 statements of RSQS. Two items of RSQS appertained to "telephonic interaction with customers" and "store's own credit cards" were not found to be relevant in Indian retail environment (Kaul, 2007).). Kaul (2007) examined the face validity of RSQS items with an independent expert (extensive academic and consulting experience in Indian retailing) and store managers of two nationally reputed apparel specialty stores. They all opined that these two items are inapplicable for Indian retail. So the researchers carried the research with the same scale as used by Kaul (2007).

Another additional 3 questions were included in the questionnaire pertaining to the overall service quality, customers' future intentions to shop and recommendation of food outlet to others. To reduce the level of frustration among respondents, and to enhance the quality and rate of the responses a 5 point scale ranging from 1 (= strongly disagree) to 5 (= strongly agree) has employed instead of a 7 point Likert scale (Prayag, 2007; Buttle, 1996). Information on demographic profile such as age, gender, marital status, education level and monthly income was also gathered.

DATA ANALYSIS AND FINDINGS

Factor Analysis

To assess the applicability of the RSQS, principal component exploratory factor analysis with varimax rotation has been used. A number of researchers (Nadiri and Tumer, 2009; Ravichandran et al., 2008; Parikh, 2006) find out the applicability of service quality scale by employing exploratory factor analysis. Akbaba (2006) and Gilbert et al. (2004) had also employed principal component and varimax procedure in their respective studies. To ensure the suitability of data for factor analysis, Kaiser-Meyer-Olkin (KMO) measure for sampling adequacy and the Bartlett's test of sphericity has been performed (Pallant, 2007). Table 2 showcased the SPSS output of data for factor analysis.

Table 2: Kmo and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.867
Bartlett's Test of Sphericity	Approx. Chi-Square	1.776E3
	Degree of Freedom	325
	Sig.	0.000

Kaiser (1974) proposed that if Kaiser-Meyer-Olkin (KMO) value is greater than 0.8 than the data was appropriate for factor analysis. The retail service quality data was appropriate for factor analysis as KMO measure of sampling adequacy coefficient was 0.867, which is greater than 0.8. The Bartlett's test of sphericity was 1.776E3 (significance level as 0.00) which show that the values are significant and thus acceptable.

If the communalities value is greater than 0.5 than the data set is appropriate for further analysis (Stewart, 1981). The communalities derived for the 26 statements were greater than 0.5, which was an acceptable figure. Finally the retail service quality data were reduced to 7 factors with an eigen value greater than 1.

Table 3: Factor Extraction Results of Service Quality Measurements Scale (Varimax with Kaiser Normalization)

Name of the dimension	Factor Loadings	Cronbach Alpha
Factor 1: APPEARANCE (Eigen Value=7.844; % of variance = 11.657)		.798
1. Outlet has modern-looking equipment and fixtures/racks.	.648	
2. Outlet and its physical facilities are clean, convenient and visually attractive.	.791	
3. Materials associated with the Outlet's service are visually appealing.	.732	
4. The store has clean, attractive, and convenient physical facilities.	.672	
Factor 2: PROBLEM SOLVING and POLICY Eigen Value=1.810; % of variance = 11.509)		.804
20. Outlet willingly handles returns and exchanges.	.634	
21. When a customer has a problem, the Outlet shows a sincere interest in solving it.	.548	
22. Employees in the Outlet are able to handle customer complaints directly and immediately.	.681	
23. The Outlet offers high quality merchandise.	.442	
24. The Outlet provides plenty of convenient parking for customers.	.702	
25. The Outlet has operating hours convenient for all their customers.	.507	
26. The Outlet accepts all major credit cards.	.626	

Name of the dimension	Factor Loadings	Cronbach Alpha
Factor 3: CONVENIENCE (Eigen Value=1.687; % of variance =8.571)		.681
5. The layout of the Outlet makes it easier for customers to find what they need.	.741	
6. The layout of the Outlet makes it easier for customers to move around in the Outlet.	.571	
Factor 4: INTERACTION QUALITY (Eigen Value=1.354; % of variance =8.488)		.678
14. Customers feel safe in their transactions with this Outlet.	.524	
15. Employees give prompt service to customers.	.745	
16. Employees in the Outlet tell customers exactly when services will be performed.	.742	
Factor 5: RELIABILITY (Eigen Value=1.198; % of variance =8.478)		.670
7. When the Outlet promises to do something by a certain times, it will do so.	.577	
8. The Outlet provides the services at the time it promises to do so.	.719	
9. The outlet performs the service right the first time.	.656	
10. The Outlet has merchandise available when the customers want it.	.556	
Factor 6: PERSONAL ATTENTION (Eigen Value=1.139; % of variance =6.799)		.677
17. Employees in the Outlet are never too busy to respond to customer's requests.	.528	
18. The Outlet gives customers individual attention.	.803	
19. Employees in the Outlets are consistently courteous with customers.	.575	
Factor 7: INSPIRING CONFIDENCE (Eigen Value=1.013; % of variance =6.212)		.645
11. The Outlet insists on error-free sales transactions and records.	.685	
12. Employees in the Outlet have the knowledge to answer customer's questions.	.540	
13. The behaviour of employees in the Outlets instils confidence in customers.	.604	
OVERALL RETAIL SERVICE QUALITY		**.903**

The cumulative variance explained reach 60.232 percent of the retail service quality, which exceeds the 60 percent threshold commonly used in social sciences to establish satisfaction with the solution (Hair *et al.,* 1995). Table 3 present the name of the factors with eigen value, percentage of variance explained and Cronbach's alpha reliability coefficient.

The factor analysis findings showed that the RSQS is not a five dimensional structure in India. But the overall reliability of the RSQS in Indian food retail setting was satisfactory (Cronbach's alpha coefficient = .903). The reliability coefficients for the seven individual retail service quality dimensions ranged from .645 to .804, indicating a fair to good internal consistency among the items of each dimension.

The first factor was composed of four items, which were similar to the original sub-dimension *"Appearance"*. The second factor picked up its items from two dimensions namely *"Problem Solving"* and *"Policy"*. It could be explained by the fact that in India organised retail is at nascent stage. That's why they cannot differentiate between service attributes related to Problem Solving and Policy. Factor 3 was defined by items 5 and 6 and was analogous to the sub-dimension labelled as *"Convenience"*. The fourth factor picked up variance from items 14-16 and seemed to deal with the *"Interaction Quality"* of the store employees. Factor 5 comprised of four items and was similar to the original *"Reliability"* dimension of RSQS. The sixth factor composed of three items 17-19, relating to the *"Personal Attention"* given by employees to the customers. In the present study, a sub-dimension *"Helpfulness/Courteous"* of RSQS was split into two new dimensions (i.e. factor 4 and factor 6). Factor 7 picked up its variance from statements 11-13 and constitutes the dimension called *"Inspiring Confidence"*.

HE PROFILE OF THE CUSTOMERS AND SERVICE QUALITY PERCEPTIONS

While evaluating service quality in non-professional services like retailing, there is a need to examine the demographic characteristics of customers (Webster, 1989). In this study, Analysis of Variance had been used to determine whether the service quality factors were influenced by the demographics. Data analysis points to the existence of four significant associations between service quality dimensions and demographic characteristics. Post hoc analysis using LSD method was applied to analyse these relationships in greater detail.

Table 4: Effect of Demographic Characteristics on Perception of Retail Service Quality Dimensions

	Age	Gender	Education Background	Occupation	Monthly Income
Appearance	0.004	0.476	0.525	0.553	0.008
Problem Solving and Policy	0.032	0.337	0.295	0.412	0.79
Convenience	0.538	0.109	0.224	0.583	0.862
Interaction Quality	0.946	0.952	0.102	0.525	0.302
Reliability	0.444	0.847	**0.021**	0.272	0.702
Personal Attention	0.819	0.503	0.281	0.726	0.736
Inspiring Confidence	0.527	0.25	0.787	0.584	0.585

Table 5: Post Hoc Analysis Using Lsd

(I)	(J)	(I-J) Mean Difference	SIG.	95% Confidence Interval	
AGE (Appearance)	**AGE (Appearance)**			**LOWER BOUND**	**UPPER BOUND**
25-30	15-20	.70132809*	**.001**	.2773896	1.1252666
	20-25	.40011354*	**.037**	.0245695	.7756576
	Above 30	.06588302	.769	-.3758508	.5076169
AGE (Problem Solving and Policy)	**AGE (Problem Solving and Policy**			**LOWER BOUND**	**UPPER BOUND**
20-25	15-20	.39353188*	**.042**	.0135573	.7735064
	25-30	.01671164	.931	-.3632629	.3966862
	Above 30	**.49299254***	**.016**	**.0928036**	**.8931815**
EDUCATION (Reliability)	**EDUCATION (Reliability)**			**LOWER BOUND**	**UPPER BOUND**
Graduate	Under Graduate	.07186386	.703	-.2990721	.4427998
	Post Graduate	.43609067*	**.010**	.1074852	.7646961
INCOME (Appearance)	**INCOME (Appearance)**			**LOWER BOUND**	**UPPER BOUND**
15000 -25000	Below 15000	.53238774*	**.001**	.2206494	.8441261
	25000-30000	.20971092	.407	-.2885855	.7080073
	Above 30000	.50061854	.066	-.0331571	1.0343942

*Positive mean difference is significant at the .05 level.

Analysis of Variance shown in table 4 represents that age had an influence over "Appearance" of the food outlet. Post hoc analysis revealed that respondents of age group "25-30" differ significantly from the people of age group "15-20" and "20-25". Respondents in the profile of "25-30" years have more exposure of international retailing. So they prefer to buy the food and grocery from clean, convenient and visually appealing retail outlet.

Respondents of age group "20-25" differ significantly from "15-20" and "above 30" on the dimension of "Problem Solving and Policy". Respondents in the profile of "20-25" years were mostly students (pursuing graduation or post graduation). They know the importance of time more than other age group respondents. That is why they preferred an outlet whose policies are customized and who sorted out the problems/complaints in a short while.

ANOVA reported that "Graduate" respondents gave more importance to "Reliability" dimension than the "Post-Graduate" respondents. Graduate category includes those respondents who have just started the process of patronizing independently. As they are the beginners they want that the food items should be readily available whenever they visit the outlet and food retailers must kept their promises.

Analysis of Variance exhibited that respondents of income strata "15000-25000" differed significantly on "Appearance" dimension from "below 15000" income group. It could be explained by the fact that as the level of income increases the level of expectations also increases. Same is the case with respondents earning between "15000-25000". They want to patronise in an outlet whose infrastructure is quite attractive, soothing ambience, visually appealing fixtures/racks. As respondents in the income strata "15000-25000" are earning more than "below 15000" their level of expectation differs.

ERVICE QUALITY AND BEHAVIOURAL INTENTIONS

To analyse the association between individual retail service quality and behavioral intentions Stepwise Discriminant analysis was conducted. Discriminant analysis is used to model the value of a dependent categorical variable based on its relationship to one or more predictors. Gahlawat (2012); Kaushik (2009) used discriminate analysis in their respective studies to test the relationship between dependent categorical variable and its predictors. The seven dimensions of retail service quality were taken as predictors where as behavioral intentions were taken as dependent categorical variable. The entered variables are significant at 5 percent level of significance.

Table 6: Wilks' Lambda

OVERALL SATISFACTION				
Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.806	25.185	2	0.000
INTENTION TO REPURCHASE				
Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.732	36.48	2	0.000
INTENTION TO RECOMMEND				
Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.830	20.285	2	0.000

The relationship between the seven dimensions of retail service quality and overall satisfaction of retail service quality was statistically significant (as the significance value is 0.00). The results show that retail service quality had a positive effect on customers' satisfaction. Wilks' lambda also highlighted that retail service quality has a positive effect on intention to recommend (sig 0.000) and customers' future buying decisions (sig 0.000).

Standardizing the coefficients allows us to examine the relative standing of the measurements. The coefficients of the canonical variable are used to compute a canonical variable score for each case. Table 6 represents the standardized canonical discriminate coefficients for overall satisfaction, intention to repurchase and intention to recommend.

Table7: Standardized Canonical Discriminant Function Coefficients

OVERALL SATISFACTION	
Appearance	.704
Problem Solving and Policy	.594
Convenience	.619
INTENTION TO RECOMMEND	
Appearance	0.821
Inspiring Confidence	0.595
INTENTION TO REPURCHASE	
Appearance	0.744
Convenience	0.827

Heskett *et al.* (1994) proposed that a satisfied customer tells five people about their experience whereas a dissatisfied person tells eleven people about his experience. One of the weapons to satisfy customer is service quality. In the present study, customer's overall satisfaction with the food outlet was influenced by three factors of service quality. Dimensions namely "Appearance", "Problem Solving and Policy" and "Convenience" were statistically significant, which influenced the respondents' overall satisfaction with the service quality of food outlets.

When a sale is made, the customer buys together with the product a perception it has of the company and its product (Griffin, 1995). The shopper will indulge in patronising again if he experienced excellent service quality. Here also a positive association was encountered between retail service quality dimensions and repurchase intentions. Repurchase intentions were influenced mostly by "Appearance" and "Convenience". In terms of individual dimensions, only "Appearance" and "Convenience" were shown to be statistically significant in their effect on repurchase intention

Koskela (2002) puts forward that customers who heard of word-of-mouth recommendations need less selling time, have greater loyalty potential, and are ready to buy. Similarly, a significant positive relationship was established between two dimensions of retail service quality and recommend intentions. Of the individual dimensions, only "Appearance" and "Inspiring Confidence" were shown to be statistically significant in their effect on intention to recommend.

Table 8: Canonical Discriminant Function Coefficients

OVERALL SATISFIED	
Appearance	.716
Problem Solving and Policy	.630
Convenience	.620
(Constant)	.109
INTENTION TO REPURCHASE	
Appearance	.769
Convenience	.875
(Constant)	.124
INTENTION TO RECOMMEND	
Appearance	.854
Inspiring Confidence	.596
(Constant)	.123

Unstandardized coefficients

The higher the standardized canonical co-efficient, more is the contribution of factors in explaining overall satisfaction. As shown in the table 7, overall satisfaction was influenced largely by Appearance (canonical co-efficient = .704) followed by Convenience (canonical co-efficient = .619) and Problem Solving and Policy (canonical co-efficient = .594). Intention to repurchase was influenced by two dimensions with "Convenience" as the most important dimension, canonical coefficient = .827 while Appearance (canonical co-efficient = .821) had achieved the strongest association with the intention to recommend. The results of Table 8 can be summarized as discriminant equation given below:

Discriminant score (Overall satisfaction) = .716 (Appearance) + .630 (Problem Solving and Policy) + .620 (Convenience) + .109

Discriminant score (Repurchase Intentions) = .769 (Appearance) + .875 (Inspiring Confidence) + .125

Discriminant score (Recommend Intentions) = .854 (Appearance) + .596 (Inspiring Confidence) + .123

Table 9: Functions At Group Centroids

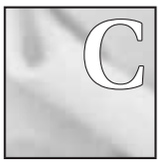
Are you satisfied with this retail outlet?	**Function**
Yes	.211
No	-1.123
Would you like to purchase from this outlet again?	
Yes	.268
No	-1.341
Would you recommend this outlet to others?	
Yes	.203
No	-.992

Unstandardized canonical discriminant functions

Group centroid values are used to compare the score of Discriminant equation. If the Discriminant score (Overall satisfaction) of the equation is greater than 0.211 then it implies that the customers are expected to be satisfied with the service quality offered by food retailers and if the score is less than -1.123 then the customers are not expected to be satisfied.

In terms of the relationship between retail service quality and repurchase intentions the discriminant score ranges between 0.268 to -1.341. It signifies that if the score of the equation is greater than 0.268 then the customers are likely to repurchase the food products from the organised food outlet and if the score of the equation is less than -1.341 then they're not expected to re-purchase food items from the retail outlet.

The discriminant score between individual retail service quality and recommend intentions was in the range of 0.203 to -0.992. It means that the customers are likely to recommend the food outlet to others (friends and relatives) if the discriminant score is greater than 0.203 and if score is less than -0.992 then they're not interested in spreading positive word-of-mouth communication.



ONCLUSION

Service quality has become the most basic and significant marketing tool for organised retailers to enhance customer's patronising perception, which ultimately leads to differential advantage over competitors. The present study aims to learn and assess the customer's consumption behaviour influenced by the service attributes offered by food retailers.

The results gave a different component structure of RSQS as compared to its proposed structure, some similarities and differences were found. The findings showed that the original five dimensions of RSQS does not factor out, which reconfirms that RSQS is not a generic scale (Torlak *et al.,* 2010; Ravichandran *et al.,* 2008; Nhat and Hau, 2007; Parikh, 2006; Kaul, 2007; Kim and Jin, 2001; Mehta *et al.*, 2000). Most of the items did not merge according to the dimensions proposed by Dabholkar, Thorpe and Rentz (1996). The study does not support the five-structure, but puts forward a seven factor structure applicable in Indian organised food retail. The findings of the RSQS in India are not in harmony with the previous researchers (Nadiri and Tumer, 2009; Das *et al.*, 2008; Leen *et al.*, 2004; Boshoff and Terblanche, 1997; Dabholkar, Thorpe and Rentz, 1996) findings.

The research demonstrated that among the seven service quality dimensions, "Appearance" (with the largest value) was the most important and the best predictor, followed by Problem Solving and Policy and Convenience. With the help of ANOVA, four significant associations (at the 0.05 level) between perceptions of service quality and demographic characteristics were detected, which are as follows. Firstly, significant differences were found in the dimensions of **"Appearance"** and **"Problem Solving and Policy"** according to the age of respondents. The finding was analogous to the research studies forwarded by Yaghi (2010); Nadiri and Tumer (2009); Ganesan-Lim, Russell-Bennett and Dagger (2008); Siu and Chow (2004); Foucault and Scheufele (2002); Siu and Cheung (2001) and Chuang (1998) who demonstrated that there were differences in shopping behavior when it involves age. But, researchers (Liu and Tsai, 2010 and Gagliano and Hathcote, 1994) found that age was not influential to perceptions of retail service quality.

Yaghi (2010), Sui and Chow (2004) and Gagliano and Hathcote (1994) reported that subjects of different gender do not have significant different perceptions of retail service quality. In line with this finding, no significant differences were found in the present study when it involves gender. This was contrary to the results reported by Tanwar *et al.*, (2012); Liu and Tsai (2010); Raven and Welsh (2004); Foucault and Scheufele (2002) and Siu and Cheung (2001) who highlighted that there were differences in patronising when it involves gender.

Kaushik (2009) ascertained that respondents differed significantly on the "Tangibility" factor on the basis of educational background. On the same track researchers found that the graduate's respondents held more favourable perception than post graduates for "Reliability". The findings are opposite to the result reported by Yaghi (2010) and Liu and Tsai (2010) that education was not significant at the 0.05 level.

Kaushik (2009) found that occupation/profession had a big influence on the satisfaction via service quality in aviation industry. But, the present study observed that no differences exist in the perception of service quality among the respondents of different occupation.

Apart from this, significant differences were obtained on the basis of income level under the dimension of "Appearance". Siu and Cheung (2001) found significant differences of income levels under the dimensions of "Physical Appearance" and "Promises". Similarly Nadiri and Tumer (2009) demonstrated an association between monthly income and "Physical Aspects".

To examine the strength of association among the individual service quality dimensions and behavioural intentions Discriminant Analysis was performed. A positive association was encountered between retail service quality and repatronage intentions. Analogue to this was the findings of Nadiri and Tumer (2009); Rauyruen *et al.* (2007); Gonzalez and Brea (2005); Siu and Cheung (2001); Bloemer et al. (1999); Boulding *et al.* (1993); and Woodside *et al.*, (1989) who ascertained that retail service quality had a positive effect on customers' future buying decisions. The attributes which arouse the **"Repurchase Intentions"** were **"Appearance"** and **"Convenience"**.

"Intention to recommend" was also positively influenced by service quality attributes. Similarly, Saha and Theingi (2009); Nadiri and Tumer (2009); Suwannapirom and Lertputtarak (2008); Long and McMellon (2004); Bloemer *et al.* (1999); Dabholkar *et al.* (1996); Boulding et al. (1993); and Bitner (1990) reported a positive relationship between perception of service quality and the likelihood of recommending a product or service. Beatty et al. (1996) reported that satisfied retail consumers frequently engaged in positive word of mouth advertising for the retailer with whom they were satisfied. "Recommendation Intentions" were predominantly determined by **"Appearance"** and **"Inspiring Confidence"**.

CONTRIBUTION OF THE STUDY

The study contributes to the effective managerial decisions to be made by the Indian apparel retailers, when they have to decide on the service quality factors which can delight the customers and subsequently affecting their behavioural intentions. This study is unique because it resulted in dimensions that are specific to the retail industry in India. The findings showed that the original five dimensions of RSQS do not factor out and RSQS in India is not in harmony with the previous researchers Nadiri and Tumer (2009), Ravichandran *et al.* (2008), Jayakumar and Samad (2008), Das *et al.* (2008), Leen et al. (2004), Kim and Jin (2002), Boshoff and Terblanche (1997) and Dabholkar *et al.* (1996). The study revealed that service quality in Indian retail is composed of seven dimension rather than five dimension as found out in studies of developed countries. Among the identified seven dimensions "Appearance" of physical facilities and layout is the one which makes a difference to customers while patronising food and grocery from organised retail outlets.

This research supports previous studies who elicited cultural differences in customer's perception of service quality (Kumar *et al.*, 2009; Tsoukatos and Rand, 2007; Lee, 2007; Kaul, 2007; Cui *et al.*, 2003; Kim and Jin, 2002; Witkowski and Wolfinbarger, 2000; Furrer et al., 2000; Mattila, 1999; Donthu and Yoo, 1998; Herbig and Genestre, 1996; Malhotra *et al.*, 1994) as well as studies that emphasized the need to modify service quality instruments while applying in different business settings (Kim and Jin 2002; Sureshchander et al., 2001; Furrer et al., 2000; Winsted, 1999; Dalholkar *et al.*,1996; Winsted, 1997; Babakus and Boller, 1992).

This study contributes to the body of knowledge regarding the customer's behavioural intentions. A number of empirical researches (Kim and Jin, 2002; Malhotra et al., 1994) concluded that in countries where organised retail is at initial stage "Physical Aspects" of shopping outlets matters a lot. Alike Maslow's needs hierarchy, the lower-level needs should be satisfied before higher-level needs are addressed and in this case physical aspects of retail outlets is a lower order need. Before referring retail outlet to others, Indian consumers are thinking of tangible aspects (Appearance) over intangible services (Inspiring Confidence). Similarly, repurchase intentions of Indian consumers is being influenced only by tangible aspects i.e. Appearance and Convenience.

The analysis supplements the previous research stating that demographics do play its role in different perception of service quality (Tanwar *et al.*, 2012; Yaghi, 2010; Liu and Tsai, 2010; Nadiri and Tumer, 2009; Kaushik, 2009; Ganesan-Lim *et al.*, 2008; Paulins, 2005; Siu and Chow, 2004; Raven and Welsh, 2004; Foucault and Scheufele, 2002; Siu and Cheung, 2001; Chuang, 1998). So food retailers need to apply different weapons to target customers of different profile.

RECOMMENDATIONS AND IMPLICATIONS FOR RETAILERS

Enormous potential lies in the Indian organized food retail as 97 percent of the sector is untapped and under the grip of unorganized food retailers. To compete with highly fragmented competitors it becomes extremely vital for organized food retailers to understand the consumer perceptions and delivery of services in the areas of Appearance, Problem Solving and Policy, Convenience, Interaction Quality, Reliability, Personal Attention and Inspiring Confidence. As these are prime service dimensions for any food retailer, they generate interest in knowing the perception and satisfaction of the consumers after the delivery of services.

Every culture has its own unique economic and socio-demographics, thus the scales developed for a specific country or context needs to be modified before applying the scale in another country or context (Kumar et al., 2009; Sureshchander et al., 2001). The present study lends further credence to their argument as a different component structure of RSQS emerges in Indian retail environment. Prior applying internationally developed RSQS, retailers and researchers should conduct customer research to have a better understanding of local consumers and their shopping experience

Food retailers who carry out periodic inspections can use the reliable "Retail Service Quality Scale" to benchmark their current levels of retail service quality. By specifying the weight to each of the seven factors of service quality, existing organised retailers and new/ potential entrants can propose appropriate action plans. Organised food retailers are suggested to analyse data at different levels (i.e. overall level and dimension level) to identify priority areas of service improvement. Thus, the retailers will be able to channelize its resources in the direction of strengthening the most important dimension (Seth et al., 2008).

When customers experienced high level of service quality then only they will engage in favourable behavioural intentions like intentions to repurchase and spreading positive word-of-mouth communication. According to the study, the researchers recommend food retailers to improve their service performance in order to enhance customer's behavioural intentions by (1) developing charismatic shop layout, with nifty physical facilities; (2) customer service and merchandising clerk must ensure that the display of the food items in the outlet is attractive; (3) employees should be neat and well-dressed in good looking uniform; (4) outlet be sketched in a fashion that shoppers can comfortably and leisurely hang out; (5) zoning of the food items should be done in such a fashion that in the first sight customers will catch what they are looking for; (6) employees performing error-free transactions; (7) empowering staff members to handle customers' queries and (8) trained employees to inculcate confidence in the customers while patronising.

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Understanding "India Way" from "Blue Ocean Strategy" Perspective

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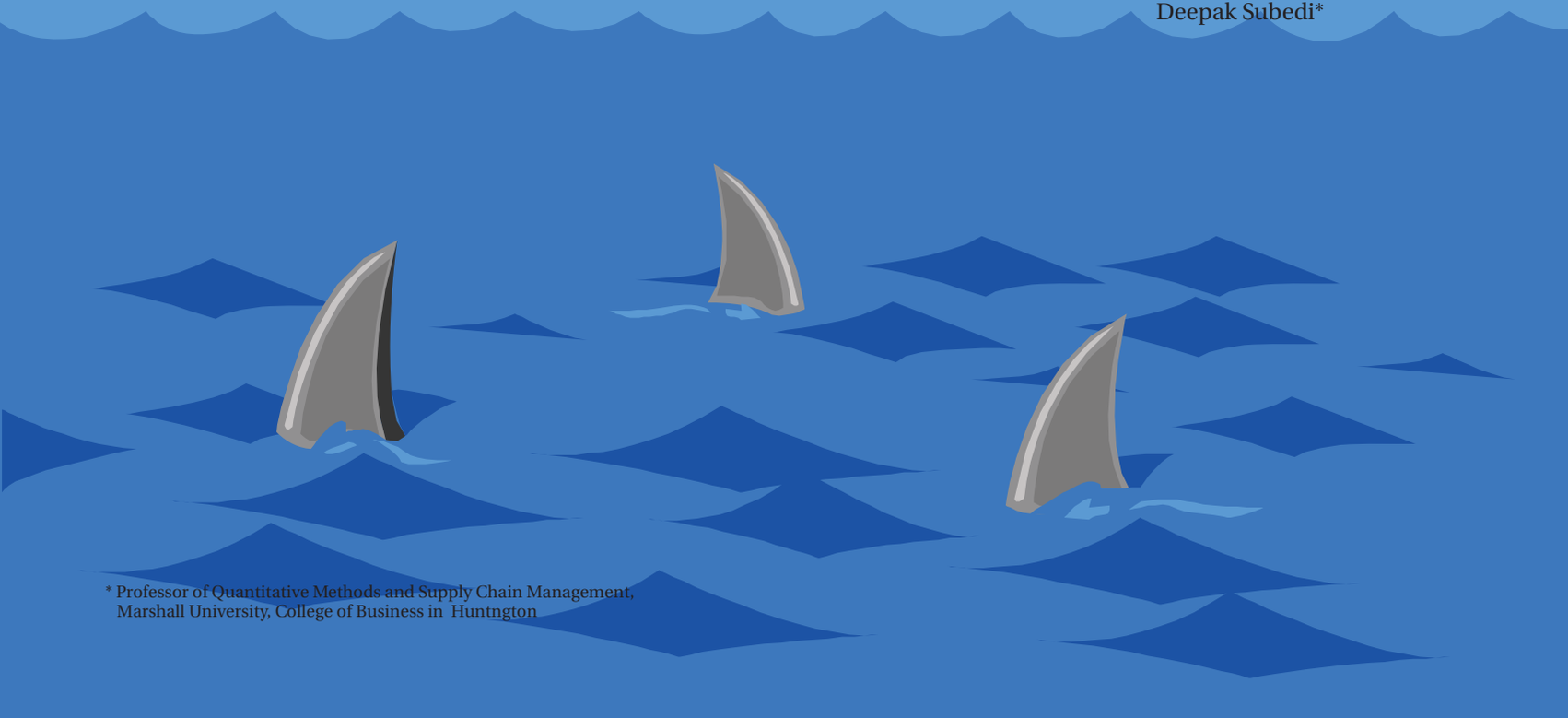

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ABSTRACT

The purpose of this paper is to analyze the business practices prevalent in Indian enterprises, which is described as the "India way" by Cappelli, Singh, and Useem (2010),and understand how their unique business practices and situations bestow them with distinctive advantages in innovations. It uses the concepts of "blue ocean strategy" (Kim and Mauborgne, 2005 and 2005a) and "disruptive innovation" (Christensen, 1997) for understanding aspects Indian business practices. Our analysis shows that the Indian businesses' abilities to function in the face of lots of hurdles, such as lack of resources and entangled bureaucratic red tapes, plus their interest in contributing to the improvements of lives of general mass provide them with unique opportunities to innovate.

Keywords: *Innovation, Jugaad, Blue Ocean Strategy, Disruptive Innovation*

INTRODUCTION

Since last few years, with their economy growing, Indian business practices have attracted some attentions from academia as well as business managers all over the world. And, Jugaad - a Hindi word, which means to adjust or get by in the face of resource constraints, bureaucratic red tapes and poor infrastructures (transportation and electricity supply etc.), has entered into business/ academic lexicon (e.g. Economist, 2010; Jaana, 2009; Prahalad and Mashelkar, 2010; Cappelli, Singh, Singh and Useem, 2010; Cappeli, Singh, Singh and Useem, 2010b).

As per Capelli et al. (2010), in Indian businesses the central role is played by value proposition (i.e. innovation). And, its quest for innovation is supported by the "holistic employee engagement," company missions (which are broad and include commitments for social good as well), and also by improvising and adapting (i.e. juggad)(Cappelli et al., 2010, Chapter 1).

Again, Cappelli et al. (2010) argue the role of "creative value propositions" as "meeting the need of persistent long term customers" (e.g. Chapter 5). One example of Indian innovation everyone likes to cite is Tata's Nano (a small size car with a price tag of $2000). This "simpler" and "cheaper" version of car definitely underperforms the mainstream cars (Cappelli et al., 2010, Chapter 1). And, this is not geared towards fulfilling the needs of long term customers of cars, as Cappelli et al. (2010) suggest. This is an example of what Christensen calls "disruptive innovation." Such products, at least initially, command lower profit margins and have smaller market size, making just marginal impact on the bottom-line of a big company like Tata (Christensen, 1997, pages xvii- xx). Such innovators seek to create market, targeting products towards hitherto "noncustomers," hoping to benefit from the first mover advantage and avoiding direct competition from other car manufacturers in the overcrowded car industry. This is "blue ocean strategy" as described by Kim and Mauborgne (2005).

This paper endeavors to analyze and understand principle factors of "India way" as elaborated by Cappelli et al. (2010) and others using the conceptual frameworks of "disruptive innovation" and "blue ocean strategy" propagated by Christensen (1997) and Kim and Mauborgne (2005) respectively.

While, discussing and explaining the virtues of innovation, they (i.e. Christensen, 1997 and Kim and Mauborgne, 2005) have also elaborated on how culture, structure, and strategies, have often constrained (western and especially American) enterprises' capabilities and inclination to innovate. And, they have also devoted substantial portion of their books to discuss ways to overcome those constraints. Using their frameworks, this paper shows the advantage of "India way" in which culture, structure and strategy plays positive and enabling roles in innovation. By doing so, it draws crucial conclusions applicable for scholars/ researchers and practitioners working in such areas as business strategy and innovation.

LUE OCEAN STRATEGY" AND INNOVATIONS IN INDIAN ENTERPRISES

The following paragraphs discuss crucial aspects of '"blue ocean strategy" as applicable in the context of business practices of the Indian enterprises.

Targeting Non-Customers

The most important principle of the blue ocean strategy is to look across the industry boundary and established customer base to create new "market space." For example before Fordstarted mass produced - model T, cars such as Cadillac and Buick, which were available to American public were hand crafted by skilled artisans. Naturally, their availability was limited and cost high. When Ford made Model-T, it was not targeted towards these car owners. Rather, it was geared towards the "noncustomers, "who would be commuting on horses or horse drawn wagons. Its pricing reflects that strategy very well. Initially, it was priced at $850, which was half of the lowest priced car at that time and twice the price of horse drawn carriage. By doing so, they avoided direct competition with other car manufacturers, and more importantly created themselves a new "market space" (Kim and Mauborgne, 2005, p 194; Kim and Mauborgne, 2009).

Similarly, the Tata's Nano car is not targeted towards conventional car buyers, but rather towards the vast middle class Indians who ride scooters for their daily commutes. Accordingly, Tata targeted it to be priced at less than 50% of the cheapest car available in India, which is made by Maruti (Cappelli et al., 2010, Chapter 1; Scanion, 2009). This is a strategy reflective of Ford did about a century ago with its Model-T.

As of writing this article, there were models of Maruti priced around $6000 (@$ 1= Indian Rupees 49) (http://www.marutisuzuki.com/prices.aspx). Furthermore, the price of Maruti Swift (which is described one of the popular cars in India) ranges from around $9000 to more than $13000 (http://www.cardekho.com). However, the base model of Tata's Nano costs around $2750 (http://www.infibeam.com/static/tata-nano.html) - a price closer to motorbikes from Bajaj- which is around $1500 on average (http://www.bajajauto.com/pulsar/Pulsar/pulsar135.html).

Blue ocean strategy focuses on serving new customer by creating new demand rather than competing on the existing markets, by providing cheaper or better versions of existing products. Kim and Mauborgne (2005) call this type of innovation as "value innovation," They say it needs a synchronization of "utility, price and cost position" (pages 12-14). This innovation is similar to what is popularly known as "frugal innovation" (Economist, 2010) or what Christensen(1997) calls "disruptive innovation." For example in 1980's when desk top computer was created, it was a knock down version of the mainframe or minicomputer, which were favorite of the mainstream business. But, it created new market for itself in every home, by providing requisite utility

with affordable price for the general people (Christensen, 1997, p 226-230).

Further, Kim and Mauborgne (2005, page 29 and 2005a) state that products pursuing blue ocean strategy can be judged on the basis of four action frameworks. These are as following-

- Which factors should be eliminated?
- Which should be reduced below industry standard?
- Which should be raised above industry standard?
- Which should be created that Industry has never offered?

Nano can be judged against these four factors. Tata eliminated things like air conditioning, power brakes and radios, which are standard in many cars these days, from its Nano. They reduced the maximum speed of the car. This would not matter, given the congestion in Indian roads and highways. By changing the design, Nano interior is made 20% wider for its size giving more space and leg room for commuters. And, it is made car lighter using aluminum and lighter steel, Nano can achieve 50 miles per gallon of gas (Cappelli et al., 2010, Chapter 1).

Again, ICICI- one of the most admired and innovative banks of India can provide another example. In India, there are vast number of people, spread across small towns and hamlets, with income level of around $500 per year, who have no banking accounts and credit history. ICCI created a new market space by extending credit card and other services to this un-bankable group. They eliminated the need to check the credit score- as normal western bank would want, but developed its own scoring system. They provided ATM service and online banking and brokerage service- well above the industry standard in India. Their ATM is especially designed to handle Indian notes which have become soiled wet and sweaty notes, because they pass through many hands in Indian humid climate(Prahalad and Krishnan, 2008, p 62-77; Khanna, 2007, p 105-110; Cappelli et al., 2010, Chapter 4; Kanter, 2009, Chapter 4).

Again, the famous Dhirubhai Ambani prodded his sons to make communication network for (middle class) Indians, so that they can make local calls at a price "less than what it costs to send a postcard" (Cappelli et al., 2010, Chapter 5). That became mantra for Ambani owned Reliance Communication, and also to its upstart rival Bharti Airtel. They basically extend the cell phone service to people who did not even have a land line(Prahalad, 2012; Prahalad and Mushelkar, 2010).

Kim and Mauborgne (2005, p 100-115) argue that with blue ocean strategy letting companies to avoid direct competition can lead to a path of fast growth. Today, ICICI is a leading bank in India. And,Bharti Airtel is leading the field by providing cell phone service charging less than 1 cent/minute. No wonder it had already signed up 100 million customers by 2009 (Prahalad, 2012; Prahalad and Mushelkar, 2010).

USINESS STRUCTURE

Targeting right market with right product and price is a first step; next step would be adjusting the production process to bring the cost down. Ford's strategy would not have been succeeded had it not standardized theparts and automated the assembly line. Just by using unskilled labor in place of skilled artisans, as was the practice then, they reduced the labor cost by 60% (Kim and Mauborgne, 2005, p 132 & 194, Kim and Mauborgne, 2009). Now, Tata is making Nano car completely modular, which could eventually be assembled at distributors' end, lowering production and distribution cost for Tata (Cappelli et al., 2010, Chapter 1; Scanion, 2009).

Similarly, ICICI reckons that average deposit from its customer base would be around $100. In order to serve them it needed structure, which could be operated at one hundredth of the cost of typical western bank. Traditional bank would open branches in its new service area. Pressure to lower the cost made that difficult for ICICI. So, they turned to technology, and established a biggest network of ATM machines, in India. These machines are adjusted to Indian condition by making them capable of handling notes which have become soiled and sweaty by passing through many hands in humid climate, besides reading and scanning checks and also offering extra service such as making offers to famous but remotely located temple. Similarly, they turned to Internet banking and allowed its customer to invest online (Prahalad and Krishnan, 2008, p 62-77; Khanna, 2007, p 105-110; Cappelli et al., 2010, Chapter 5).

Again, Bharti Airtel, which grew too fast to be able to adjust its business process and expand its infrastructure, choose to totally outsource its operations and networks, while keeping customer relations and supporting roles for itself (Prahalad, 2012; Prahalad and Mushelkar, 2010; Cappelli et al., 2010, Chapter 5).

No Dilemma For Indian Innovators

Christensen (1997) and Christensen, Kaufman and Shih (2008) discuss, the "dilemma" of American and western enterprises. In America generally more successful the company higher the hurdle rate they have for new investment to be acceptable. Otherwise, stock market will punish their share values. Managers, paid with stock options, would not like that either. Christensen (1997) presents many instances in computer industry where new innovative ideas were not pursued for not crossing the hurdle rates. That is why in most cases dominating company in one generation have lost their leadership position when next generation of computer became the main stream.

In India, stock market is not yet that punishing. And, many of big enterprises are still controlled by founding families, and employees are not paid in stock options. That means they are not under pressure from their stock markets to increase their returns every quarter(Cappelli et al., 2010, Chapter 7).So, investing in small margin products meant for fringe market would not be that much of a problem. For example, Ford would never have invested in something like "Nano," the way Tata did. Remember, in the past big three car companies allowed Toyota to gain a foothold with small cars, which has lower margin than the big full sized ones (Fujimoto, 1999; p 45-46).

Even though, India makes big news with its fast growing economy and sleek software industry, their per capita income is just little above $1000. And, out of more than a billion people,

only about 270 million are counted as middle class- this too by defining anyone earning $2 per day as a middle class. Growth opportunities at "bottom of pyramid," (as suggested by Prahalad,2012), do not naturally attract attention of established multinationals.

So, big western multi-nationals could focus on just small sliver of its high/ upper middle class market. That is what all most all the (foreign based and India based) car companies, in India are doing. (Just looking at Wikipedia (Automotive Industry in India) reveals that there are seven indigenous car companies and fourteen foreign ones manufacturing cars in India. Besides, India is importing twenty-eight different models of cars.) Similarly, in banking business foreign banks like Citibank would only focus on the credit-card business of high-worth individuals in big cities (Khanna, 2007, p 105-110). This allows (and forces) Indian companies to engage in "value innovation" and pursue "blue ocean strategy" (Subedi, 2010; Prahalad, 2012; Prahalad and Mushelkar, 2010).

And finally, (Cappelli et al., 2010, Chapter 1)emphasize that Indian businesses see themselves as having broad social mission to support national economic growth. Then, this mission should alsonaturally lead them towards "value innovation," which can create affordable products and services for most of its population.

So, it was natural for Tata to be looking at 50 to 100 million people, who would want more than what a $1000 scooter could provide and still would not be able to afford a $6000 for a car (Scanion, 2009). And, same goes for ICICI, who was looking for opportunities to expand, to look towards around 100 million people with $500 income per annum, who were hitherto out of purview of banking industry (Khanna, 2007, p 105-110; Cappelli et al., 2010, Chapter 4, Kanter, 2009). Similarly, it was also natural for Dhirubhai Ambani to prod his sons to provide the convenience of phone, at prices of postcard, to general public in India (Cappelli et al., 2010, Chapter 5).

"Jugaad" as Enabler of Innovations

An important characteristic of the India way is getting things done somehow or other, even when resources are not adequate. This is named "jugaad." It allows/ forces employees take "pragmatic approach" while trying to work towards "grand agendas" of their organizations. And, naturally trying novel ways to get things done and also accepting failuresare part of this pragmatism (Cappelli et al., 2010, Chapter 5; Cappelli et al., 2010b).

Moreover, it is said that Indian enterprises' relations with their employees are quite different, compared to those of western counterparts. It is said, Indian companies invest in the employees to continuously improve their capabilities, and empower and enable them to make decisions. And, they also urge them to use these skills and authorities on behalf of the companies.Moreover, job contract in India is different. Indian enterprises like to offer to take care of the employees and their family in exchange of employees looking after their interests (Cappelli et al., 2010, Chapter 5; Cappelli et al., 2010b). In effect the ties between the employees and the companies are more bound by cultures and less formal as compared to what we find in western businesses.

This means they are less likely to complain about lack of resources- another hurdle described by Kim and Maugorbne (2005), and also more likely to seek and support the opportunity to innovate. They also discuss other hurdles such as lack of motivation among the employees to forge the change necessary for developing new markets.Political leg-pulling often prevent people from taking initiative (Kim and Maugorbne, 2005, p 147-148). They also point how fear among employees as to whether they will end up getting raw deals or even lose their jobs because of the impending changes, lead them to drag their feet in implementing such changes (Kim and Maugorbne, 2005, p 171-176).

Kim and Maugorbne (2005) elaborate on another hindrance. This is called the "cognitive" hurdle. Generally, it is very difficult to convince on the merit of new project and enlist necessary support without adequate data and convincing analyses. For disruptive innovation targeted towards new market, such data may not exist (Christensen, 1997, p xxv and Kim and Maugorbne, 2005, p 147-155).

On the other hand, Cappelli et al. (2010, Chapters 1 & 3)emphasize that the strategies in Indian companies are described not in terms of market share or return on investment for example, but in terms of long-term overarching goals like what the organizations intend achieve, and how they want to contribute towards improving lifestyle of the Indian society etc. Naturally, employees of such organizations can have better comprehension on the benefits of such innovations.

FINDINGS

This paper analyses the examples of Indian business practices as identified by Cappelli et al. (2010), with the framework of "blue ocean strategy" (Kim and Maugorbne, 2005) and "disruptive innovation" (Christensen, 1997).

Relationships in Indian enterprises, which are mostly for gedon family-like relationships along with the need to utilize informal network to get things done, force them to be flexible and pragmatic (jugaad). Companies, have to rely on the capabilities of their employees, along with their abilities to connect, communicate and coordinate with each other and even outsiders. These practices have made them more inclined towards experimenting and risk taking, which are required to bring innovative products and services to the market (Cappelli et al., 2010, Chapters 4 & 5).

As per our analysis, there are few other important factors that can explain the Indian enterprises' advantage on "value innovation" to follow "blue ocean strategy." First, Indian enterprises are less focused on their performances on the share markets, allowing them to accept lower growth rate and take long term view (Cappelli et al., 2010, Chapter 7). Secondly, because of the state of development in India, they have to target their innovation to the people who are yet to benefit from the products and services offered by the mainstream of the market thus far (Subedi, 2010; Prahalad, 2012; Prahalad and Mushelkar, 2010). Besides, Indian enterprises also put emphasis on their social responsibilities, and make improving the lifestyles of general mass (by providing innovative

solutions their needs) as one of their goals (Cappelli et al., 2010, Chapter 1).

DISCUSSIONS AND CONCLUSIONS

The discussions in this article show that Indian enterprises have natural advantages in "value innovations" as compared to their more advanced and established western multinationals.Excited by the similar examples, it is suggested that impact of "jugaad" in management theory and practicecould be as significant as those of "total quality management" or "quality circle,"for example (Janna, 2009).

In my view, such comparisons can be taken with some caveats. First, the examples discussed above elaborate on the success stories of some of the Indian business during the last one and half decade. So, while "jugaad" could be the compulsion of all the India enterprises, these examples can just be taken as the way of management in the most successful amongst them.

More importantly, Toyota (whose name is attached to TQM or quality circle) started making car for domestic consumption in small scale after Second World War. But, it had already surpassed productivity of American car manufacturers by 1960's. And, by seventies it had improved the quality of its cars, and started to export them. Then, during eighties, when Toyota started having transplant factories in the United States, its products were already well appreciated for quality and price and manufacturing and business processed was already structured, matured and codified. For those reasons, the processes of American transplants corresponded to those of Japanese counterparts and products of similar quality and cost structure, in spite of obvious cultural differences and language barriers (Fujimoto, 1999, p 38-49). "Jugaad" has a long way to go if it is ever to make a serious impact in management theory and practice.

At the same time we can see that Indian innovations, such as Nano, ICICI's credit cards and Bharti Airtel cellphone service etc., do not have any attraction for American/ western customers. However, that does not mean they have implications for their businesses. There are significant indirect impacts. First, with saturated market and slow growing economy, American/ western business would definitely like to grow in the emerging markets like India. And, Indian enterprises' competitiveness, based on their innovative prowess, is limiting such growths (Bhattacharya and Michael, 2008).

For example, the total market share of American and European car manufacturers in India is very small (Automobile Industry in India; Gupta and Shekhar, 2010). Similarly, foreign banks, like City bank or HSBC, have only marginal market share there, while Indian banks like SBI and ICICI dominate the scenes (Economist, 2011). So,

That's not all. Disruptive innovations are named as such, because products/ services which "underperform" the "expectations in mainstream market" today, improve quickly enough to meet them (Christensen, 1997, p xxviii). The story of prowess of Indian software which started as cheap suppliers for American businesses is well known. There are other examples as well. Mahindra and Mahindra always made low horsepower tractors; good enough for India's fragmented land pieces and lower buying power. Now, it has upgraded it technology making it suitable for the American hobby farmers, who don't need tractors as powerful as those of the professional farmers. As a result, Mahindara is the second biggest seller of tractor after John Deer (Khanna, 2007, page 10-12; Subedi, 2010).

EvenGE, which is based in America, is designing and building medical devices with Indian need and paying capacity in mind. These devices are also then upgraded to be used in the hospitals in the US itself (Immelt, Govindarajan and Trimble, 2009).

So, even if it is too early to see any sustained impact or "jugaad" or Indian management or innovation practices in contemporary business theory and practices, it is about time to start researching, understanding and discussing how these practices are developing, evolving and impacting business in India and the world. Starting (or participating on) such discussions could be considered an important contribution of this article. In order to do so, it has taken the assistance of frameworks (blue ocean strategy and disruptive innovation) well-known to management theory and practice.

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ABSTRACT

During the recent period the growth of mutual fund industry is tremendous. Competition is increasing as more and more companies are entering this industry. Hence, it is very much important for the fund manager to have market timing skills in addition to stock selection skills. These skills help the fund manager to generate superior returns by careful micro security selection efforts, but also by engaging in successful macro market timing activities. This enables the fund managers of judging direction of the market correctly, whether bull or bear. This study is aimed at examining the market timing abilities of Indian mutual fund managers of 137 selected open-ended mutual fund schemes on the basis of the monthly returns from January 2000 to December 2009 by using Jensen & Mazuy Model and Henriksson and Merton model. BSE30 has been used as benchmark proxy and 91 days T-bills rate has been used as a proxy to risk free return. The study finds that the Indian fund managers do not seriously engaged in correct market timing activities at all and are relying on stock selection skills and they have not been successful in earning returns in excess of the market, rather they are timing the market in the wrong direction.

Keywords: *Mutual Funds, Market timing abilities, Jensen & Mazuy Model, Henriksson and Merton model.*

An Empirical Investigation

Market Timing Abilities of Indian Mutual Fund Managers

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INTRODUCTION

The Mutual Fund industry has been prevalent in the world since the 18th century; however, India's MF industry took birth in 1963. Government of India (GOI) and Reserve Bank of India (RBI) took initiative and laid the foundation of Unit Trust of India (UTI) in 1963. The initial growth of this industry was slow, but the same accelerated when public sector banks and other public sector insurance corporations entered the market since 1987. Later, in 1993, in the wake of the policies of liberalization and globalization, the Government also permitted the private sector to enter into the mutual fund business. This phase actually gave Indian investors variety and a complete family to select the correct MF for them. The Indian MF industry has faced its ups and down like various other industries in the country but still looks promising and holds a bright future ahead. During the recent period the growth of mutual fund industry is tremendous. Competition is increasing as more and more companies are entering this industry. Hence, it is very much important for the fund manager to have market timing skills in addition to stock selection skills. These skills can thus help the fund manager to generate superior returns by careful micro security selection efforts, but also engaging in successful macro market timing activities. This would mean that fund managers are capable of judging correctly the direction of the market, whether bull or bear.

This paper is aimed at examining the market timing abilities of the Indian mutual fund managers with respect to Treynor & Mazuy model and Henriksson & Merton model and also to examine the parameter stationary of results obtained from both the models.

LITERATURE REVIEW

There has been an excellent study conducted on the market timing abilities of the fund manager. This section, therefore, reviewed major studies relating to market timing abilities of the fund manager carried out both in India and foreign countries.

Treynor and Mazuy (1966)[1] developed a model for testing the market timing abilities of the fund managers. They examined the performance of 57 open-ended mutual fund schemes during the 10 year period from 1953 to 1962. The study noted the absence of statistical evidence that, investment managers had successfully outguessed the market. Of the 57 funds examined by them, only one fund revealed a positive and significant value. **Roy D. Henriksson and Robert C. Merton (1981)**[2] developed the statistical framework for both parametric and nonparametric tests of market-timing ability. If the manager's forecasts were observable, then the nonparametric test could be used without further assumptions about the distribution of security returns. If the manager's forecasts were not observed, then the parametric test could be used under the assumption of either a capital asset pricing model or a multifactor return structure. This specification permitted the identification and separation of the gains of market-timing skills from the gains of micro stock-selection skills. **J. Fletcher (1995)**[3] examined the selectivity and timing abilities of 120 the UK trusts with Growth, General or Income Objectives as detailed in the Unit Trust Year Book for 1980. He applied a variety of indices and methods including Chen and Stockum and Hendriksson and Merton's measures of timing ability. He reported that, the selectivity skills on average are positive, but the timing performance was negative in his sample period from 1980 to 1989. **Amitabh Gupta (2000)**[4] had examined the market timing abilities of the Indian fund managers using weekly NAV data for 73 mutual fund schemes during the period of 1994 to 1999. He found that managers of closed ended schemes can time the market easily. **Nicolas P. B. Bollen et al. (2001)**[5] estimated parameters of standard stock selection and market timing models using daily returns of 230 mutual funds during the period from January 2, 1985 through December 29, 1995 and quarterly measurement periods. They ranked funds quarterly by abnormal return and measured the performance of each fund the following quarter. They found that, the average abnormal return of the top fund in the post-ranking quarter was 39 basis points. The post-ranking abnormal return disappeared when funds were evaluated over longer periods. These results suggested that superior performance was a short-lived phenomenon that was observable only when funds were evaluated several times a year. **Nalini Prava Tripathy (2006)**[6] evaluated the market timing abilities of the Indian fund managers of thirty-one tax planning schemes in India, over the period from December, 1995 to January, 2004 by using Treynor & Mazuy Model and Henriksson and Merton model.

The study indicated that the fund manager had not been successful in reaping returns in excess of the market; rather they were timing the market in the wrong direction. **Deb, Banerjee and Chakrabarti (2007)**[7] attempted to find the stock selection and market timing abilities of the Indian mutual fund managers using unconditional as well as conditional approaches. The study used a sample of 96 Indian mutual fund schemes with monthly as well as weekly data during the period of January 2000 to June 2005. The study results showed strong evidence of lack of market timing and weak evidence of positive stock selection across all categories of fund with monthly data frequency. And the weekly data frequency analysis showed strong evidence of positive stock selection and negative market timing. **Raju and Rao (2009)**[8] used Treynor and Mazuy & Henriksson and Merton with the BSE Sensex and NSE Nifty as market proxies to measure the market timing ability of the fund managers. The results indicated that a majority of the selected mutual fund scheme managers was not seriously engaged in any market timing activities and were relying mainly on stock selection skills. They also found that the fund managers of private sector exhibited better market timing according to Henriksson and Merton model.

After reviewing the empirical studies, testing market timing abilities of the fund managers both in foreign countries and in India, it is found that the majority of them argue that Fund managers were unable to successfully time the markets. While some argue that at the individual fund level there was some

evidence of superior micro- and macro forecasting ability on the part of the fund manager. And some argue that the measured timing ability could not be explained as a spurious statistical phenomenon and reported that observation frequency matters when judging fund performance.

ATA SOURCE AND SAMPLE

In case of mutual fund schemes there are various schemes being launched as well as matured over a period of time. As of 1st January 2000, total 325 schemes were in operation. But during the period January 2000 to December 2009, total 188 schemes were matured, out of 325 schemes which were launched before 1st January 2000. For the purpose of our study ten year period is selected. Hence out of all the available schemes, the schemes for which data were available for the entire span of study period are selected. For 137 schemes such data were available from January 2000 to December 2009 and hence they are selected as sample for the study, to analyze the performance of the mutual fund schemes. These schemes are from public as well as private sectors.

For the purpose of the research, the closing value of the NAV, on the last working day of the month, for each fund is considered. NAVs per unit have been adjusted for dividends, bonus and rights for appropriate comparison assuming dividends are reinvested at the ex-dividend NAV. The information on the monthly NAV, of sampled mutual fund schemes was collected from different websites viz., www.indiainfoline.com, www.amfiindia.com, www.mutualfundsindia.com and www.valueresearchonline.com. The study used BSE 30 as a surrogate for market portfolio and the information in this regard has been compiled from www.bseindia.com and information on 91 days T-Bills rate as surrogate for the risk free rate of return has been compiled from www.rbi.org.

In respect of the market timing abilities of the fund managers following hypotheses have been framed for the purpose of examination:

H_{01}: Mutual Fund managers do not display distinct Market timing abilities.

H_{02}: The Market timing abilities of the Fund Managers of Growth schemes do not differ from those of other schemes.

H_{03}: The Market timing abilities of the Fund Managers of the bank sponsored mutual fund schemes do not differ from those of Private sector sponsored mutual funds and Institution sponsored mutual fund schemes.

ETHODOLOGY ADOPTED TO EXAMINE THE MARKET TIMING ABILITIES OF THE FUND MANAGERS

To calculate monthly return of the scheme, following formula is used:

$$R_{jt} = [(NAV_t - NAVt_{-1} + D_{jt}) / NAV_{t-1}] * 100 \quad (1)$$

The monthly returns so computed for a single period by using formulae (1) have been compounded to get compounded monthly rates of return of the mutual fund scheme. The following formulae (2) have been used to compute monthly compounded rates of return, R_p, for fund "j":

$$R_p = (Rj1 * R_{j2} * R_{j3} * \ldots\ldots\ldots * R_{jn})^{1/n} - 1 \quad (2)$$

Analogously, the monthly return of the market index BSE 30 has been computed. The 91 days T-Bills rate has been used as a surrogate for the risk free rate of return. The return on the risk free asset i.e. the monthly yields on 91 days T-Bill is given on an annualized basis on the RBI website, which is converted into monthly basis using the following formula.

$$(1+r)^{j=} (1+R) \quad (3)$$

Where, r is Monthly risk-free rate, R is Annualized risk-free rate and j is 12 (because r is the monthly return).

The total risk of the sample scheme has been measured by standard deviation (σ) of the return distribution and market risk of the sample scheme has been measured by beta (β).

The Market timing ability of the fund managers has a great impact on the performance of the mutual funds. It refers to the ability of the managers to anticipate the major moves in the stock market prices and accordingly adjust the composition of their portfolios. Keeping this important determinant of the mutual fund performance into consideration, two major market timing ability models, the Treynor and Mazuy Model (1966) and Henriksson and Merton Model (1981) have been employed in order to identify, if the fund managers really have the ability to speculate the market returns or not.. These are also referred to as, the "squared regression model". A brief description of these two models is given below:

1) **Treynor and Mazuy Model:** There are several procedures that have been proposed to correct the effect of timing ability on the estimate of beta. The first is a quadratic regression proposed by Treynor and Mazuy in order to detect the market timing abilities of fund managers. This regression is

$$R_P - R_F = \alpha + \beta (R_M - R_F) + \gamma (R_M - R_F)^2 + \varepsilon_{PT} \quad (4)$$

Where, R_p is the actual return of the portfolio; R_F is the return on the risk-free asset; R_M is the return of the Market; ε_{PT} is random error term and α, β and γ are parameters of the model.

The parameters in the above model can be estimated by using standard regression methodology. Treynor and Mazuy have argued that estimated value of parameter γ in the above formula act as a measure of market timing skill of the fund manager. If fund managers could able to select the time correctly, the estimated value of γ would be significantly positive. On the contrary, if the estimated value of γ should not

be significantly different from zero, the fund managers are not be able to select the market timing correctly.

2) **Henriksson and Merton Model:** Another return-based approach for estimating timing performance is the option approach developed by Henriksson and Merton. The regression used is similar to the Treynor Mazuy regression. In contrast to the linear beta, adjustment of the Treynor and Mazuy framework, the portfolio beta in the Henriksson and Merton study is assumed to switch between two betas. A large value if the market is expected to do well i.e. when $R_M > R_F$ (up market) and a small value otherwise i.e. when $R_M < R_F$ (down market). Therefore, it is argued that a successful market timer would select a high up market beta and a low down-market beta. Thus, such a relationship can be estimated by an equation using a dummy variable.

$$R_P - R_F = \alpha + \beta (R_M - R_F) + \gamma [D (R_M - R_F)] + \varepsilon_{PT} \qquad (5)$$

Where, D is Dummy variable that equals 0 for $R_M > R_F$ and –1 otherwise; R_P is the actual return of the portfolio; R_F is the return on the risk-free asset; R_M is the return of the Market; ε_{PT} is a random error term and α , β and γ are parameters of the model.

So that beta of the portfolio is β in a bull or up-market and $(\beta - \gamma)$ in a bear or down market. Parameter γ indicates the difference between the two betas and significant value of γ would indicate a market timing ability of the fund managers.

It may be noted here, that in both these models, the intercept term α represents the stock selection ability of the fund managers.

MPIRICAL RESULTS

This section discusses the empirical results pertaining to market timing abilities of fund managers and other related issues in terms of the above two formulations. The order of discussion is as follows:

A. Empirical results pertaining to market timing abilities

B. Market timing and fund objectives

C. Market timing and sponsorship

EMPIRICAL RESULTS PERTAINING TO MARKET TIMING ABILITIESRESULTS OF TREYNOR AND MAZUY MEASURE (1966)

Table 1 shows the empirical results of Treynor and Mazuy model with respect to BSE 30 benchmark proxy. It is found that out of 137 mutual fund schemes, investment manager of only one scheme, viz., ICICI Prudential Gilt Fund (Investment Plan) (G) appears to be a successful market timer. This is evident from the observed t-values for their gamma coefficients, which is found to be significant and positive at the five percent level. ICICI Prudential Gilt Fund (Investment Plan) (G) is an **Open-ended Income Private Sector scheme**. There are other ten schemes for which the t-values are significant but are negative. These schemes are Birla Sun Life M N C Fund (G), Franklin FMCG Fund (G), Franklin Pharma Fund (G), ICICI Prudential Balanced Fund (G), ICICI Prudential FMCG Fund (G), ICICI Prudential Growth Plan (G), Kotak Mahindra 30 Unit Scheme (G), Kotak Mahindra Balance (G), LIC Mf Balance Fund (G) and Principal Tax Savings Fund (G). Out of these ten wrong market timers, six are **growth schemes**, three are **balanced schemes** and one is **tax-planning scheme**. Hence, fund managers for these schemes appear to undertake timing activities but were, indeed, unsuccessful, as they were timed in the wrong direction. Out of ten schemes, nine are from **Private sector** and one is from **Institutions (LIC).** So in terms of Treynor and Mazuy model, the results reported here support the hypothesis that Indian mutual fund managers do not display distinct market timing abilities. However, there is evidence that some of the funds are timing the market in the wrong direction.

Results of Henriksson And Merton Measure (1981)

Table 2 presents the empirical results of Henriksson and Merton model with respect to BSE30 benchmark proxy. It is found that out of 137 mutual fund schemes, investment manager of only one scheme viz., Birla Sun Life Cash Plus-Ret (G) is found to be a successful market timer. The t-value for gamma was found to be statistically significant and positive at 5 per cent level. Birla Sun Life Cash Plus-Ret (G) is an **open-ended Income Private Sector scheme**. There are sixteen other schemes for which the t-values are significant but are negative. These schemes are Kotak Mahindra Balance (G), ICICI Prudential Balanced Fund (G), Tata Tax Saving Fund (G), LIC Mf Balance Fund (G), Kotak Mahindra 30 Unit Scheme (G), ICICI Prudential Growth Plan (G), Principal Tax Savings Fund (G), LIC Mf Balance Fund (D), Principal Personal Tax Saver Fund (G), DSP Blackrock Balanced Fund (G), LIC M F Growth Fund (G), Birla Sun Life M N C Fund (G), Franklin India Prima Fund (G), JM Equity Fund (G), JM Balanced Fund (D) and Franklin India Prima Plus (G). Out of these sixteen wrong market timers, seven are **growth schemes**, six are **balanced schemes** and three are **tax-planning schemes**. Fund managers for these schemes appear to undertake timing activities but were, indeed, unsuccessful, as they were timed in the wrong direction. Out of sixteen schemes, thirteen are from **Private sector** and three are from **Institution (LIC).** In terms of Henriksson and Merton model, the results reported here support the hypothesis that Indian mutual fund managers do not display distinct market timing abilities; however, there is evidence that, some of the funds are timing the market in the wrong direction.

Thus in terms of both the model the results indicated that only one scheme ICICI Prudential Gilt Fund (Investment Plan) (G) was found to be reflect market timing abilities. While other seven schemes viz. Birla Sun Life MNC Fund (G), Franklin FMCG Fund (G), Franklin Pharma Fund (G), ICICI Prudential Balanced Fund (G), ICICI Prudential FMCG Fund (G), ICICI Prudential Growth Plan (G), Kotak Mahindra 30 Unit Scheme (G), Kotak Mahindra Balance (G), LIC Mf Balance Fund (G) and Principal Tax Savings Fund (G) were found to be the wrong market timer. Hence it can be concluded that, whether one use Treynor and Mazuy measure or Henriksson and Merton

measure, some of the results (fifty percent) are common for both the measures. These results are similar to those reported by other researchers utilizing data from Indian mutual funds viz. Amitabh Gupta (2000)[4], Bijan Roy and Saikat Sovan Deb (2003)[9], Ramesh Chander (2006)[10], Nalini Parva Tripathy (2006)[6], Soumya Guha Deb, Ashok Banerjee and B B Chakrabarti (2007)[7], B. Phaniswara Raju and K Mallikarjuna Rao (2009)[8] etc.

Summing up, it is to be said that none of the schemes rewarded the investors and the main constraint on the portfolio managers is that they cannot book the profits when the market is booming phase due to lack of depth in the market. At the same time there are no hedging instruments available for them to hedge the market uncertainties.

Market Timing And Fund Objective

It has been hypothesized that the market timing abilities of Fund Managers of growth schemes do not differ from those of other schemes. The growth schemes under investment objective are those which aim to achieve capital appreciation by investing in stocks. Such schemes focus on those companies that are experiencing significant earnings or revenue growth. Such Schemes invest the majority of funds in equities (shares). They promise attractive return on investments and are exposed to high risks depending upon the equity market situations, which are influenced by external factors like economic, social and political aspects of the economy. The balanced funds combine features of growth funds and income funds. These funds invest in companies having potential for capital appreciation and those known for issuing high dividends. The level of risks involved in these funds is lower than growth funds and higher than income funds. Funds that invest in medium to long-term debt instruments issued by private companies, banks, financial institutions, governments and other entities belonging to various sectors (like infrastructure companies etc.) are known as Income Funds. Income funds are low risk profile funds that seek to generate fixed current income (and not capital appreciation) to investors. In order to ensure regular income to investors, income funds distribute large fraction of their surplus to investors. Income funds are generally less risky than equities. To minimize the risk of default, income funds usually invest in securities from issuers who are rated by credit rating agencies. Tax-planning schemes are schemes that offer tax rebates to the investors under specific provisions of the Income Tax Act, 1961 as the Government offers tax incentives for investment in specified avenues - e.g. Equity Linked Savings Schemes (ELSS). Pension schemes launched by the mutual funds also offer tax benefits. These schemes are growth-oriented and invest pre-dominantly in equities. Their growth opportunities and risks associated are like any equity-oriented scheme. Thus, one would expect growth funds to show market timing more than funds with other objectives.

Table 3 presents the results pertaining to market timing and fund objectives in respect of Treynor & Mazuy model and Henriksson & Merton model.

Table 3 indicates that, in respect of Treynor & Mazuy model, there was only one scheme where some market timing was reflected. However, there was some evidence that fund managers wrongly timed the market. 10 fund managers were found to be wrong market timers. Out of 10 schemes, 6 were Growth Fund Schemes, 3 were Balanced Fund Schemes and 1 was Tax-Planning Scheme. Thus, it could be concluded that the majority of the wrong market timers were fund managers of growth schemes.

In respect of Henriksson and Merton model, there was only one scheme where some market timing was reflected, as the t-values of gamma coefficient were positive and significant at the five percent level. However, there was some evidence that fund managers wrongly timed the market. 16 fund managers were found to be wrong market timers. Out of these 16 schemes, 7 were Growth Fund Schemes, 6 were Balanced Fund Schemes and 3 were Tax-Planning Schemes.

However, results are somewhat different in terms of both the models. As per the wrong market timers are concerned 6 (60 per cent) schemes out of 10 (100 per cent) schemes were from growth schemes with respect to Treynor and Mazuy model and 7 (44 per cent) schemes out of 16 (100 per cent) schemes were from growth schemes with respect to Henriksson and Merton model.

Therefore, overall results support the hypothesis that market timing abilities of Fund Managers of growth schemes do not differ from those of other schemes. There is no scheme found to be the correct market timer with respect to both the models except income scheme. And evidence is found that, fund manager of balanced schemes, growth schemes and tax-planning schemes are the wrong timers on the market.

Market Timing and Sponsorship

It has been hypothesized that, the market timing abilities of Fund managers of the bank sponsored mutual fund schemes do not differ from those of private sector sponsored mutual funds and Institution sponsored mutual fund schemes. Table 4 presents the results pertaining to market timing and sponsorship in respect of Treynor & Mazuy model and Henriksson & Merton model.

Table 4 indicates that, in respect of Treynor & Mazuy model there was only one scheme where some market timing was reflected. The scheme was sponsored by the private sector mutual fund. However, there was some evidence that fund managers wrongly timed the market. 10 fund managers were found to be wrong market timers. Out of 10 schemes, 1 was from Institution sponsored and 9 were from Private Sector sponsored mutual fund. In respect of Henriksson and Merton model there was only one scheme where some market timing was reflected. This scheme was sponsored by the private sector mutual fund only. However, there was some evidence that fund managers wrongly timed the market. 16 schemes were found to be wrong market timers. Out of 16 schemes only 3 were Institution sponsored while remaining 13 schemes were sponsored by the private sector.

Hence, as per Treynor & Mazuy model and Henriksson & Merton model, results do not support the hypothesis that the market timing abilities of Fund managers of the bank sponsored mutual fund schemes do not differ from those of private sector and Institution sponsored mutual fund schemes. And there is no scheme found to be the correct

market timer with respect to both the models except PS-JV-PI schemes. But it is found that, the majority of the wrong market timers were sponsored by the private sector mutual funds. There is no bank sponsored mutual fund schemes which found to be wrong market timers.

UMMARY AND CONCLUSIONS

This paper has empirically analyzed the market timing abilities of the Indian mutual fund manager in the form of two models, Treynor & Mazuy model and Henriksson & Merton model. Based on the results found, it may be concluded that Indian fund managers does not seriously engaged in correct market timing activities at all and are relying only on stock selection skills. The market timing abilities of Fund Managers of growth schemes do not differ from those of other schemes. The market timing abilities of Fund managers of the bank sponsored mutual fund schemes do not differ from those of private sector and Institution sponsored mutual fund schemes.

Summing up, it is to be said that none of the schemes satisfied the investors and the main limitation on the portfolio managers is that they cannot book the profits when the market is booming phase due to lack of depth in the market. At the same time there are no hedging instruments available for them to hedge the market uncertainties.

ONTRIBUTION OF THE STUDY

This study would help the existing and prospective AMCs, institutional and individual investors, researchers and policy makers.

This will have broader implications for institutional and individual investors to select an appropriate scheme for investment, to existing and prospective AMCs for developing competitive strategies, becoming more investor oriented, and developing appropriate policies encouraging the healthy growth of Indian Mutual Funds. From an academic perspective, the objective of identifying superior fund manager is interesting as it encourages the development and application of new models and theories thus making a significant contribution to the body of knowledge of investment management.

COPE FOR FUTURE RESEARCH

The present study is an attempt to mainly study market timing ability of Indian Mutual Fund Managers during the period January 2000 to December 2009. The scope for further research is summarized below:

- The performance may be examined by taking an enlarged sample.
- The study period may go beyond 10 years. Testing of fund performance in the long run can be done.
- One can use daily or weekly data for evaluating the market timing abilities of fund managers as against month-end data used in this study.
- The study used only two characteristics viz., scheme category and sponsorship of the scheme. The Future study can be done including variants such as Fund Market capitalization, Fund size, NAV, Risk, P/E ratio, Expense ratio, Turnover, Management tenure, Fund age , Diversification level, Number of holdings, Education level of fund managers, Age of fund manager etc. to see whether these variables are affecting the fund performance or whether it best indicates the future performance.

Table 1 : Results of Treynor and Mazuy Model : BSE 30

Balanced								
Sr. No.	**Scheme Name**	**Beta**	**Standard Error Beta**	**t-beta**	**Gamma**	**Standard Error Gamma**	**t-Gamma**	**R^2**
1	Birla Sun Life'95 Fund (G)	0.748912	0.037063	20.206686	-0.001493	0.002794	-0.534454	0.778984
2	Birla Sun Life'95 Fund (D)	0.749437	0.044804	16.727060	-0.002199	0.003377	-0.651166	0.707411
3	DSP Blackrock Balanced Fund (G)	0.695275	0.024114	28.832286	-0.001907	0.001818	-1.049061	0.877776
4	Templeton India Pension Plan (G)	0.351217	0.013866	25.328748	-0.001599	0.001045	-1.529455	0.847511
5	Templeton India Pension Plan (D)	0.369894	0.031338	11.803340	0.001585	0.002362	0.671047	0.546213
6	HDFC Prudence Fund (D)	0.703291	0.054141	12.989980	-0.001035	0.004081	-0.253530	0.592818
7	HDFC Prudence Fund (G)	0.705666	0.032811	21.507244	-0.000523	0.002473	-0.211657	0.799565
8	ICICI Prudential Balanced Fund (G)	0.688453	0.030750	22.388373	-0.006997	0.002318	**-3.018883***	0.815209
9	JM Balanced Fund (G)	0.667686	0.073271	9.112502	-0.004809	0.005523	-0.870830	0.419886
10	JM Balanced Fund (D)	0.767701	0.040654	18.883613	-0.003138	0.003064	-1.024059	0.755303
11	Kotak Mahindra Balance (G)	0.628389	0.040240	15.616008	-0.008061	0.003033	**-2.657753***	0.684582

12	LIC Mf Balance Fund (D)	0.678899	0.041497	16.360192	-0.005510	0.003128	-1.761728	0.700533
13	LIC Mf Balance Fund (G)	0.663994	0.035144	18.893475	-0.005886	0.002649	**-2.222044***	0.757709
14	LIC MF Unit Linked Insurance Scheme (D)	0.539650	0.054066	9.981270	-0.005268	0.004075	-1.292704	0.466817
15	Principal Balanced Fund (D)	0.598812	0.150766	3.971785	0.007852	0.011364	0.690968	0.122541
16	Principal Balanced Fund (G)	0.768666	0.149101	5.155335	0.015398	0.011238	1.370113	0.196220
17	SBI Magnum Balanced Fund (G)	0.818534	0.070517	11.607673	-0.001015	0.005315	-0.190880	0.537538
18	Tata Balanced Fund (G)	0.750057	0.035812	20.944051	-0.001837	0.002699	-0.680564	0.791157
19	UTI Balanced Fund (D)	0.581002	0.049197	11.809745	-0.004357	0.003708	-1.174938	0.548880
20	UTI Balanced Fund (G)	0.625438	0.034186	18.295148	-0.000998	0.002577	-0.387120	0.742813
21	UTI Ulip (G)	0.353864	0.033448	10.579439	-0.001533	0.002521	-0.607862	0.492190
Growth								
22	Baroda Pioneer Diversified fund (G)	1.029915	0.041142	25.033463	-0.001636	0.003101	-0.527527	0.843934
23	Birla Sun Life Advantage Fund (G)	1.052305	0.042239	24.913129	0.001398	0.003184	0.439085	0.842541
24	Birla Sun Life Equity (G)	1.066579	0.048264	22.098789	-0.002337	0.003638	-0.642302	0.808295
25	Birla Sun Life India Opportunities Fund (D)	1.082205	0.095546	11.326559	-0.006115	0.007202	-0.849155	0.526944
26	Birla Sun Life India Opportunities Fund (G)	1.031034	0.068195	15.119008	-0.004858	0.005140	-0.945211	0.664529
27	Birla Sun Life M N C Fund (G)	0.718217	0.040865	17.575399	-0.006211	0.003080	**-2.016570***	0.730038
28	Birla Sun Life M N C Fund (D)	0.732905	0.059283	12.362847	-0.003643	0.004468	-0.815212	0.569922
29	DSP Blackrock Equity Fund (G)	0.969169	0.097523	9.937814	0.000540	0.007351	0.073411	0.459864
30	Franklin Fmcg Fund (G)	0.547784	0.044162	12.403969	-0.006748	0.003329	**-2.027251***	0.577382
31	Franklin India Bluechip Fund (G)	0.952332	0.025841	36.853107	-0.002099	0.001948	-1.077821	0.921421
32	Franklin India Bluechip Fund (D)	0.946025	0.061715	15.328840	0.000995	0.004652	0.213862	0.669494
33	Franklin India Prima Fund (G)	1.013814	0.061143	16.580970	-0.005659	0.004609	-1.227809	0.704733
34	Franklin India Prima Fund (D)	1.000577	0.071022	14.088324	-0.002190	0.005353	-0.409095	0.631490
35	Franklin India Prima Plus (G)	0.933854	0.031830	29.338768	-0.001628	0.002399	-0.678689	0.881354
36	Franklin India Prima Plus (D)	0.902910	0.059798	15.099323	0.001149	0.004507	0.254884	0.662791
37	Franklin Infotech Fund (D)	0.957400	0.094789	10.100328	-0.007933	0.007145	-1.110327	0.471480
38	Franklin Infotech Fund (G)	0.933142	0.088585	10.533843	-0.009984	0.006677	-1.495321	0.494596
39	Franklin Pharma Fund (G)	0.595928	0.056731	10.504459	-0.009161	0.004276	**-2.142327***	0.498678
40	Templeton India Growth Fund (G)	0.969609	0.030977	31.301381	0.000859	0.002335	0.367837	0.894139
41	HDFC Capital Builder	0.828821	0.068744	12.056627	-0.003541	0.005182	-0.683435	0.557262

	Fund (D)							
42	HDFC Capital Builder Fund (G)	0.855284	0.044253	19.327166	-0.003778	0.003336	-1.132639	0.763887
43	HDFC Equity Fund (G)	0.966668	0.033308	29.022119	-0.000862	0.002511	-0.343185	0.879000
44	HDFC Equity Fund (D)	0.864957	0.065115	13.283601	-0.003103	0.004908	-0.632290	0.604145
45	HDFC Top 200 Fund (D)	0.967376	0.059433	16.276683	-0.001650	0.004480	-0.368236	0.695706
46	HDFC Top 200 Fund (G)	0.973214	0.035959	27.064867	-0.001084	0.002710	-0.399979	0.863361
47	ICICI Prudential FMCG Fund (G)	0.625833	0.055493	11.277604	-0.011543	0.004183	**-2.759679***	0.538634
48	ICICI Prudential Growth Plan (G)	0.934569	0.033384	27.994139	-0.007158	0.002516	**-2.844651***	0.872445
49	ICICI Prudential Growth Plan (D)	0.910320	0.064695	14.071037	-0.006913	0.004876	-1.417745	0.633395
50	ICICI Prudential Power (G)	0.332972	0.558187	0.596524	-0.026439	0.042073	-0.628405	0.006494
51	JM Basic Fund (G)	1.204684	0.102567	11.745396	0.003298	0.007731	0.426627	0.543399
52	JM Equity Fund (D)	1.031905	0.054911	18.792377	-0.002782	0.004139	-0.672249	0.753133
53	JM Equity Fund (G)	1.085862	0.040892	26.554708	-0.002671	0.003082	-0.866588	0.858954
54	Kotak Mahindra 30 Unit Scheme (G)	0.979351	0.034689	28.232494	-0.006218	0.002615	**-2.378225***	0.873931
55	LIC M F Growth Fund (G)	0.974682	0.053052	18.372080	-0.004388	0.003999	-1.097253	0.745149
56	LIC MF Equity Fund (G)	1.065478	0.036447	29.233446	-0.001128	0.002747	-0.410645	0.880546
57	Principal Index Fund (G)	0.987294	0.013456	73.374073	-0.001385	0.001014	-1.365467	0.978925
58	Reliance Growth Fund (D)	0.909232	0.076855	11.830522	0.001226	0.005793	0.211624	0.546822
59	Reliance Growth Fund (G)	0.978792	0.051939	18.844890	0.000118	0.003915	0.030158	0.753796
60	Reliance Vision Fund (G)	0.930599	0.045895	20.276590	-0.002283	0.003459	-0.660024	0.780253
61	SBI Magnum Contra Fund (G)	0.929546	0.077918	11.929727	-0.001669	0.005873	-0.284260	0.551222
62	SBI Magnum Equity Fund (G)	1.087310	0.066434	16.366732	-0.003491	0.005007	-0.697250	0.698394
63	SBI Magnum F M C G Fund (G)	0.603490	0.062623	9.636853	-0.009036	0.004720	-1.914347	0.455161
64	SBI Magnum Global Fund-1994 (G)	1.147506	0.066565	17.238985	0.003067	0.005017	0.611382	0.719385
65	SBI Magnum I T Fund (G)	1.064959	0.090212	11.805080	-0.005033	0.006800	-0.740115	0.547041
66	SBI Magnum Multiplier Plus-1993 (G)	1.103700	0.060372	18.281745	-0.002617	0.004550	-0.575168	0.742676
67	SBI Magnum Pharma Fund (G)	0.783726	0.071652	10.938001	-0.001378	0.005401	-0.255237	0.507999
68	Sundaram B N P Paribas Growth Fund (G)	1.035624	0.039067	26.509104	0.001474	0.002945	0.500488	0.858327
69	Tata Equity Opportunities Fund (D)	0.892580	0.058215	15.332589	0.001184	0.004388	0.269877	0.669612
70	Tata Growth Fund (G)	0.868086	0.046338	18.733613	0.001514	0.003493	0.433607	0.751611

71	Tata Life Sciences & Technology Fund (G)	0.930513	0.060434	15.397241	0.000126	0.004555	0.027768	0.671472
72	Tata Pure Equity Fund (G)	0.985402	0.034425	28.624616	-0.001640	0.002595	-0.631920	0.876095
73	Tata Select Equity Fund (G)	1.091280	0.059108	18.462503	-0.005790	0.004455	-1.299517	0.747309
74	Taurus Bonanza (G)	1.012667	0.057308	17.670579	-0.000126	0.004320	-0.029215	0.729156
75	Taurus Discovery (G)	1.120227	0.074317	15.073540	0.004325	0.005602	0.772033	0.662398
76	Taurus Starshare (G)	1.144160	0.065475	17.474734	0.004368	0.004935	0.885092	0.725037
77	UTI Master Value Fund (G)	0.885224	0.072181	12.263906	-0.001885	0.005441	-0.346390	0.564927
78	UTI Mastershare (G)	0.896687	0.032243	27.810367	-0.000616	0.002430	-0.253366	0.869618
Income								
79	Birla Sun Life Cash Manager-Ret (G)	0.001429	0.001111	1.286173	0.000068	0.000084	0.814143	0.019414
80	Birla Sun Life Cash Plus-Ret (G)	-0.000556	0.000762	-0.729622	0.000113	0.000057	1.963386	0.036672
81	Birla Sun Life Income Plus-Ret (G)	0.039600	0.021021	1.883789	-0.001434	0.001584	-0.904947	0.036558
82	Birla Sun Life Income Plus-Ret (QD)	0.045626	0.025620	1.780879	-0.000541	0.001931	-0.279963	0.027336
83	DBS Chola Triple Ace (G)	0.006397	0.015787	0.405164	0.001613	0.001190	1.355688	0.016878
84	DSP Blackrock Bond Fund (G)	0.027683	0.014432	1.918235	-0.001308	0.001088	-1.202452	0.042679
85	DSP Blackrock Bond Fund (QD)	0.025300	0.025988	0.973527	-0.000390	0.001959	-0.199129	0.008473
86	Templeton India Income Fund (G)	0.031220	0.012045	2.591978	-0.001287	0.000908	-1.417962	0.070530
87	Templeton India Income Fund (QD)	0.043451	0.017334	2.506656	-0.000836	0.001307	-0.639705	0.054796
88	Templeton India Treasury Management Account (G)	-0.000460	0.000961	-0.478947	0.000123	0.000072	1.703747	0.026425
89	Templeton India Treasury Management Account (WD)	0.003101	0.002771	1.119089	-0.000176	0.000209	-0.840926	0.016768
90	HDFC Cash Management Fund - Savings Plan (WD)	0.037065	0.037710	0.982899	-0.001830	0.002842	-0.643701	0.011867
91	HDFC Cash Management Fund - Savings Plan (G)	-0.022985	0.049074	-0.468380	0.001543	0.003699	0.417118	0.003413
92	HDFC High Interest Fund (QD)	0.048104	0.024249	1.983758	-0.000010	0.001828	-0.005544	0.032817
93	HDFC High Interest Fund (AD)	0.027261	0.028222	0.965953	-0.001584	0.002127	-0.744675	0.012782
94	HDFC High Interest Fund (HD)	0.030089	0.024363	1.235023	-0.003113	0.001836	-1.694929	0.036863
95	HDFC High Interest Fund (G)	-0.080575	0.089558	-0.899690	0.012175	0.006750	1.803601	0.034097
96	ING Vysya Income Fund-Ret (QD)	0.074885	0.023030	3.251628	-0.002388	0.001736	-1.375705	0.097663
97	ING Vysya Income Fund-Ret (G)	0.028721	0.015946	1.801113	-0.000935	0.001202	-0.777570	0.032338

98	ICICI Prudential Gilt Fund (Investment Plan) (G)	0.023456	0.026395	0.888629	0.004014	0.001990	**2.017571***	0.039937
99	ICICI Prudential Gilt Fund (Treasury Plan) (QD)	0.010680	0.038634	0.276432	0.000259	0.002912	0.088949	0.000722
100	ICICI Prudential Gilt Fund (Treasury Plan) (G)	0.006730	0.011575	0.581367	0.000576	0.000872	0.660052	0.006562
101	ICICI Prudential Income Plan (G)	0.035828	0.020567	1.741994	-0.000149	0.001550	-0.096014	0.025598
102	JM G-Sec Fund - Regular (D)	0.038454	0.026113	1.472579	0.003235	0.001968	1.643511	0.039913
103	JM High Liquidity Fund (G)	-0.000773	0.001341	-0.576244	0.000149	0.000101	1.471218	0.021209
104	JM High Liquidity Fund (WD)	-0.003212	0.018000	-0.178464	0.000392	0.001357	0.288996	0.001002
105	JM Income Fund (G)	0.027777	0.010033	2.768384	-0.001293	0.000756	-1.710225	0.084330
106	JM Income Fund (D)	0.053763	0.041623	1.291663	-0.000352	0.003137	-0.112299	0.014310
107	Kotak Mahindra Gilt-Savings (G)	0.003645	0.003649	0.998802	-0.000371	0.000275	-1.350057	0.023956
108	LIC Bond Fund (G)	0.017206	0.012676	1.357384	-0.001282	0.000955	-1.341514	0.030736
109	LIC Bond Fund (D)	0.022153	0.018291	1.211149	0.000734	0.001379	0.532119	0.014757
110	LIC Monthly Income Plan (MD)	0.147329	0.015361	9.591235	-0.000523	0.001158	-0.451880	0.443085
111	LIC Monthly Income Plan (G)	0.239154	0.107200	2.230912	-0.000289	0.008080	-0.035733	0.041166
112	LIC MF Govt. Securities Fund-Regular (G)	0.034687	0.021270	1.630782	0.000437	0.001603	0.272707	0.022955
113	LIC MF Govt. Securities Fund-Regular (D)	0.013740	0.028955	0.474529	0.001426	0.002182	0.653420	0.005539
114	SBI Magnum Income Fund-1998 (D)	0.048859	0.023846	2.048937	-0.000546	0.001797	-0.303810	0.035769
115	SBI Magnum Income Fund-1998 (G)	0.036942	0.014234	2.595332	-0.001367	0.001073	-1.273942	0.067709
116	SBI Magnum Insta Cash Fund (WD)	0.008205	0.015927	0.515155	0.000285	0.001201	0.237015	0.002744
117	SBI Magnum Insta Cash Fund (G)	-0.001515	0.007890	-0.191995	0.000201	0.000595	0.337626	0.001310
118	Sundaram B N P Paribas Bond Saver (G)	0.033129	0.012523	2.645458	-0.001111	0.000944	-1.177445	0.067877
119	Tata Gilt RIP (G)	0.043961	0.023439	1.875549	-0.000372	0.001767	-0.210663	0.029859
120	Tata Gilt RIP (D)	0.054721	0.024838	2.203135	-0.000253	0.001872	-0.134974	0.040358
121	Tata Income Fund (G)	0.013815	0.015507	0.890886	-0.000843	0.001169	-0.721216	0.011307
122	Tata Income Fund (HD)	0.029384	0.019488	1.507844	-0.002240	0.001469	-1.524953	0.038500
123	UTI Bond Fund (D)	0.076216	0.041056	1.856396	-0.000716	0.003095	-0.231281	0.029358
124	UTI Bond Fund (G)	0.023614	0.018419	1.282055	-0.000059	0.001388	-0.042186	0.013997
125	UTI Money Market Fund (WD)	-0.031966	0.073377	-0.435642	0.000437	0.005531	0.079029	0.001693
Tax-Planning								
126	Baroda Pioneer Elss 96	1.046483	0.061589	16.991319	-0.002389	0.004642	-0.514715	0.713701

	(G)							
127	Canara Robeco Equity Tax Saver (G)	1.054949	0.070026	15.065127	0.001168	0.005278	0.221373	0.661771
128	HDFC Tax Saver (D)	0.886900	0.076329	11.619418	-0.001112	0.005753	-0.193250	0.538043
129	HDFC Tax Saver (G)	0.971513	0.062825	15.463844	-0.002141	0.004735	-0.452059	0.673695
130	ICICI Prudential Tax Plan (G)	1.045225	0.056778	18.409063	-0.004001	0.004280	-0.934993	0.745692
131	LIC MF Tax Plan (G)	0.973095	0.055485	17.538101	0.000442	0.004182	0.105596	0.726150
132	Principal Personal Tax Saver Fund (G)	1.008841	0.079224	12.734117	-0.010383	0.005971	-1.738708	0.588117
133	Principal Tax Savings Fund (G)	0.998069	0.051081	19.538884	-0.009036	0.003850	**-2.346927***	0.769941
134	SBI Magnum Tax Gain'93 (G)	1.059177	0.083411	12.698263	-0.003737	0.006287	-0.594353	0.582379
135	Sahara Tax Gain Fund (G)	1.067449	0.104494	10.215392	0.003900	0.007876	0.495115	0.473946
136	Tata Tax Saving Fund (G)	1.008285	0.056033	17.994361	-0.006723	0.004223	-1.591769	0.738106
137	Taurus Tax shield (G)	1.089163	0.086088	12.651677	0.001889	0.006489	0.291073	0.579851
Note: * Significant at 5% level								

Table 2 : Results of Henriksson and Merton Model : BSE 30

Sr. No.	Scheme Name	Beta	Standard Error Beta	t-beta	Gamma	Standard Error Gamma	t-Gamma	R^2
Balanced								
1	Birla Sun Life'95 Fund (G)	0.673829	0.070936	9.499059	-0.149597	0.120441	-1.242079	0.781348
2	Birla Sun Life'95 Fund (D)	0.651028	0.085704	7.596233	-0.196135	0.145514	-1.347872	0.710870
3	DSP Blackrock Balanced Fund (G)	0.605960	0.045595	13.289975	-0.177987	0.077415	**-2.299128***	0.881994
4	Templeton India Pension Plan (G)	0.315939	0.026673	11.844890	-0.070520	0.045287	-1.557176	0.847621
5	Templeton India Pension Plan (D)	0.419147	0.060181	6.964812	0.098290	0.102179	0.961940	0.548057
6	HDFC Prudence Fund (D)	0.634970	0.103945	6.108680	-0.136040	0.176486	-0.770828	0.594669
7	HDFC Prudence Fund (G)	0.651168	0.062870	10.357382	-0.108436	0.106745	-1.015845	0.801256
8	ICICI Prudential Balanced Fund (G)	0.536740	0.059172	9.070796	-0.303311	0.100467	**-3.019012***	0.815210
9	JM Balanced Fund (G)	0.512308	0.140435	3.648000	-0.310027	0.238441	-1.300225	0.424481
10	JM Balanced Fund (D)	0.628021	0.077094	8.146120	-0.278398	0.130896	**-2.126854***	0.762358
11	Kotak Mahindra Balance (G)	0.387929	0.075314	5.150849	-0.479950	0.127873	**-3.753340***	0.701613
12	LIC Mf Balance Fund (D)	0.515956	0.078934	6.536536	-0.325243	0.134020	**-2.426826***	0.707377
13	LIC Mf Balance Fund (G)	0.513319	0.067061	7.654467	-0.300960	0.113862	**-2.643213***	0.761746

14	LIC MF Unit Linked Insurance Scheme (D)	0.393468	0.103563	3.799325	-0.291870	0.175836	-1.659900	0.471684
15	Principal Balanced Fund (D)	0.797978	0.289898	2.752615	0.397835	0.492210	0.808264	0.123864
16	Principal Balanced Fund (G)	1.182633	0.285670	4.139862	0.826663	0.485030	1.704353	0.203167
17	SBI Magnum Balanced Fund (G)	0.753605	0.135531	5.560401	-0.129293	0.230114	-0.561867	0.538648
18	Tata Balanced Fund (G)	0.651410	0.068209	9.550169	-0.196516	0.115810	-1.696872	0.795401
19	UTI Balanced Fund (D)	0.468490	0.094434	4.961034	-0.224723	0.160337	-1.401572	0.551113
20	UTI Balanced Fund (G)	0.569966	0.065548	8.695401	-0.110496	0.111292	-0.992844	0.744651
21	UTI Ulip (G)	0.348933	0.064464	5.412843	-0.010198	0.109451	-0.093173	0.490610
Growth								
22	Baroda Pioneer Diversified fund (G)	0.965818	0.078954	12.232657	-0.127803	0.134054	-0.953373	0.844776
23	Birla Sun Life Advantage Fund (G)	0.998890	0.081141	12.310515	-0.105786	0.137767	-0.767860	0.843077
24	Birla Sun Life Equity (G)	0.935118	0.091930	10.172046	-0.261854	0.156086	-1.677629	0.812170
25	Birla Sun Life India Opportunities Fund (D)	0.836000	0.182463	4.581736	-0.490862	0.309799	-1.584452	0.534087
26	Birla Sun Life India Opportunities Fund (G)	0.820499	0.129716	6.325371	-0.419651	0.220240	-1.905423	0.672204
27	Birla Sun Life M N C Fund (G)	0.571446	0.078378	7.290905	-0.293287	0.133076	**-2.203913***	0.731805
28	Birla Sun Life M N C Fund (D)	0.642640	0.113977	5.638315	-0.180326	0.193519	-0.931826	0.570671
29	DSP Blackrock Equity Fund (G)	1.009838	0.187614	5.382519	0.080960	0.318545	0.254157	0.460140
30	Franklin Fmcg Fund (G)	0.464709	0.085990	5.404243	-0.166846	0.145999	-1.142785	0.567281
31	Franklin India Bluechip Fund (G)	0.876578	0.049287	17.785342	-0.151088	0.083682	-1.805501	0.922804
32	Franklin India Bluechip Fund (D)	0.964846	0.118763	8.124113	0.037661	0.201645	0.186767	0.669463
33	Franklin India Prima Fund (G)	0.801121	0.116125	6.898778	-0.424147	0.197165	**-2.151222***	0.712370
34	Franklin India Prima Fund (D)	0.854879	0.135841	6.293235	-0.290107	0.230640	-1.257835	0.635924
35	Franklin India Prima Plus (G)	0.830064	0.060322	13.760616	-0.206682	0.102418	**-2.018011***	0.884923
36	Franklin India Prima Plus (D)	0.845972	0.114935	7.360446	-0.112852	0.195145	-0.578300	0.663573
37	Franklin Infotech Fund (D)	0.739588	0.181818	4.067728	-0.434910	0.308704	-1.408826	0.474848
38	Franklin Infotech Fund (G)	0.657138	0.169439	3.878326	-0.551086	0.287685	-1.915589	0.500650
39	Franklin Pharma Fund (G)	0.436845	0.109934	3.973718	-0.318520	0.186653	-1.706483	0.491606
40	Templeton India	0.955876	0.059624	16.031750	-0.027067	0.101234	-0.267368	0.894081

	Growth Fund (G)							
41	HDFC Capital Builder Fund (D)	0.721242	0.132028	5.462804	-0.214708	0.224166	-0.957807	0.558967
42	HDFC Capital Builder Fund (G)	0.724527	0.084428	8.581559	-0.260831	0.143348	-1.819563	0.767900
43	HDFC Equity Fund (G)	0.891645	0.063604	14.018599	-0.149313	0.107992	-1.382629	0.880841
44	HDFC Equity Fund (D)	0.693620	0.124119	5.588338	-0.341297	0.210738	-1.619531	0.611564
45	HDFC Top 200 Fund (D)	0.906781	0.114242	7.937364	-0.120847	0.193968	-0.623024	0.696366
46	HDFC Top 200 Fund (G)	0.906266	0.068857	13.161527	-0.133326	0.116911	-1.140410	0.864689
47	ICICI Prudential FMCG Fund (G)	0.443243	0.108404	4.088812	-0.365854	0.184056	-1.987732	0.524538
48	ICICI Prudential Growth Plan (G)	0.795298	0.064673	12.297144	-0.278629	0.109807	**-2.537443***	0.870722
49	ICICI Prudential Growth Plan (D)	0.761172	0.124501	6.113773	-0.298193	0.211387	-1.410652	0.633333
50	ICICI Prudential Power (G)	-0.451492	1.072522	-0.420963	-1.565804	1.821003	-0.859858	0.009425
51	JM Basic Fund (G)	1.112304	0.197269	5.638522	-0.182727	0.334937	-0.545557	0.543853
52	JM Equity Fund (D)	0.863129	0.104262	8.278494	-0.336124	0.177023	-1.898761	0.759642
53	JM Equity Fund (G)	0.945259	0.077441	12.206238	-0.280109	0.131484	**-2.130361***	0.863386
54	Kotak Mahindra 30 Unit Scheme (G)	0.832649	0.066453	12.529957	-0.293152	0.112828	**-2.598222***	0.875056
55	LIC M F Growth Fund (G)	0.785426	0.100521	7.813545	-0.377242	0.170672	**-2.210337***	0.752911
56	LIC MF Equity Fund (G)	0.985087	0.069638	14.145862	-0.160052	0.118236	-1.353667	0.882232
57	Principal Index Fund (G)	0.968703	0.026020	37.229449	-0.037305	0.044178	-0.844423	0.978717
58	Reliance Growth Fund (D)	0.835591	0.147703	5.657241	-0.146024	0.250781	-0.582279	0.547969
59	Reliance Growth Fund (G)	0.908742	0.099656	9.118777	-0.139176	0.169203	-0.822540	0.755222
60	Reliance Vision Fund (G)	0.827398	0.087763	9.427624	-0.205679	0.149011	-1.380301	0.782992
61	SBI Magnum Contra Fund (G)	0.835199	0.149637	5.581512	-0.187925	0.254064	-0.739678	0.553018
62	SBI Magnum Equity Fund (G)	0.932874	0.126995	7.345762	-0.307812	0.215621	-1.427559	0.702359
63	SBI Magnum F M C G Fund (G)	0.434531	0.120988	3.591504	-0.338114	0.205423	-1.645943	0.450775
64	SBI Magnum Global Fund-1994 (G)	1.121576	0.128265	8.744204	-0.050731	0.217778	-0.232947	0.718612
65	SBI Magnum I T Fund (G)	0.854258	0.172480	4.952799	-0.420026	0.292848	-1.434278	0.552832
66	SBI Magnum Multiplier Plus-1993 (G)	0.987007	0.115640	8.535147	-0.232579	0.196342	-1.184560	0.745026
67	SBI Magnum Pharma Fund (G)	0.704928	0.137649	5.121189	-0.156950	0.233711	-0.671557	0.509629
68	Sundaram B N P Paribas Growth Fund (G)	1.006297	0.075190	13.383415	-0.057898	0.127663	-0.453521	0.858273

69	Tata Equity Opportunities Fund (D)	0.863866	0.112013	7.712172	-0.056754	0.190184	-0.298416	0.669658
70	Tata Growth Fund (G)	0.834024	0.089164	9.353779	-0.067295	0.151390	-0.444517	0.751632
71	Tata Life Sciences & Technology Fund (G)	0.845135	0.115921	7.290595	-0.169635	0.196819	-0.861880	0.673560
72	Tata Pure Equity Fund (G)	0.908519	0.065826	13.801792	-0.153212	0.111764	-1.370846	0.877651
73	Tata Select Equity Fund (G)	0.916114	0.112959	8.110170	-0.349604	0.191789	-1.822856	0.750770
74	Taurus Bonanza (G)	0.929063	0.109902	8.453552	-0.166174	0.186600	-0.890536	0.730993
75	Taurus Discovery (G)	1.149905	0.143337	8.022392	0.060101	0.243368	0.246956	0.660842
76	Taurus Starshare (G)	1.121018	0.126393	8.869276	-0.044854	0.214600	-0.209012	0.723284
77	UTI Master Value Fund (G)	0.793664	0.138610	5.725872	-0.182443	0.235342	-0.775223	0.566721
78	UTI Mastershare (G)	0.877162	0.062025	14.142069	-0.038962	0.105310	-0.369977	0.869700
Income								
79	Birla Sun Life Cash Manager-Ret (G)	0.002417	0.002141	1.128992	0.001982	0.003636	0.545207	0.016332
80	Birla Sun Life Cash Plus-Ret (G)	0.002041	0.001463	1.394696	0.005189	0.002484	**2.088942***	0.040744
81	Birla Sun Life Income Plus-Ret (G)	0.035520	0.040591	0.875083	-0.008480	0.068918	-0.123039	0.029883
82	Birla Sun Life Income Plus-Ret (QD)	0.052684	0.049311	1.068404	0.013885	0.083723	0.165845	0.026909
83	DBS Chola Triple Ace (G)	0.025276	0.030549	0.827383	0.037937	0.051868	0.731414	0.005886
84	DSP Blackrock Bond Fund (G)	0.016167	0.027914	0.579173	-0.023226	0.047395	-0.490046	0.032749
85	DSP Blackrock Bond Fund (QD)	0.037437	0.049999	0.748746	0.024018	0.084893	0.282919	0.008819
86	Templeton India Income Fund (G)	0.019065	0.023339	0.816864	-0.024489	0.039627	-0.618004	0.057523
87	Templeton India Income Fund (QD)	0.041121	0.033414	1.230671	-0.004847	0.056732	-0.085438	0.051521
88	Templeton India Treasury Management Account (G)	0.001792	0.001855	0.965986	0.004507	0.003150	1.431080	0.019376
89	Templeton India Treasury Management Account (WD)	-0.000543	0.005334	-0.101860	-0.007288	0.009057	-0.804773	0.016267
90	HDFC Cash Management Fund - Savings Plan (WD)	-0.003807	0.072557	-0.052475	-0.081700	0.123193	-0.663192	0.012083
91	HDFC Cash Management Fund - Savings Plan (G)	0.006467	0.094449	0.068469	0.058930	0.160362	0.367484	0.003079
92	HDFC High Interest Fund (QD)	0.071057	0.046595	1.524989	0.045610	0.079112	0.576530	0.035580
93	HDFC High Interest Fund (AD)	0.008857	0.054400	0.162819	-0.036985	0.092363	-0.400434	0.009432
94	HDFC High Interest Fund (HD)	-0.029834	0.047004	-0.634720	-0.119893	0.079807	-1.502293	0.031847
95	HDFC High Interest Fund (G)	0.153522	0.172847	0.888195	0.468375	0.293472	1.595977	0.028346
96	ING Vysya Income Fund-Ret (QD)	0.032375	0.044433	0.728620	-0.085100	0.075442	-1.128011	0.092891

97	ING Vysya Income Fund-Ret (G)	0.027943	0.030765	0.908285	-0.001789	0.052235	-0.034244	0.027305
98	ICICI Prudential Gilt Fund (Investment Plan) (G)	0.104877	0.050902	2.060372	0.162849	0.086425	1.884281	0.035760
99	ICICI Prudential Gilt Fund (Treasury Plan) (QD)	0.003790	0.074341	0.050976	-0.013625	0.126222	-0.107945	0.000755
100	ICICI Prudential Gilt Fund (Treasury Plan) (G)	0.019345	0.022274	0.868519	0.025220	0.037818	0.666879	0.006639
101	ICICI Prudential Income Plan (G)	0.053020	0.039535	1.341097	0.034126	0.067126	0.508395	0.027687
102	JM G-Sec Fund - Regular (D)	0.114667	0.050144	2.286761	0.152296	0.085138	1.788822	0.043930
103	JM High Liquidity Fund (G)	0.002211	0.002585	0.855316	0.005968	0.004388	1.359940	0.018592
104	JM High Liquidity Fund (WD)	-0.001637	0.034648	-0.047237	0.003233	0.058828	0.054957	0.000309
105	JM Income Fund (G)	0.009203	0.019443	0.473336	-0.037247	0.033011	-1.128304	0.071433
106	JM Income Fund (D)	0.030005	0.080057	0.374794	-0.047305	0.135926	-0.348018	0.015231
107	Kotak Mahindra Gilt-Savings (G)	-0.000213	0.007064	-0.030155	-0.007763	0.011994	-0.647233	0.012187
108	LIC Bond Fund (G)	0.009258	0.024564	0.376897	-0.016127	0.041707	-0.386678	0.016966
109	LIC Bond Fund (D)	0.062787	0.034960	1.795960	0.080942	0.059358	1.363621	0.027934
110	LIC Monthly Income Plan (MD)	0.134356	0.029551	4.546651	-0.025917	0.050173	-0.516551	0.443385
111	LIC Monthly Income Plan (G)	0.270801	0.206256	1.312939	0.062816	0.350195	0.179374	0.041422
112	LIC MF Govt. Securities Fund-Regular (G)	0.062328	0.040832	1.526472	0.055045	0.069327	0.793990	0.027613
113	LIC MF Govt. Securities Fund-Regular (D)	0.061959	0.055571	1.114949	0.096194	0.094352	1.019521	0.010743
114	SBI Magnum Income Fund-1998 (D)	0.056568	0.045897	1.232492	0.015178	0.077928	0.194766	0.035317
115	SBI Magnum Income Fund-1998 (G)	0.026916	0.027559	0.976676	-0.020279	0.046791	-0.433400	0.056194
116	SBI Magnum Insta Cash Fund (WD)	0.012319	0.030653	0.401879	0.008249	0.052044	0.158496	0.002477
117	SBI Magnum Insta Cash Fund (G)	0.003324	0.015181	0.218957	0.009668	0.025775	0.375095	0.001540
118	Sundaram B N P Paribas Bond Saver (G)	0.026403	0.024230	1.089668	-0.013656	0.041139	-0.331957	0.057632
119	Tata Gilt RIP (G)	0.055128	0.045096	1.222469	0.022095	0.076567	0.288573	0.030184
120	Tata Gilt RIP (D)	0.070029	0.047770	1.465968	0.030355	0.081107	0.374261	0.041364
121	Tata Income Fund (G)	0.015691	0.029907	0.524679	0.003509	0.050778	0.069108	0.006915
122	Tata Income Fund (HD)	0.007038	0.037794	0.186212	-0.044991	0.064169	-0.701133	0.023364
123	UTI Bond Fund (D)	0.058985	0.078998	0.746657	-0.034428	0.134129	-0.256679	0.029461
124	UTI Bond Fund (G)	0.040337	0.035397	1.139588	0.033219	0.060099	0.552739	0.016572
125	UTI Money Market Fund (WD)	-0.118980	0.140885	-0.844518	-0.172806	0.239205	-0.722416	0.006111
Tax-Planning								

126	Baroda Pioneer Elss 96 (G)	0.921237	0.117863	7.816160	-0.249517	0.200116	-1.246860	0.716842
127	Canara Robeco Equity Tax Saver (G)	1.004704	0.134668	7.460602	-0.099546	0.228649	-0.435366	0.662181
128	HDFC Tax Saver (D)	0.815942	0.146699	5.562020	-0.141300	0.249076	-0.567297	0.539173
129	HDFC Tax Saver (G)	0.873381	0.120525	7.246445	-0.195570	0.204637	-0.955694	0.675674
130	ICICI Prudential Tax Plan (G)	0.919165	0.108801	8.448124	-0.251554	0.184730	-1.361740	0.747807
131	LIC MF Tax Plan (G)	0.931603	0.106678	8.732838	-0.082341	0.181126	-0.454606	0.726611
132	Principal Personal Tax Saver Fund (G)	0.706508	0.150854	4.683389	-0.603513	0.256131	**-2.356269***	0.596687
133	Principal Tax Savings Fund (G)	0.793899	0.098095	8.093187	-0.408088	0.166552	**-2.450211***	0.770875
134	SBI Magnum Tax Gain'93 (G)	0.886830	0.159650	5.554854	-0.343468	0.271064	-1.267110	0.586826
135	Sahara Tax Gain Fund (G)	1.122463	0.201198	5.578897	0.110341	0.341608	0.323004	0.473308
136	Tata Tax Saving Fund (G)	0.766669	0.105761	7.249039	-0.481901	0.179569	**-2.683649***	0.748029
137	Taurus Tax shield (G)	1.032363	0.165605	6.233899	-0.112384	0.281175	-0.399695	0.580122
Note: * Significant at 5% level								

Table 3 : Summary Results : Market Timing and Fund Objectives

Objectives	Sample Schemes	Treynor and Mazuy Model		Henriksson and Merton Model	
		Market Timers	Wrong Timers	Market Timers	Wrong Timers
Balanced	21	-	3	-	6
Growth	57	-	6	-	7
Income	47	1	-	1	-
Tax-Planning	12	-	1	-	3
Total	**137**	**1**	**10**	**1**	**16**

Table 4 : Summary Results : Market Timing and Fund Sponsorship

Sponsorship	Sample Schemes	Treynor and Mazuy Model		Henriksson and Merton Model	
		Market Timers	Wrong Timers	Market Timers	Wrong Timers
BS:JV-PF	2	-	-	-	-
BS:JV-PI	14	-	-	-	-
BS:O	8	-	-	-	-
INST.	12	-	1	-	3
PS:F	17	-	2	-	2
PS:I	33	-	2	-	5
PS:JV-PF	7	-	1	-	2
PS:JV-PI	44	1	4	1	4
Total	**137**	**1**	**10**	**1**	**16**

BS:JV-PF : Bank Sponsored: Joint Venture- Private Foreign, BS:JV-PF : Bank Sponsored: Joint Venture- Private Indian, BS:O : Bank Sponsored: Others, INST. : Institutions, PS:F : Private Sector : Foreign, PS:I : Private Sector : Indian, PS:JV-PF : Private Sector : Joint Venture- Private Foreign, PS:JV-PI : Private Sector : Joint Venture- Private Indian,

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GDP Composition and Sector-wise Growth Trends in India:

Evidences From Post-reform Period

Sanjay Kumar Mangal,* D. R. Agarwal**

ABSTRACT

Economic growth models have emphasized upon the need for increase in investment leading to the rise in the rate of capital formation as the means for the development of any backward region/country. Considering this need of investment, economic reforms (liberalization, privatization and globalization (LPG)) gained major significance in India from July 24, 1991. These reforms introduced high investment to stimulate economic growth and average economic growth in India since then has been around 6.66% per annum (calculated form Handbook of Statistics on Indian Economy, RBI, 2011-1). However, these reforms have also led to change in the composition of gross domestic product (GDP) and growth rates of different sectors have been different during the post reform period. This paper aims at (1) examining the changes in GDP composition, (2) studying sector-wise growth rates using compound average growth rate (CAGR) and average annual growth rate (AAGR) and (3) finding the impact of gross capital formation (GCF) and labour employed on economic growth using multiple regression analysis in India during post-reform period i.e. 1991-92 to 2011-12. It has been found that the service sector contributes the highest and the agriculture & allied activities sector contributes the lowest share in GDP while the contribution of the industry sector has remained almost constant. As far as the sub-sector analysis is concerned, the trade, hotel, transport & communication sub-sector contributes the highest share in total output. GCF growth rate has found a significant determinant of economic growth and an 1% increase in the GCF growth rate leads to 0.91% increase in the GDP growth rate, while employment does not significantly affect the GDP growth rate.

Keywords: *economic reforms, GDP composition, growth trends, gross capital formation, labour employed, CAGR, and AAGR*

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INTRODUCTION

The economic backwardness of India prior to the introduction of economic reforms in 1991 could be termed as a case of the resource-curse (the paradox of plenty, i.e. countries with abundance of natural resources but having low economic growth and development). The main forces responsible for economic backwardness were colonial exploitation, poor terms of trade, volatility of global market, non availability of advanced technology, inefficient distribution of resources etc. India, virtually had no economic growth during first half of twentieth century and though unspectacular, the economy maintained a growth rate of 4.39% per annum. The development process was completely governed by colonial policies of the alien rulers. After India's independence in 1947, the Indian Govt. adopted economic planning in 1951 and the economy was transformed into a mixed economy based on the existence of three distinct ideologies viz, Socialism, Liberalism and Gandhism. Since independence, India's economic growth experience has been unique as it neither grew at a high growth rate of over 6% per annum like its East and Southeast Asian counterparts nor it had a period of prolonged stagnation/decline such as witnessed by African and Latin American countries.

During the first four decades of economic planning, India followed a model of growth through State enterprises and applied significant controls on private sector industrialization through licensing policies.

This model resulted in India getting into a spiral of major economic crisis in terms of mounting fiscal deficit and erosion of foreign exchange reserves due to huge imbalance in balance of payment / trade. Early 90s resulted in India on the brink of economic disaster and had to pledge gold reserves to temporarily borrow foreign exchange to remain solvent on current account payments.

Forced by the severe economic debacle, the liberalisation policy found its way focusing; liberalization instead of control, limiting the role of public sector and encouraging the participation of private sector, allowing foreign direct investment, carrying out a number of fiscal reforms, legal reforms and providing a framework for global institutions to set up base in India.

ITERATURE REVIEW

Economic growth measurement and the identification of its determinants has been a subject of long discussion in economic literature ranging from classical model to present economic reforms models. Harrod (1948) examined the impact of capital-output ratio, saving, investment and optimum utilization of resources on the steady growth and propounded that equality of warranted growth rate, actual growth rate and natural growth rate is the condition for equilibrium of steady growth. Robinson (1956) gave golden age model of economic growth. She found that rate of capital accumulation and labour force are the main determinants of economic growth and the equality between the two is necessary for equilibrium growth rate. Solow (1956) postulated that growth rate of labour and capital is the crucial determinant of economic growth and capital-labour determines the level of investment and income in the economy. Domar (1957) emphasised upon the role of investment on productivity and growth. Duesenberry (1958) gave optimum growth model recognising that growth occurs because the actual capital-output ratio lies quite far below the optimum ratio to induce sufficient investment that permits income to grow as fast as or faster than capital accumulation. Neo-classical growth model with technical progress emphasised upon the role of technical progress in economic growth of any nation.

BJECTIVES

Economic reforms have proved to be the main force behind the sound economic growth in India in last two decades and there have been significant changes in the composition of GDP. This paper analyses the GDP composition and sector-wise growth rates during post-reform period in India. Following are the objectives of this paper:

1. To examine the change in composition of gross domestic product (GDP).

2. To examine the change in share of sub-sectors in the aggregate industry and service sectors.

3. To study sector-wise growth trends in Indian economy.

4. To study growth of capital formation and labour force in India and impact of the two on GDP growth.

ESEARCH METHODOLOGY

This paper is based on secondary data taken from Handbook of Statistics on Indian Economy 2011-12, Reserve Bank of India. This paper covers a period of 20 years from 1991-92 to 2010-11. Data for 2009-10 are Provisional Estimates, 2010-11 are Quick Estimates and 2011-12 are Revised Estimates.

GDP Composition: The composition of GDP has been studied in terms of percentage share of agriculture & allied activities, industry and service sectors and their sub-sectors viz. mining & quarrying, manufacturing and electricity, gas & water supply for industry sector and construction, trade, hotel, transport & communication, financing, insurance, real estate & business and community, and social & personal services for service sector.

Growth Trends: Growth trends have been examined in terms of compound average growth rate (CAGR) per annum and average annual growth rate (AAGR). The entire period (1991-92 to 2011-12, named as Period III) is divided into two sub-periods as Period I, first decade after economic reforms (1991-92 to 2000-01) and Period II, second decade after economic reforms (2001-02 to 2010-11).

Economists distinguish between the terms economic growth and economic development as the former deals with the problems of developed and rich countries while the later that of underdeveloped and developing countries. Economic growth implies more output where as economic development

is defined in terms of both more output and changes in technical institutional arrangements by which it is produced. "Development is a discontinuous and spontaneous change in the stationary state which forever alters and displaces the equilibrium state previously existing; while growth is a gradual and steady change in the long run which comes about by a general miracle in the rate of savings and population" (Schumpeter, 1912/1934).

Following are two methods which have been applied to measure economic growth:

A. Simple Growth Rate:

$$Y_n = Y_0 + \frac{Y_0 \times r \times n}{100} \text{ ---------- (1)}$$

$$r = \frac{(Y_n - Y_0) \times 100}{Y_0 \times n} \text{ ---------- (2)}$$

Where Y_n= GDP at the end of the period, *n*=length of the period and r=rate of economic growth.

B. Compound Growth Rate:

$Y = ab^t e^u$ ---------- (3)

Where $b = 1 + r$ and r is the compound growth rate.

Y= gross domestic product (GDP)

t= time

The logarithmic transformation of the above function gives:

$\log Y = \log a + t \log b + u$ ----------(4)

And the values of log *a* and log *b* have been estimated using the following two normal equations:

$$\sum \log Y = n \log a + \log b \sum t$$

$$\sum t . \log Y = \log a \sum t + \log b \sum t^2$$

As equation (4) is a log-linear function, therefore, CAGR has been computed by using following formula:

CAGR (r %= (AL ($\log b$) –1) x 100

Impact of Capital Formation and Labour Employed on Economic Growth

To study the impact of gross capital formation (GCF) and labour employed on economic growth, following linear regression model has been used:

$GDPR = b_0 + b_1 GCFR + b_2 LEMR + u_i$ ----------(5)

Where GDPR= annual growth rate of GDP, GCFR= annual growth rate of gross capital formation and LEMR= annual growth rate of labour employed (public sector and organised private sector)

GROSS DOMESTIC PRODUCT COMPOSITION

GDP composition implies the contribution of different sectors in the gross domestic product of the country. The contribution of three main sectors viz. Primary (agriculture and allied activities), Secondary (industry sector) and Tertiary (service sector) during post-reform period is shown in table 1. It is evident from the table that Indian economy is clearly on path of development as the contribution of primary sector in GDP has constantly declined, secondary sector's share has been almost constant till 2009-10 followed by a decline and the share of tertiary sector showing a constant growth. During the post-reform period, there has been a drastic change in the GDP composition as primary sector contribution has declined from 28.60% in 1991-92 to 14.01% in 2011-12. The share of secondary sector has almost been constant till 2009-10 (little over 20%) but decreased to 19.22% in 2011-12. The proportion of tertiary sector has continuously increased from 51.13% in 1991-92 to 66.77% in 2011-12. Thus, table 1 shows that composition of India's GDP has greatly changed during the post-reform period where the share of primary sector share has declined and tertiary sector share has increased.

Table 1: Sector-wise Composition of India's Gross Domestic Product (in percent)

Year	Agriculture & Allied Activities	Industry Sector	Service Sector
1991-92	28.60	20.27	51.13
1992-93	28.97	19.85	51.18
1993-94	28.32	20.14	51.54
1994-95	27.87	20.90	51.23
1995-96	25.76	21.97	52.26
1996-97	26.27	21.96	51.78
1997-98	24.49	21.47	54.05
1998-99	24.41	20.83	54.75
1999-00	23.27	20.36	56.37
2000-01	22.31	20.69	57.00
2001-02	22.42	20.03	57.55
2002-03	20.13	20.58	59.28
2003-04	20.32	20.12	59.56
2004-05	19.03	20.22	60.75
2005-06	18.27	20.05	61.67
2006-07	17.37	20.66	61.97
2007-08	16.81	20.65	62.54
2008-09	15.77	20.14	64.10
2009-10	14.70	20.24	65.07
2010-11	14.51	19.95	65.54
2011-12	14.01	19.22	66.77

Source: Calculated from Handbook of Statistics on Indian Economy, RBI, 2011-12

5.1 Industry Sub-Sectors' Contribution to GDP and Aggregate Industry Sector:

Industry sector plays a vital role in the economic development of any region as it provides the infrastructure base. The contribution of industry sub-sectors in India's GDP and aggregate industry sector is shown in table 2. The share of mining & quarrying and electricity, gas & water supply in GDP has declined during the period as the share of mining & quarrying was 3.55% in 1991-92 and it decreased to 2.24% in 2011-12. While the share of electricity, gas & water supply declined from 2.17% in 1991-92 to 1.86% in 2011-12. The share of manufacturing sub-sector in GDP has increased from 14.54% in 1991-92 to 15.84% in 2011-12. Here it is also important to examine the share of different sub-sectors in aggregated industry sector. Table 2 reveals that manufacturing is largest industry sub-sector and contributes 78.90% share in aggregate industry sector in 2011-12 while electricity, gas & water supply contributes the lowest share which is 9.68%, almost same as in 1991-92.

5.2 Service Sub-Sectors' Contribution to GDP:

Service sector contributes the largest share in GDP of India and has sub-divided into four sub-sectors viz. firstly construction, secondly trade, hotel, transport & communication, thirdly financing, insurance, real estate & business and fourthly community, social & personal services as shown in table 3. The table reveals that contribution of first three sub-sectors in GDP has increased from 1991-92 to 2011-12 while the contribution of community, social & personal services has declined from 13.58% in 1991-92 to 13.05% in 2011-12. Among all four sub-sectors, trade, hotel, transport & communication contributes the maximum among all four sub-sectors which has increased from 17.83% in 1991-92 to 27.23% in 2011-12.

Table 2: Contribution of Industry Sub-sectors in GDP & Aggregate Industry Sector in India (in percent)

Year	Mining & Quarrying	Manu-facturing	Electricity, Gas & Water Supply	Mining & Quarrying	Manu-facturing	Electricity, Gas & Water Supply
	Share in GDP			Share in Aggregate Industry Sector		
1991-92	3.55	14.54	2.17	16.92	73.35	9.73
1992-93	3.41	14.24	2.20	17.54	71.76	10.70
1993-94	3.27	14.63	2.24	17.16	71.74	11.10
1994-95	3.36	15.24	2.30	16.23	72.65	11.12
1995-96	3.31	16.38	2.29	16.06	72.92	11.02
1996-97	3.08	16.63	2.24	15.05	74.53	10.42
1997-98	3.24	15.92	2.31	14.05	75.75	10.20
1998-99	3.12	15.39	2.32	15.09	74.16	10.75
1999-00	3.02	15.07	2.27	15.00	73.89	11.11
2000-01	2.97	15.50	2.22	14.85	74.02	11.13
2001-02	2.86	15.02	2.14	14.33	74.93	10.74
2002-03	2.98	15.44	2.16	14.29	75.01	10.70
2003-04	2.84	15.19	2.09	14.50	75.01	10.49
2004-05	2.86	15.25	2.11	14.10	75.51	10.39
2005-06	2.65	15.34	2.06	14.15	75.42	10.43
2006-07	2.60	16.00	2.06	13.21	76.50	10.29
2007-08	2.46	16.14	2.04	12.57	77.47	9.96
2008-09	2.36	15.78	2.00	11.93	78.19	9.87
2009-10	2.31	15.97	1.96	11.71	78.37	9.92
2010-11	2.24	15.84	1.86	11.43	78.90	9.68

Source: Calculated from Handbook of Statistics on Indian Economy, RBI (2011-12)

Table 3: Contribution of Service Sub-sectors in India's GDP (in percent)

Year	Construction	Trade, Hotel, Transport & Communication	Financing, Insurance, Real Estate & Business	Community, Social & Personal Services
1991-92	7.12	17.83	12.60	13.58
1992-93	7.00	17.89	12.62	13.67
1993-94	6.66	18.09	13.28	13.51
1994-95	6.59	18.69	12.96	12.98
1995-96	6.51	19.74	13.04	12.97
1996-97	6.15	19.78	12.84	13.00
1997-98	6.50	20.35	13.73	13.47
1998-99	6.47	20.55	13.88	13.86
1999-00	6.52	21.19	14.02	14.64
2000-01	6.63	21.63	14.05	14.68
2001-02	6.54	22.26	14.27	14.48
2002-03	6.81	23.22	14.79	14.47
2003-04	7.08	23.88	14.48	14.12
2004-05	7.70	24.49	14.71	13.84
2005-06	7.93	25.07	15.13	13.54
2006-07	7.99	25.53	15.74	12.70
2007-08	8.10	25.91	16.12	12.42
2008-09	7.99	26.09	16.92	13.09
2009-10	7.89	26.56	17.08	13.53
2010-11	7.86	27.23	17.40	13.05

Source: Calculated from Handbook of Statistics on Indian Economy, RBI (2011-12)

5.3 Service Sub-Sectors' Contribution to Aggregate Service Sector:

The contribution of service sub-sectors in aggregate service sector is shown in table 4. The contribution of construction and community, social & personal services sub-sectors has declined over the years during post-reform period which was 14.24% in 1991-92 and declined to 12.13% in 2011-12 for construction and 27.00% in 1991-92 and decreased to 20.80% in 2011-12 for community, social & personal services. While contribution of trade, hotel, transport & communication and financing, insurance, real estate & business sub-sectors has increased. The share of trade, hotel, transport & communication increased from 35.55% in 1991-92 to 40.82% in 2011-12 while the share of financing, insurance, real estate & business increased from 23.21% in 1991-92 to 26.25% in 2011-12. Thus trade, hotel, transport & communication sub-sectors is the most contributing in aggregate service sector and construction is the least contributing sector.

Table 4: Contribution of Service Sub-sectors in India's Aggregate Service Sector (in percent)

Year	Construction	Trade, Hotel, Transport & Communication	Financing, Insurance, Real Estate & Business	Community, Social & Personal Services
1991-92	14.24	35.55	23.21	27.00
1992-93	13.93	34.86	24.65	26.56
1993-94	13.68	34.95	24.67	26.71
1994-95	12.92	35.11	25.76	26.21
1995-96	12.87	36.49	25.30	25.34

Year	Construction	Trade, Hotel, Transport & Communication	Financing, Insurance, Real Estate & Business	Community, Social & Personal Services
1996-97	12.45	37.77	24.96	24.83
1997-98	11.87	38.21	24.81	25.11
1998-99	12.02	37.66	25.40	24.92
1999-00	11.82	37.53	25.34	25.31
2000-01	11.56	37.60	24.88	25.96
2001-02	11.64	37.95	24.66	25.76
2002-03	11.36	38.68	24.80	25.16
2003-04	11.48	39.17	24.94	24.41
2004-05	11.89	40.10	24.31	23.70
2005-06	12.68	40.31	24.22	22.79
2006-07	12.87	40.64	24.54	21.95
2007-08	12.89	41.20	25.40	20.50
2008-09	12.95	41.42	25.77	19.86
2009-10	12.47	40.71	26.40	20.43
2010-11	12.13	40.82	26.25	20.80

Source: Calculated from Handbook of Statistics on Indian Economy, RBI (2011-12)

SECTOR-WISE GROWTH TRENDS

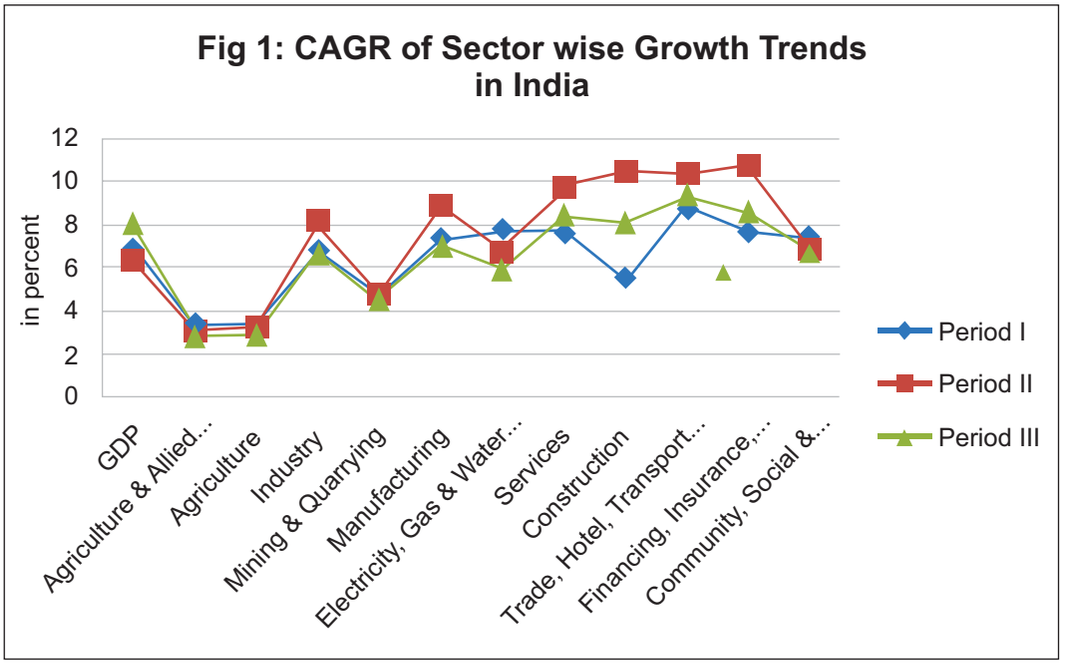
Since 1991, a series of economic reforms such as liberalization, privatization, globalization, de-licensing, tax reforms, tariff reduction etc., have been introduced in Indian economy. They have positive impacts on economic growth. Phenomenal economic growth has been registered during last two decades. To analyse sector-wise growth trends compound average growth rate (CAGR) and average annual growth rate (AAGR) has been calculated for three period viz. Period I (1991-92 to 2000-01), Period II (2001-02 to 2010-11) and Period III (1991-92 to 2010-11 as shown in table 5.

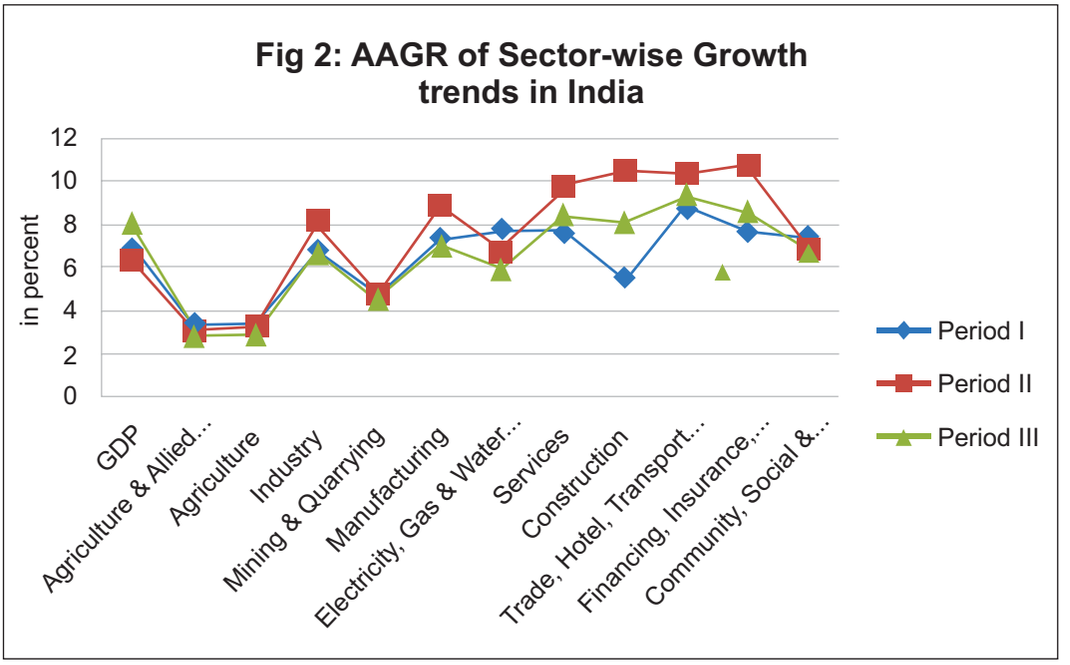
CAGR of GDP was 6.9%, 6.4% and 8.1% for period I, period II and period III respectively while AAGR of GDP was 6.69%, 5.75% and 7.64% for the above three periods respectively. These growth rates show that for the entire economy, growth rate was higher in the first decade after economic reforms than second decade. CAGR of agriculture & allied activities has decreased from period I (3.3%) to period II (3.1%) while it is 2.8% in period III. Industry and service sectors have registered increase in CAGR from period I to period II. Industry sector registered a CAGR of 6.8% in period I, 8.1% in period II and it is 6.7% in period III. Service sector registered a CAGR of 7.7% in period I, 9.7% in period II and 8.4% in period III. This shows that agriculture and allied activities sector's CAGR has been less than that of GDP while service sector's CAGR has been more in all three periods whereas industry sector's CAGR has been less than that of GDP in period I & III and more in period III. The same results have also been given by AAGR.

Table 5: Sector-wise Growth Trends in Indian Economy (in percent)

Sectors	Period I		Period II		Period III	
	CAGR	AAGR	CAGR	AAGR	CAGR	AAGR
GDP	6.9	6.69	6.4	5.73	8.1	7.64
Agriculture & Allied Activities	3.3	2.84	3.1	3.19	2.8	3.01
Agriculture	3.3	2.80	3.3	3.35	2.9	3.07
Industry	6.8	5.81	8.1	7.27	6.7	6.54
Mining & Quarrying	4.6	4.05	4.7	4.68	4.5	4.37
Manufacturing	7.3	6.09	8.9	7.91	7.2	7.0
Electricity, Gas& Water Supply	7.8	6.81	6.7	5.77	5.9	6.29
Services	7.7	7.18	9.7	9.15	8.4	8.17
Construction	5.5	5.06	10.5	9.53	8.1	7.3
Trade, Hotel,Transport & Communication	8.9	7.9	10.4	10.14	9.4	9.02
Financing, Insurance,Real Estate & Business	7.7	7.85	10.8	9.98	8.6	8.91
Community, Social& Personal Services	7.4	6.71	6.8	6.41	6.8	6.56

Source: Calculated from Handbook of Statistics on Indian Economy, RBI (2011-12)





As far as sub-sectors' growth rates are concerned, electricity, gas & water supply and community, social & personal services are only sub-sector where growth rates have decreased from first decade after economic reforms to second decade. In period I and III Trade, Hotel, Transport & Communication sub-sector registered highest growth rate i.e. CAGR (8.9%) and AAGR (7.9%) in period I and CAGR (9.4%) and AAGR (9.02%) in period III. In period II, Financing, Insurance, Real Estate & Business sub-sector registered the highest CAGR (10.8%) while Trade, Hotel, Transport & Communication registered the highest AAGR (10.14%). Agriculture growth has, however, been the lowest in all three periods.

CAPITAL FORMATION AND LABOUR FORCE (EMPLOYMENT)

Capital formation and employment are two main driving forces behind economic growth of any region and economic reforms of 1991 in India have induced a high amount of investment and led to gross capital formation and employment at faster rate.

Table 6: Capital Formation and Employment in India

Year	Gross Capital Formation At Constant Price(in Rs. billion) Base 2004-05=100	Employment in Public Sector	Employment in Organised Private Sector	Total Employment
		In million		
1991-92	3630.28	19.21	7.85	27.06
1992-93	3268.03	19.33	7.85	27.18
1993-94	3764.93	19.45	7.93	27.38
1994-95	3510.32	19.47	8.06	27.53
1995-96	4099.39	19.43	8.51	27.94
1996-97	4858.71	19.56	8.69	28.25
1997-98	4428	19.42	8.75	28.17
1998-99	5236.35	19.41	8.7	28.11
1999-00	5506.91	19.31	8.65	27.96
2000-01	6716.71	19.14	8.65	27.79
2001-02	6262.07	18.77	8.43	27.2
2002-03	6950.12	18.58	8.42	27
2003-04	7148.9	18.2	8.25	26.45
2004-05	7987.15	18.01	8.45	26.46
2005-06	10522.32	18.19	8.77	26.96
2006-07	12237.17	18	9.24	27.24
2007-08	14107.54	17.67	9.88	27.55
2008-09	16534.38	17.8	10.38	28.18
2009-10	16262.2	17.86	10.85	28.71
2010-11	18146.41	NA	NA	NA
CAGR (%)	**10.4**	**-0.6**	**1.3**	**0.0**
AAGR (%)	**9.53**	**-0.34**	**1.86**	**0.38**

Source: Calculated from Handbook of Statistics on Indian Economy, RBI (2011-12)

It is evident from table 6 that GCF increased to Rs. 18146.41 billion in 2010-11 which was Rs. 3630.28 billion in 1991-92. It increased at an annual CAGR of 10.4% and AAGR of 9.53%. Labour employed in public sector has decreased from 19.21 million in 1991-92 to 17.86 million in 2009-10 with an annual CAGR of negative 0.6% and at AAGR of negative 0.34%. Employment in organised private sector has increased from 7.85 million in 1991-92 to 10.85 million in 2009-10 with an annual CAGR of 1.3% and at AAGR of 1.86%. Total employment has increased from 27.06 million in 1991-92 to 28.71 million in 2009-10.

Table 7: GDP Growth-Gross Capital Formation (GCF) & Labour Employed Growth: Regression Statistics during Post-Reform Period in India

Dependent Variable: GDPR
Independent Variables: GCFR & LEMR

Variables	Coefficients	Standard Error	t-Statistics
Intercept	5.516*	0.567	9.730
GCFR	0.91*	0.037	2.492
LEMR	0.568	0.346	1.641
R Square	0.336	**Observations**	19
Adjusted R Square	0.253	**Standard Error**	1.8144
D-W Statistics	1.965	**F-Statistics**	4.043*

**Significant at 1% level.*

Impact of GCF and labour employed growth rate on GDP growth rate in India during the period from 1991-92 to 2009-10 has been analysed using multiple regression analysis shown in eq. 11 and results have been shown in table 7. It is evident from the table 7 that growth rate of GCF significantly affect the GDP growth rate and 1% increase in GCF growth rate leads to 0.91% increased in GDP growth rate while labour employed does not significant affect GDP growth rate during the period of study.

ONCLUSION

The problem of underdeveloped and developing countries is that either their resources are unknown to them or they are underutilized, though they have rich natural resources; while most of the developed countries already know their resources and have developed them to a considerable extent. Looking at this problem of underdeveloped and developing countries, economic development is a long process and requires joint working effort of Govt., market forces, and factors of production. These countries require increase in productivity and efficiency of their factors of production to increase production of goods and services which positively correlate the welfare of masses in general. Economic reforms in India have successfully led to the better utilization of natural resources of the nation.

This paper has examined the GDP composition, sector-wise growth trends and impact of gross capital formation and labour employed on economic growth after the introduction of economic reforms in 1991 in India. It has been found that service sector has been the driving factor to the total output and there has been a considerable decline in the share of agriculture and allied activities while share of industry sector has remained almost constant. This change in the composition of GDP shows that India's pattern of growth is in line with the growth model followed hitherto by other developed countries. Economic reforms have also affected the growth rate of different sectors in Indian economy. Growth rate of trade, hotel, transport & communication sub-sector has been highest. It shows that after globalization this sub-sector has rapidly grown and Govt. policies of trade and telecom have been successful. Economic reforms have positively affected capital formation and it has been found through regression analysis applied that GCF growth rate has significantly affected economic growth in India (table 7). Employment figures (table 6) clearly show that privatization policy has led to increase in organised private sector employment while employment in public sector has declined. Thus economic reforms have translated to a positive curve of economic growth in India and this model of growth should continue to be followed. Regression analysis establishes that there is a positive correlation between the rate of capital formation and rate of economic growth.

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An Empirical Study on

The Factors Influencing Faculty Intention to Stay at Management Institutions

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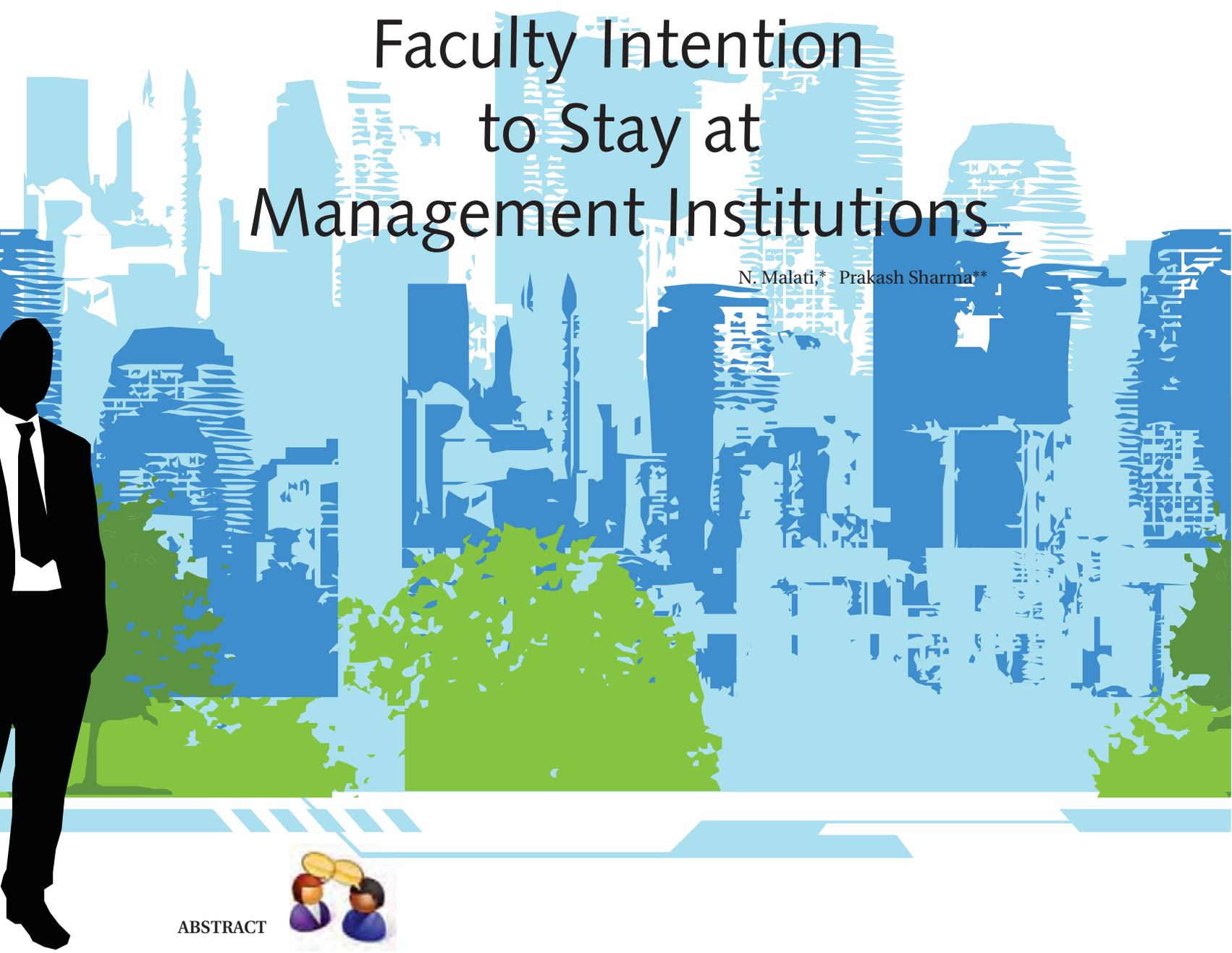

ABSTRACT

Education sector in the 21st century has seen sweeping changes, through the governmental policies. There has been a spurt in the educational institutions, leading to a challenge in attracting and retaining the faculty. Faculty satisfaction leads to quality improvement and reduced costs. Intention to stay indicates the extent of employee's commitment to his organization and the willingness to remain employed. The study aims to comprehend the faculty intention to stay in autonomous PGDBM institutions with respect to four factors- work environment, training and development, compensation and role of HOD. The paper reveals that all the four factors have a positive role in the intention to stay of the faculty with compensation being rated as the most important parameter affecting the faculty's intention to stay.

Keywords: *Work Environment, Compensation, Training & Development, Role of HOD, Institutions, Intention to stay.*

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INTRODUCTION

Employee satisfaction is used to describe whether employees are happy, contented and fulfilling their desires and needs at work. Many measures purport that employee satisfaction is a factor for employee motivation, goal achievement, and morale at workplace. Locke (1976) defined job satisfaction as an enjoyable and positive emotional state that is a result of ones job experience's evaluation. Locke and Lathen (1990) defined job satisfaction as the employees' perception regarding extent to which their job provides those things that are considered crucial by them. Kalleberg (1977) defines job satisfaction as an outcome of four variables i.e. works itself, work conditions, financial benefits, and growth opportunity. Employee satisfaction is also a prerequisite for staff retention. Organizations with higher staff retention rates are naturally better at retaining knowledge, leading to better performance and profit for the business. Improved employee satisfaction reduces the cost of staff turnover, builds brand loyalty with staff and positions the organization as an employer of choice that attracts talented people to the organization.

Human Relations perspective supposes that satisfied workers are productive workers (Likert, 1961; McGregor, 1960). Organizational productivity and efficiency is achieved through employee satisfaction and attention to employees' physical as well as socio– emotional needs. Human relation researchers further argue that employee satisfaction sentiments are best achieved through, maintaining a positive social organizational environment, providing autonomy, participation, and mutual trust (Likert, 1961). Employee satisfaction is also believed to influence the patterns of interaction within organizations. The existing literature supports to the fact that the satisfaction level of employees (as a whole) may relate to performance at the business-unit and/or organizational levels. The benefits of employee satisfaction are manifold and their absence results in employee turnover causing financial loss and loss of institutional memory (Shaw, Gupta & Delery, 2005). Hence it is desirable for the organizations to comprehend the factors which aid the faculty's intention to stay to reduce the costs associated with turnover.

Employee turnover intention is the behaviour intention that comes before the actual turnover. Firth, Mellor, Moore and Loquet (2004) posit employee turnover intention as the behaviour depicted by an individual who may be thinking about quitting a job. Based on this notion an individual who nurtures the thought of quitting his present profession is more likely to do so if the right condition exists, or if adverse conditions that support the thought of intent persists (Ajzen & Fishbein, 1980).

Intention to stay indicates the extent of employee's commitment to his organization and the willingness to remain employed (Hewitt, 2004). It is also stated to as the propensity to leave, intent to quit, intent to stay; depending on behavioral commitment and attachment (Halaby, 1986; Mueller, Iverson, & Price, 1999). Several studies have revealed that this concept whether it is called 'intent to stay' or 'propensity to leave', it is clearly the most important determinant of turnover (Tett & Meyer, 1993; Igharia & Greenhaus, 1992). Dalessio, Silverman and Shuck (1986) have emphasized that higher concern should be given on intention to stay rather than turnover, as whenever an employee exits, an organization has to incur the cost of recruiting and maintaining a new employee.

Technical education in India contributes a major share to the overall education system and plays a vital role in the social and economic development of our nation. In India, technical education is imparted at various levels such as: craftsmanship, diploma, and degree, post-graduate and research in specialized fields, catering to various aspects of technological development and economic progress.

The technical education sector has been growing at a stupendous rate in recent times. The number of institutes and universities are also increasing. With the increase comes the need to have resources, in the form of finances, infrastructure, qualified and competent faculty. Though the former resources of finances and infrastructure can be arranged by the management, but the later resource of attracting the faculty and retaining talent becomes a problem as the increased faculty turnover is largely due to dissatisfaction on various parameters in the current institutions and availability of better opportunities at other places. The faculty crunch is the highest with more than 50% of the requirement needs still to be met with. Hence it becomes imperative to understand that bricks and mortar alone do not make grand institutions, but faculty and facilities make. Institutions understand that the intention to stay of the faculty is dependent on their satisfaction. This study intends to analyze the level of faculty satisfaction and their intention to stay in the institutions in select AICTE approved PGDM institutions in the NCR region.

ELEVANCE OF THE STUDY

Most of the research on job satisfaction is related to the business organization in various sectors. The current study aims at identifying the major factors which influence the faculty's intention to stay at PGDM institutions.

1. Cope with faculty deficiency: Management institutes face several challenges and faculty crisis is critical. The current and predicted shortages of competent faculty members can move from a situation of “distress ‟ to “disaster ‟ in coming decades. Faculty satisfaction improves faculty retention rate and arrests attrition rate.

2. Maintain Quality of education: Competent faculty is the key for quality education. Maintenance of quality requires continuous training and commitment on part of the faculty members. A satisfied faculty will take initiative and keen interest towards training programs in true sense.

3. Organizational commitment: Higher job satisfaction provides the existing faculty members a reason to stay in the institute and stay committed.

4. Image building of the institute: Satisfaction and retention of qualified faculty is an important factor in maintaining the identity and improve its reputation in the market. This helps the institution in attracting quality students.

This study uses intention to stay as the central issue to be researched due to several reasons: The use of existing data did

not always provide the reasons why employees left their employers. Distinction between voluntary or involuntary terminations not found due to employee departure. (Thompson & Terpening, 1983). The study using intent to stay can collect the information more easily as the employees are still associated with the organization. (Thompson & Terpening, 1983). The benefit that an organization receives is opportunity to arrest the exit of its work force. Hence it is felt that intention to stay is accepted as the single best predictor of turnover, and there are efforts being made to understand the association it has with other variables (Igharia & Greenhaus, 1992).

ITERATURE REVIEW

Zhou & Volkwein, (2004) states that excellence in higher education is a function of the kind of people it is able to attract and retain on its facilities. Dalessio, Silverman and Shuck (1986) have emphasized that more concern should be given on intention to stay rather than turnover, as employee exit, results in the organization incurring a cost in the form of recruitment and maintenance of another employee. Saari. L. M and Judge. T.A, (2004) identified three major gaps between HR practice and the scientific research in the area of employee attitudes in general and the employee attitude in particular—job satisfaction. Study conducted by Tella. A (2007) reveals that a correlation exists between perceived motivation, job satisfaction, and commitment, although correlation between motivation and commitment was found to be negative. Brown and Shepherd, (1997) reported that motivation improves workers' performance and job satisfaction. Chess (1994), reported that certain motivational factors contribute to the prediction of job satisfaction. Tang and LiPing (1999) reported that a relationship exists between job satisfaction and organizational commitment. Stokes, Riger, and Sullivan's (1995) reported that perceived motivation relates to job satisfaction, commitment, and even intention to stay with the firm. According to Mueller & Price, (1990); Bluedorn, (1982); Halaby & Weakliem, (1989) Hom & Griffeth, (1995); in addition to individual and personal characteristics of employees, overall conditions of places of work significantly affect the attachment of employees to the organization. The internal customer satisfaction would always be a precondition to customer orientation and satisfaction of the external customer (Shaney, Banwet & Karunes, 2008).

Camilli K.A (2004) found that years of teaching experience was not a significant predictor of teacher job satisfaction and burnout. Ostroff (1992), studying a sample of 364 schools, found that aggregated teacher attitudes such as job satisfaction and organizational commitment were concurrently related to school performance. The institutions comprise of both internal and external parties- the internal ones being faculty, administrative staff and the management whilst the external ones being the students and industry. Kusku (2003) also proposed the direct link between employees' satisfaction and quality of higher education. Luthans (1998) mentions work itself, pay, supervision, co-workers, and promotion as factors affecting job satisfaction. Rosenholtz and Simpson (1990) further found that teachers' commitment to the workplace which can be measured by their disaffection, absenteeism, and defection, is highly correlated to turnover. Hensel (1991) emphasized that the well-being of a university depends on its ability to recruit and retain talented faculty. The welfare of the country depends on its ability to develop a happy knowledge oriented and productive future generations. Bowen and Schuster (1986) opined that excellence in higher education is a function of the kind of people it is able to enlist and retain on its faculties. Ingersoll (2001) argued that teacher attrition negatively affects school community and school improvement efforts.

The studies undertaken by Barnes, Agago, & Coombs (1998); Johnsrud & Rosser (2002) Manger & Eikeland, (1990), Rosser (2004), Smart (1990), Zhou & Volkwein, (2004) have examined why faculty members leave or intend to leave their institutions. Intention to leave refers to the likelihood extent to which an employee would terminate his or her association in an organization while intention to stay refers to the extent to which an employee plans to continue membership with his or her employer (Kirn, Price, Mueller, & Watson, 1996).

According to Black and Stevens (1989) intention to stay was significantly negatively correlated with turnover. Since intention to stay is referred to as employees' willingness to stay with an organization, it consistently demonstrated a stronger relationship with turnover than did other turnover precursors (Tett & Meyer, 1993). Empirical researches have demonstrated that organizational variables, personal variables, work variables and environmental variables serve as the predictors of turnover intention (e.g., Douglas & Martinko, 2001; Fox, Spector & Miles, 2001). However, these studies have only been undertaken by Western scholars. According to Ahmad, T & Riaz, A (2011) in recent years, issues on turnover intention has also attracted few Asian scholars.

A study undertaken on "Teaching Loads and Compensation for Lecturers", College of Liberal Arts and Sciences (LAS), Iowa State University (ISU), 1 January 2010 also reveals the fact that

(i) Compensation is the most influential factor that results in Faculty Satisfaction and their intention to stay with the institute.

(ii) Both personal and professional factors affect the faculty's intention to stay in the current institute of work.

The Emerging Directions in Global Education (EDGE) survey report 2009, on "Faculty Recruitment and Retention-The Issues and Challenges" highlights on the challenges involving faculty recruitment and retention in India. The survey reports that average attrition rate in academic institute are about 25 percent per annum. Compensation along with other employee benefits were the two major professional reasons for the faculty to leave the institute.

The need to undertake the current study was felt by the author because institutions need to be proactive and understand the reasons affecting the faculty stay at an institution and also work upon them further to attract more competent people and also have a better committed workforce. The current study aims at identifying the various factors which affect the intention of the faculty to stay in an autonomous institute.

BJECTIVES

- To identify and analyze the factors affecting the intention of the faculty to stay in the institution.
- To identify the most important factor affecting the faculty intention to stay.

YPOTHESIS

H_1: Work environment of the organization has a positive effect on intentions to stay of faculty in PGDBM institutions.

H_2: Compensation given in the organization has a positive effect on intentions to stay of faculty in PGDBM institutions.

H_3: Training and development of employee has a positive effect on intentions to stay of faculty in PGDBM institutions.

H_4: Role of HOD has a positive effect on intentions to stay of faculty in PGDBM institutions.

ESEARCH DESIGN

A structured questionnaire was designed to collect the data. Different factors were identified through literature review and exploratory study. Five main factors were selected as constructs for the survey, they are: work environment (supportive colleagues, comfortable place, adequate safety, emotionally attached, and flexible timing offered), compensation(Satisfactory salary package, competitive salary package, timely payments of salary, adequate information provided pay issues, provide non-monetary incentives, and offer monetary incentives), training and development (Job specific training, professional development opportunity, money allocated for training, provides opportunity to apply training, and latest pedagogical tools), role of HOD (Public appreciation offered, appropriate evaluation of performance, provide productive feedback, reward good ideas, personal problems deal with empathy, and timely redressal of problem) and intention to stay on two dimensions: intention to leave and intention to remain with the organization. The four independent factors which affect the dependent variable intention to stay are identified as follows:

Work Environment

According to Buckley, Schneider, & Yi, (2004) the effect of dissatisfaction with facilities offered were found to have a larger effect than that of dissatisfaction with pay. Imazeki, (2005) found that increased spending on instructional needs was associated with lower odds of attrition. Zuber (2001) revealed that employees are more likely to stay when there is a predictable work environment and vice versa. According to Johnson & Birkeland, (2003); Johnson, (1990) teachers state that poor working conditions related to safety, facilities, supplies, class size and opportunities for professional development to be the primary reasons for leaving or moving while pay was considered to be secondary. Hence five factors - comfortable place, adequate safety, emotionally attached, supportive colleagues and flexible timing offered were identified for the current study under the category work environment.

Compensation

Podgursky et al., (2004) Hanushek et al., (2004) examined the relationship between pay and retention and found a constant association between higher teacher salaries and lower rates of attrition. While Orpen and Bonnici (1987) conducted a research on faculty members of five Australian universities and found that pay benefits, pay raises, pay levels and pay structures are closely related to faculty job satisfaction. Further it was stated that four components of a salary structure, job related components, payment related factors, personal or special allowances, and fringe benefits should be taken in to account in studying salaries as an effective motivator for employees' performance. Hence sub-factors which were taken into consideration under category compensation were: satisfactory salary package, competitive salary package, timely payments of salary, adequate information provided regarding pay issues, provide non-monetary incentives, and offer monetary incentives.

Training and Development (T&D)

Hay (1999) argues that lack of training and development for employees' skills was the largest determining factor of turnover in organisations. Samuel & Chipunza (2009) state that there exists a strong evidence of association between training & development and employee retention. Hequet (1993) reveals a negative correlation between training and turnover in a number of companies. Bradley, Petrescu and Simmons (2004) explain that creating on-going learning as well as training at workplace had a highly significant effect on job satisfaction. Ballot, Fakhfakh and Taymaz (2006) have identified the impact of training on productivity in addition to employees and employers sharing the benefits from training. Hence the constructs that were taken under T&D were: Job specific training, professional development opportunity, money allocated for training, provides opportunity to apply training, and latest pedagogical tools.

Role of Head of the Department (HOD)

The HOD plays the role of leader for the respective department. Syptak et al. (1999) suggested that the attitude and the quality of supervisor influenced the satisfaction of the workers. Salmon et.al. (1999) stated that pay and relationship with the supervisor were significantly higher reasons to leave. Carrel et al. (1992) suggested that organizations could implement programmes regarding employee grievance procedure to enhance the job satisfaction and thus reduce the intention turnover. Thobega (2007) revealed that the supervision provided, positively correlated with job satisfaction. The sub- factors which comprised of the Role of HOD were: Public appreciation offered appropriate evaluation of performance, provide productive feedback, reward good ideas, personal problems dealt with empathy, and timely redressal of problem.

Validity of the questionnaire was checked through face validity method and was found to be high. Items were rated on likert

scale of five points which is the most popular choice for ordinal scale; the opinion indicated as 'strongly agree' has been assigned a weight of 5. To evaluate most of the factors a total (summated) score was calculated for each respondent by summing across items. The final questionnaire consisted of 24 items under the five categories of which Work Environment, Compensation, Training and Development and Role of the HOD comprised of only positive statements with the assumption that higher the selected number, greater will be the level of agreeability on the above stated parameter(s). The fifth parameter being Intention to stay which was measured on two dimensions: intention to leave and intention to stay with the organization. Intention to stay was measured by reverse coding items of intention to leave where respondents indicated their degree of agreement on a 5-point scale ranging from (5) "strongly disagree" to (1) "strongly agree" (reverse-coded), while the items measuring intention to stay were normally coded. The relationship between the four factors and the Intention to Stay of the faculty in the organizations was measured. The final questionnaire was pre-tested on 25 faculty members followed by a reliability test using SPSS17.0. Cronbach's alpha is used as a measure of internal consistency of a psychometric instrument. Cronbach's A for Work Environment, Compensation, Training and Development, Role of the HOD and Intention to Stay are 0.641(for 5 items), 0.751(for 6 items), 0.633(for 5 items), 0.895(for 6 items) and 0.694(for 2 items).

AMPLING AND DATA COLLECTION

For the purpose of the research, a sample of 120 questionnaires was administered to the faculty members in the institutes offering PGDM. The response rate turned out to be 85% i.e. 102 questionnaires were received after duly being filled.

STATISTICAL TOOLS

Shapiro-Wilk and Kolmogorov-Smirnova test of normality was employed for "Intention to Stay" and their values are .248 and .200 indicating the normality of the data. Further, we choose to use Categorical regression which is a method for regression with (unordered or ordered) categorical variables using optimal scaling to analyze the data. Categorical regression converts nominal and ordinal variables to interval scales. This conversion is designed to maximize the relationship between each predictor and the dependent variable. The target variable, intention to stay in the institute, is clearly rank ordered. All the predictor variables are also rank ordered variables. For rank ordered variables with a small number of categories, CATREG provides the ordinal scaling level; for variables with a large number of categories the monotonic spline, ordinal scaling level is more suited. With both these scaling levels the transformation is a monotonically non increasing function. The ordinal scaling level results in a step function (degrees of freedom equal to the number of categories that have received different quantified values), while the transformation using monotonic spline scaling shows a smooth curve and is more restrictive if the number of categories is large (degrees of freedom equal to number of interior knots and degree of the spline).

Table 1: Demographic Profile

Category	Gender	Designation	Experience
Male	44		
Female	58		
Lecturer/Asst.Prof		64	
Reader/Asso. Prof		30	
Professor		08	
0-less than 6			14
6-less than 12			64
12 & greater than 12			24
Total	**102**	**102**	**102**

The demographic profile of the respondents indicates that 56.9% of the sample comprises of females while males comprise of 43.1%. In the case of designations 62.74% of the sample holds the designation of Lecturer/Asst. Professors, followed by 29.41%in the category of Readers/Associate Professors and 7.85% comprising of Professors. In the case of total experience it was observed that 62.7% have experience between 6-less than 12 years, followed by 23.5% of the respondents having 12 and greater than 12 years of experience and 13.8% of employees have 0-less than 6 years of experience.

Table 2: Mean & Standard Deviation

Factor(s)		Mean	Std. Deviation	Mean	Std. Deviation
Work Environment	Supportive colleagues	3.65	.688	3.44	.534
	Physically comfortable place to work	3.76	.815		
	Adequate safety provisions	3.63	.824		
	Feel "emotionally" attached	3.82	.767		
	Flexible timing offered	2.35	1.036		
Compensation	Satisfactory salary package	3.57	1.063	3.48	.664

Factor(s)		Mean	Std. Deviation	Mean	Std. Deviation
	Competitive salary package	3.61	1.021		
	Timely payment of Salary	4.51	.612		
	Adequate information provided about pay issues	3.61	.918		
	Provide non-monetary incentives	2.71	1.064		
	Offer monetary incentives	2.88	1.194		
Training & Development	Job specific training given	3.12	.765	3.32	.395
	Professional development opportunities provided	3.49	.612		
	Money is allocated for training	2.94	.676		
	Provide opportunity to apply training at the workplace	3.39	.750		
	Latest pedagogical tools available	3.69	.761		
Opinion About HOD	Public appreciation offered	3.10	.985	3.29	.746
	Appropriate evaluation of performance	3.51	.987		
	Provide productive feedback	3.57	.944		
	Rewards good ideas	2.94	.881		
	Personal problems dealt with empathy	3.53	.880		
	Timely redressal of professional problems	3.12	.840		

- In the case of **work environment** '*emotional attachment*' contributes the most as it has a mean value of 3.82 whereas *'flexible timing offered'* received lowest value with its mean value being 2.35.
- In the **compensation** factor *'timely payment of salary'* has the highestimpact with a mean value of 4.51 whereas *'providing non-monetary incentives'* has been accorded the lowest importance with the mean value being 2.71
- Under the **Training and Development** factor '*Latest pedagogical tools available*' contributes the most, with a mean value of 3.69 whereas *'money is allocated for training'* has been allocated least worth with a mean value of 2.94.
- In the **Opinion about HOD** factor - '*provide productive feedback*' contributes to the most with the mean value being 3.57 whereas *'reward good ideas'* ranks the lowest with mean value being 2.94.

Out of the four factors (Work Environment, Compensation, Training and Development and Opinion about HOD) **compensation** has the highest mean and thus affects the intention to stay the most.

Non-existence of multi co linearity is assessed. The tolerance values Work Environment, Compensation, Training and Development and Role of the HOD are 0.433, 0.238, 0.618 and 0.206, which are quite respectful. The VIF values for Work Environment, Compensation, Training and Development and Role of the HOD are 2.311 4.210, 1.618, 4.861 respectively.

The categorical regression procedure yields an R2 of 0.791, indicating that 79.1% of the variance in the transformed, "Intentions to Stay" in the institute ranking is explained by the regression on the optimally transformed predictors. Using Categorical model, significant model emerged (F 8, 93 =19.918, $p < 0.05$).The significance shows that H1, H2, H3 and H4 are accepted i.e. all the four predictors' have positive effect on Intention to Stay.

Categorical regression standardizes the variables, so only standardized coefficients are reported. The largest coefficient has been observed for Compensation which means that when compensation factor changes by one standard deviation then the dependent variable i.e. intention to stay increases by 0.932 standard deviations provided all the other predictors are kept constant. The variables and their significance are shown below:

Predictor Variables

Work Environment	0.094	0.341
Compensation	0.932	0.000
Training & Development	0.131	0.117
Opinion about HOD	-0.289	0.000

Table 3: Correlation and Tolerance

	Correlations			Importance	Tolerance	
	Zero-order	Partial	Part		After Transformation	Before Transformation
Work Environment	.565	.147	.068	.067	.517	.477
Compensation	.865	.818	.649	1.018	.485	.244
Training and Development	.339	.240	.113	.056	.748	.736
Role of the HOD	.387	-.408	-.204	-.141	.499	.254

The squared partial correlation corresponds to the proportion of the variance explained relative to the residual variance of the response remaining after removing the effects of the other variables It has been observed from the table that **Compensation** has a partial correlation of **.818.** Removing the effects of the other variables, Compensation explains **66.9%** of the variation in the dependent variable i.e. intention to stay. The part correlation of the Compensation factor is 0.649 implying that if we remove the effects of Training & Development, Work Environment and Opinion about HOD from the Compensation, the remaining part of **Compensation** explains **42.1%** the variation in intention to stay.

Pratt's measure of relative importance is highest for Compensation thereby stating that it is the most crucial predictor for the faculty's Intention to stay in the PGDBM institutions

MPLICATION OF THE STUDY

The study tried to identify the extent of importance associated of intention to stay four with factors- work environment, compensation, Training and Development and Role of HOD. The study brought forth that compensation has been rated as the most important factor affecting the faculty's intention to stay. Understanding the relative importance of the factors would aid the institutions in controlling the turnover costs and help them build a better brand image.

CONCLUSION

Education sector has a huge potential in the coming years as the government aims to increase the Gross Enrolment Ratio (GER) in higher education to 21% by the end of the 12th five year plan period from the current 13.5% and Ministry of Human Resource Development has formulated an action plan to achieve this target. Entry of foreign universities apart from the private universities and autonomous institutions would provide a fillip to the sector. Availability of quality and competent faculty will be a major issue. Imparting quality education is hugely dependent on the faculty hence their intention to stay at their current institution becomes pertinent. Previous researches on this subject have identified the major factor resulting in retention to be compensation; in addition the studies also revealed that both personal and professional factors affect the faculty's intention to stay in the current institute of work indicating that work-life balance is focused upon by the faculty.

According to the results of current study, compensation has a strong and significant relationship with intention to stay of the faculty in the institute. The categorical regression analysis, gave the result of 0.932 of beta for Compensation which is the highest in comparison to Work Environment, Training and Development, and Role of the Head of Department. Internal and external parity in the compensation provided along with satisfactory monetary and non-monetary benefits will have a positive effect on their intention to stay.

The study also presented that the overall factors that affect retention of faculty are both professional and personal factors. A high value of around 70% faculty members of the sample chose this criterion over only professional or personal factors.

The next important factor that has proved to be significant is Training and Development. Every individual's growth to a large extent depends on the kind of training that one gets. The difference in the faculty's intention to stay in the institutions is dependent on encouragement and opportunities provided by the institution for their progression to move ahead in their careers.

The factor Work Environment is ranked next followed by Role of HOD. Conducive work environment inclusive of the physical settings and flexibility of time become pertinent for faculty's stay. It is often stated that people do not leave organizations but leave bosses. Empathetic and supportive bosses often aid in employee retention.

It is assumed that institutions can grow from strength to strength when they devise proper programmes for the retention of the faculty through creating provisions for the payment of equitable and competitive compensation along with formulating continuous training and development activities to keep pace with the changes in the sector. The dearth of qualified faculty puts the onus on the organizations to increase faculty's intention to stay, by providing salaries according to norms and also supporting their professional development which would in turn assist the institutions in their progression. The active role of regulatory bodies in ensuring to the adherence of the norms would also result in the institutions providing with competitive salaries, increasing the Intention to Stay, further affecting the quality and performance of the institutions.

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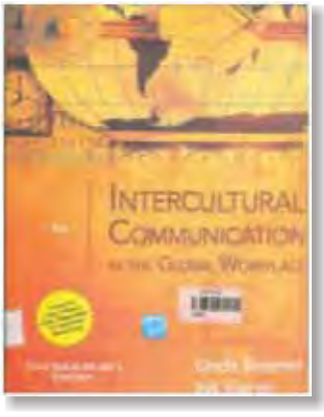

INTERCULTURAL COMMUNICATION IN THE GLOBAL WORK PLACE

Authors:
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Tripti Mishra

Imagination of one earth with borderless countries remains a utopian dream. However globalization has left a huge impact across the globe with people crossing boundaries and working in totally unfamiliar cultural terrains. Organizations with their business spreading across the world have welcomed liberalization and globalization with open arms. Each employee walking into an organization brings a new culture creating a multicultural workforce that has to gel together in order to work in harmony. Few cultures due to their demographic closeness readily accept each other while few other under go frictions. Under this scenario business communication basically tends to be intercultural communication that must be effective in order for the business to flourish.

The book "Intercultural Communication in the Global work place" explains the need and methods of developing effective inter cultural communication business skills. It successfully connects business communication and understanding of business priorities with actual business practices. The book has been divided into three parts each containing 3 to 4 chapters.
In a very logical flow the authors have started with the basic concept of understanding of culture and its impact on business, it then considers its application to a specific communication task and finally moves on to implications intercultural business communication for the firms operating locally or globally.

Chapter 1 is a glimpse of essential elements of business communication. Culture has been defined as a coherent, learned and shared using an agreed upon symbols to rank important and dictate behavior of the society. It captures the essence of the communication and relates culture with communication.

Major issues related to the use of language in intercultural business communication has been tak en in chapter 2.The emphasis is on language barriers, the company's own language, role of interpreter and communication with nonnative speakers. Business letters format from different cultures' are exhibited to emphasize how culture effect the communication.

Third chapter is an attempt to understand different cultures by means of asking questions many of which are spiritual. As spiritual beliefs of a community has definite role in shaping any culture the chapter deals with concepts of dominance of man over nature, life after death etc.

In order to understand others it is imperative that a man analyzes himself first. Chapter four deals with the way people view themselves and how it affect their business interactions. The difference of east and west lies in the basic foundation of understanding oneself as a unit of the group or individual respectively. Ample examples have been given on how businesses of west need to mould their individualistic nature into community form and vice versa. The differences of opinion of different culture on different issues like gender, age etc as the work force has been dealt in detail. The first part of the book offers a deep insight into understanding of culture based business priorities and their effect on business expansion beyond the boundaries.

Next the authors have focused on organization of business messages in different culture. Direct plan is favoured by result oriented cultures like U.S while indirect plan are preferred by relationship oriented cultures like Asian. Chapter 5 discusses the influence of cultural values and language pattern on the organization business messages.

Although nonverbal signals tend to enhance and support languages, they can minimize or even contradict a verbal communication depending upon the culture one is dealing with. Chapter 6 explains various aspects of nonverbal communication and how they can be misinterpreted in a culture different from our own. Difference of opinion on Issues like hospitality, recognition of performance,

assertiveness etc are elaborated in chapter 7 which shows how appropriate social and business behavior is dependent on cultural orientation oif the employee. Business information is culturally defined and it is important that right information be gathered and used at right time in order to achieve business goals.

Chapter 8 examines the Impact of cultural priorities on information gathering, decision making and problem solving.This section is concluded by chapter 9 which explains how to apply the intercultural communication skill to business negotiations.

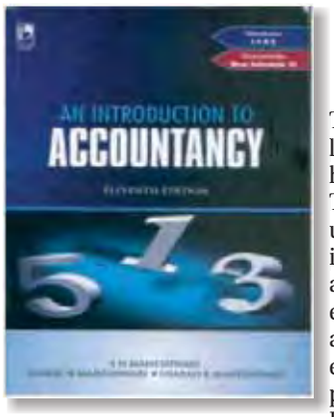
Third part of the book begins with chapter 10 which explores the legal environment and communication implications for international managers. International firms must consider specific legal system. Dispute settlements, legal issues in labor etc need careful consideration of the cultural diversity of the workforce of the organization.

An International firm must deal with a variety of business structures around the world.As companies expand internationally their communication need also expands and becomes much complex than domestic firm's requirement. In international firms intercultural communication experts are required at all the levels of hierarchy of the organization. Chapter 11 covers intercultural business communication practices across the organization and the structure of the international firm.

The book is written with an easy logical flow that has taken into consideration the psychology of the communities too while explaining communication. Authors have made the book all the more interesting by following a story telling narration style with each chapter starting with a real world example of cross cultural business and interesting incidences being sprinkled all across the book under the heading of “In Focus”.

Excellent case studies given at the end are useful for applying all the analysis studied in earlier chapters.
The book offers an insight to researchers working in the field intercultural communication and give important tips to people working on a global platform.

AN INTRODUCTION TO ACCOUNTANCY



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The advancements in the economic and regulatory landscape besides evolution of world as a global hub have given rise to multifarious transactions. The complexity of these transactions has unearthed glitches relating to subjectivity and inconsistency in the application of traditional accounting techniques. The ensuing loopholes are exploited by connoisseurs leading to manipulation and accounting scandals, thus, necessitating the enhancement of competencies of business professionals to safeguard their maneuvers. Extensive knowledge of global developments, internationally recognized business practices and accounting standards is the need of the hour to satiate the demand of the ever-changing marketplace.

The book under review, An Introduction to Accountancy proves to be an important milestone that provides readers, including students and accounting professionals with rudimentary tools essential to cognize and apply different accounting policies in pertinent situations. The authors have catered to the need of keeping oneself abreast by incorporating the latest updates in related legal and regulatory framework at the relevant places.

The book has been divided into FIVE sections which cover different sections of accounting. Section – I, "Accounting Principles and Processes", entails the elucidation of accounting cycle along with some related concepts like depreciation and bank reconciliation statement.

The barebones of accounting including meaning and objectives, branches of accounting and its relationship with other disciplines have been deliberated upon meticulously in the first chapter, Meaning and Scope of Accounting.

The accounting concepts and conventions along with the latest developments in the accounting and legal domains viz. current status of IFRS,the roadmap for its convergence in India and the notification of 35 Ind AS by the Ministry of Corporate Affairs are covered comprehensively in the second chapter, Accounting Principles.It also encapsulates an abridgment of all the Accounting Standards presently in practice.

Realizing the imperative need of the knowledge of the accounting jargon for the end users of accounting information, the authors have consciously dedicated a separate chapter, Basic Accounting Terms, to enable the readers to understand the language of business.

Usually, a discrepancy between account balances arises because of timing differences between data entry in the bank's pass book and in the firm's cash book. Bank reconciliation statement facilitates the identification of causes of these differences and reconciliation thereof, together with verification that both, the records of the company and the records of the financial institution, are in agreement. The readers can learn and practice the preparation of bank reconciliation statement with the help of numerous illustrations in the text and practical problems included at the end of chapter 8: Bank Reconciliation Statement.

The rate of obsolescence of products as well as assets is snowballing at an alarming rate, thanks to the rapid progressions in technology. Also, constant usage causes wear and tear, consequently, diminishing the service potential of capital assets invested in the business venture, making it indispensable to allocate the cost of the asset over its useful life. The methods of depreciation have been detailed upon in chapter thirteen, Depreciation Provisions and Reserves,along withthe provisions of AS-6 (Revised): Depreciation Accounting as issued by ICAI.

Although, double entry system is used by companies to record the financial transactions, still in the interest of simplicity and cost effectiveness, various small, proprietary or partnership concerns make use of single entry system recording only the "bare-essentials", usually the personal accounts and cash book. The authors have covered this system of accounting in Chapter – 14 so as to aid the readers in preparation of final accounts from incomplete records.

The demand for merchandises and services is intensifying with the spiraling spending power of the public, consequently, impelling companies to change the way they operate. It is becoming very challenging to establish a direct link with the ultimate consumers to cater to the needs of the clientele, both existing and potential. The cognitive process of the management aspires to optimize the prevailing edifice at minimum marginal cost and securing growth opportunities with returns over the imminent span and at low risk. The organizations can set up their outlets at different locations, enter into joint ventures with other companies or choose consignment agreements for selling their products in national and international markets. The book lucidly deals with the aforesaid in Section II- "Special Accounting Problems".

Starting a business is still easier than nurturing and making it grow. Opening up branch offices in diverse parts of the native republic as well as other countries helps a company expand its operations. Branches can be independent as well as dependent. The book, in the chapter: Branch Accounts explicates all the four methods of preparing accounts under dependent branches along with the accounting treatment in case of home branch and foreign branch with the help of numerous solved illustrations. The era of virtual merchants is gaining prominence, thus leading to an increasing number of companies retailing robustly in cyberspace or operating without brick and mortar. Selling on consignment is also a good option for such businesses. The authors have discussed the

procedure for maintaining accounting records, both, in the books of the consignor as well as the consignee in the chapter, Consignment Accounts.

Small scale firms, usually, suffer from the problem of dearth of funds. Hire purchase and lease systems prove to be pragmatic routes in such cases. Joint ventures and tacticalcoalitions also maneuver management to secure rapid and lower risk growth. These options have been discussed in detail in separate chapters encasing miniscule intricacies thereof. The second section, under the heading, Inventory Valuation, also deliberates upon the systems and methods of valuation of inventory along with the elucidation of AS – 2 (Revised): Valuation of Inventories.

Strategic partnerships offer small businesses the prospect to propagate their customer base and expand their business operations. The adage that two brains are better than one may also explain the reason for many entrepreneurs and small business owners to go in for partnerships. Section – III – "Partnership Accounts" covers the different concepts and events concerning partnership business in a very simple and lucid way. The methods of valuation of goodwill and accounting treatment of joint life policy have been explicated elaborately.

Reconstitution of partnership firms including admission, retirement, death and amalgamation has been explained intelligibly in consort with the accounting entries and their effect on capital accounts of the partners and the Balance Sheet of the firm. A separate chapter has been dedicated to dissolution of the partnership firm which discusses the modes of dissolution and the accounting treatment of realization of assets and liabilities. Garner v Murray rule in addition to the methods of distribution of the realized proceeds amongst the creditors and the partners have been deliberated upon with the help of several solved hands-on questions and plentiful practical unsolved problems for practice purpose.

Joint stock company, with the basic concepts like formation and allotment along with an in-depth discussion of the allied concepts have been covered meticulously in Section IV: "Company Accounts". Companies often issue shares to raise capital for operational and strategic reasons. The different concepts viz. under and over subscription, stock invest, forfeiture, surrender, buy back, underwriting and redemption as well as accounting treatment thereof have been discussed intricately in the chapter Shares and Share Capital. The next chapter Debentures details the classification of debentures from the point of view of security, redemption, convertibility and transferability. The journal entries with respect to the different terms of issue as well as redemption of debentures have also been delved upon articulately, with the help of numerous illustrations demonstrating all intricate facets.

The preparation of final accounts in accordance with the revised Schedule VI, effective from financial year beginning on or after 1st April, 2011 has been demonstrated with the help of comprehensive problems. Special points to be considered while preparing the statements of a company like dividend, managerial remuneration, bonus issue and depreciation, have been dealt with in detail by the authors along with the latest amendments in their respective rules and guidelines, with the intention of keeping the readers abreast of the recent revisions in the allied legal provisions.

Reconstruction, both, internal as well as external, has been deliberated upon in separate chapters along with a discussion of AS 14: Accounting for Amalgamation. The accounting entries in the books of the vendor company and the purchasing company have been discussed at length with the help of copious illustrations, thus enhancing the understanding and knowledge of the readers.

A smooth operational business calls for immense responsibility. In a company, managers need to know the logistics of every department. Although, the scope of financial statements for the purpose of decision making has widened, but management of the business entails exhaustive information related to cost also so as to equip their executives with the relevant statistics required for planning, scheduling, controlling and decision making. Section V – "Cost and Management Accounting" encompasses discussion on the nature and scope of management accounting in addition to analysis and interpretation of financial statements, funds flow statement and cash flow statement.

Acquaintance with intricacies of accumulation, assessment and manipulation of financial data in addition to good working knowledge about cost behavior to facilitate evaluation, projection and other decisions is imperative for financial analysts. Meticulous analysis and extensive planning can help establish a secure path for the financial success of any business. Considering the said significance, the authors, in chapter Financial Statements: Analysis and Interpretation, have categorized and discussed the different techniques of financial analysis, viz. comparative financial statements, common size financial statements, trend percentages, funds flow analysis, cash flow analysis, CVP analysis and ratio analysis.

Many a times, the emergence of an ironic situation, where negative flows are experienced by firms although profits are reported, makes it imperative for the changes in cash position to be depicted. Also, it is indispensable to assess the ability of a business entity to generate cash so as to use it as and when required. Moreover, it is obligatory to gauge the liquidity and solvency position of a business. In consequence, the preparation of cash flow statement is quite beneficial to management. The same has been discussed in the chapter titled Cash Flow Statement. Numerous exemplars have been used to make the concepts more coherent to the readers. The book concludes with highlights of the new Indian Company Law as passed on 8thAugust, 2013.

The book provides one-point source information with language intelligible enough for novice as well as for experts. The concepts have been explicated by the authors in a coherent manner to cater to the needs of the readers. Throughout the book, copious illustrations along with their detailed workings have been used to enhance the understanding and provide practical knowledge of the subject. The meticulous calculations for the computed numbers have been presented for further clarity to the readers. The learning objectives at the beginning of each of the chapters provide a glance at the subject matter covered under the respective topics. Test questions including objective type and essay type questions in addition to plentiful practical problems expedite ample preparation and provides opportunity for the readers to assess their understanding of the subject. The book will prove to be valuable guide for academicians, business professionals as well as students preparing for their undergraduate courses like B.Com and BBA, post graduate courses like MBA, M.Com and MCA besides Foundation examinations conducted by various professional institutes. The incorporation of all the related amendments along with comprehensive hands-on and theoretical exposure, the book is an indispensable resource for the readers.

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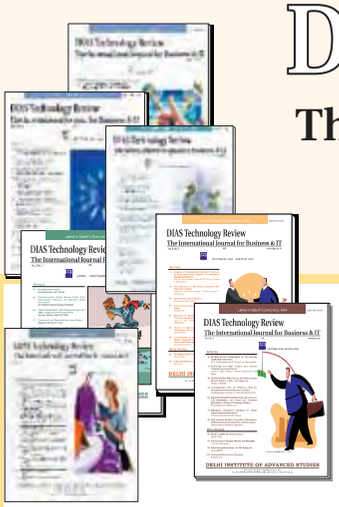

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