ISSN 0974-763X

SOUTH ASIAN JOURNAL OF MANAGEMENT RESEARCH

(SAJMR)

Volume 2 Number 1 January 2010

Contents

Chh. Shahu Institute of Business Education and Research (SIBER)
(An Autonomous Institute)
Kolhapur - 416 004, Maharashtra State, INDIA

SOUTH ASIAN JOURNAL OF MANAGEMENT RESEARCH (SAJMR)

ISSN 0974-763X
(An International Peer Reviewed Research Journal)

Published by
Chh. Shahu Institute of Business Education & Research (SIBER)
University Road, Kolhapur - 416 004, Maharashtra, India
Contact: 91-231-2535706 / 07 Fax: 91-231-2535708 Website: www.siberindia.co.in, Email: sajmr@siberindia.co.in

Editorial Note

Born in a Peasant Family, Dr. A.D. Shinde was known as a visionary educationist. Inspite of being a Chartered Accountant, he spent most of his life as a teacher and administrator. He established Chh. Shahu Institute of Business Education and Research (SIBER) and was the patron of South Asian Journal of Management Research (SAJMR). The Institute imparts Master of Business Administration (MBA), Master of Computer Application (MCA), Master of Social Work (MSW), Master of Environment Management (MEM) and certain Diploma courses. In addition to these the M.Phil in Commerce and Management, Economics, Social Work and Sociology is also being offered. Now Dr. Shinde is not with us.

We can talk many imbibed quality in him. He was a visionary and led a modest life style. He inspired many people and strengthened their lives. He was a role model of many people.

I worked under his guidance for about a quarter century beginning of my earlier carrier till his departure. I found in him the thirst for research. He was also concerned about quality research and the outcome is South Asian Journal of Management Research.

He is also responsible for establishing Vasantraodada Patil Institute of Management Studies and Research, Sangli, College of Non-Conventional Vocational Courses for Women, Kolhapur, Dinkarrao Shinde College of Education, Gadhinglaj and Radhabai Shinde English Medium School, Kolhapur.

He had a clear goal and a vision and was able to manage the complex situation from time to time. He was equally able to influence the followers towards reaching the vision. His ability to articulate his vision towards development of the Institute needs to be remembered the most.

His aura of Charisma, and optimistic view helped him to develop the legend he left before the people. Leaders typically make the difference. We the editorial members, management body, faculties and non-teaching staff salute him. We pray for him. Let his soul rest in peace.

Dr. Babu Thomas
Editor

The Impact of Changes in Macroeconomic Factors on the Indian Stock Returns

Aman Srivastava*[1], Furqan Qamar [2] and Masood Khan[3]
*[1]Jaipuria Institute of Management, Noida, INDIA
E-mail: amansri@hotmail.com
[2]Centre for Management Studies, Jamia Milia Islamia, New Delhi, INDIA
[3]Department of Economics, Jamia Millia Islamia, New Delhi, INDIA

Abstract
A dynamic capital market is an important segment of the financial system of any country as it plays a significant role in mobilizing savings and channeling them for productive purposes. The efficient fund allocation depends on the stock market efficiency in pricing different securities traded in it. The modern financial theory focuses upon systematic factors as sources of risk and contemplates that the long run return on an individual asset must reflect the changes in such factors. An enquiry into such factors through different methodologies suggested in finance literature would help the policy makers and investors, to design their investment strategies meaningfully. There are many different emerging and enduring financial issues in the stock markets in India. However, one important issue is the valuation of stocks. The objective of this paper is to investigate the performance of the Arbitrage Pricing Theory (APT) in the Indian Stock Exchanges for the period of 1997-2008 on monthly basis. The study develops seven prespecified macroeconomic variables. The term structure of the interest rate, the risk premium, the exchange rate, the money supply and the unanticipated inflation are similar to those derived in Chen, Roll and Ross (1986). This study extends the approach of Chen, Roll and Ross, by adding industry specific variables, such as sectoral dividend yield and sectoral unexpected production.

Keywords: Arbitrage pricing theory; Indian stock exchange; Macroeconomic factors

1. Introduction

A dynamic capital market is an important segment of the financial system of any country as it plays a significant role in mobilizing savings and channeling them for productive purposes. The efficient fund allocation depends on the stock market efficiency in pricing the different securities traded in it. The modern financial theory focuses upon systematic factors as sources of risk and contemplates that the long run return on an individual asset must reflect the changes in such factors. An enquiry into such factors through different methodologies suggested in finance literature would help the policy makers and investors, to design their investment strategies meaningfully. There are many different emerging and enduring financial issues in the stock markets in India. However, one important issue is the valuation of stocks. There are various models for valuating stocks in developing countries such as the discounted cash flows model (DCFM), the capital asset pricing model (CAPM), and the arbitrage-pricing model (APM). Limitations of the existing models are based on the concept of market equilibrium and the existence of a perfect market. In many developing countries, there are market imperfections and other market characteristics, which make the existing models unsuitable for developing countries like India. Therefore, there is a need to develop a suitable approach to valuation of stocks on the Stock Exchanges of India.

Both the national and international role of any security market is to provide a facility in which investors and enterprises can come together with confidence to create prosperity through sharing of risks and rewards. The security market helps facilitate the flow of funds from investors to productive enterprises; this eventually stimulates economic growth, creates national wealth, and generates employment and stability within society. An effective security market is therefore a necessary condition for corporate vitality in any national economy. It provides three principal opportunities: trading equities, debt securities, and equity and index derivatives. Additionally, the security market is an important conduit for the overseas flow of equity investments in any nation. Capital markets around the globe have an impact on the performance of national economies. Economic activities are interrelated with capital market movements. Capital markets are very volatile. When the market is bullish, it is generally a sign of a strong economy. On the other hand, a bearish market indicates a week economy. The volatility of security prices has become a real phenomenon. A capital market can crash and shake the whole economy. Whether the market crash is a signal for necessary correction or refers to a downturn in economic activities has been the subject of ongoing research in every country. How are securities being priced? Should the pricing mechanism rely on fundamental, technical or behavioural variables? Although there are a good number of theories and models available to explain some of these problems, shortcomings are still evident. The research here aims to identify and assess factors that contribute to changes in security market prices. This proposed research is an attempt to understand the prevailing theories and empirical approaches adopted to investigate the relationships among the variables, including their dynamic co-movement in the adjustment process to long-term equilibrium in the Indian stock market.

The objective of this paper is to investigate the performance of the Arbitrage Pricing Theory (APT) in Indian Stock Exchanges for the period of 1997-2008 on monthly basis. The study develops seven prespecified macroeconomic variables. The term structure of interest rate, the risk premium, the exchange rate, the money supply and unanticipated inflation are similar to those derived in Chen, Roll and Ross (1986). This study extends the approach of Chen, Roll and Ross, by adding industry specific variables, such as sectoral dividend yield and sectoral unexpected production. The paper proceeds along the following lines. Section II presents the review of literature, section III discusses the data, variables and the research methodology, section IV discusses data analysis and results and section V offers conclusions.

2. Literature Review

Asset prices are believed to react to economic events. Some macroeconomic changes affect asset prices stronger than others do and some do not affect them at all. Then, the theoretical question of "which economic factors have significant effects on the pricing mechanism?" is tried to be resolved by many empirical studies, which employ multifactor models. The APT approach essentially seeks to measure the risk premium attached to various risk factors and attempts to assess whether they are significant and priced into stock market returns. There are quite a few approaches to studying security-pricing behaviour, namely, standard factor analysis, cross-sectional regression analysis, principal component analysis, maximum likelihood analysis, multivariate analysis, and generalized method of moments. In recent years, multi-factor modeling has become a prominent tool for valuation of stocks. Multiple factor models attempt to describe asset returns and their covariance matrix as a function of a limited number of risk attributes. Factor models are thus based on one of the basic tenets of financial theory: no reward without risk. In contrast to the Capital Asset Pricing Model (CAPM) first presented by Sharpe (1964), Linder (1965) and Mossin (1966) that uses the stock beta as the only relevant risk measure, empirical studies – for instance Fama/French (1992) – could not confirm this very restrictive statement. The Arbitrage Pricing Theory presented by Ross (1976) already posited a more general multiple factor structure for the return generating processes. However, it specified neither the nature nor the number of these factors. Starting with the studies of Rossenberg, multiple factor models have been applied early in investment practice, mainly because they allow a differentiated risk-return analysis. The applications of multiple factor models are various and are based on the analysis and prognosis of portfolio risk. Multiple factor models can give valuable insights especially in performance and risk attribution. Chen, Roll and Ross (1986) who considered some significant economic variables to have systematic influence on asset returns implemented one of the most famous APT tests on this subject. These are the spread between long and short-term interest rates, expected and unexpected inflation, industrial production, and the spread between high- and low-grade bonds. Some other empirical studies of the APT are only focused on determining the number of risk factors that systematically explain the stock market returns by implementing Factor Analysis Methods. There are a great number of papers that employ factor analysis methods. For example, Roll and Ross (1980) found that three or four systematic risk factors are statistically adequate to explain the asset returns in the period of 1962-1972, while on the other hand Chen (1983) found five factors in the NYSE and AMEX during 1963-1978. Dhrymesetal (1985) found a changing number of factors depending on the period length and the size of the stock groups under analysis. Although the number of factors can be estimated in these kinds of analysis, the identification of priced factors is impossible. However, in the analysis which employs macroeconomic factors, additional information can be obtained by analyzing the links between asset returns and macroeconomic events. A research by Özcam (1997) can be considered an example of APT testing in Istanbul Stock Exchange. In this research, seven macroeconomic variables of Turkish economy are separated into expected and unexpected series by a regression process, and then two-step testing methodology is implemented on these series. A sample population of 54 stocks for the period of 01/1989-07/1995 is used. As a result, beta coefficients of expected factors are found significant for asset returns. Altay (2001) is another example of two different APT tests in Istanbul Stock Exchange. In the first test, factor analysis method is employed in daily returns of 121 to 265 stocks in the 1993-2000 period for each year and one dominant significant factor is found among several minor significant factors for each year. The second test employs multivariable regression process in order to examine the significance of macroeconomic variables on asset returns. As a result, only expected Treasury bill interest rate beta is found significant for explaining asset returns. All these above stated studies employ factor analysis methods in order to derive basic common factors from stock returns or utilize regression processes to test the significance of macroeconomic variables and their betas on asset returns. In this research, it is proposed to use a method for conceptualizing the effect of macroeconomic factors on asset prices in both markets, which has a similar idea with Cheng (1995). Cheng implemented factor analysis on both asset returns and macroeconomic variables in order to derive priced security factors and macroeconomic factors, and then compared these two categories of factors with a canonical correlation analysis in order to reach a statistically significant relation. This kind of analysis eliminates the problems of the multicolinearity and the sensitivity of the estimation results to the number of independent variables, in pricing model of classical multivariate regression testing techniques of APT. In Indian context, Naka, Atsuyuki, Mukherjee, Tarun K. Tufte, David R. (1998) analyzed relationships among selected macroeconomic variables and the Indian stock market. By employing a vector error correction model, they found that three long-term equilibrium relationships exist among these variables. Their results suggested that domestic inflation is the most severe deterrent to Indian stock market performance, and domestic output growth is its predominant driving force. For the Indian Economy, work in this area has not progressed much. Abhay Pethe and Ajit Karnik (2000) have examined the inter – relationships between stock prices and important macroeconomic variables, viz., exchange rate of rupee vis - a -vis the dollar, prime lending rate, narrow money supply, and index of industrial production. The study, of course, reported that in the absence of cointegration it is not legitimate to test for causality between a pair of variables and it does so in view of the significance attached to the relation between the state of the economy and stock markets. The study reports weak causality running from industrial production index to share price index (NIFTY and Nifty) but not the other way round. In other words, it holds the view that the state of economy affects stock prices. Chakradhara Panda and B. Kamaiah (2001) investigated the causal relations and dynamic interactions among monetary policy, expected wholesale price index, real activity and stock returns in the post liberalization period, using a vector –autoregression (VAR) approach. In another study, Mukhopadhyay and Sarkar (2002) conducted a systematic analysis of the Indian stock market returns prior to and after market liberalization and the influence of macroeconomic factors on returns.

3. Data and methodology

The first step in testing the multi-factor CAPM using macro economic variables is to construct independent factors from various key macro-economic variables. The present study has considered all major economic variables for which the data is available through CMIE's Economic Intelligence service. Major categories of variables considered are those representing the product, money and capital markets, external trade as well as the global stock markets. The tentative list of all proposed macro economic variables used in this study is given in Table I. The study has considered the recent period of economic activity starting from January 1997 to December 2008 to examine the more recent trends in the asset-pricing activity in India. S&P CNX Nifty is considered as the Market Proxy. To address the objective of this research, 16 initial *a priori* variables were considered. The data on wholesale price index (WPI), consumer price index (CPI), the industrial production index (IPI), money supply (M3), imports and exports to derive net exports (NX), Net foreign institutional investment (NFII), foreign exchange reserve of government, foreign exchange rate of Indian rupee against the US dollar, yield on 91-days treasury bills, average monthly call money rates, interest rate on 10 year government bond, average monthly prices of gold and International crude oil prices (ICOP) were collected for the study. The net export (NX) figures were derived from the imports and exports of all goods and services of India during the period under study as (NET EXPORTS = EXPORTS – IMPORTS). Finally, six factors including SENSEX were extracted from 16 initial *a priori* variables. Variables the study used are the *SENSEX, the Industrial Production Index (IPI), Inflation (Consumer Price Index), Money supply (M3),*

Table 1: Description of variables used in research

Variable	Definition
S&P CNX Nifty	Share price index of National stock Exchange (NSE) of India
Industrial Production index	The industrial production index of all commodities of India
Consumer Price index	The Price index based o consumer prices
Interest Rate	Annualized Yield on 91 Days Indian Treasury Bills
Foreign Exchange Rate	The exchange rate of Indian rupee with US dollar
Money Supply	Broad money supply M3

Interest Rate (Annualized yield of 91 days Indian Treasury bills) and foreign exchange rate (exchange rate of Indian rupee against the US dollar). All data sets were extracted from the database of Reserve Bank of India (RBI). Similar sets of variables have been used by Chen, et. al. (1986), Darrel and Mukherjee (1987), Hamao (1988), Brown and Otsuki (1988), Darrat (1990), Lee (1992), and Mukherjee and Naka (1995). All variables are transformed into natural logs. Logged values of the SENSEX, industrial production, inflation (CPI), exchange rate of Indian rupee against US dollar and interest rate are denoted as *LNSENSEX, LNINDPROD, LNCPI, LNM3, LNINT and LNEXRATE.*

This study employed the Johansen multivariate cointegration test and vector error correction mechanism (VECM) to determine whether selected macroeconomic variables are cointegrated (hence possibly causally related) with share prices in the Indian stock exchange. Furthermore, the vector error correction mechanism is used to examine the dynamic relations between stock indices and various macroeconomic variables. The Augmented Dickey-Fuller (ADF) and Philips-Perron (PP) approaches are used to pre-test the order of integration for all time series variables. The lag length for the time series analysis is determined by choosing the lag length given by the minimum Akaike Information Criteria and Schwarz Information Criteria. Lagrange Multiplier tests are run to ensure that the residuals from the chosen lag length are serially uncorrelated.

3.1. Unit root tests

For cointegration analysis, it is important to check whether all the time series variables are nonstationary with unit root $I(1)$ and stationary with unit root $I(0)$ at difference before using them in cointegration analyses. This is because the standard inference procedures that are relevant to the standard regression model do not apply in cointegration analysis. It bypasses the standard regression modelling structure. Cointegration analysis requires us to use only those variables that are nonstationary with unit root $I(1)$. The study has tested the stationary of all these series using EViews 5.0 econometric software. The study tested for unit roots in both levels and first differences for all three possible states of the model in relation to intercept and trend. The tested models were with intercept but no trend, intercept with trend, and no intercept or trend. The study used both the Augmented Dickey-Fuller and the Phillips-Perron test procedures in Eviews 5.0.

3.2. Lag length selection method

As the autoregressive model is sensitive to the lag operator chosen, the study had to ascertain the appropriate lag length before the study conducted the cointegration analysis in line with Johansen. The study has used Eviews 5 to determine the optimal lag length based on the Akaike Information Criteria (AIC) or Schwarz Bayesian Criteria (SBC criteria).

3.3. Mathematical presentation of model used

The tests used to investigate the existence of unit roots in the level variables as well as in their first differences are the augmented Dickey-Fuller (ADF) test [Dickey and Fuller, (1979, 1981)] and Phillips and Perron (P-P) test [Phillips and Perron (1988)]. These tests are based on the following two regressions:

$$\Delta x_{it} = \mu + \alpha x_{it-1} + \sum_{j=1}^{m} \square\square b_j \square \Delta x_{it-j} + \varepsilon_{it} \quad (1)$$

and the second unit root test which allows for the existence of a deterministic trend

$$\Delta x_{it} = \mu + \beta t + \alpha x_{it-1} + \sum_{j=1}^{m} \square\square b_j \square \Delta x_{it-j} + \varepsilon_{it} \quad (2)$$

Where is the share price series, text is the residual term and T is a time trend. The null hypothesis is that the variable under consideration has a unit root. In each case the lag-length is chosen by minimizing the final prediction error (FPE). We also tested for the tenth order serial correlation in the residuals of each regression using the Lungs-Box Q statistics.

The next stage in the analysis is to test for the presence of cointegration in the three-variable vector of share price indices. We employ the approach of Johansen (1988) and Johansen and

Juselius (1990). Their approach is to consider the vector autoregressive (VAR) model of the form

$$X_t = \mu + \Phi_1 X_{t-1} + \Phi_2 X_{t-2} + \ldots\ldots + \Phi_k X_{t-k} + \eta_t\ ,\quad t = 1,2,\ldots\ldots,T. \qquad (3)$$

Where X_t is a n x 1 vector containing logarithm of share price indices or macroeconomic variables. Suppose that all share price series are I(0) after applying the differencing filter once. If we exploit the idea that there may exist co-movements of these variables and possibilities that they will trend together towards a long-run equilibrium state, then by the Granger representation theorem, we may posit the following testing relationships that represent a vector error-correction (VEC) model

$$\Delta X_t = \mu + \Gamma_1 \Delta X_{t-1} + \Gamma_2 \Delta X_{t-2} + \ldots + \Gamma_{k-1} \Delta X_{t-k+1} + \Pi X_{t-k} + \eta_t, \qquad (4)$$
$$t = 1,\ldots,T$$

Where ΔX_t is the vector of first differences of the variables, the Γ's are estimable parameters, Δ is a difference operator, η_t is a vector of impulses which represent the unanticipated movements in X_t, with $\eta_t \sim$ niid $(0, \Sigma)$ and Π is the long-run parameter matrix. With r cointegrating vectors ($1 \leq r \leq 3$), Π has rank r and can be decomposed as $\Pi = \alpha\beta'$, with α and β both 3 x r matrices. β's are the parameters in the cointegrating relationships and α are the adjustment coefficients which measure the strength of the cointegrating vectors in the VEC model. Attention focuses on the long-run parameter matrix Π. The Johansen (1988, 1991) approach estimates the long-run or cointegrating relationships between the non-stationary variables using a maximum likelihood procedure which tests for the cointegrating rank r and estimates the parameters β of these cointegrating relationships. As proved in Johansen (1991, 1992b), the intercept terms in the VEC model should be associated with the existence of a deterministic linear time trend in the data. If, however, the data do not contain a time trend, the VEC model should include a restricted intercept term associated to the cointegrating vectors.

The VEC model describes how the system adjusts in each time period towards its long-run equilibrium state. Since the variables are supposed to be cointegrated, deviations in the short-term, from the long-run equilibrium will feed back on the changes in the dependent variables in order to force their movements towards the long-run equilibrium state. Hence the cointegrating vectors from which the error-correction terms are derived are each indicating an independent direction where a stable, meaningful long-run equilibrium state exists. The coefficients of the error-correction terms, however, represent the proportion by which the long-run disequilibrium in the dependent variables is corrected in each short-term period.

4. Empirical results

4.1. Descriptive statistics

The descriptive statistics of the six variables (*which include the five independent variables and the NIFTY*) are reported in Table 2. Table 2 shows no major discrepancies, meaning that the selected six variables are consistent with conventional research norms.

4.2. Optimal lag length selection

In selecting the optimal lag length for our analysis, the research has conducted the necessary tests using EViews 5, as presented in Tables 3 and 4. The results of the correlogram in Tables 2 and 3 indicate that the appropriate lag length is two, while the lag length selection test statistics of LR, FPE, SBC and

Table 2: Descriptive statistics

Parameters	LNNIFTY	LNIP	LNM3	LNINT	LNCPI	LNEXRATE
Mean	8.551941	5.188535	14.22532	2.124889	5.107389	3.765406
Median	8.355753	5.147783	14.2343	2.055653	5.090367	3.783763
Maximum	9.894814	5.719984	15.20347	2.623811	5.41832	3.891755
Minimum	5.960859	4.822698	13.31999	1.571008	4.817856	3.536602
Std. Dev.	0.537707	0.22559	0.526554	0.304738	0.16726	0.094746
Skewness	1.03695	0.383945	-0.000636	-0.030818	0.038067	-0.91074
Kurtosis	2.847213	2.167705	1.930354	1.823969	1.822499	2.853989
Jarque-Bera	25.94644	5.694218	6.864869	8.321087	8.353833	20.03467
Probability	0.000002	0.021341	0.032308	0.015599	0.015346	0.000045
Sum	1231.479	745.149	2048.446	305.984	735.4639	542.2185
Sum Sq. Dev.	41.3455	5.277388	39.6481	13.27972	4.000537	1.283693
Observations	144	144	144	144	144	144

HQ in Tables 3 & 4 clearly suggest that a lag of one period is the optimal lag length. Although the AIC and correlogram criteria suggested differently, the other tests suggested that a lag of one month is appropriate. The available literature also suggests that optimal length with such type of studies can be considered as one. Accordingly, the study takes the lag length as one in the model for analysis.

4.3. Unit toot test for stationary data series

In econometric analysis if two or more stock market price indices are found to be *cointegrated*, it implies that there is a long-run equilibrium relationship between them or that they will move very strongly together eventually. In econometric time series analysis, a stationary series has time independent mean, variance, and autocorrelation that are

Table 3: Correlogramme of variables

<table>
<tr><th>Autocorrelation</th><th>Partial Correlation</th><th></th><th>AC</th><th>PAC</th><th>Q-Stat</th><th>Prob</th></tr>
<tr><td>.|*** |</td><td>.|*** |</td><td>1</td><td>0.359</td><td>0.359</td><td>16.891</td><td>0.000</td></tr>
<tr><td>.|** |</td><td>.|* |</td><td>2</td><td>0.223</td><td>0.108</td><td>23.464</td><td>0.000</td></tr>
<tr><td>.|. |</td><td>*|. |</td><td>3</td><td>0.017</td><td>-0.109</td><td>23.501</td><td>0.000</td></tr>
<tr><td>**|. |</td><td>***|. |</td><td>4</td><td>-0.280</td><td>-0.328</td><td>34.046</td><td>0.000</td></tr>
<tr><td>***|. |</td><td>**|. |</td><td>5</td><td>-0.350</td><td>-0.201</td><td>50.646</td><td>0.000</td></tr>
<tr><td>***|. |</td><td>*|. |</td><td>6</td><td>-0.340</td><td>-0.102</td><td>66.371</td><td>0.000</td></tr>
<tr><td>***|. |</td><td>*|. |</td><td>7</td><td>-0.344</td><td>-0.171</td><td>82.606</td><td>0.000</td></tr>
<tr><td>**|. |</td><td>**|. |</td><td>8</td><td>-0.265</td><td>-0.205</td><td>92.366</td><td>0.000</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>9</td><td>-0.001</td><td>0.046</td><td>92.366</td><td>0.000</td></tr>
<tr><td>.|* |</td><td>.|* |</td><td>10</td><td>0.187</td><td>0.132</td><td>95.288</td><td>0.000</td></tr>
<tr><td>.|** |</td><td>.|. |</td><td>11</td><td>0.270</td><td>0.023</td><td>105.66</td><td>0.000</td></tr>
<tr><td>.|***** |</td><td>.|**** |</td><td>12</td><td>0.694</td><td>0.554</td><td>176.69</td><td>0.000</td></tr>
<tr><td>.|** |</td><td>**|. |</td><td>13</td><td>0.253</td><td>-0.229</td><td>185.98</td><td>0.000</td></tr>
<tr><td>.|* |</td><td>*|. |</td><td>14</td><td>0.103</td><td>-0.179</td><td>185.53</td><td>0.000</td></tr>
<tr><td>*|. |</td><td>*|. |</td><td>15</td><td>-0.073</td><td>-0.121</td><td>188.31</td><td>0.000</td></tr>
<tr><td>**|. |</td><td>.|. |</td><td>16</td><td>-0.300</td><td>-0.000</td><td>201.70</td><td>0.000</td></tr>
<tr><td>***|. |</td><td>*|. |</td><td>17</td><td>-0.368</td><td>-0.066</td><td>222.01</td><td>0.000</td></tr>
<tr><td>**|. |</td><td>.|. |</td><td>18</td><td>-0.306</td><td>0.014</td><td>236.14</td><td>0.000</td></tr>
<tr><td>**|. |</td><td>*|. |</td><td>19</td><td>-0.304</td><td>-0.061</td><td>250.29</td><td>0.000</td></tr>
<tr><td>*|. |</td><td>.|. |</td><td>20</td><td>-0.172</td><td>0.062</td><td>254.86</td><td>0.000</td></tr>
<tr><td>.|. |</td><td>*|. |</td><td>21</td><td>0.018</td><td>-0.086</td><td>254.91</td><td>0.000</td></tr>
<tr><td>.|* |</td><td>.|. |</td><td>22</td><td>0.189</td><td>-0.032</td><td>260.54</td><td>0.000</td></tr>
<tr><td>.|** |</td><td>.|. |</td><td>23</td><td>0.258</td><td>0.003</td><td>271.07</td><td>0.000</td></tr>
<tr><td>.|**** |</td><td>.|. |</td><td>24</td><td>0.538</td><td>0.041</td><td>315.36</td><td>0.000</td></tr>
<tr><td>.|** |</td><td>.|. |</td><td>25</td><td>0.210</td><td>-0.052</td><td>324.51</td><td>0.000</td></tr>
<tr><td>.|* |</td><td>.|. |</td><td>26</td><td>0.081</td><td>0.028</td><td>325.59</td><td>0.000</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>27</td><td>-0.053</td><td>0.056</td><td>326.07</td><td>0.000</td></tr>
<tr><td>**|. |</td><td>.|* |</td><td>28</td><td>-0.205</td><td>0.108</td><td>333.08</td><td>0.000</td></tr>
<tr><td>**|. |</td><td>.|. |</td><td>29</td><td>-0.269</td><td>0.030</td><td>345.20</td><td>0.000</td></tr>
<tr><td>**|. |</td><td>.|. |</td><td>30</td><td>-0.222</td><td>-0.039</td><td>353.55</td><td>0.000</td></tr>
<tr><td>*|. |</td><td>.|* |</td><td>31</td><td>-0.177</td><td>0.113</td><td>358.91</td><td>0.000</td></tr>
<tr><td>*|. |</td><td>.|. |</td><td>32</td><td>-0.097</td><td>-0.043</td><td>360.53</td><td>0.000</td></tr>
<tr><td>.|. |</td><td>.|. |</td><td>33</td><td>0.035</td><td>-0.036</td><td>360.74</td><td>0.000</td></tr>
<tr><td>.|* |</td><td>*|. |</td><td>34</td><td>0.139</td><td>-0.093</td><td>364.14</td><td>0.000</td></tr>
<tr><td>.|* |</td><td>.|. |</td><td>35</td><td>0.180</td><td>0.003</td><td>369.95</td><td>0.000</td></tr>
<tr><td>.|*** |</td><td>.|. |</td><td>36</td><td>0.368</td><td>-0.009</td><td>394.39</td><td>0.000</td></tr>
</table>

Table 4: Var lag order selection criteria

Endogenous variables: LNNIFTY LNINDPROD LNEXRATE INTRATE LNCPI LNM3				
Lag	LogL	LR	FPE	AIC
0	558.1279	NA	5.08e-12	-8.977689
1	1654.114	2065.225	1.66e-19	-26.21323
2	1698.783	79.89674	1.45e-19*	-26.35420
3	1725.393	44.99822	1.71e-19	-26.20151
4	1772.016	74.29326	1.47e-19	-26.37424
5	1801.628	44.29747	1.68e-19	-26.27037
6	1826.706	35.06892	2.10e-19	-26.09278
7	1873.173	60.44465	1.90e-19	-26.26297
8	1923.700	60.79661*	1.65e-19	-26.49918*
* indicates lag order selected by the criterion				

constant through time. The major problem associated with regression of non-stationary variables are the 'spurious regressions' resulting from the non-stationary of a particular time series. To avoid the problem of spurious regressions, it is necessary to test the order of integration of each variable in time series analyses. For examining the stationary property of stock prices linkage among the sampled Asian stock markets and the US market, both the augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) unit-root tests were employed. These are presented in Table 5. The test results reported in Table 5 are compared against the MacKinnon (1990) critical values for rejection of the null hypothesis of no unit root. It clearly suggests that all of the seven series are integrated to order one *I*(1) in levels and are of order zero *I*(0) in first differences, meaning that they are nonstationary in levels and stationary in first differences.

4.4. Cointegration analysis

For the cointegration analysis, the study considered a vector autoregressive (VAR) model, which has a constant (but no trend) as exogenous. In view of the previously identified lag length one as the order of the VAR, The study has employed Eviews 5 to perform the analysis following Johansen (1991). Accordingly, the study has performed a likelihood ratio (LR) test, the maximum Eigen value test and the trace test for the cointegration analysis. The cointegration results along with test statistics are presented in Table 6.

It is evident from the results in Table 6 that the study can reject the null hypothesis of r=0 against the alternative r=1 from the λ_{max} test. The same outcome is achieved from the λ_{trace} test, which has rejected r=0 against r ≥ 1. The study has ascertained that in its model only one stationary linear combination of variables is cointegrated in the long-run. Coefficients of the cointegrating equation (B) in Table are normalized by β_{11} S_{11} β_{11} = I, as an identification process of the Johansen (1995) procedure, since the long-run multiplier matrix Π_y does not generally lead to a unique choice for the cointegrating relations. The identification of β in $\Pi_y = \acute{\alpha}_y \beta'$ requires at least r restrictions per cointegrating relation (r). As The study has found that r =1, one restriction should be enough to identify the cointegrating relationship which is the normalizing restriction applied to the LNNIFTY variable. LNNIFTY is considered as the cointegrating equation, because it is the vector that contains the maximum Eigen value.

Although the normalization is convenient from the mathematical point of view, it may not always be meaningful otherwise. It has an advantage because such normalization is made without assuming anything about which variables are cointegrated, that is, it serves the purpose without normalizing β. It appears from the likelihood ratio (LR) test results of restrictions concerning each variable in equation (B) of Table 6 that the study can reject the null hypothesis of no significance (β does not significantly differ from zero) in relation to four macroeconomic variables, including Industrial exchange rate (LNEXRATE) interest rate (LNINTRATE), money supply (LNM3) and exchange rate (LNEXRATE) at the 5% level of significance. From these results, the study can see that on the basis of LR test statistics only one *variable* (inflation) has significant long-run influence on Indian stock price movements or returns. The results therefore suggest that although the linear combination of all four variables of our model are found cointegrated, not all variables are equally influential. The only significantly

Table 5: Unit root test results

Variables	Augmented Dickey Fuller (ADF) Test			Phillips Perron Test (PP)		
	Intercept No Trend	Intercept with Trend	No Intercept No Trend	Intercept No Trend	Intercept with Trend	No intercept No Trend
	Model A	Model B	Model C	Model A	Model B	Model C
At Levels						
LNNIFTY	0.5518	-1.2001	1.7303	0.5518	-0.2001	1.5825
LNINDPROD	2.6160	2.0805	1.0977	0.0235	-0.2669	1.2086
LNEXRATE	-2.3598	-1.1873	1.2903	-2.7025	-0.2898	1.5744
INTRATE	-1.8150	-0.6768	-1.8697	-1.8411	-0.5839	-0.9778
LNCPI	-0.3519	-3.0923	1.1065	-0.3758	-0.2661	1.4213
LNM3	0.3460	-1.8365	1.1872	0.7215	-0.8259	1.0848
At 1 Difference						
? LNNIFTY	-9.2608	-9.3921	-9.1401	-9.2917	-0.4063	-0.1401
? LNINDPROD	-3.1567	-4.0584	-2.2665	-34.9869	-3.2883	-8.5943
? LNEXRATE	-8.3789	-8.7853	-8.2461	-8.3723	-0.2898	1.5744
INTRATE	-10.7910	-9.6169	-10.6879	-10.7838	-0.9791	-0.6656
? LNCPI	-8.7274	-8.6939	-6.4593	-9.4933	-0.4006	-0.3755
? LNM3	-3.1415	-4.0091	2.0031	-9.5964	-5.58401	-0.3432

Note: MacKinnon Critical values at level: for model A. -2.9851; model B. -3.469; model C. -1.9439, and at 1st difference: for model A. -2.8955; model B. -3.4626; model C. -1.9445

Table 6: Cointegration test results

Hypothesized No. of CE(s)	Test Statistics	Critical Value 5%	1%	*Eigen value*
A. Cointegration Test				
Test Statistics : *Unrestricted Cointegration Rank Test (Maximum Eigenvalue)*				
Maximum Eigenvalue (λ_{max})				
None *	71.3554	36.6302	0.0000	*0.4835*
At most 1 *	60.1985	30.4396	0.0000	*0.4273*
At most 2	26.4040	24.1592	0.0245	*0.2169*
At most 3	15.3824	15.7973	0.1113	*0.1328*
At most 4	4.2341	11.2248	0.5914	*0.0384*
At most 5	0.0070	4.1299	0.9454	*0.0001*
Test Statistics : *Unrestricted Cointegration Rank Test (Trace)*				
Trace (λ_{max})				
None *	175.5813	83.9371	0.0000	*0.4835*
At most 1 *	106.2259	60.0614	0.0000	*0.4273*
At most 2 *	46.0274	40.1749	0.0116	*0.2169*
At most 3 *	19.6234	24.2760	0.1728	*0.1328*
At most 4	4.2411	12.3209	0.6760	*0.0384*
At most 5	0.0070	4.1299	0.9454	*0.0001*

The long run equation

$$\mathbf{LNNIFTY = 9.84\ LNINDPROD_{(-3.210)} - 5.63\ LNM3_{(-2.816)} - 1.29\ LN\ INT_{(-0.4247)} + 5.97\ LNCPI_{(-4.628)} + 6.17\ LNEXRATE_{(1.950)}}$$

Or

$$\mathbf{LNNIFTY - 9.84\ LNINDPROD_{(-3.210)} + 5.63\ LNM3_{(-2.816)} + 1.29\ LNINT_{(-0.4247)} - 5.97\ LNCPI_{(-4.628)} - 6.17\ LNEXRATE_{(1.950)} = 0}$$

r = number of cointegrating vectors
(a) Optimal lag structure is 1 and the VAR contains a constant without trend and breakpoint dummy as exogenous to the model.
(b) The cointegrating vector is normalized on the Indian stock price index (LNNIFTY).
(c) The LR test statistics, given in parentheses, are used to test the null hypothesis that each coefficient is statistically zero. The test statistic is asymptotically distributed as a chi-square distribution with 1 degree of freedom. The critical values of chi-square distribution at 5% and 10% significance levels are 3.841 and 2.706 respectively.

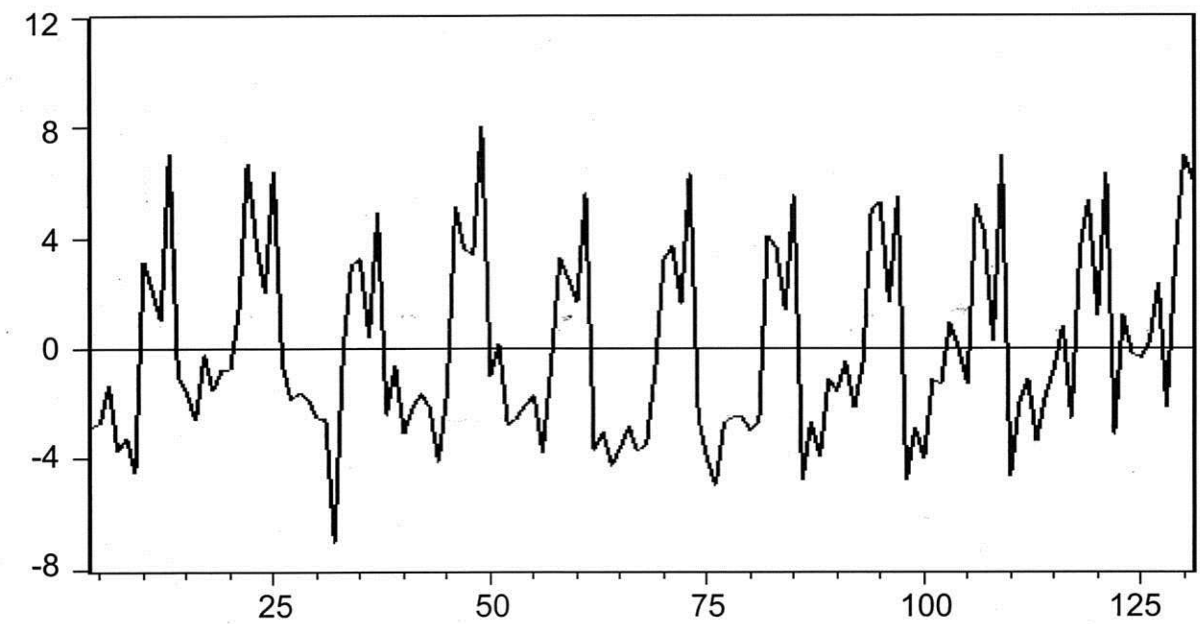
Table 7: Multivariate dynamic time series (Short-run) models

LHS VARIA BLE: ?LNNIFTY	Coefficient	Standard Error	t-statistics (Probability)
D(LNNIFTY(-1))	0.090483	-0.10865	0.83283
D(LNIP(-1))	0.166668	-0.18583	0.89689
D(LNM3(-1))	-0.14999	-0.65784	-0.22801
D(LNGSEC(-1))	-0.007194	-0.04792	-0.15013
D(LNCPI(-1))	0.118967	-0.6686	0.17794
D(LNEXRATE(-1))	0.001282	-0.00606	0.21145
ECM-1	0.001282	-0.10865	0.83283
LHS VARIABLE: ?LNIP			
D(LNNIFTY(-1))	0.047439	-0.06049	0.78420
D(LNIP(-1))	-0.517605	-0.12402	-4.17340
D(LNM3(-1))	-0.776875	-0.34523	-2.25029
D(LNGSEC(-1))	0.053452	-0.08745	0.61124
D(LNCPI(-1))	-1.710502	-0.71966	-2.37681
D(LNEXRATE(-1))	0.242711	-0.34074	0.71230
ECM-1	0.008285	-0.00417	1.98528
LHS VARIABLE: ?LNM3			
D(LNNIFTY(-1))	-0.033929	-0.01491	-2.27612
D(LNIP(-1))	-0.104285	-0.03056	-3.41224
D(LNM3(-1))	-0.101421	-0.08507	-1.19218
D(LNGSEC(-1))	0.001639	-0.02155	0.07608
D(LNCPI(-1))	-0.164754	-0.17734	-0.92904
D(LNEXRATE(-1))	0.026549	-0.08397	0.31619
ECM-1	0.006289	-0.00085	5.44176
LHS VARIABLE: ?LNINT			
D(LNNIFTY(-1))	0.072117	-0.06093	1.18354
D(LNIP(-1))	-0.233067	-0.12493	-1.86562
D(LNM3(-1))	-0.36894	-0.34774	-1.06095
D(LNGSEC(-1))	0.006626	-0.08809	0.07522
D(LNCPI(-1))	0.265793	-0.7249	0.36666
D(LNEXRATE(-1))	0.900477	-0.34322	2.62359
ECM-1	0.01227	-0.01257	0.9762
LHS VARIABLE: ?LNCPI			
D(LNNIFTY(-1))	0.011252	-0.00778	1.44638
D(LNIP(-1))	-0.027559	-0.01595	-1.72786
D(LNM3(-1))	0.079771	-0.0444	1.79676
D(LNGSEC(-1))	0.006318	-0.01125	0.56177
D(LNCPI(-1))	0.324975	-0.09255	3.51140
D(LNEXRATE(-1))	0.160314	-0.04382	3.65850
ECM-1	0.000741	-0.00046	1.59938
LHS VARIABLE: ?LNEXRATE			
D(LNNIFTY(-1))	-0.000118	-0.0167	-0.00704
D(LNIP(-1))	-0.049253	-0.03425	-1.43812
D(LNM3(-1))	-0.006001	-0.09533	-0.06295
D(LNGSEC(-1))	-0.029169	-0.02415	-1.20790
D(LNCPI(-1))	-0.033901	-0.19873	-0.17059
D(LNEXRATE(-1))	0.377619	-0.09409	4.01323
ECM-1	-0.0000955	-0.00095	-0.10071

Note: Critical values for t-statistics (2-sided test) are 1.64, 1.96 and 1.58 at10%, 5% and 1% significance levels, respectively influential macroeconomic variable in the long-run cointegrating relationship for the Indian stock market is the Inflation (LNCPI). But at 10% level of significance industrial production and money supply also have significant long run influence on Indian stock returns. Results of dynamic time series models and their corresponding error correction mechanisms (ECM -1) are presented in Table 7.

The identified long-run cointegrating relation amongst five variables in this study from the perspective of the Indian stock market is plotted in Figure 1.

Fig. 1: Cointegrating relationship of Indian stock market and priori variables



Taking ΔLNNIFTY as the left hand side variable in the short-run model in Table 7 (which may be thought as the dependent variable in structural time series), it may be suggested that the Indian stock market is not very dynamic and has not been continually corrected from its own disequilibrium of the previous month. The speed of correction from previous month is .090 % and the t statistics suggests that it is not very significant. All individual variables contribute to the process of adjustment for equilibrium. The money supply and industrial production and the previous performance of Indian market itself (ΔLNNIFTY) are also found tobe significant in the dynamic adjustment process, and also the error correction mechanism (ECM_{-1}) is very efficient. The exchange rate (LNEXRATE) and inflation (LNCPI) are found to significantly contribute towards long-run equilibrium, as their related error correction mechanisms are significant.

From another angle, coefficients of our long-run parameter β' upon normalization for LNNIFTY are 1, 9.84, -5.63, -1.29, 5.97 and 6.17 for LNNIFTY, LNINDPROD, LNM3, LNINT, LNCPI and LNEXRATE respectively. Resulted corresponding *t*-statistics are -3.210, -2.816, -0.4247, -4.628 and 1.950. Thus, our estimated values are normalized.

$$\boldsymbol{\beta}_{NIFTY} = (\beta_{11}, \beta_{21}, \beta_{31}, \beta_{41}, \beta_{51}, \beta_{61}) = (1.00, 9.84, -5.63, -1.29, 5.97, 6.17) \quad (5)$$

This suggests that the inflation (LNCPI) variable is more significant in the long-run cointegrating relationship for India as it is significant when compared with the critical value for the *LR*-statistic (3.841) at the 5% significance level. But industrial production and money supply variables are also significant at 10% level of significance. The short-run dynamic system provided us with coefficients of corresponding to ΔLNNIFTY, ΔLNINDPROD, ΔLNM3, ΔLNINT, ΔLNCPI and ΔLNEXRATE. The coefficients of $\acute{\alpha}$ in respective order are 0.001282, 0.008285, 0.006289, 0.01227, 0.000741, -0.0000955. Corresponding *t*-values for $\acute{\alpha}$ are 0.21145, 1.98528, 5.44176, 0.9762, 1.59938, -0.10071 respectively. This information can be presented as:

$$\boldsymbol{\alpha}_{NIFTY} = (\alpha_{11}, \alpha_{21}, \alpha_{31}, \alpha_{41}, \alpha_{51}, \alpha_{61}) = (0.0013, 0.0083, 0.0063, 0.0123, 0.0007, -0.0001) \quad (6)$$

Wherein the ECM-1 for the LNNIFTY is $\alpha_{NIFTY} = \alpha_{11} = 0.0013$, which is the adjustment parameter in the cointegrating equation for India. The *t*-statistic in parentheses corresponding to $\acute{\alpha}_{11}$ indicates that ECM-1 for LNNIFTY is not very significant and the linear combination of all variables is found cointegrated. This might mean that the Indian stock market is not efficient in terms of its auto correction. The study has obtained the estimates of the short-run parameters for the Indian market ΔLNNIFTY as 0.090483, -0.166668, -0.14999, -0.007194, 3.1325 and 0.118967 for $\Delta LNNIFTY_{-1}$, $\Delta LNINDPROD_{-1}$, $\Delta LNM3_{-1}$, $\Delta LNINT_{-1}$, $\Delta LNCPI_{-1}$ and $\Delta LNEXRATE_{-1}$ respectively. The corresponding *t*-statistics for ΔLNNIFTY are 0.83283 0.89689-0.22801-0.150130.17794. This suggests that in the process of the short-run adjustment for the Indian stock market, $\Delta LNNIFTY_{(-1)}$, $\Delta LNINDPROD_{(-1)}$, $\Delta LNEXRATE_{(-1)}$, ΔLNINTRATE (-1), and ΔLNCPI (-1) are not significant at 5% level. This means that Indian stock market prices are being adjusted each month dominantly by the influences of the market's own performance. The study thus presents the short-run estimated parameter ΔLNNIFTY as:

$$\Delta LNNIFTY = (0.09, 0.17, -0.15, -0.01, -3.13, 0.12) \quad (7)$$

Based on the above results, the study presents the estimated model (VECM) for India in equations 8.1 and 8.2. Our estimated model takes the following shape:

$$\Delta LNNIFTY_t = -0.0013*[1*LNNIFTY_{-1} - 9.84* LNINDPROD_{-1} + 5.63* LNM3_{-1} + 1.29*LNINT_{-1} - 5.97*LNCPI_{-1} \; -6.17*LNEXRATE_{-1}] - [0..09* \Delta LNNIFTY_{-1} + .17*\Delta LNINDPROD_{-1} -.15*\Delta LNM3_{-1} - 0..01*\Delta LNINT_{-1} \; 3.13*\Delta LNCPI_{-1} + 0.12*\Delta LNEXRATE_{-1}] \; (8.1)$$

Or

$$\begin{aligned}\Delta LNNIFTY_t = & -0.0013* LNNIFTY_{-1} - 0.0127* LNINDPROD_{-1} - 0.0099* \\ & LNM3_{-1} -0.0017*LNINT_{-1} + 0.0077*LNCPI_{-1} + .008*LNEXRATE_{-1} \\ & - 0.14043* \Delta LNNIFTY_{-1} - .41922*\Delta LNINDPROD_{-1} + .08495*\Delta LNM3_{-1} \\ & + 0.13062*\Delta LNINT_{-1} + .80672*\Delta LNCPI_{-1} - 0.43205*\Delta LNEXRATE_{-1}\end{aligned}$$

In the long-run equilibrium, the second part of the above model would not exist; therefore, our solved model in reduced form is as follows:

$$\begin{aligned}\Delta LNNIFTY_t = & -0.0013* LNNIFTY_{-1} - 0.0127* LNINDPROD_{-1} - 0.0099* \\ & LNM3_{-1} -0.0017*LNINT_{-1} + 0.0077*LNCPI_{-1} + .008*LNEXRATE_{-1}\end{aligned}$$

These results are interesting and useful in understanding the Indian stock market pricing mechanism as well as its return generating process. The cointegrating analysis presented in above equation shows that three out of five variables are cointegrated in the long-run, and these variables are influential in the pricing process. These variables are *Industrial Production (LNINDPROD), Inflation (LNCPI) and Money Supply (LNM3),*

5. Findings and conclusion

The results of this analysis should not be treated as conclusive for an investment. Apart from understanding Indian stock market pricing based on the contributions of the significant variables, there remain other important issues that affect the return generating process. These issues are the cost of equity capital, asset valuation, industry analysis, a firm's management and operational efficiency analysis, and so on. Any investor should consider all relevant sources of information when making an investment decision. Even within the arena of systematic risk analysis for assets, one should identify both business and financial risks and analyze them while selecting a stock in their portfolio for investment. The business risk of a firm depends on the systematic risk of a firm's assets. The greater a firm's business risk, the greater the firm's cost of equity. The other component in the cost of equity is determined by a firm's financial structure, which also needs assessment while selecting stocks for an investment portfolio. The extra risk that arises from the use of debt financing is called the financial risk of a firm's equity. The well-known propositions of Franco Modigliani and Merton Mills are useful in analyzing the value of a firm as well as its cost of equity. Their first proposition is that the value of a firm is independent of a firm's capital structure, while their second proposition states that the cost of equity depends on the required rate of return on a firm's assets, its firm's cost of debt, and its firm's debt equity ratio. When investigating portfolio investment, an investor should analyze two types of risks, the total systematic risk of the firm's equity consisting of business risk, and financial risk (Ross, et. al. (1998)). It is more useful for the purposes of investment to know that the linear combination of modeled variables contains a relationship. The variables are cointegrated and the sampled variables explain the price movements as well as the return generating process of the Indian stock market in both the long- and short-runs. These results are interesting and useful in understanding the Indian stock market pricing mechanism as well as its return generating process. These variables are Industrial Production (LNINDPROD), Inflation (LNCPI) and Money Supply (LNM3),. The study observes that out of five factors three are more significant and likely to influence the stock market more than other factors. These factors are industrial production, Inflation (CPI) and money supply. The study suggests that these factors are likely to influence the long term pricing mechanism of the Indian stock market.

References

Chen, N. F.; Roll, R. and Ross, S. A., 1986. Economic forces and the stock market, *Journal of Business*, vol. 59(3), pp. 383-403.

Darrat, A.F. and T.K. Mukherjee, 1987, The Behavior of the Stock Market in a Developing Economy, *Economics Letters* 22, 273-278.

Dickey, D. A. and Fuller, W. A., 1979. Distribution of Estimators for Autoregressive Time Series Regression with a Unit Root, *Journal of the American Statistical Association*, vol. 74, pp. 423-431.

Dickey, D. A. and Fuller, W.A., 1981. Likelihood ratio statistics for autoregressive time-series with a unit-root, *Econometrica*, vol. 49, pp. 1057-1072.

Engle, R. F. and Granger, C. W. J., 1987. Co-integration and Error Correction: Representation, Estimation and Testing, *Econometrica*, vol. 55(2), pp. 251-276.

Fama, E. F. and French, K. R., 1992. The economic fundamentals of size and book-to-market equity, *Working Paper*, Graduate School of Business, University of Chicago, Chicago, IL, USA.

Granger, C. W. J., 1969. Investigating Causal Relations by Econometric Models and Cross-Spectra. Methods, *Econometrica*, vol. 37(3), pp. 424-438.

Johansen, S. and Juselius, K., 1990. Maximum likelihood estimation and inference on cointegration with application to the demand for money, *Oxford Bulletin of Economics and Statistics*, vol. 52, pp. 169-210.

Johansen, S. and Juselius, K., 1991. Some structural hypotheses in a multivariate cointegration analysis of the purchasing power parity and uncovered interest parity for UK, *Manuscript* for the Journal of Econometrics.

Johansen, S. and Juselius, K., 1992. Testing structural hypotheses in a multivariate cointegration analysis of the PPP and UIP for UK, *Journal of Econometrics*, vol. 53, pp. 211-244.

Johansen, S. and Juselius, K., 1994. Identification of the long-run and short-run structure: An application to the IS/LM model, *Journal of Econometrics*, vol. 63, pp. 7-36.

Johansen, S. and Lando, D., 1996. *Multi-period models as cointegration models*, University of Copenhagen.

Johansen, S. and Schaumberg, E., 1999. Likelihood analysis of seasonal cointegration, *Journal of Econometrics*, vol. 88, pp. 301-339.

Johansen, S. and Swensen, A. R., 1999. Testing some exact rational expectations in vector autoregressive models, *Journal of Econometrics*, vol. 93, pp. 73-91.

Johansen, S., 1988. Statistical analysis of cointegration vectors, *Journal of Economic Dynamics and Control*, vol. 12, pp. 231-254.

Johansen, S., 1988a. The mathematical structure of error correction models, *Contemporary Mathematics*, vol. 80, pp. 259-386.

Johansen, S., 1990. A representation of vector autoregressive processes integrated of order 2, *Manuscript* for the Journal of Econometric Theory.

Johansen, S., 1991. Estimation and Hypothesis Testing of Cointegration Vectors in Gaussian Vector Autoregressive Models, *Econometrica*, vol. 59(6), pp. 1551-1580.

Johansen, S., 1991a. The Power Function for the Likelihood Ratio Test for Cointegration, In: Gruber, J., Ed., *Economic Decision Models: New Methods of Modeling and Application.*

Johansen, S., 1991b. The statistical analysis of *I*(2) variables, *Discussion Paper*, University of Copenhagen.

Johansen, S., 1992. Determination of cointegration rank in the presence of a linear trend, *Oxford Bulletin of Economics and Statistics*, vol. 54(3), pp. 383-397.

Johansen, S., 1992a. Cointegration in partial system and the efficiency of single equation analysis, *Journal of Econometrics*, vol. 52, pp. 389-402.

Johansen, S., 1994. The role of the constant and linear terms in cointegration analysis of nonstationary time series, *Econometric Reviews*, vol. 13, pp. 205-231.

Johansen, S., 1995. *Likelihood-based Inference in Cointegrated Vector Autoregressive Models*, Oxford University Press, Oxford.

Johansen, S., 1995a. Identifying Restrictions of Linear Equations with Applications to Simultaneous Equations and Cointegration, *Journal of Econometrics*, vol. 69, pp. 111-132.

Johansen, S., 1996. *Likelihood based inference in Cointegrated Vector Autoregressive Models*, Oxford University Press, Oxford.

Johansen, S., 2000. Modelling of cointegration in the vector autoregressive model, *Economic Modelling*, vol. 17, pp. 359-373.

McMillan, D. G., 2001. Cointegration Relationships between Stock Market Indices and Economic Activity: Evidence from US Data, *Discussion Paper*, Issue No. 0104, Centre for Research into Industry, Enterprise, Finance and the Firm (CRIEFF), University of St. Andrews, Scotland.

Mossin, J., 1966. Equilibrium in a capital asset market, *Econometrica*, vol. 34 (4), pp. 768-783.

Mukharjee, T. K. and Naka, A., 1995. Dynamic relations between macroeconomic variables and the Japanese stock market: an application of a vector error-correction model, *The Journal of Financial Research*, vol. 18 (2), pp. 223-237.

Naka, Atsuyuki & Mukherjee, Tarun K. & Tufte, David R., 1998. "Macroeconomic variables and the performance of the Indian Stock Market," Working Papers 1998-06, University of New Orleans, Department of Economics and Finance.

Panda, C. and Kamaiah, B., "Monetary policy, Expected Wholesale price index, real Activity and Stock Returns in India: An Empirical Analysis", *Asian – African Journal of Economics and Econometrics*, Vol. 1, 2001, 191-200.

Pethe, A., and Karnik, A., "Do Indian Stock Markets Matter? Stock Market Indices and Macro-Economic Variables", *Economic and Political Weekly*, Vol. 35, 2000, 349-356.

Ross, S. A., 1976. The arbitrage theory of capital asset pricing, *Journal of Economic Theory*, vol. 13, pp. 341-360.

Sharma, J.L. and R.E. Kennedy (1977), "Comparative analysis of stock price behavior on the Bombay, London & New York Stock Exchanges", JFQA, Sept 1977, pp. 391-403.

Sharpe, W. F., 1964. Capital asset prices: A theory of market equilibrium under conditions of risk, *Journal of Finance*, vol. 19(3), pp. 425-442.

An Empirical Study of the Relationship between Price Dimensions and Private Label Brand Usage

Vipul V. Patel
Faculty of Marketing, V.M. Patel Institute of Management, Ganpat University, Ganpat Vidyanagar, Mehsana Gozaria Highway, Mehsana, Gujarat, INDIA
E-mail: vipulpat@gmail.com

Abstract
Over the last few years, retail has become one of the fastest growing sectors in the Indian economy. The organized retail industry in India is expected to grow 25-30 per cent annually and is projected to attain USD 23 billion by 2010. In this retail revolution, the private label brands are increasingly gaining acceptance from the Indian consumers. The private label brands are generally priced lower than the national brands. So consumers' price perceptions of private label brands play an important role in the purchasing process. In this study, an attempt is made to analyse the relationship between various price dimensions and private label brand usage. Hypotheses are developed to test the relationship between six price related dimensions and private label brand usage. These six dimensions are value consciousness, price consciousness, sales proneness, price **mavenism,** price-quality schema and prestige sensitivity. Data were collected from various shopping malls located in Ahmedabad city of Gujarat, India, with the help of a structured questionnaire. The target population for this study consisted of active mall shoppers. Confirmatory factor analysis was used to validate the six price related constructs and one private label brand usage construct. Structure Equation Model was used to test the hypotheses.

Key Words: Confirmatory factor analysis; Price dimensions; Private label brand; Structure equation model

1. Introduction

Over the last few years, retail has become one of the fastest growing sectors in the Indian economy. Traditionally, Indian retail sector has been characterized by the presence of a large number of small-unorganized retailers. However, over the last half decade, the Indian consumer market has seen a significant growth of various retail formats such as supermarkets, department stores, discount stores, hyper markets, etc. The organized retail industry in India is expected to grow 25-30 per cent annually and is projected to attain USD 23 billion by 2010. In this era of retail revolution, a consumer has availability of various brand choices and is constantly faced with the decision of what brands to buy. Private label brands have added more competition to this by offering products which are lower in price compared to that of the national brands. With an increased set of brands to choose from, consumers contemplate the purchase of a particular brand by weighing various factors like price, quality, store image etc. Both the national brands and private label brands are competing to attract the consumers on these factors. Of these factors, price is one of the most important factors that the consumers consider in their decision making process. The private label brands are generally priced lower than the national brands. So the consumers' price perceptions of private label brands play an important role in the purchasing process. An attempt is made in this study to determine the relationship between various price dimensions and private label brand usage.

2. Private Label Brands

Private label brands are increasingly gaining acceptance among the Indian consumers. The American Marketing Association defines a private label brand (also referred to as store brand or distributor's brand) as "*a brand name or label name attached to or used in the marketing of a product other than by the product manufacturers; usually by a retailer*" (Zentes et al., 2007). Retailers offer these private label brands as an alternative to national and international brands. Private Label brands help the retailers in differentiating their merchandise; increase the potential for sales by attracting more customers (Vahie et al., 2006). Private label products generate higher margins, increase control over shelf space and give retailers greater bargaining power in the channel of distribution (Jin et al., 2005). Market penetration of the private label brands has been steadily increasing. Some of the major food and grocery retailers average between 20 and 30 per cent private label penetration with the highest penetration of about 50 per cent today. In clothing and apparel, some retailers have as much as 65 per cent of the sales coming from private labels.

Despite the substantial increase in private label activities in India, there is a notable lack of research devoted to investigating the buying behaviour of private label brands. Therefore, understanding private label brands from the Indian consumer perspective is imperative, considering the rapid growth of organized retail markets and wide acceptance of private label brands in India.

3. Objective of Study

As the private label brands are generally priced lower than the national brands, price will be one of the most important factor consumers consider in the buying process. Therefore, the main objective of this study is to find the relationship between various price dimensions and private label brand usage in Indian market. That is, do the price dimensions affect the private label brand usage?

This research paper is divided into three major sections. First, the theoretical background and previous research that has been conducted in the area of price dimensions and private label brand usage is discussed. Although there has been a dearth of such type of studies in the Indian context, theoretical exploration can be based on international studies carried out in other countries. Second, the research methodology adopted to test the hypothesis proposed for the study is presented. Finally, a general discussion of the findings, as well as limitations of the study and directions for future research is provided.

4. Literature Review

Price is particularly influential in consumer behaviour because it is present in all purchase situations. Price is one of the most important cue consumer uses in his decision making. A price is the amount of money, goods or services that must be given to acquire ownership or use of a product. Some prospective customers are interested in low prices, whereas another segment is more concerned with other factors, such as service, quality, value and brand image (Etzel et al., 2005) Marketers recognise that consumers often actively process price information, interpreting prices in term of their knowledge from prior purchasing experience, formal communications (advertising, sales call and brochures), informal communications (friends, colleagues or family members) and point of purchase or online resources. Price is a multidimensional concept and it is important to understand the underlying dimensions of the price. Lichtenstein et al (1993) suggested two dimensions of positive price cues (price/quality schema and prestige sensitivity) and five dimensions of negative price cues (sale proneness, price mavenism, value consciousness, coupon proneness, and price consciousness). There are few empirical studies investigating direct relations between each dimensions of price and private label brand usage. To help address this void, an attempt is made in this paper to study the relationship between the six price dimensions proposed by Lichtenstein et al. (1993) and private label brand usage. Coupon, however, are not widely used in Indian market, so the coupon proneness construct was excluded in this study.

4.1. Hypothesis Development

In the following sub sections, various hypotheses to be tested in the study are discussed.

4.1.1. Price Consciousness – PL Brand Usage

Price consciousness refers to the degree to which the consumer focuses exclusively on paying low prices. When consumers think of price as a resource they must sacrifice in purchasing, they tend to be price conscious and actively search for the lowest available price (Jin et al., 2003). The general consensus in research is that price is the most important reason for purchasing private label brands (Jin et al., 2003). The conventional wisdom is that private label brands are aimed at consumers who are price conscious because their prices are lower than that of the national brands. Consumer propensity to choose the cheapest alternative has a positive effect on picking the store brand because private label brand is offered usually at the lowest prices of the product category (Baltas, 1997). Burton et al. (1998) found a positive relationship between price consciousness and private label brand attitude for the grocery items. Batra and Sinha (2000) examined several factors that helped explained variations in purchasing preferences for national brands versus private label brands across twelve different product categories and found that price consciousness has significant effect on private label brand purchase. Therefore, in this study, other things being equal, a positive relationship between price consciousness and private label brand usage is expected.

Hypothesis 1: There is a positive relationship between price consciousness and private label brand usage.

4.1.2 Value Consciousness - PL Brand Usage

Consumers do not buy private label brands solely because it is cheaper. Some consumers consider the quality of the private label brands with respect to the price that they are paying. This group of consumers is defined as value conscious. Lichtenstein et al. (1993) defines value consciousness as a concern for price paid relative to quality received. It implies consideration of quality not in absolute terms, but in relations to the price of a particular brand (Jin, 2005). Empirical research has confirmed that value related measures are positively related to private label brand attitude. Dick et al. (1995) found that store brand prone shoppers regard store brands as having greater value for money than do non-store brand prone shoppers. It also has been suggested that when consumers balance price and quality, there is a more favourable attitude towards private label brands (Garretson et al., 2003). Therefore, other things being equal it can be hypothesised a positive relationship between value consciousness and private label brand usage.

Hypothesis 2: There is a positive relationship between value consciousness and private label brand usage.

4.1.3 Price Quality Schema - PL Brand Usage

Perceived quality is a critical element for consumer decision making. Consumer will compare the quality of alternatives with regard to price within a category (Jin et al., 2005). Many consumers use price as an indicator of quality. Some consumers are willing to pay more because they associate high price with high quality. This price quality schema has been defined as the generalised belief across product categories that the level of a price cue is related positively to the quality level of the product (Lichtenstein et al., 1993). Consumers who have a positive price quality schema prefer higher priced products. Rao and Monroe (1989) found that for consumer products, the relationships between price and perceived quality are positive and statistically significant.

Consumers' perceptions of private label brand quality may explain their usage. Customers who are reluctant to buy private label brands are more inclined to believe that private labels offer lower quality. A low price for private label brands may be attributed to some problematic aspect of the product, which is then perceived as inferior in the overall level of quality. Previous studies indicate that consumers generally perceive private label brands to be of lower quality than national brands. Dick et al (1995) found significant differences in quality perceptions of store brands relative to national brands between the two groups under research. Batra and Sinha (2000) found that perceived quality variation indirectly impacts on private brand purchase. Therefore, in this study, we expect a negative relationship between price quality schema and store brand usage.

Hypothesis 3: There is a negative relationship between price quality-schema and Private label brand usage.

4.1.4. Sales Proneness - PL Brand Usage

Consumers' perception of the price may also be related to sale proneness. Lichtenstein et al. (1993) defined sale proneness as "an increased propensity to respond to a purchase offer because the sale from in which the price is presented positively affects purchase evaluations." Those consumers who view price as what they give up for the product might exhibit sales proneness (Jin et al., 2005). This concept is closely related to the concept of deal proneness which is used to describe consumers who strongly respond to many forms of promotion. Baltas (1997) found that consumers who usually search for price cuts and special offers were not private label brand prone. This is reasonable to believe since typically private label brands are at permanent lower prices and do not promote as often as national brands do. So we expect a negative relationship between sales proneness and private label brand usage.

Hypothesis 4: There is a negative relationship between sales proneness and private label brand usage.

4.1.5. Price Mavenism - PL Brand Usage

The concept of price mavenism is adopted from term of market mavenism. Lichtenstein et al.(1993) defined price mavenism as the degree to which an individual is a source for price information for many kinds of products and places to shop for the lowest prices, initiates discussion with consumers, and responds to request from consumers for market place price information. When consumer view price as cash that they have to give up for a product, they are likely to keep up-to-date on marketplace prices (Jin et al., 2003).

Empirical studies of the relationship between price mavenism and private label brand usage could not be found. As price maven has all the information regarding the products and their prices in the market, for this study, it is expected that a positive relationship between price mavenism and private label brand usage exists.

Hypothesis 5: There is a positive relationship between price mavenism and private label brand usage.

4.1.6. Prestige Sensitivity - PL Brand Usage

Individuals often engage in behaviour that is designed to create or avoid particular images to portray the self in a socially positive light. Price may give signals to other people about purchasers. Some consumers are willing to pay more when they feel that high priced products convey prestige to others (Jin et al. 2003). Lichtenstein et al. (1993) defined price sensitivity as "favourable perceptions of the price are based on feelings of prominences and status that higher prices signal to other people about the purchaser."

We can predict that consumers are concerned about the negative social impression that private label brand usage can convey. Consumers will avoid using private label brand because they believe that this can convey the negative impression of appearing cheap. Dick et al. (1995) also find that low private label brand prone shoppers are more included to believe that the purchase of private label brands may results in the perception that the individuals is cheap. Therefore, other things being equal it can be hypothesised a negative relationship between prestige sensitivity and private label brand usage.

Hypothesis 6: There is a negative relationship between prestige sensitivity and private label brand usage.

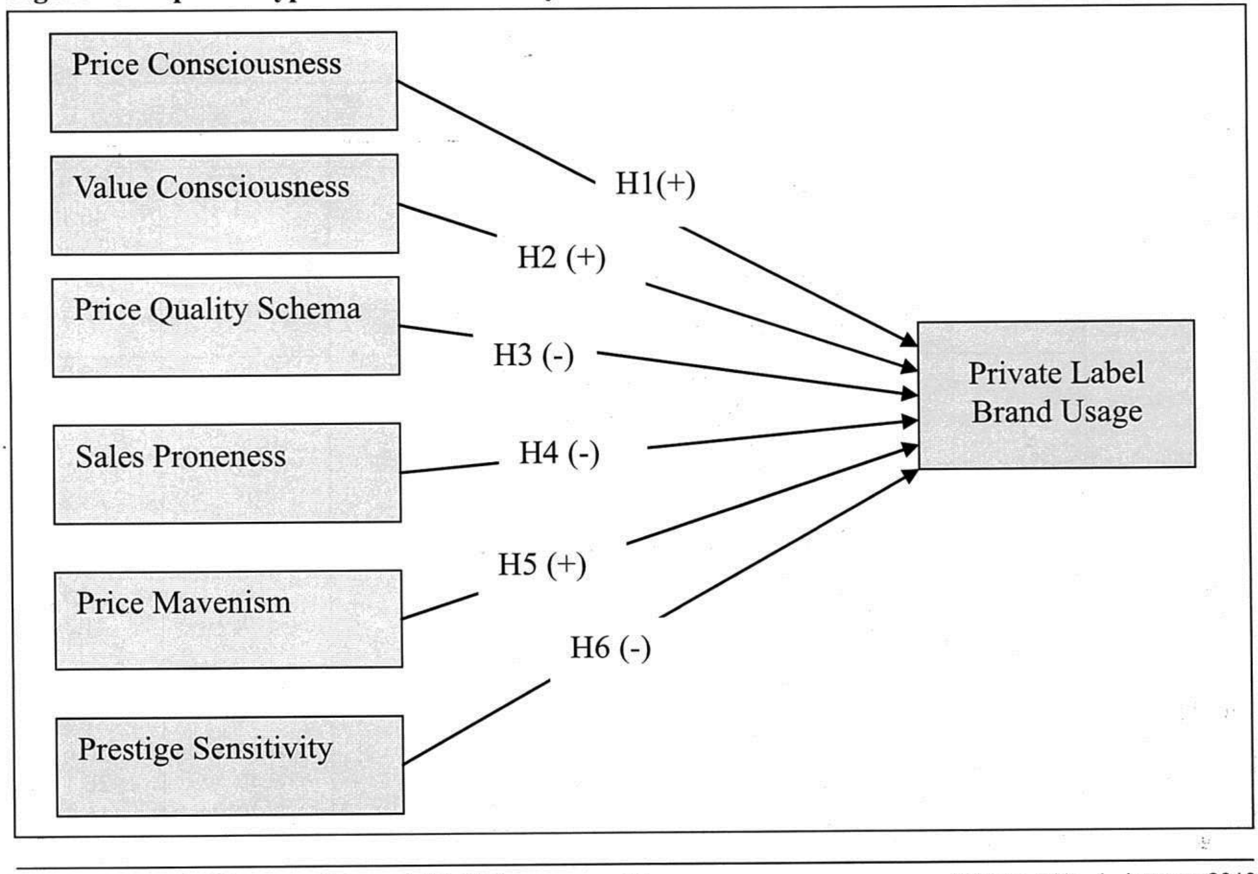
5. Research Methodology

This study used mall intercept survey method. Data were collected from various shopping malls located in Ahmedabad city of Gujarat, India. The target population for this study consisted of active mall shoppers. The sample for the study was selected from the population by convenience sampling method.

The product category selected for the study was apparel because this category is the largest segment of Indian retail industry and accounts for almost 39 percent of the organised retail sector. The men's apparel market in India has grown by 12 percent and women wear market by 13.4 percent over the previous year in the value term in year 2004 (Pradhan, 2004). This sector has highest number of private labels brands in Indian retail stores. Some retailers have as much as 65 percent of the sales coming from private label brands in clothing and apparel category.

A structured questionnaire was developed for the study. Questionnaire included measures of private label brand usage and six price related constructs (i.e. value consciousness, price consciousness, sales proneness, price mavenism, price-quality schema and prestige sensitivity). Multi items scales for measurement were taken from prior research. Scales for measurement of private label brand usage used by Ailawadi et al. (2001) were

Figure 1: Proposed Hypothesis for the Study



employed. Scales for six price related constructs were employed from Lichtenstein et al. (1993). All the scales were five point Likert type scales in which respondents were asked to indicate their level of agreement (1 = *strongly disagree* to 5 = *strongly agree*). Lastly, the questionnaire also contained questions to solicit demographic information of the respondents such as gender, age, education, household income and marital status.

Questionnaire was hand carried and personally explained to respondents by the trained interviewers. An interviewer randomly intercepted shoppers in shopping malls and requested participation in the study. Respondents were screened by asking whether an apparel product had been purchased. Verbal explanation about "private labels brands" and "national brands" with suitable examples were presented before shoppers began answering the questionnaire. The interviewer waited until a respondent filled out the questionnaire, then collected it.

5.1. Demographic Profile of the Sample

A total of 180 respondents participated in the survey. Selected demographic characteristics of the sample including gender, age, education, marital status and monthly family income, are presented in Table 1.

The sample consisted of 53.3 percent of male and 46.7 percent female respondents. Respondents were mostly between the ages of 21 and 30 years (46.1%). 58.9 percent of the respondents were single. Almost 71 percent of the respondents had at least bachelor degree. Almost 73 percent of the respondents reported that their family income was more than Rs. 20,000.

6. Data Analysis

6.1. Reliability and Validity Testing of Constructs

6.1.1. Reliability Testing of Constructs

The analysis began with reliability testing of the measures adopted for the study. Internal reliability of the scales was measured by computing Cronbach's coefficient alpha for six price related constructs and one private label brand usage construct. Those items generating low values of alpha were deleted from further analysis. Table 2 shows the values of Cronbach's alpha for each multi item scales. Hair et al. (1998) suggest that the generally agreed upon the lower limit for Cronbach's alpha is 0.70. Therefore, taking value of alpha as 0.70 and above as an indicator of good reliability, we can conclude that all the scales are reliable.

6.1.2. Validating Testing of Constructs

In order to validate the measurement properties of

Table 1: Demographic Profile of the Sample

Variables		Frequency	%
Gender	Male	96	53.3
	Female	84	46.7
Age	Below 20 Yrs	50	27.8
	21-30 Yrs	83	46.1
	31-40 Yrs	20	11.1
	41-50 Yrs	20	11.1
	Above 50 Yrs	07	03.9
Education	Lower than secondary school	09	05.0
	Secondary School or equivalent	43	23.9
	Bachelor degree	98	54.4
	Master degree	22	12.2
	Doctoral degree	05	02.8
	Others...	03	01.7
Marital Status	Single	106	58.9
	Married	74	41.1
Monthly Family Income	Less than Rs.10,000	10	5.6
	Rs.10,000 to Rs.20,000	39	21.7
	Rs.20,000 to Rs.30,000	55	30.6
	Rs.30,000 to Rs.40,000	47	26.1
	More than Rs.40,000	29	16.1

the private label brand usage and six price related constructs, confirmatory factor analysis (CFA) was conducted using AMOS 16.0. The first performance of CFA model indicated a couple of items having low factor loadings in value consciousness, price consciousness and price mavenism constructs. Deleting these low factor loading items, CFA was performed again. The final results of the confirmatory factor analysis are reported in Table 2. The standardized factor loadings for all the items were quite high (above 0.5, Hair et al., 2003) and significant at 0.05. t value of all the items is above 1.96. Average variance extracted was calculated and shown in Table 2. Hair et al. (2000) suggest this value to be higher than 0.50. In this study, AVE for all the constructs is above 0.50. Composite reliability for each measure was also calculated. Hair et al. (2000) suggest this value to be higher than 0.70. Composite reliability of each measures range from 0.735 to 0.825. Therefore, it can be concluded that all the scales used in the study are valid and reliable.

Confirmatory factor analysis demonstrated a moderate fit of the measurement model on the basis of a number of fit statistics like the ratio of chi-square to degrees of freedom (3.916), the goodness-of-fit index –GFI (0.714), adjusted GFI-AGFI (0.662), the normed fit index - NFI (0.496), Tucker-Lewis index –TLI (0.521), incremental fit index -IFI (0.570), the relative fit index –RFI (0.447),

Table 2: Confirmatory Factor Analysis

Constructs	Items	Factor Loading	Cronbach's Alpha	Construct Reliability	Variance Extracted
Private Label Brand Usage	I buy private label brands. I look for private label brands when I go shopping. My shopping cart contains private label brands for several products.	0.802 0.756 0.821	0.825	0.836	0.629
Price Consciousness	I am wiling to go to extra effort to find lower prices. I will shop at more than one store to take advantage of low prices.	0.756 0.646	0.710	0.845	0.732
Value Consciousness	I am very concerned about low prices, but I am equally concerned about product quality. When shopping, I compare the prices of different brands to be sure I get the best value for the money. When purchasing a product, I always try to maximize the quality I get for the money I spend.	0.803 0.793 0.679	0.768	0.804	0.578
Price Quality Schema	Generally speaking, the higher the price of a product, the higher the quality. The old saying 'you get what you pay for' is generally true. The price of the product is good indicator of its quality. You always have to pay a bit more for the best.	0.654 0.609 0.693 0.601	0.732	0.735	0.410
Sales Proneness	If a product is on sale, that can be a reason for me to buy it. When I buy a brand, that's on sale, I feel that I am getting a good deal. I have favourite brands, but most of the time I buy the brand that's on sale. I am more likely to buy b rands that are on sale.	0.637 0.777 0.771 0.714	0.813	0.811	0.53
Price Mavenism	I like helping people by providing them with price information about many types of products. My friends think of me as a good source of price information. I enjoy tellin g people how much they might expect to pay for different kind of products.	0.588 0.875 0.696	0.731	0.788	0.532
Prestige Sensitivity	Buying a high priced brand makes me feel good about myself. It says something to people when you buy the high priced version of a product. Your friends will think you are cheap if you consistently buy the lowest priced version of a product. I think others make judgments about me by the kinds of products and brands I buy.	0.731 0.848 0.710 0.624	0.818	0.820	0.536

comparative fit index -CFI (0.564), and root mean square error of approximation - RMSEA (0.128).

6.2. Hypothesis Testing

The structural equation model was examined to test the hypotheses. AMOS 16 is used for the same. Results pertaining to structural path estimates are shown in Table 4 . From the table it can be concluded that hypothesis H1, H3 and H4 are supported while other hypothesizes are rejected. The structural paths of prestige sensitivity – PL brand usage is not significant at confidence level of 0.05. Other structural paths are significant at 0.05 confidence level.

7. Discussion

The main objective of the study was to measure the impact of consumers' price perception on store brand usage in Indian environment. For this, six price related constructs were used. An examination of the significant structural paths reveals that price consciousness is positively related with PL brand usage. This finding is consistent with the previous researches. As the price of the private label is lower than the national brands, price conscious consumers are inclined to purchase PL brands. Value consciousness is negatively related with the PL brand usage. Indian consumers do not find private label brand as delivering greater value for money. In line with this, it is found that price quality schema is negatively related with private label band usage. Indian consumers consider private label brand as low quality product. Low price of the private label brand may be accountable for this perception. Sales proneness is negatively related with private label brand. Consumers who usually search for price cuts and specific offers were not store brand prone. This is reasonable since store brand is offered usually at lowest prices of the product category. On the other hand, consumers can afford national brand offering sales promotion schemes at the regular price of PL brands. So shoppers who buy products on sales are not inclined to purchase PL brands. Private label brand usage is negatively related with price mavenism. Price mavens have all the information regarding the products in the market. They know the value proposition of national brands as well as private label brands. So price mavens are not inclined to purchase PL brands. Prestige sensitivity does not have any statistically significant relationship with PL brand usage.

Table 4: Hypothesis Testing

Hypothesized Path	Proposed Relationships	Standardised Coefficient	t value	Result
H1: Price Consciousness – PL Brand Usage	Positive	+ 0.218	3.527	Accepted
H2: Value Consciousness – PL Brand Usage	Positive	- 0.116	2.245	Rejected
H3: Price Quality Schema – PL Brand Usage	Negative	- 0.103	1.980	Accepted
H4: Sales Proneness – PL Brand Usage	Negative	- 0.122	4.298	Accepted
H5: Price Mavenism – PL Brand Usage	Positive	- 0.139	3.276	Rejected
H6: Prestige Sensitivity – PL Brand Usage	Negative	Not Significant	0.250	Rejected

8. Limitations

A couple of limitation of this study suggests potential research opportunities. First, as mentioned earlier, the current study does not consider the effect of product categories on private label brands usage. This study is conducted in the context of apparels. Therefore the findings cannot be applied to private label brands of other product categories. Future research should examine other product categories to expand the scope of this research field in order to see if the observed effects can be generalised across various categories. The measures of store brands usage and price related constructs were based on only one shopping trip and situational variables may strongly affect purchases on any single occasion (Garretson et al., 2002). Measurement over many trips will provide results that would carry more confidence. The study has been conducted in Ahmedabad city of Gujarat, India. The results of the same, if conducted in other part of the county may vary. The shopping malls for the survey were selected according to convenience. As was noted earlier, our sample included consumers, who were, on average, younger, single, and with average income. Further research is needed with focus target consumers with respect to demographic factors.

9. Conclusion

An attempt is made in this study to investigate the impact of consumer price perception on private label brand usage. Six price related constructs are used for that and it is found that price consciousness is positively related with PL brand usage while value consciousness, price quality schema, sales proneness and price mavenism are negatively related with PL brand usage. Prestige sensitivity does not have any statistically significant impact on PL brand usage. Important managerial implications of this study may be noted. The findings of the study will be helpful for retailers to understand the importance of various price related factors in buying behavior of private label brands. It is found that consumers are suspicious of store brand quality and value. Retailers must pay attentions to improve the product quality and quality related cues. This finding suggests that retailers need to strengthen the advertising and promotional campaigns of their private label brands. This will help them to attract sales prone consumers to purchase private label brands. This study will help the retailers to design better, more suitable pricing and branding strategies.

References

Ailawadi, K.L., Neslin, S.A., and Gedenk, K. (2001) "Perusing the Value Conscious Consumer: Store Brands Versus National Brand Promotions," *Journal of Marketing,* Vol. 65 (January), pp. 71-89.

Baltas, George (1997), "Determinants of Store Brand Choice: A Behavioral Analysis", *Journal of Product & Brand Management,* Vol. 6 (5), pp. 315-324.

Batra, R and Sinha, I., (2000), "Consumer Level Factors Moderating The Success Of Private Label Brands", *Journal of Retailing,* Vol. 76 (1), pp.175-191.

Burton, S., Lichtenstein, D. R., Netemeyer, R. G., & Garretson, J. A.,(1998), "A Scale For Measuring Attitude Toward Private Label Products And An Examination Of Its Psychological And Behavioral Correlates," *Journal of Academy of Marketing Science,* Vol. 26 (4), pp. 293-306.

Dick Alan, Jain, Arun and Richardson, Paul (1995), "Correlates of Store Brand Proneness: Some Empirical Observations," *Journal of Product & Brand Management,* Vol. 4 (4), pp. 15-22

Etzel, M.J; Walker B.J., Stanton, W.J. and Pandit, Ajay (2005), Marketing – Concepts and Cases, Tata McGrow Hill Publishing Company Ltd., 13e.

Garretson, J.A., Fisher, D., and Burton, Scot (2002), "Antecedents of Private Label Attitude and National Brand Promotion Attitude: Similarities and Differences", *Journal of Retailing,* Vol. 78, pp. 91-99.

Indian Retail: On The Fast Track, Time for Bridging Capacity Gap, report published by FCCI, 2005

Jin, Byoungho., Sternquist, Brenda and Koh, Aeran (2003), "Price as Hedonic Shopping," *Family and Consumer Sciences Research Journal,* Vol. 31 (4), pp.378-402

Jin, Byoungho and Suh, Yong Gu, (2005), "Integrating Effect of Consumer Perception Factors In Predicting Private Brand Purchase In a Korean Discount Store Context," *Journal of Consumer Marketing,*, Vol. 22 (2), pp. 62–71

Meer, David,(1995), "System Beaters, Brand Loyal and Deal Shoppers: New Insights into the Role of Brand and Price", *Journal of Advertising Research,* Vol. 35 (2), pp. RC2-RC7.

Moore, M., Kennedy, K.M., and Fairhurst, A., (2003), "Cross-Cultural Equivalence of Price Perceptions between US and Polish Consumers", *International Journal of Retail & Distribution Management,* Vol. 31(5), pp.268-279.

Lichtenstein, D. R., Ridgway, N. M., and Netemeyer, R. G., (1993), "Price Perceptions And Consumer Shopping Behavior: A Field Study," *Journal of Marketing Research,* Vol. 30 (2), pp. 234-245.

Pradhan, Swapna (2004), Retailing Management – Text and Cases, Tata McGraw Hill Publication Company Ltd., New Delhi, 2nd edition.

Rao and Monroe (1989), "The Effect of Price, Brand Name And Store Name On Buyers' Perceptions Of Product Quality: An Integrative Review", *Journal of Marketing Research,* Vol. 26 (3), pp. 351-357.

Vahie, Archna and Paswan, Audhesh (2006), "Private Label Brand Image: Its Relationship With Store Image And National Brand", *International Journal of Retail & Distribution Management,* Vol. 34, No.1. pp. 67-84.

Zeithamal, V.A. (1988), "Consumer Perceptions of Price, Quality and Value: A Means-End Model and Synthesis of Evidence," *Journal of Marketing,* Vol. 52 (July), pp. 2-22.

Profiling Training and Information Needs of Hospital Decision-Makers: Some Lessons from the Portuguese Experience

Fernanda Nogueira*, Chris Gerry and Francisco Diniz
CETRAD/Departamento de Economia, Sociologia e Gestão, Escola de Ciências Humanas e Sociais, Universidade de Trás-os-Montes e Alto Douro, Av. Almeida Lucena, 1, 5000-660 Vila Real, PORTUGAL
E-mail: nogueira@utad.pt; cgerry@utad.pt, fdiniz@utad.pt

Abstract
The main aim of the present paper is to identify the main components that determine the profile of the typical hospital decision-maker and to ascertain their priority training and information needs. To this end, using interview and questionnaire techniques, an attempt was made to specify the career-long training pathways and the corresponding training and information "requirements" and "acquisitions" of hospital decision-makers, along with their perceptions regarding their role in hospital decision-making (in general) and the role of training and information in that process (in particular).

Key words: Hospital decision-makers; Information; Professional profiles; Public sector management; Training

1. Introduction: recent advances in decision-making theory

In an increasingly globalised world, even the most visionary of observers has been surprised by the speed at which information is produced and transmitted, and the rate at which technology has advanced. In this context, the population at large faces a wide range of new challenges and, for this reason, society (in general) and clients of public services (in particular) have come to demand services that are always up-to-date and that are delivered in an increasingly professional manner at constantly improved levels of quality. Whenever people experience a radical shift in their circumstances, there is a stimulus – both in the public and the private sectors – to rethink and re-evaluate current processes and practices, as well as the ways in which problems are defined and resolved. As the implications of a globalised world unfold before our eyes, our bombardment from all sides with all manner of information reaches almost insupportable levels, the daily life of each citizen (at least of the most developed countries) comes to exemplify ever more closely not only the hyper-connectedness predicted in McLuhan's concept of the global village, but also the sense of growing perplexity and alienation that accelerated change implies. It should come as no surprise that globalisation also subjects the organisational models hitherto employed in the private and, increasingly, the public sectors, to critical assessment and constant change (Ackroyd, 1995; Gerry and Nogueira, 2000).

As citizens of the same global village, administrators are obliged to constantly reflect on, rethink and adjust each aspect of their management practices, regardless of their nationality, branch of activity, area of specialist knowledge or position in the organisational hierarchy. Clearly the public sector is not exempt from the influences of the new demands that professionals face – not only regarding the appropriateness and adaptability of their accumulated skills and competencies, but also the efficiency of the management practices they currently adopt. Nor can they readily ignore the calls for greater decision-making autonomy and social justice, aimed not only at achieving a faster pace of administrative modernisation in general, but more specifically at facilitating the emergence of new policies, and at fostering greater convergence between the management practices inherent in current public policies and the more "entrepreneurial" approaches offered by the private sector (Drucker, 2000).

Faced with these challenges, the managers of any type of undertaking are forced to acquire not only a greater capacity to handle information and knowledge, but also to practice greater flexibility in its management. Decision-making requires information, training, knowledge security, coherence and, of course, power (Pfeffer, 1994). The decisions taken with regard to the resources of any type of organisation – be they material, financial or human resources – is a key determinant of its success or failure. Based on what has happened in other organisations, it is clear that there needs to be an improvement, renovation and updating of the decision-making skills of public sector managers to enable them to intervene more effectively in the new types of situations that they now routinely face: in short, they need to be invested with greater autonomy and more appropriate skills (Miller, 1996; Carapinheiro, 1998) if the public's expectations of greater effectiveness at lower costs/prices are to be met.

Regardless of the importance of the education, training and skills with which public sector managers might be equipped, these are not sufficient to ensure that decisions produce the hoped-for results. From a theoretical standpoint, according to Simon (1960), any real-world decision can be located anywhere on a continuum between (at one extreme) the entirely empirically-based decision and (at the other extreme) the wholly rational, scientific and programmed decision. Traditionally, decision-making theories have tended to focus on the latter (i.e. rational – scientific) end of the continuum, applying fundamental principles and criteria, logical processes and analytical techniques that are intended to lead – whenever possible – to rational and objective solutions. Theorists nevertheless recognised that this sought-for objective rationality is at best difficult to achieve and at worst a chimera, and have therefore adopted less absolutist concepts such as "subjective rationality" and "bounded rationality" for a number of reasons, including:

1. the unlikelihood of having access to complete information on which to base a comparison of all the alternatives and their likely outcomes;
2. the difficulties involved in conducting cost-benefit analyses of all the alternatives under consideration;
3. the problems of ranking alternative solutions either in terms of value or utility; and
4. the constraints imposed either by the internal or external environment in which the decision is to be made.

However, managers in general, and not least of all those working in the public sector, are constantly faced with the need to opt between alternatives, take decisions, and adopt defensible positions on the basis of their chosen course of action. However, decision-making in what might be called "contested and/or controversial environments" i.e. where the private sector also operates but under different rules and/or constraints, or where institutional structures are particularly rigid, or where the policies to be followed have already been determined, is particularly difficult – particularly if the manager or administrator does not have access to all the information and/or all the skills and training or for some reason is unable to use their information and training correctly (Mintzberg and Westly, 2001).

Many analysts take as their starting point decision-making as a learning process, and thereby attempt to transfer some of the basic ideas of the prescriptive school to the sphere of strategic planning based on information and training systems. The aim is to focus on the decision-making process and to analyse it from an evolutionary standpoint, applying the principles of logical incrementalism. Furthermore, an attempt is made to view decision-making as part of the overall process of organisational learning in which solutions are constructed by the organisation itself on the basis of a much wider range of competencies than merely technical inputs (Farnham and Horton, 1996; Mintzberg, 1995).

The search for specific mechanisms that might give rise to a more coherent and better integrated decision-making strategy has resulted in a new methodology that is deeply rooted in the information systems approach. The real aim of strategic decision-making is to use multiple information sources in order to lay claim to all that managers learn, drawing not only on the outputs of their day-to-day activities and on the results of dedicated research and assessment of their performance, but also on valuable insights that are derived from their own personal experience (Exworthy and Halford, 1999; Mintzberg, 1995). In other words, strategic decision-making means refining all the results of organisation learning into a new vision and a new direction for the organisation. Ward and Griffiths (1996) have identified three processes they consider to be crucial to the decision-making process and all of which are dependent upon substantial information inputs:

1. strategic planning that is systematic and comprehensive, and which permits an action plan to be developed;
2. strategic thinking that is creative, imaginative, enterprising and appropriate to the nature and mission of the organisation and which makes strategic planning viable; and
3. decision-making that is timely and conducive to pro-active initiatives whenever new challenges and opportunities emerge.

From this standpoint, a strategy can no longer be seen as the exclusive result of the strategic planning process, but rather the product of a complex set of mutually permeable, interacting and interlocking processes that together contribute to the identification of a strategic decision that is both timely and pro-active, as Figure 1 (below) attempts to illustrate.

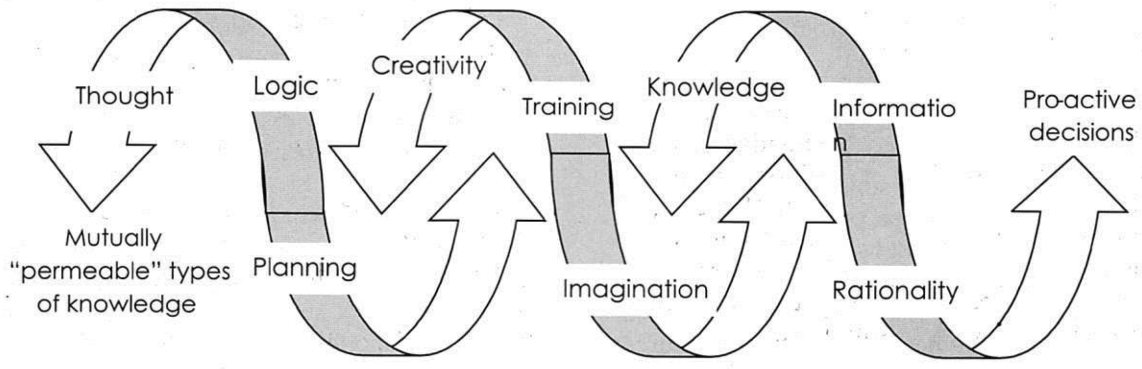
In the formulation of a strategy, both the decision-making process, and the more intuitive processes (i.e. based on individual personal experience and on organisational learning) in which managers are involved contribute to the generation of "mental models" (Senge, 1990; António, 2003) or "subjective realities" that are the result of the interaction of successive cycles of organisational learning and other personal experiences, and which generate a continuous flow of information. In contrast to the classic prescriptive and essentially static approach to strategic planning based on fairly immutable principles, rules and outcomes, more recent models view the strategic decision-making process as dynamic, constantly being adjusted, based on rules that themselves change in line with the needs of the organisation and alterations in its external environment. Information in its most diverse forms not only influences but also alters decision-makers' attitudes and beliefs (i.e. their mental models); at the same time, newly-acquired skills and abilities strengthen and refine their knowledge, understanding and sensitivity (Du Gay and Salaman, 1996). This dialectical cycle (or spiral) operates both at the individual and the organisational levels, thereby incorporating new information, new skills and new synergies into the whole process.

However, and with regard to the specific aims of the present paper, it needs to be remembered that **the successful application of this new approach to strategic decision-making presupposes that we know who the decision-makers are.** Given that organisations are made up of people, each of whom have a particular personal and professional profile that has evolved over the course of their lives, it is not unreasonable to begin the more detailed discussion of the research presented here by trying to identify the main personal and professional traits that underpin different decision-making styles.

The purpose of these introductory comments has been to some extent to justify the hypothesis underlying the study presented here, namely that **the degree of difficulty with which public sector administrators and managers arrive at their decisions is more related to their capacity both to gain access to the information and training necessary for decision-making, as well as the knowledge necessary to make appropriate use of that information and training, rather than to the formal decision-making power with which they are invested.**

From this perspective the key question concerns not the relationship between power and decision-making, but rather the relationship between information/training and decision-making. In most research of this type relating to the information society, the key variables have tended to be knowledge and the information/training associated with its exercise. The degree of competitiveness that globalisation now demands of all organisations means that key decisions have to be made on the basis of appropriate and reliable flows of "high density" information that are quantitatively and qualitatively greater than ever before. Quite simply, organisations that are unprepared for this type of decision-making run the risk of being eliminated (Vaill, 1999; Campos, 2002). It is important to note, moreover, that the aim of this paper is not to make value judgements about the quality of decision-making in Portuguese hospitals, or to designate them as being either right or wrong, but rather to understand **how decision-making is viewed by the decision-makers themselves** and to establish **how well their professional and personal lives have prepared them – in terms of training and**

Fig. : Proactive and timely decision



information – to participate in the decision-making processes in which they are currently involved.

2. Research methodology

Portuguese public and private sector hospitals were chosen as the object of this research into the influence of decision-makers' access and use of information and training over the decisions at which they arrive. In a relatively modest **doctoral** research project, it was not possible to interview the entire universe of hospital decision-makers; thus it was of particular importance to be rigorous in the selection of the sample of hospitals in which the questionnaires were to be applied, so as to cover an appropriately large number of hospitals that also was sufficiently representative of the universe. The Portuguese hospital system consists of a hierarchy of public and private institutions, some large, others smaller, some providing general/comprehensive medical care, others being more specialised. Table 1 below summarises the typology of institutions adopted in the research and the corresponding number of questionnaires programmed and actually undertaken.

In order to minimise the risk of under-representing one or more of the types of hospital identified above, particularly in advance of evidence relating to the availability of hospital staff to attend face to face interviews with the researcher, the number of questionnaires undertaken in each institution had to correspond in broad terms to its dimensions (defined in terms of overall employment and/or occupation of beds and/or the range of services offered). Thus the number of questionnaires undertaken broadly corresponded to the size of the institution, which in turn reflected the corresponding presence or absence of specific technical and managerial functions as Table 2 indicates:

The questionnaire schedule was aimed more at collecting qualitative responses than quantitative data, mainly because this approach is more conducive to successfully characterising the meanings decision-makers attach to their actions (in particular) and the world of workplace human interaction (in general) than approaches that focus exclusively on quantitative modelling and highly focussed statistical interpretation. Data collection included both the primary data derived from the 53 extremely detailed questionnaires undertaken (consisting of both closed questions and opportunities for more open responses); simultaneously, interviews were conducted with a wide range of key individuals with specialised knowledge of the sector. Complementary secondary data was also collected from official sources and published research referring either to the specific institutions being analysed and/or more broadly to the health sector as a whole. The data collection covered a relatively long period of time (October 2002 – September 2003), in line with the availability of decision-makers in each institution.

Given that the methodology adopted focussed on the collection and detailed analysis of key decision-makers' opinions, indirect (i.e. postal or

Table 1 : Questionnaires planned and undertaken by type of hospital

Type of institution	N° in sample	N° of questionnaires		
		planned	undertaken	coverage (%)
Small hospitals	2	10	15	150
Medium sized hospitals	2	20	15	75
Large hospitals	2	20	15	75
Specialist hospitals	1	10	8	80
Total	7	60	53	88

Table 2: Questionnaires planned and undertaken by decision-makers' position in the professional hierarchy

Professional function	N° of questionnaires		
	planned	undertaken	coverage (%)
Administrators	28	22	79
Medical staff	13	13	100
Nursing staff	13	5	38
Other personnel	6	13	217
All groups	60	53	88

similar) methods of data collection were rejected in favour of face-to-face contact in which a common questionnaire was applied and a subsequent interview undertaken using common guidelines. One major concern in designing the questionnaire was how to adequately and accurately express the opinions of decision-makers regarding key areas of their work and responsibilities. From among the various approaches available, the Likert model was chosen, which provides 5 gradations of approval or disapproval of a given statement, ranging (for example) from "never", through "rarely", "sometimes" and "often" to "always". This approach allows answers that reflect differing degrees of (dis)agreement to be registered in a standard form. Notwithstanding its drawbacks – mainly the fact that respondents tend to be drawn to the mid-range responses –under the circumstances and with the research aims in mind, it appeared to offer the best available solution for most of the subject on which decision-makers were to be questioned. Respondents were obliged to answer using only the gradations provided on the simple (and perhaps naïve) grounds that, as senior decision-makers, they should not be allowed the luxury of answering "I don't know".

The questionnaire schedule covered a wide range of variables relating to the main aims of the study and reflecting the various concerns raised by key theorists, the author's and other researchers' observations regarding the administrative reality of hospitals, as well as issues that were raised in interviews with key informants. On this basis, the guidelines used in data collection can be divided into two parts: (1) the personal and professional pathway followed by the decision-maker, with particular emphasis on the acquisition of training and access to information; and (2) perceptions and practices in the context of hospital decision-making.

The first part of the questionnaire schedule, as its title suggests, had the aim of eliciting personal information regarding the respondent him/herself, particularly in regard to the educational and training pathway followed to date. In addition to permitting the sample to more clearly disaggregated and categorised, these data also helped to identify how the respondent had arrived at the decision-making responsibilities held at the time of the study. The second part of the schedule aimed at collecting details of the decision-making process in which the respondent was involved as a result of the responsibilities explicit in his/her administrative and/or managerial functions. Figures 3 and 4 below summarise the major groups of variables on which data were collected during fieldwork.

The extremely high number of variables on which data was collected (233) was due to the fact that there was no pre-existing research on this subject that might have allowed the elimination of some variables found elsewhere to have been of limited relevance. As a result, it was decided to initially investigate the maximum number of variables relating to all the above-mentioned dimensions, thereafter eliminating those that were statistically proven to less significant. These apparently less important variables would nevertheless still be available for future reference and possible comparative analysis.

The codified results of the questionnaires were processed using standard SPSS™ software. In the first phase, all the initial exploratory analysis of hospital decision-makers was undertaken, which essentially involved calculating the frequencies of key variables. For the data collected on decision-makers' perceptions of decision-making processes, in addition to the calculation of median values, recourse was made to the Kruskall-Wallis test whenever the interpretation of a particular group of variables demanded it. Factorial analysis was subsequently employed with a view to reducing the number of variables to be taken into account. The PROBIT model was then applied to the factors identified in the previous stage of the analysis in order to estimate the principal components of hospital decision-makers' profiles. Finally, Zellner's iterative process (as incorporated into the SURE technique) was used in order to confirm the robustness of the conclusions (Zellner, 1962).

Fig. 2: Operationalised dimensions permitting the identification of the key components in the hospital decision-maker's profile

Professional pathway of the decision-maker	Aspects of hospital decision-making
• Personal characteristics	• Perception
• Initial and complementary education/training	• Involvement
• Professional career pathway	• Planning/formulation
• Nature/content of present/past functions	• Execution/implementation
• Related information and training needs	• Evaluation
• Human relations in the workplace	

Fig. 3: Aspects of the training and information needs profile of the hospital decision-maker

A. Personal characteristics. Age; gender; workplace; how appointed; professional category/post; type of contract.	***D. Nature and content of work.*** Nature of the tasks undertaken; degree of autonomy in these tasks; level of satisfaction from performing these tasks; attitudes adopted in unpredictable situations.
B. Initial and complementary education and training. Basic course of study; year graduated; motivation for choosing course of study; extent to which expectations were fulfilled; complementary training; relationship between training and function.	***E. Training and information needs.*** Academic studies undertaken for health sector purposes; academic studies undertaken for function performed; professional training undertaken for health sector purposes; professional training undertaken for function performed.
C. Career/professional pathway. Choice of profession; date professional career began; other professional activities; when hospital functions began; extent to which expectations fulfilled.	***F. Human relations in the workplace.*** Extent and frequency of socialising; personal investment in human relations; intensity of general and close cooperation; basic values governing workplace relations.

Fig. 4: Dimensions taken into account in the evaluation of hospital decision-makers' perceptions of the decision-making process

A. Involvement. Level of participation; hierarchical position; skills and capacities; basic concerns; analytical processes employed; autonomy vis-à-vis national health service; type of decisions taken; type of information used.	***B. Planning/Formulation.*** Which aims are defined? Who defines aims? How much influence is exerted by internal actors? External actors? What are the key conditioning factors?
C. Execution/Implementation. What are the priority decisions? How are decisions put into practice? The origins and contribution of unplanned decisions; the degree of articulation between decisions; resource availability. What are the main sources of finance?	***D. Evaluation of the decision.*** What are the main evaluation criteria? Who defines them and at what hierarchical level? What types of results are evaluated? What data are used in evaluation? What resources are evaluated?

3. Results

In our contacts with key informants at the beginning of the research, a number of traits of hospital decision-makers were clarified. Nevertheless, a number of characteristics remained unknown until the fieldwork began. In the first group of results discussed below, six sub-groups of variables are identified: (1) personal characteristics; (2) initial and complementary education/training; (3) career/professional pathway; (4) nature and content of work; (5) information and training needs; and (6) human relations in the workplace. The second group of results is dedicated to identifying the type of understanding that the three levels/types of decision-makers (top, middle and lower level) have of their involvement in the decision-making process, as well as their perceptions of the different phases of this process in the organisations in which they work (involvement, planning/formulation, execution/implementation and evaluation). In the third and final group of results, the main characteristics of hospital decision-makers' profiles are presented, based on the preceding analysis.

As the summarised results in Figure 5 indicate, the sample consists of individuals with high levels of technical training and knowledge related to the health sector and poor levels of training and information-access related to the management functions they perform. In Figure 6, the sample's perceptions of the decision-making process are presented.

In summary, it can be concluded that decision-makers perceive (1) that they exercise a certain degree of autonomy over the use and distribution of resources; (2) that difficulties exist in elaborating and fulfilling planned activities, and in keeping within budgetary limits; (3) the availability and appropriateness of technical resources, as well as the training available to both technical and managerial staff, leave much to be desired; (4) their institutions' services have low visibility both internally and externally; (5) client/user participation levels are low; (6) there is excessive financial dependency on public funding; and (7) policy is excessively government-led, with little or no real receptivity to inputs from the professions.

Fig. 5: Personal and professional pathway: summarised results of key factors

	Factor analysed	Summary of results of sample of 53 decision-makers
A.	Personal characteristics	Aged 28-64 (average 48 standard deviation 7.9), predominantly male, all occupying senior positions in the hospitals where they worked.
B.	Initial and complementary education and training	Graduates (1971-1981), with an average of 22 years of education, with mainly sectorally-focussed complementary training. Mainly chose their courses out of personal vocation, but educational expectations mainly not satisfied. Strong connection between past training and current functions.
C.	Career/profess-ional pathway	Chose profession out of vocation. Mainly began career in the sector, though 32% exercise other (mainly entrepreneurial) activities, of which half in private medicine. Most entered present institution 1990-99 and have between 1-32 years of service.
D.	Nature and content of work	Technical functions (doctors/nurses) based on training and, in the case of managers, related to the post held. Have relative autonomy in both technical and resource related decision-making. Satisfaction restricted to technical outcomes. Tend to deal with unpredictable situations via help of colleagues and superiors.
E.	Training and information needs	Feel little/no need for further academic sector-related training but some need for further function-related training. Have sufficient access to professional information and training but aware of substantial shortfalls with regard to exercise of their administrative/management functions.
F.	Human relations in the work-place	Socialise through daily contact with colleagues and make their personal investment mainly in work context. Feel that there are many with whom cooperation is possible and that the level of cooperation is high. Loyalty is the guiding value in their workplace relations.

Table 6 : Principal components of the personal-professional profiles of hospital decision-makers

Characteristics (or Components)	Profile I (24%)	Profile II (57%)	Profile III (19%)
A. Unmodelled variables			
Age	<39	39-45	49-59
Gender	Female	Male	Male
Hospital unit	Large	Small	Medium
Hierarchical position	Base-line managers	Intermediate managers	Top managers
Education/training	*Técnico Superior 1*	*Técnico Superior de Saúde* [3]	Administrator/Director
Views re. participation	Participatory	Rather non-participatory	—
B. Modelled variables			
Category	Positive sign	Negative sign	—
Complementary training	Positive sign	—	—
Inter-institutional relations	Positive sign	—	Positive sign
Career pathway	—	Positive sign	—
Training/information needs	—	Negative sign	—

1) The aim of applying factorial analysis to each of the dimensions previously presented was to minimise the number of variables used, while retaining the maximum information possible. It should be stressed that factorial analysis was not applied to Dimension 1(personal characteristics) given that a number of nominal variables were concerned. This being the case, the process of reducing the number of variables under consideration began with Dimension II – initial and complementary education/training.

2) The Técnico Superior and Técnico Superior de Saúde constitute , respectively, the basic levels of graduate entry into the administrative hierarchy of the Portuguese civil service (in general) and in the national health service (in particular).

4. The profile of the hospital decision-maker

On the basis of the analysis of the perceptions of the decision-making process held by hospital administrators and managers, we concluded that there existed significant differences in terms of both the type of opinions expressed by each group of decision-makers, and the feelings they had regarding the extent and quality of their participation in this process. Whether there were significant differences between the personal-professional profiles of those with differing perceptions of hospital decision-making remained to be investigated. The analysis shifted to the identification of the principal characteristics of these profiles, based on the training- and information-related professional pathway each person had followed. New variables that had emerged from the preceding factorial analysis were examined using a PROBIT regression model (Greene, 2000) and the robustness of the results was tested using Zellner's iterative method (See Table 3).

5. Summary of results

There seems little reason to doubt that an appropriate level and degree of control exercised over the functioning and performance of an organisation – be it public or private – requires a combination of ingredients that are not necessarily always found to coincide in time and space. More specifically, it may be the case that those responsible for the implementation of key decisions, and the subsequent monitoring and evaluation of their effects are unable to simultaneously enjoy legitimacy within the organisation and fulfil their tasks with the appropriate level of technical-professional competence. Legitimacy is an essentially political ingredient of the decision-maker's art and should not be confused with the mere representation of the interests either of professional groups or government entities. Technical competence requires a continuous "apprenticeship" and permanent professional commitment that, for a multiplicity of reasons, often tends to evaporate over the course of a long career.

Naturally, it would be interesting to know which individuals make up the three profiles identified in this study. In order to attain this objective, some of the as-yet untransformed variables were re-examined. This procedure led to the following conclusions:

1) Profile I consisted of decision-makers who appeared to be the most concerned about gaining access to the training and information considered necessary for their administrative functions. Consequently, they had more positive/optimistic view of their involvement in the decision-making process – or, at least, they considered that their greater participation was a legitimate aspiration on their part, due to the investment they had made in gaining further training and in keeping professionally well-informed. Profile I had the following characteristics: female, under 39 years of age, with a professional category of at least *Técnico Superior* level, working in large hospitals, typically at the base-line management level. Certain social phenomena that have emerged in organisations of all types may partly explain this result. On the one hand, in recent years there has been a much greater flow of (in particular, well-qualified) women into the labour market and a greater willingness of certain organisations to appoint women to positions of significant decision-making responsibility. On the other hand, large hospital units are typically sited close to the larger centres of information-supply and training-provision, and this may have been a factor in women being more successful than before in attaining and retaining decision-making positions.

2) Profile II consisted of decision-makers whose training and access to information related more to the sector in which they work than to the functions they perform. They tended to be male, aged between 49 and 59, with a professional category of at least *Técnico Superior de Saúde* level, working in small hospitals, typically at the intermediate management level. The fact that they have complementary training relating to the health sector and not to their management responsibilities makes it difficult for them to accurately identify their real role in decision-making, and leads to a sense of dissatisfaction with a process in which they believe they barely, participate – if at all. Interestingly, the viewpoint adopted by Profile II decision-makers is in stark contrast to the conclusions that would be drawn by any disinterested observer of the process in the hospitals in question or, indeed, any impartial analyst of the content of the questionnaires and interviews of the decision-makers involved. One of the key aspects of these results is the fact that many of the administrators in question appeared to have deliberately withdrawn from some of the key managerial tasks in their organisations; furthermore, it was in this group that was to be found the majority of those staff who had opted to engage in entrepreneurial activities related to the health sector in parallel with their hospital duties. These results also raise an interesting question regarding how best to involve and motivate health professionals with this training/information profile.

3) Profile III consists of those who over the course of their careers have accumulated training

and information relating both to the health sector and to their managerial functions. The group is predominantly male, aged between 49 and 59, of Administrator/Director status (i.e. at the top of the decision-making hierarchy), and working in medium-seized hospitals. The experience and information accumulated over a long career provides them with a clear appreciation of their real role in the decision-making process, leading them to evaluate their participation very positively.

The three profiles summarised above correspond to three distinct positions regarding the importance (or otherwise) of training and information as a means not only of personal advancement and realisation, but also of "decisional" learning at the organisational level.

At one extreme of the continuum, we have a group consisting mainly of young women whose motivation is based on the conscious recognition that they need to actively and permanently deploy knowledge and information in the taking of decisions and in the forecasting of their consequences. Consequently this group manifests particular concern with regard to life-long training and the establishment and maintenance of productive inter-institutional relations. As such, they could be seen as constituting the most promising "future" for hospital administration, management and decision-making.

At the other extreme, we find the "wise old heads" of the profession, who have acquired a clear and comprehensive view of what hospital decision-making has been, is today and perhaps what it could be tomorrow. While this group undoubtedly has the required legitimacy, leadership and power, in principal, it also has the strategic vision, rationality, information and training necessary for high quality hospital decision-making. In summary, they have all the key facets of knowledge inherent in and essential to hospital decision-making and recognise the relative importance of the various cognitive inputs necessary for the development of each of these dimensions of the task. They, too, are concerned with organisational learning and inter-institutional synergies, but are coming to the ends of their careers.

Between these two extremes, corresponding to "future promise" and the "best of the past", respectively, we find the "other" decision-makers. However, this does not constitute the typical heterogeneous intermediate or residual category that often occupies middle ground in any essentially dualistic continuum: its members have quite distinct traits. They are basically concerned with their own professional and personal pathways and the fact that their knowledge, beliefs and attitudes are predominantly patient-oriented they often forego or even scorn training related to the decision-making processes in which they are objectively involved.

6. Discussion and conclusions

In summary, we can conclude that the decision-makers of Profile 1 consists predominantly of health sector decision-makers who have the technical training and/or information necessary for decision-making, but lack the training and/or information necessary for decision-making relating to their day-to-day duties. The same decision-makers have the training and/or information necessary to act at the inter-institutional level and, in general terms, to fulfil their overall management aim.

Furthermore, the decision-makers of Profile II only have the technical training and/or information necessary to function in the health-related sector. This being the case, they have a substantial demand for management training and/or information in order to be able to support decision-making inherent in the management of the specific services for which they are responsible, in addition to tasks of a technical nature that they need to perform in health related activities. Thus the managers that make up this particular Profile have an undeniable need for training and information related to the theory and practice of decision-making.

Finally, the decision-makers in Profile III dispose of the training and/or information necessary both for health-related functions and for the management functions they currently perform, and so their perceived needs (as identified in the research) tend to be those related to the permanent

3) It should be noted that the direction of causality is not totally clear here: does the emergence of entrepreneurial opportunities cause people to withdraw from managerial tasks in the hospital? Or does a real or imagined sense of non-participation in hospital decision-making encourage people to look for other ways of satisfying not merely their material ambitions, but also a need for recognition and/or self-affirmation (i.e. via self-employment)? In either case, it is probable that in answering questions (in)directly relating to this issue, a degree of self-justification is involved – i.e. "I'm fulfilling myself personally and financially through entrepreneurial activities because I cannot achieve this in my main occupation".

4) At the present moment, the Portuguese government is considering the integration of health service users' organisations in the National Health Council.

updating of their knowledge in the overall sphere of management and decision-making.

The contributions made by the present study can be summarised as follows: above all, it has contributed to the broader debate on the training and information needs of different types of hospital administrators and, more specifically, to our understanding of the real world of hospital decision-making. The results of the analysis may help those involved in hospital management to:

1) more clearly understand their real role and their degree of participation in the decision-making process;
2) reorient their life-long training with a view to improving performance in all management tasks;
3) adjust the hospital management structure and system so as to identify more clearly and objectively "who decides what", and this in turn may help managers to determine what should be their optimum degree of participation in the successive steps of hospital decision-making; and
4) introduce mechanisms more conducive to stimulating a review and reform of training and information processes in hospitals, with particular regard to the needs of present and future senior decision-making staff.

In fact, complex problems such as hospital decision-making can only be resolved as part of a continuous learning and adjustment process both at the individual and institutional levels. Investment decisions and the contracting of key services obey different logic in the health sector compared to other areas of public administration. In many cases, the hospital is simultaneously a provider of its own services, a buyer of outside services, entrepreneur, as well as prescribing institutional and individual solutions through its professional staff i.e. making micro- and macro- decisions that impact on people's quality – and quantity – of life (Harding and Preker, 2003). Those availing themselves of the service as patients do so outside the decision-making process.

This unique situation demands that a well-structured internal strategic planning be established – a challenge that is far from easy to meet unless a rigorous and well-thought-out methodology is employed. More concretely, by abandoning the classic bureaucratically-obsessed administrative model, and by applying a more training- and information-oriented approach to the professional and career development of health staff, it may be possible to develop a more flexible, dynamic, responsive, participatory system more conducive to improved health-related activities i.e. satisfying final users' needs as a contribution to optimising overall social welfare.

As far as training is concerned, one of the ways of overcoming the current problems of the health service may be to prioritise those new types of complementary and continuing training that are able that are capable of contributing most immediately, effectively and visibly to the decision-making skills of those involved in hospital management, whether their initial training has been in medicine, nursing, management or any other area. To miss this opportunity would be to condemn health services to yet another generation of decision-makers whose initial and complementary training barely (or only poorly) equips them to deal with the managerial demands of the sector.

With reference to information needs of different types of hospital decision-makers, the same problems could be mitigated via the creation of effective and genuinely pluri-disicplinary teams at key levels of hospital decision-making. However, for the creative exchange of knowledge to be effective, the information available has to be accurate, timely, complete, coherent, well-founded and cross-checked, a prerequisite that strongly suggests the need to rethink the organisational structures on the basis of which today's health institutions function.

References

Ackroyd, Stephen (1995) From public administration to public sector management. *International Journal of Public Sector Management*, 8 (2): 19-32.

António, N.S. (2003) Estratégia Organizacional; Do Posicionamento ao Movimento. Edições Sílabo, Lisboa.

Antunes, M.J. (2001) A Doença da Saúde. Quetzal Editores, Lisboa.

Brilman, J. (2000) As Melhores Práticas de Gestão no Centro do Desempenho. Edições Sílabo, Lisboa.

Campos, A.C. (2002) Confissões Políticas da Saúde: Auto de Breve Governação. Oficina do Livro, Lisboa.

Carapinheiro, Graça (1998) Saberes e poderes no hospital. Uma sociologia dos serviços hospitalares. (3ª ed.) Edições Afrontamento, Porto, Portugal.

Drucker, P.F. (2000) Liderança para o Século XXI. Futura, Lisboa.

Du Gay, Paul & Salaman, Graeme (1996) The conduct of management and management of conduct: contemporary managerial discourse and the constitution of the 'competent' manager. *Journal of Management Studies*, 33 (3): 263-283.

Exworthy, Michael & Halford, Susan (1999) Professionals and managers in a changing public sector: conflict, compromise and collaboration, in Michael Exworthy & S. Halford (eds.), *Professionals and the new managerialism in the public sector*, Open University Press, Philadelphia: 1-17.

Farnham, David & Horton, Sylvia (1996) Managing people in the public services. MacMillan, London.

Gerry, C. & Nogueira, F. (2000) Reflexões Acerca da Aplicabilidade à Administração Pública de Inovações Recentes na Gestão de Empresas Privadas. In 2º Encontro INA – Moderna Gestão Pública – Dos Meios aos Resultados. Fundação Gulbenkian, Lisboa.

Greene, W.H. (2000). Econometric Analysis. 4ª Edition. Prentice Hall, New Jersey.

Harding, April & Preker, Alexander (2003) A conceptual framework for the organizational reforms of hospitals, in Alexander Preker & A. Harding (eds.), Innovations in health service delivery. The corporatization of public hospitals. The World Bank, Washington: 23-78.

Miller, D. (1996) A Preliminary Tipology of Organizational Learning: Synthesizing the literature. *Jornal of Management, 22:* 485-505.

Mintzberg, H. and Quinn, J.B. (1995) The strategy process: concepts, contexts and cases. Prentice-Hall, Englewood.

Mintzberg, H. and Westley, F. (2001) Decision Marking: it's not what you think. *Slone Management Review,* 42(3): 89-93.

Pfeffer, J. (1994). Gerir com Poder. Políticas e Influências nas Organizações. Bertrand, Venda Nova.

Senge, P.M. (1990) A Quinta Disciplina: Arte, teoria e prática da organização e de aprendizagem. Editora Best Seller, São Paulo.

Simon, H.A. (1960) The New Science of Management Decision. Harper and Row, New York.

Vaill, P.B. (1999) Aprendendo Sempre. Estratégias para sobreviver num mundo em permanente mutação. Futura, São Paulo.

Ward, A. & Griffiths, J. (1996) Strategic Planning for Information Systems. John Wiley and Sons, Chichester, England.

Zellner, A. (1962) An Efficient Method of Estimating Seemingly Unrelated Regressions and Tests for Aggregation Bias. *Journal of American Statistical Association*, 57: 348-368.

Customer Satisfaction and Quality Perceptions of Electronic Banking Channel Services: An Empirical Study

A.J. Joshua*[1], K.V.M. Varambally[2] and Moli P. Koshy[3]

*[1]Manipal Institute of Management, MIT Campus, Manipal-576 104, INDIA
E-mail: joshuaambat@yahoo.co.in
[2]Director, Manipal Institute of Management, MIT Campus, Manipal-576 104, INDIA
E-mail: kv.varambally@manipal.edu
[3]School of Management Studies, Cochin University of Science & Technology, Kochi-22, INDIA
Email-id: molipkoshy@rediffmail.com

Abstract

The customer satisfaction and perception of quality of services provided through the electronic banking channels such as ATM, internet banking services and tele banking services are found out and their relationships are explored in this study. The impact of customer satisfaction with these electronic banking channels on their adoption level and usage are examined. A survey research has been conducted on the retail bank customers of the sampled banks who were the users of these services. The findings showed that ATM services were widely adopted where as Internet banking and tele banking adoption and usage were in the introductory phase. It was found that the service quality affects customer satisfaction positively, which had an impact on the adoption levels and usage of these electronic banking services. However since ATM services were widely adopted the satisfaction level of its users did not have any significant impact on its adoption and usage. The managerial implications identified would help the bank managements to device policies to improve the quality, customer satisfaction and expedite the adoption of internet banking and tele banking services.

Key words: Adoption level; Customer satisfaction; Electronic banking; Service quality perception

1. Introduction

All banks in India have realized that, in the post-liberalization era in order to remain competitive and provide the best services to their customers they need to have the latest technology in place. Irrespective of their ownership status (public sector or private sector), almost all of them have given maximum importance to technological development and deployment, ATMs, plastic money, online collection and payment services, electronic fund transfer and clearing services, mobile ATMs, document management systems, smart cards, core banking solutions, branch networking and internet banking are all outcomes of their initiative of technological upgradation (Upadhyay, 2007). Banks world over have been effectively deploying information technology as a strategic resource to achieve speed, efficiency, cost reduction, customer service and competitive advantage. Technology-enabled products and delivery channels offer value to customers providing them with anywhere, anytime, anyway banking to customers. Even though these technological changes have been pioneered in India by New Private sector and foreign banks now even the traditional banks in the Public Sector and Old Private banks are increasingly pursuing technology.

1.1. Purpose of the study

This paper examines the relationships between customer satisfaction and perceptions of quality of services provided through the electronic banking channels such as ATM, internet banking and tele banking. Their relationship with the adoption and usage of these services are examined.

2. Literature Survey

2.1. Service Quality

Most comprehensive studies to date in service quality were conducted by Parasuram, Berry and Zeithmal (1985, 1988a, 1988b, 1990, 1991 and 1994a). They developed a conceptual model called the Gaps model of service quality which showed the various gaps that need to be managed by a service firm in order to provide quality service from its customers' view point.

Parasuram et al. (1988a) developed the definition of service quality as "the overall evaluation of a service firm that results from comparing that firm's performance with the customer's general expectations of how firms in that industry should perform". On the basis of this definition they developed a multi-dimensional service quality assessment instrument called SERVQUAL containing 22 variables divided into five dimensions and the service quality was operationalised as the summated difference or disconfirmation between the customers' perception (P) and expectations (E) along these variables. This particular SERVQUAL scale has been extensively used in a number of studies covering different service settings.

Subsequently various studies (Teas, 1993, 1994; Spreng and Olshavsky, 1992) found that the disconfirmation as a method of determining service quality has several conceptual, theoretical and measurement problems. They also argued that the model suffers from the problems with respect to measuring expectations, the confusion stems from the fact that expectations are dynamic (varying from time to time), then again when to measure it, before or after receiving the service. These problems with the disconfirmation model had made researchers to increasingly ignore expectations completely and measuring perceptions as an indicator of service quality (Jayawardhena, 2004). The studies by Andaleeb and Basu (1994) and Mittal and Lassar (1996) propound that this approach results in good predictive power of service quality. Babakus and Boller (1992) and Cronin and Taylor (1992) in their respective works compared the computed difference scores with perceptions and found that perceptions are a superior predictor of service quality than disconfirmation. This had lead to the designing of performance-only or perception only scale by Cronin (1994).

The studies by Dabholkar et al. (2000) also proved that the perception measures have higher predictive and explanatory power and have better indicative power in the cases of customer evaluation and intention. In addition they observed that perception could also allow an understanding of service quality at factor level and proposed all the dimensions of quality as antecedents, rather than components of service quality. It is found by Page and Spreng (2002) that performance only measure is more reliable and stronger indicator of service quality than expectations. Moreover in case of e-commerce, as found out by Santos (2003) expectations seem to be of lesser of a comparison standard and customers appear to use experience based standards. According to the study by Yang and Jun (2002) majority of consumers were found not to have a clear idea regarding what expectations they held for online services.

Taking into consideration the problems associated with the disconfirmation model of service quality and the fact that it was measured in an e-commerce environment, this study conceptualized and measured service quality as performance perceived by consumers.

2.1.1 Automated Service Quality (E -service quality)

Service quality involving face-to-face interactions between the service provider and the customer has well established definitions in the literature, but with the introduction of technology-enabled service delivery, the service quality concepts have to be suitably modified. Presently most of the literature focuses only on the service quality of those services delivered through websites as seen in the research by Parasuram et al. (2005) and Zeithmal (2002). In the current study a broader view of the e-service quality is considered so that it addresses the service quality of not only internet banking but also of those services delivered through the other technology-enabled banking delivery channels such as telephone banking and ATM banking services. Hence a broader definition of automated service quality or E-service quality has been considered in this research as proposed by Santos (2003), "as the consumers' overall evaluation and judgment of excellence and quality of e-service offerings in the virtual market place."

2.1.1.1. Two approaches for measuring automated service quality (E-service quality)

Researchers have relied upon mainly two types of approaches for developing the measurement models for automated service quality (Al-Hawari et al., 2005). In the first approach existing service quality theory is used as a basis for developing automated service quality measures (Yang & Jun, 2002; Zeithaml, 2002; Long and McMellon, 2004) So the dimensions and items generated to measure the automated service quality have their roots in the traditional service quality conceptualization.

In the second approach the focus is on technological interfaces and the quality of new categories of self-services technology (Santos, 2003; van Riel et al., 2001). In this approach new categories and measurement models for automated service quality has been formed which diverges from the traditional service quality constructs (Joseph et al., 1999; Joseph & Stone, 2003). These are propounded to be more appropriate to measure the determinants of service quality in which the customer interaction is with technology -enabled self-service delivery channels rather than interpersonal interaction with the service providers.

Every automated service delivery channel has its own attributes (Dabholkar, 1996) and hence it is required to separate out the individual attributes of every delivery channel or other compounding factors which affect the perception of quality.

However these two approaches have the following common factors such as reliability, ease of use, personalization, accessibility, accuracy, security and efficiency. So these factors are considered while developing appropriate items for measuring service quality of the services provided through each channel and the individual measurement items are discussed separately in the methodology section.

In the banking sector, as the delivery of the same services takes place through multiple channels, depending on their conveniences the customers tend to use these channels in a complimentary way. Hence the customer relationship and transactions can be managed by any one delivery channel or a combination of them (Patricio et al. 2003, Lang & Colgate 2003). The customers' assessment of the services through a particular technology-enabled delivery channel and their intention to use a particular delivery channel depends on their perceptions about the various attributes of that particular delivery channel (Dabholkar, 1996). That is, every different channel has its own attributes, which differ from the others, so it is important to measure the quality of each channel separately and not combine their attributes together in a generalized way. This will give a better picture of the service quality pertaining to the technology-enabled services delivered through these self-service automated delivery channels.

2.2. Customer Satisfaction

According to Rust and Oliver, (1994) the definition of customer satisfaction in the services literature is given as "customer satisfaction is a summary of cognitive and affective reaction to a service incident (or sometimes to a long term service relationship). Satisfaction (or dissatisfaction) results from experiencing a service quality encounter and comparing that encounter with what was expected".

Oliver's (1993) model says that consumer satisfaction is a consumer's fulfillment response and that satisfaction judgments are influenced both positive and negative, affective or emotional responses and cognitive disconfirmation.

2.2.1. Relationship between service quality and customer satisfaction

As far as service quality is concerned there is a general agreement that it is a construct which is different from customer satisfaction and many researchers are endorsing the definition put forth by Bitner and Hubert (1994), which says that service quality is "The consumers' overall impression of the relative inferiority/superiority of the organization and its services".

Rust and Oliver (1994) have identified some of the key aspects that distinguish service quality from customer satisfaction. They are:

(a) The expectations for quality are based on ideals or perceptions of excellence, while a large number of non-quality issues go into the formation of satisfaction evaluations such as needs, perceptions of fairness and so on.

(b) In order to have satisfaction judgment one should have experience with the service or provider while to have quality perceptions prior experience is not required.

Researchers are having divergent views regarding the linkage between service quality and customer satisfaction. Some of the findings suggest that customer satisfaction with a given experience would influence an overall evaluation/attitude about service quality over time (Bitner, 1990; Parasuram et al., 1988). However study by Oliver, (1993) has shown that service quality would be an antecedent to customer satisfaction whether measured in a transaction specific or over the time mode. In this particular study customer satisfaction is taken as an antecedent to service quality.

2.2.2 Measurement of customer satisfaction

The customer's overall satisfaction of the organization is based on all the experiences of the customer with that organization. It can occur at different levels in a firm, like satisfaction with the different channels of service, with different aspects of each service and so on (Sureshchandar et al., 2002b).

In order to measure customer satisfaction different researchers have used different types of scales, single item and multi-item scales (Al-Hawari et al. 2006). For instance Cronin and Taylor (1992), had defined and measured customer satisfaction using a one-item scale asking customers overall satisfaction. But other researchers (Sureshchander et al 2002, Danaher and Haddrel, 1996) are of the opinion that customer satisfaction is multidimensional in nature so a single item scale fails to capture the complexity of customer satisfaction. The present study has mostly used multi-item scales to measure customer satisfaction except in two cases where single item measures have been used in the interest of maintaining the parsimony of the research instrument.

2.2.3 Adoption level measurement

Literature says that relationship duration and interaction frequency has been found to be good predictors of relationship development (Levinthal and Fichman, 1988). Frequency and duration of use of the internet banking by the respondents had also been used by Eriksson et al. (2005) to measure the usage of internet banking in their study. In view of these the respondents' frequency of usage and duration of usage have been asked and a composite score calculated taking their summated scores to develop a measure for adoption level (extent of adoption).

3. Research Methodology

The primary data for the study used a self-completion questionnaire delivered personally to the respondents to be filled up at a later stage and returned to the researcher or his representative either collected by hand or mailed back as the case may be. A brief introductory note was also included along with the questionnaire stating the purpose of the study and giving assurance of confidentiality and anonymity as recommended in the literature (Bryman and Bell, 2003).

A multi-phase sampling design has been done for the study in which the geographical locations was first fixed, followed by the banks from which the respondents were sampled and finally the sampling of the population of interest in the study. Hence when selecting the geographical locations care was taken so that the locations selected had an adequate representation of the users of internet banking and tele banking. Such locations had to be selected so that it had the probability of having fairly segment of users of these services. Therefore the study was limited to metro banked centre, Bangalore city and sampled urban banked centres Mangalore and Udupi cities in Karnataka.

The *population* for the study was the banking customers in the selected cities belonging to nine selected banks who were having an annual income of more than rupees one lakh and above, who were using at least one of the electronic banking channels and aged above eighteen years. The income condition was not kept applicable for the student category as they could be non-income earners but at the same time represent a potential group of electronic banking users. The income condition was kept because for utilizing banking services extensively a reasonable earning capacity is a prerequisite.

Of the nine banks whose customers were sampled four were from the public sector (State Bank of India(SBI), Canara Bank, Syndicate Bank and Corporation Bank), three were from the private sector (ICICI Bank, HDFC Bank and AXIS Bank) and two were from the foreign bank group (Citi Bank and ABN Ambro Bank). Among the public sector banks, SBI was selected for the study as it was the largest bank in this sector; Canara Bank was selected as it was the 'lead bank' in Bangalore area and was also headquartered here; Syndicate Bank was the 'lead bank' in the Mangalore as well as Udupi area, headquartered in Udupi; Corporation Bank was selected since it was headquartered in Mangalore. ICICI bank, HDFC bank and AXIS bank were number one, number two and number three banks respectively business wise in the private sector. Citi Bank was the largest foreign operating in the country, while ABN Ambro bank was the only foreign bank which had branches both in the selected metro and urban 'banked centres'.

From the discussions with the bank officials and pilot study results it was found that adoption ATMs among the bank customers were not a problem and that almost everyone had opted for it. The customers were sampled randomly from the partial list of customer databases of users as well as non-users of internet banking and tele banking provided by the banks. The intention of the sampling was to get a representative sample of users and non-users of those technology-enabled banking self-services, such as internet banking and tele banking for which the adoption among bank customers were a problem.

The suggestion which Sudman, (1976) gave about the sample size cited by Thronton and White (2001) was used as a guideline for determining sample size. This suggestion states that the sample size should be large enough so that each major category of break downs should have 100 units or more and minor categories of break downs should have 20 to 50 units. Another guideline followed in selecting the sample size for this particular study is that given by Alreck and Settle (2004) which states that for a survey research if the population is 10,000 or more usually a sample size of between 200 to 1000 respondents are considered adequate by most experienced researchers to give reasonable results. In addition an examination of the sample sizes and methods of sample selection in similar empirical studies pertaining to technology-enabled banking self-services are looked into (Rugimbana, 1995; Lockett and Littler, 1997; Sathye 1999; Tan and Teo, 2000; Al-Ashban and Burney, 2001; Thornton and White, 2001; Howcraft et al., 2002; Kolodinsky et. al., 2004 and Laforet and Li, 2005) and it was found that the sample sizes ranged from 128 to 801.

The final usable sample size obtained in the study was 553 of which 300 were from the metro banked centre and 253 were from the urban banked centres. The responses from the public sector, private sector and foreign banks were 254, 228 and

71 respectively. These were deemed to be as per the above mentioned guidelines and were considered adequate for the study.

4. Research Instrument

The survey instrument/questionnaire was designed and developed after an extensive literature review, close consultation with experts in the banking area (both practitioners and researchers) and inputs from two focus group discussions.

In order to measure the customer satisfaction of the ATM services a three-item scale is used. The items include overall satisfaction with the ATM of the respondent's bank, the respondent's satisfaction with the reliability of the ATM to provide transactions and the satisfaction with the accessibility of the ATMs. The satisfaction was measured on a five point scale with 5 being highly satisfied and 1 being highly dissatisfied. Similarly a three-item scale was also used to measure the satisfaction of the users of internet banking regarding the internet services offered by the respondents' 'most frequented bank'. Tele-Banking satisfaction was measured using a single-item five point scale with 1 being 'highly satisfied' and 5 being 'highly dissatisfied'.

The ATM service quality is measured on a performance based seven item scale which consists of the customer perception regarding easiness of usage, usefulness of the functions provided, easiness to use and operate, security of operation, convenience of location, safety of location, and its complaint resolution. The performance of the items are rated using a five-point Likert type scale with 1 equals strongly disagree and 5 equals strongly agree. These items given below have been modified and adapted from studies by Al-Hawari et al. (2005).

The customer perception regarding the service quality of the internet banking services offered by the respondents' “most frequented bank” has been measured using an 8-item scale modified and adapted from the studies by Jun and Cai (2001), Al-Hawari et al (2005) and Jayawardhena (2004). It consists of items pertaining to the adequacy of information on bank website, security of bank's internet transactions, reliability of services provided through internet banking including error free transactions, attractiveness of website and clarity of instructions, ability of bank's website to carry out a wide range of transactions, the complaint resolution ability, accuracy of query responses and easiness of website navigation, including downloading. A five point scale was used with 1 being strongly disagree and 5 being strongly agree.

Tele banking service quality perception was measured using a 6-item scale to capture the tele-banking services provided in an automated interactive response system mode as this type of tele-banking is the one which come under the self-service categorization. These items which were adapted from the studies of Al-Hawari et al., (2005) and Joseph and Stone (2003) included statements such as pleasant musical background, reasonable number of voice prompts, short waiting time, clear instructions, service reliability and ample options. Again a five point scale was used with 1 being strongly disagree and 5 being strongly agree.

In addition to the above measures the frequency of usage of each electronic banking channel and duration of usage of them by the respondents are measured. The adoption levels of each technology-enabled self-service such as ATM services, internet banking services and tele banking services are measured using a composite variable which is a summated score of the frequency of usage and duration of usage of the respective services.

Approximate percentage of use of each electronic channel for the conduction of the overall banking transactions were also asked to form the use percentage of each of these electronic banking channels.

5. Results

5.1 Demographic profile of the respondents

The sample population comprised of 56.2% males and 33.8% females indicating that men might use the electronic banking services more than women. Out of the respondents 100% were using ATMs, 68.2% were using internet banking services and 32.9% were using tele banking services. More than 98% of the respondents have graduation or higher qualifications, which again shows that it is the educated category of the population who has widely adopted electronic banking channels. The median income of the respondents were between Rs 3 to 4 lakhs per annum which was much higher than the annual per capita income of Karnataka, Rs 34, 250 for 2006-07.

5.2 ATM Satisfaction and Service quality

ATM satisfaction level is measured using a 3-item scale as discussed earlier. The reliability coefficient was 0.83 which is above the acceptable limit of 0.7 as recommended by Nunally and Bernstein (1994). As mentioned earlier service quality was measured on a performance only basis using a 7-item scale which had a Cronbach alpha reliability coefficient of 0.77 which was above the recommended limit of 0.7.

5.2.1 Relationships among service quality perceptions, satisfaction levels, adoption levels and *use percentage of ATMs and resulting implications*

From correlation table 1 it is found that there exists significant correlation between ATM service quality and ATM satisfaction level at 99% confidence level since the p-value is less than 0.01, but however the strength of the correlation is only medium level (correlation co efficient r = 0.462). From the literature it is found that service quality is considered as an antecedent of customer satisfaction (Oliver, 1993 and Spreng and Mackoy, 1996). So here also it is seen that as the service quality increases customer satisfaction also increases in case of ATMs.

ATM service quality has weak significant relationships with ATM adoption level ATMAD and ATM use percentage, but as the correlation strengths are 0.112 and 0.1 respectively the strength of correlation is found to be negligible. ATM satisfaction levels are found to have no significant correlation with ATM Adoption level and ATM use percentage. This means both the service quality and satisfaction levels are not having any effect on adoption level and usage in the case of ATMs. The reason for this could be that, as ATMs are widely adopted, and the usage of ATMs have become habitual , the consumers tend to use this service irrespective of their satisfaction levels and quality perceptions. When usage of something becomes habitual the consumers tend to use it automatically with little cognitive or mental processing (Triandis, 1980).

In order to find out the extent of relationships among the earlier variables simple regression analysis with independent and dependent variables as shown in the table 2 is conducted. The table shows the important values such as R-square, standardized beta coefficient β and t-values corresponding to the three simple regression models which are analysed. R-square values explain the variation of the dependent variable as a result of the corresponding independent variable. It is found that ATM service quality is able to explain upto 21.5%

Table 1: Correlation between ATM customer satisfaction with: ATM service quality, ATM adoption levels and ATM use percentage

		ATM Total Satisfaction	ATM Service Quality	ATM Adoption Level ATMAD	ATM Use Percentage
ATM Total Satisfaction	Pearson Correlation	1.000	.462**	.055	-.039
	Sig. (2-tailed)		.000	.196	.371
	N	553	553	553	532
ATM Service Quality	Pearson Correlation	.462**	1.000	.112**	.100
	Sig. (2-tailed)	.000		.008	.021
	N	553	553	553	532
ATM Adoption Level ATMAD	Pearson Correlation	.055	.112**	1.000	-.002
	Sig. (2-tailed)	.196	.008		.963
	N	553	553	553	532
ATM Use Percentage	Pearson Correlation	-.039	.100*	-.002	1.000
	Sig. (2-tailed)	.371	.021	.963	
	N	532	532	532	532

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

Table 2: Simple regression analysis among ATM customer satisfaction with ATM service quality, ATM adoption levels and ATM use percentage

Independent Variable	**Dependent Variable**	**R-square value**	**Standardized Beta Coefficient β**	**t-value**	**Sig.**
ATM Service Quality	ATM Customer Satisfaction	0.215	0.463	6.7	0.000
ATM Customer satisfaction	ATM Adoption Level	0.003	0.056	1.33	0.186
ATM Customer Satisfaction	ATM percentage of use	0.002	-0.045	-1.04	0.299

(since R-square is 0.215) variation of ATM Customer satisfaction in a significant manner as seen from the significance level of t-value which is found to be less than 0.01showing statistical validity at 99% confidence level.

The results of the other two simple regression tests show that R-square values are having negligible values at 0.003 and 0.002 which are also statistically non-significant as seen from the sig. levels (greater than 0.05) of t-values. These results show that the corresponding ATM customer satisfaction doesn't affect ATM adoption and ATM use percentage in a significant manner. The same results have been corroborated by the earlier correlation analysis shown in table 1 and therefore the implications mentioned earlier hold good. Therefore it is found that ATM service quality has a significant impact on its customer satisfaction. But since the ATMs have been widely adopted the consumer behavior in ATM usage has become habitual so the customers will continue using it, despite their satisfaction level with them as it is found that customer satisfaction with ATM services is not found to have significant impact in neither their adoption nor usage.

5.3. Internet banking satisfaction and service quality

Internet banking customer satisfaction is important construct which measures how satisfied the users are with the internet banking services. It determines the adoption levels and continued usage of the internet banking services. The perceptions regarding the quality of services through internet banking is expected to be an antecedent of customer satisfaction with it and it might in turn have an influence on the adoption level and use percentage of internet banking.

A 3-item scale as discussed was used to measure the satisfaction level of the users of the internet banking services and its reliability co efficient was 0.85 which was above the recommended limit of 0.7.

The service quality of internet banking was measured by means of customer perception along an 8-item scale whose items were adapted from the literature pertaining to customer perception of internet banking service quality (Jun and Cai (2001), Long and McMellon (2004), Yang & Jun (2002) used by Al-Hawari et al (2005) in their study. The Cronbach's Alpha coefficient is found to be above 0.7 which is the acceptable level according to

Table 3: Correlations among service quality perceptions, satisfaction levels, adoption levels and use percentage of internet banking

		Internet banking Satisfaction	Internet Banking Service Quality	Internet banking adoption level IBAD	Internet Banking Use Percentage
Internet banking Satisfaction	Pearson Correlation	1.000	.643 **	.338 **	.245 **
	Sig. (2 -tailed)	.	.000	.000	.000
	N	377	377	377	377
Internet Banking Service Quality	Pearson Correlation	.643 **	1.000	.216 **	.113 *
	Sig. (2 -tailed)	.000	.	.000	.029
	N	377	377	377	377
Internet banking adoption level IBAD	Pearson Correlation	.338 **	.216 **	1.000	.704 **
	Sig. (2 -tailed)	.000	.000	.	.000
	N	377	377	531	531
Internet Banking Use Percentage	Pearson Correlation	.245 **	.113 *	.704 **	1.000
	Sig. (2 -tailed)	.000	.029	.000	.
	N	377	377	531	553

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

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

Nunnally, 1994. These items have been validated in the study done by Al-Hawari et al. (2005).

5.3.1. Relationships among service quality perceptions, satisfaction levels, adoption levels and use percentage of internet banking and their implications

From table 3 it found that there is significant correlation between the internet banking service quality and customer satisfaction at 99% confidence level (since sig. level is less than 0.01) and the strength of correlation denoted by correlation co efficient r = 0.643 is on the higher side. So it can be interpreted that as the service quality perception increases the customer satisfaction also increases. The literature says that service quality is an antecedent of customer satisfaction (Oliver, 1993; Spreng and Mackoy, 1996). From table 3 it is also found that the customer satisfaction is significantly correlated with internet banking adoption (correlation coefficient r = 0.338) and internet use percentage (correlation coefficient r = 0.245) at 99% confidence level. Hence it can be inferred that the customer satisfaction affects both adoption levels and use percentage although to a milder extent, since the strengths of correlation coefficients are mild. Thus it can be concluded that the internet banking service quality impacts customer satisfaction which in turn positively affects the adoption levels and usage of internet banking. When customer is having a good service quality perceptions his/her satisfaction levels tend to be higher, the more the customer satisfaction the more will be the adoption level as their will be more repeat usage and more duration of usage. This translates into higher use percentage of internet banking.

The implication is that the banks should strive to improve the service quality levels of their internet banking along with the factors mentioned like having a website with required information, reliable and secure transactions, clear instructions, enabling wide number of transactions, good complaint resolution, smooth navigation through the website and so on. With the improvement in quality banks can achieve better satisfaction among its customers thereby increasing their adoption levels.

Regression analysis is done in order to find the extent of relationships between the constructs pertaining to internet banking. Three regression model results are shown in table 4 namely those between

1) Internet banking service quality and Internet banking customer satisfaction
2) Internet banking customer satisfaction and internet banking adoption level
3) Internet banking customer satisfaction and internet banking use percentage.

From the table it is found that there is statistically significant relationship between internet banking service quality and customer satisfaction and the about 41% percentage of variation in customer satisfaction is influenced by the service quality in this case as evident from the R-square value of the corresponding regression model. The regression models shows that there is significant relationship between internet banking satisfaction and adoption level as well as that between internet banking customer satisfaction and internet banking use percentage. Thus the earlier implications which stated that better the service quality better will be the customer satisfaction and better customer satisfaction will lead to more adoption and usage of internet banking.

5.4 Tele banking services customer satisfaction and service quality

Customer satisfaction and service quality perceptions of the customers are important as they are likely to influence the adoption levels and in turn the extent of usage of it. More over these two variables are also interrelated since from the literature (Oliver, 1993 and Spreng and Mackoy, 1996) the service quality is an important antecedent of the formation of satisfaction.

Table 4: Simple regression analysis among Internet banking satisfaction levels with Internet banking service quality, Internet banking adoption levels and Internet banking use percentage

Independent Variable	Dependent Variable	R-square value	Standardised Beta Coefficient β	t-value	Sig.
IB* Service Quality	IB Customer Satisfaction	0.412	0.642	16.15	0.000
IB Customer satisfaction	IB Adoption Level	0.124	0.353	7.3	0.000
IB Customer Satisfaction	IB percentage of use	0.076	0.276	5.54	0.000

* IB – Internet Banking

The customer satisfaction of the users of tele banking services was measured using a single-item scale similar to the one used by Cronin & Taylor(1992). The perception regarding the service quality of tele banking services have been measured using perception of performance on a six-item five point Likert scale with the end points 5 taken as 'Strongly Agree' and 1 taken as 'Strongly Disagree'. The items of telephone banking were originally developed by Joseph and Stone (2003) and subsequently used by Al-Hawari et al (2005). It has been adapted from the study by Al-hawari et al. (2005) in which its reliability and validity had been proven.The 6-item scale used for measuring the service quality perception of internet banking had Cronbach alpha coefficient of 0.78 which was above the recommended value of 0.7 (Nunnally, 1994).

5.4.1 Relationships among service quality perceptions, satisfaction levels, adoption levels and use percentage of tele banking and their implications

A Pearson correlation test is done to find out the pairwise relationships among the service quality perceptions, customer satisfaction, adoption levels and use percentage of the tele banking services. It is found that there is significant positive correlation between service quality perception and customer satisfaction in tele banking services at 99% confidence level since it is significant at 0.01. The strength of correlation is also high at correlation coefficient r = 0.803 showing that as the service quality perception increases the customer satisfaction level also increases. This implies that for users to have high satisfaction level and high level of service quality is a pre requisite, as mentioned earlier the literature reveals that the service quality is an important antecedent of customer satisfaction. There is significant positive correlations at 99% confidence levels between customer satisfaction and adoption, with relatively high strength of correlation r = 0.707, which implies that for the adoption levels to be high the customer satisfaction levels should also be high. Customer satisfaction is also having a significant correlation with the use percentage with r = 0.33.

The service quality is also having significant correlation with adoption and use percentage as can be seen from the table 5.

Implication of these findings are that a high level of customer satisfaction and a high level of tele banking service quality are required to achieve a high level of tele banking adoption and usage. So also the service quality perception is having a positive relationship with the customer satisfaction with tele banking services. Therefore the banks have to maintain high level of service quality through maintenance of good performance along the tele banking factors which impacts the quality such as reliable service, ample options, clear instructions, short waiting time and so on.

Table 5: Correlations between satisfaction, service quality, adoption and usage of tele banking services

		TB Satisfaction	TB Service Quality	Tele Banking Adoption level TBAD	Tele Banking Percentage
TB Satisfaction	Pearson Correlation	1.000	.803 **	.707 **	.333 **
	Sig. (2-tailed)	.	.000	.000	.000
	N	182	182	182	173
TB Service Quality	Pearson Correlation	.803 **	1.000	.689 **	.227 **
	Sig. (2-tailed)	.000	.	.000	.003
	N	182	182	182	173
Tele Banking Adoption level TBAD	Pearson Correlation	.707 **	.689 **	1.000	.771 **
	Sig. (2-tailed)	.000	.000	.	.000
	N	182	182	518	501
Tele Banking Percentage	Pearson Correlation	.333 **	.227 **	.771 **	1.000
	Sig. (2-tailed)	.000	.003	.000	.
	N	173	173	501	532

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

Table 6: Simple regression analysis among Tele banking satisfaction levels with Tele banking service quality, Tele banking adoption levels and Internet banking use percentage

Independent Variable	Dependent Variable	R-square value	Standardised Beta Coefficient β	t-value	Sig.
TB* Service Quality	TB Customer Satisfaction	0.645	0.803	18.07	0.000
TB Customer satisfaction	TB Adoption Level	0.5	0.707	7.3	0.000
TB Customer Satisfaction	TB percentage of use	0.11	0.33	4.63	0.000

* TB – Tele Banking

Similar to the one for internet banking three regression model results are shown in table 6 namely those between:

1) Tele banking service quality and Tele banking customer satisfaction
2) Tele banking customer satisfaction and Tele banking adoption level
3) Tele banking customer satisfaction and Tele banking use percentage.

From table 6 it is found that there is statistically significant relationship between tele banking service quality and customer satisfaction and the about 64.5% percentage of variation in customer satisfaction is influenced by the service quality in this case as evident from the R-square value (0.645) of the corresponding regression model. Similar to the case of internet banking, other two regression models in the table show that there is significant relationship between tele banking customer satisfaction and adoption level as well as those between tele banking customer satisfaction and tele banking use percentage. Thus in case of tele banking services also better service quality will lead to better customer satisfaction and which in turn will result in more adoption and usage of this service by bank customers.

6. Conclusions and managerial implications

In this study perceptions pertaining to service quality and customer satisfaction of the services through the electronic banking channels were found out for ATM services, Internet banking services and tele banking services. The relationships between service quality, customer satisfaction and their effects on adoption levels and electronic banking usage levels were analyzed.

It was found that service quality perceptions are significantly and positively correlated with satisfaction levels for all the electronic banking services namely ATM services, internet banking services and tele banking services. The customer satisfaction levels were found to influence the adoption levels and the extent of usage of internet banking and tele banking. Whereas it was not a significant factor in the adoption and usage of ATM services whose adoption and usage were wide spread.

The adoption levels of internet banking and tele banking services were found to be low among the bank customers since only a minority of them has adopted these services. So for the banks there is an urgent need to improve the adoption and usage levels of banking services through internet banking and tele banking. In order to improve the adoption levels and usage of these electronic banking self-services, the banks have to put efforts to improve both service quality and satisfaction levels. So banks are suggested to improve the quality of services provided through these electronic banking channels. For instance, in case of internet banking, service quality can be ensured by banks through the development of a website containing all the required information, high level of security providing error free transactions, having attractive website, with ample menu options, effecting fast complaint resolution, accurate query response, and providing website with easy navigation and download capabilities. Likewise, for providing quality services through tele banking, the prerequisites are reliability of service, clear instructions, multiple menu options, pleasant musical background and reasonable number of voice prompts.

Appendix

Table A1: Multi-item scale for measuring ATM satisfaction

Items	Cronbach Alpha
Overall Satisfaction with ATM of your bank	0.834
Satisfaction with the Reliability of ATM to do transactions	
Satisfaction with the accessibility of ATM	

Table A2: Multi-item scale for measuring ATM service quality

ATM Items	Adapted from	Cronbach Alpha
Learning to use ATM was easy for me	Al-Hawari et al., 2005	0.77
Functions provided by the ATM of my bank are very useful for doing my banking		
ATM machine is easy to use and operate		
I feel secure in conducting my banking business through ATMs		
ATM is conveniently located		
ATM is located in safe locations		
The complaint resolution of my bank's ATM is fast and satisfactory.		

Table A3: Three-item scale for measuring internet banking satisfaction

Items	Cronbach's alpha
Overall Satisfaction with internet banking of your bank	0.854
Satisfaction with the Website contents	
Satisfaction with the accuracy of services	

Table A4: Multiple-item scale for measuring service quality perceptions towards internet banking services

Items	Adapted from	Cronbach's Alpha
The bank's website contains all the required information to conduct my banking.	Al-Hawari et al., (2005).	0.854
The bank's internet transactio ns are secure.		
The Internet banking is reliable as it provides error free transactions		
The bank's website is attractive with clear instructions		
The bank's internet banking facility enables me to carry out a wide range of transactions.		
The comp laint resolution of my bank's internet banking is fast and satisfactory.		
The bank is very accurate in their responses to my queries/requests.		
Navigating the Bank's website is easy and it can be downloaded fast		

Table A5: Multi-item scale for measuring tele banking service quality

Items	Adapted from	Cronbach's Alpha
The bank's tele banking service has pleasant musical background.	Al -Hawari et al. (2005), Joseph & Stone (2003)	0.783
The bank's tele banking service has reasonable number of voice prompts.		
The bank's tele banking service has short waiting time.		
The bank's tele banking service provides clear instructions.		
The bank's tele banking service is reliable.		
The bank's tele banking service provides ample options.		

References

Al-Hawari, M., Hartely, N. and Ward, T. (2005), "Measuring Banks' Automated Service Quality: A Confirmatory Factor Analysis Approach". *Marketing Bulletin*, Vol 16 Article 1, pp 1-19.

Al-Hawari M and Ward T (2006) " The effect of Automated Service Quality on Australian Banks' financial performance and the mediating role of Customer Satisfaction", Marketing Intelligence & Planning , Vol.24, No.2, pp 127-147.

Alreck, P. L. and Settle, R. B. (2004), "Survey Research Handbook", 3e, McGraw-Hill, New york, p 64.

Andaleeb, S. S. and Basu, A. K. (1994), "Technical Complexity and Consumer Knowledge as Moderators of Service Quality Evaluation in the Automobile Service Industry", *Journal of Retailing*, Vol.70, No.4, pp.367-381.

Babakus, E. and Boller, G. W. (1992), "An Empirical Assessment of the SERVQUAL Scale", *Journal of Business Research*, No.24, pp.253-268.

Bitner, M. J. (1990), "Evaluating Service Encounters: The Effects of Physical Surroundings and Employee Responses", *Journal of Marketing*, Vol.54,Issue 2,pp 69-82.

Bitner, M. J. and Hubbert, A. R. (1994), "Encounter Satisfaction versus Overall Satisfaction versus Quality", pp 72-94 in *Service Quality New Directions Theory and Practice*, Roland T Rust and Richard L. Oliver (Eds). London, Sage.

Bryman, A. and Bell, E. (2003), "Business Research Methods", Oxford University Press Inc, New York, p 52, p 144.

Cronin, J.J. and Taylor, S.A. (1992), ``Measuring service quality: a re-examination and extension", *Journal of Marketing*, Vol. 56, July, pp. 55-68.

Cronin, J. J. Jr. and Taylor, S. A. (1994), "SERVPERF Versus SERVQUAL: Reconciling Performance Based and Perceptions Minus Expectations Measurement of Service Quality", *Journal of Marketing*, Vol.58, January, pp.125-131.

Dabholkar P. A. (1996) "Consumer evaluations of new technology based Self-service options: An investigation of alternative models of service quality" International Journal of research in Marketing Vol. 13, No 1 pp 29-51.

Dabholkar, P. A., Shepherd, C. D., and Thorpe, D. I., (2000), "A Comprehensive Framework for Service Quality: An Investigation of Critical Conceptual and Measurement Issues Through a Longitudinal Study" *Journal of Retailing*, Vol. 76, No. 2, pp 139-53.

Danaher, P. J. and Handrel, V. (1996), "A comparison of question scales used for measuring customer satisfaction", International Journal of Service Industry Management, Vol.7, No. 4, pp 4-26.

Erickson, K., Kerem, K. and Nilsson, D. (2005) "Customer Acceptance of Internet banking in Estonia" *International Journal of Bank Marketing*, Vol. 23 No.2, pp 200-16.

Howcroft, B., Hamilton, R. and Hewer, P. (2002) " Consumer attitude and the usage and adoption of home-based banking in the United Kingdom", " *International Journal of Bank Marketing*, Vol. 20, No. 3, pp 111-121.

Jayawardhena, C. and Foley, P. (2000), "Changes in the Banking Sector- the case of internet banking in UK". *Internet Research: Electronic Networking Applications and Policy*, Vol.10, No. 1, pp 19-30.

Jayawardhena, Chanaka (2004) "Measurement of Service Quality in Internet Banking: the Development of an Instrument", *Journal of Marketing Management* Vol 20, No 2(Feb) pp 185-207.

Joseph, M., McClure, C. and Joseph, B. (1999), "Service quality in the banking sector: the impact of technology on service delivery". *International Journal of Bank Marketing*, Vol.17, No 4,pp 182-191.

Joseph, M. and Stone, G. (2003) "An empirical evaluation of US bank Customer Perceptions of the impact of technology on Service delivery in the Banking Sector" *International Journal of Retail & Distribution Management*, Vol 31, No. 4, pp 190-202.

Jun, M. and Cai, S., (2001), "The determinants of internet banking service quality: A content analysis" , Internetional journal of Bank marketing, Vol. 19 No. 7, pp 276-291

Kolodinsky J. M., Hogarth, J. M. and Hilgert, M. A. (2004), "The Adoption of electronic banking technologies by US consumers", *International Journal of Bank Marketing*, Vol. 22, No.4, pp 238-259.

Laforet, S. and Li, X. (2005) "Customers' Attitudes towards online and mobile banking in China", *International Journal of Bank Marketing*, Vol 23, No 5, pp362-380.

Levinthal, D.A. and Fichman, M. (1988), "Dynamics of interorganizational attachments:auditor-client relationships", *Administrative Science Quarterly*, Vol. 33, pp. 345-69.

Lockett, A. and Littler, D. (1997) "The Adoption of Direct Banking Services", *Journal of Marketing Management*, Vol. 13 pp 791-811.

Long, M. and McMellon, C. (2004), "Exploring determinants of retail service quality on the internet". *Journal of Service Marketing*, Vol. 18, No 1, pp 78-90

Mittal, B. and Lassar, W. M. (1996), "The Role of Peronslization in Service Encounters", *Journal of Retailing*, Vol.72, No.1, pp.95-109

Nunnally J & Bernstein I (1994). Psychometric Theory. New York: Mcgraw-Hill.

Oliver, Richard L. (1993), "Cognitive, Affective and Attribute Bases of Satisfaction Response," *Journal of Consumer Research*, Vol. 20 (Dec), pp 418-430.

Parasuram, A., Zeithmal, V. A. and Berry, L. L. (1985), "A conceptual model of service quality and its implications for future research", *Journal of Marketing*, Vol.49, Fall, pp 41-50.

Parasuram, A., Zeithmal, V. A., and Berry, L.L., (1988a), "SERVQUAL: a multiple-item scale for measuring consumer perceptions of service quality", *Journal of Retailing*, Vol.64, No.1, pp 12-40.

Parasuram, A., Zeithmal, V. A., and Berry, L. L., (1988b) "The Service Quality Puzzle", *Business Horizons*, Sept-Oct, pp 35-43.

Parasuram, A., Zeithmal, V. A., and Berry, L. L., (1991) "Refinement and reassessment of the SERVQUAL scale", *Journal of Retailing*, Vol. 64, No 4 pp 420-50.

Parasuram, A., Zeithmal, V. A., and Berry, L. L., (1994a), "Reassessment of expectations as a comparison standard in measuring service quality: implications for further research", *Journal of Marketing*, Vol 58, January, pp 111-124.

Parasuram, A., Zeithaml, V. A. and Berry, L. L. (1994b), "Alternating scales for measuring service quality: a comparable assessment based on psychometric and diagnostic criteria", *Journal of Retailing*, Vol 70, pp 201-230.

Parasuram, A., Zeithaml, V. A. and Malhotra, A. (2005), "E-S-QUAL: A Multiple-Item Scale for Assessing Electronic Service quality", *Journal of Service Research*, Vol .7, No 3, pp 213-234.

Rugimbana, R (1995), "Predicting automated teller machine usage: the relative importance of perceptual and demographic factors", *International Journal of Bank Marketing*, Vol 13 No. 4, pp 26-32.

Rust, Roland T. and Oliver, Richard L. (1994), Service Quality, New Directions in Theory and Practice, London, Sage.

Santos, J. (2003), "E-service quality: a model of virtual service quality dimensions.", *Managing Service Quality*, Vol 13 No.3, pp233-246.

Sathye, Milind (1999) "Adoption of Internet Banking by Australian Consumers of Internet banking by Australian Consumers: An Emphirical Investigation" *International Journal of Bank Marketing*, Vol. 17, No.7 pp 324-334.

Spreng, R. A. and Olshavsky, R. W. (1992), "A Desires-as-Standard Model of Consumer Satisfaction: Implications for Measuring Satisfaction", *Journal of Consumer Satisfaction, Disastisfaction and Complaining Behaviour*, Vol.5, pp.45-54.

Sudman, S. (1976), Applied Sampling, Academic Press, New York, cited in Thronton J and White L (2001), "Customer Orientations and Usage of Financial Distribution Channels", Journal of Services Marketing, Vol.15, No.3 pp 168-185.

Sureshchandar, G., Rajendran, C. and Anantharaman, R. N. (2002a). "Determinants of customer perceived service quality: A confirmatory factor analysis approach." *Journal of Services Marketing*, Vol. 16, No 1, pp 9-34.

Sureshchander G S, Rajendran C and Anantharaman R N, (2002b), "The relationship between service quality and customer satisfaction-a factor specific approach", *Journal of Services Marketing*, Vol. 16, No. 4, pp 363-379.

Teas, R. K., (1993), "Expectations, performance evaluation, and consumers' perception of quality", *Journal of Marketing*, Vol 57, No. 4 pp 18-34.

Teas, R. K., (1994), Expectation as a Comparison Standard in Measuring Service quality: An assessment of a reassessment", *Journal of Marketing*, Vol 58, No.1, pp. 132-39.

Thronton, J. and White, L. (2001), "Customer Orientations and Usage of Financial Distribution Channels", *Journal of Services Marketing*, Vol.15, No.3 pp 168-185.

Triandis, C. H. (1980), "Values, Attitudes and Interpersonal Behavior," Nebraska Symposium on Motivation, 1979: Beliefs, Attitudes and Values, Lincoln, NE: University of Nebraska Press, 1980, pp. 159-295.

Upadhyay, Saroj (2007), 'The new currency of change :How banks are reinventing themselves for the emerging challenges' Indian Management, July, pp 86-90.

van Riel, A. C. R., Liljander, V. and Jurriens, P. (2001), "Exploring consumer evaluation of e-service: a portal site.", *International Journal of Service Industry Management*, Vol.12, No.4, pp 359-377.

Yang, Z. and Jun, M. (2002), "Consumer perception of e-service quality: from internet purchase and non-Purchase Perspectives", *Journal of Business Strategies*, Vol.19 No1, pp 19-41.

Zeithaml, V. A. (2002), "Service-excellence in electronic channels", *Managing Service Quality*, Vol.12, No 3, pp 135-138.

Corporate Stakeholders Management: Approaches and Models – A Review

Shashank Shah* and A. Sudhir Bhaskar
School of Business Management, Sri Sathya Sai University, Vidyagiri, Prashanti Nilayam – 515134, Anantapur District, Andhra Pradesh, INDIA
E-mail: shashank@sssu.edu.in, sudhirbhaskar@sssu.edu.in

Abstract
In the current international corporate scenario, there is a need to shift the focus of corporate organisations having a skewed approach of focusing only a particular stakeholder such as the shareholders, towards a more holistic and integrated approach of ensuring the welfare of all the organisational stakeholders. As a social entity, the corporate organisation has to, along with its long term growth and success, take upon itself the responsibility of ensuring the welfare of all its constituents to the extent possible. In fact, these two are not different but in reality go hand in hand. The essence of the stakeholder view is that the fulfillment of the stakeholders' welfare finally leads to the shareholders' welfare. A preliminary literature review reveals that a lot of theoretical grounding has been provided by a number of scholars, researchers and academicians stressing on the need to implement Stakeholders Management in corporate organisations. However, there is an apparently acute dearth of implementable frameworks which detail this process. This paper highlights three main aspects relating to Corporate Stakeholder Management: (1) The Stakeholder Model of Organisation vs. the traditional Input – Output Model (2) Management Approaches to Stakeholders Management (3) Models of Stakeholders Management as proposed by a number of academicians, researchers and scholars.

Key Words: Corporate Stakeholders Management, Corporate Stakeholders Management Approaches, Corporate Stakeholders Management Models

1. Introduction

In the international corporate scenario of the last decade, corporate debacles of the likes of Enron, Arthur Anderson, WorldCom, Tyco and others in the US and many other countries as well, have opened the eyes of the business community and the common man alike for a need for change in the approach to business. The recent sub- prime crisis in the US has shaken the economic fundamentals of many a developed and developing countries across the globe. Established companies with a success story spanning nearly one and a half centuries like the Lehman Brothers have filed for bankruptcy. Many a banking and financial institutions across the globe from Iceland in the North to Japan in the Far East have suffered huge setbacks. There is no continent where the stock markets have not been affected because of this great catastrophe which has been equated by some to the Great Depression of 1929. It has forced the world's largest capitalistic economy which believes in the free enterprise system to the core, to bail out the financial institutions through a government package of over $ 700 billion. In such a scenario, it's time to do some soul searching and look for a more sustainable approach to business and business management.

A general consensus has emerged regarding the fact that there is a need to shift the focus of corporate organisations having a skewed approach of focusing only on a particular stakeholder such as the shareholders or the customers to a more holistic and integrated approach of ensuring the welfare of all the organisational stakeholders in the long term interest of the organisation. There is a fundamental need to highlight the fact that, as a social entity, the corporate organisation has to, along with its long term growth and success, take upon itself the responsibility of ensuring the welfare of all its constituents to the extent possible. In fact, these two are not different but in reality go hand in hand. ***The essence of the stakeholder view to business is that the fulfillment of the stakeholder welfare automatically leads to the shareholder welfare***.

Highlighting the crisis situation, Gopinath (2005) states that the international corporate environment has been rocked by several scandals beginning in the late 1990s. The well publicised cases of Enron, WorldCom, Tyco and Global

1) **Stakeholders** of a corporation are those constituencies that affect and / or are affected by the organisation's decisions / behaviour. They have a stake in the organisation. It is common to refer for example to a company's *Employees, Customers, Owners, Suppliers, Local Communities, Competitors* and *Financiers* as Major Stakeholders. In most cases, these Stakeholders both affect and are affected by the organisation. Other Stakeholders might include the *Media, Activist groups* and the *Government* which affect but are relatively unaffected by the Organisation.

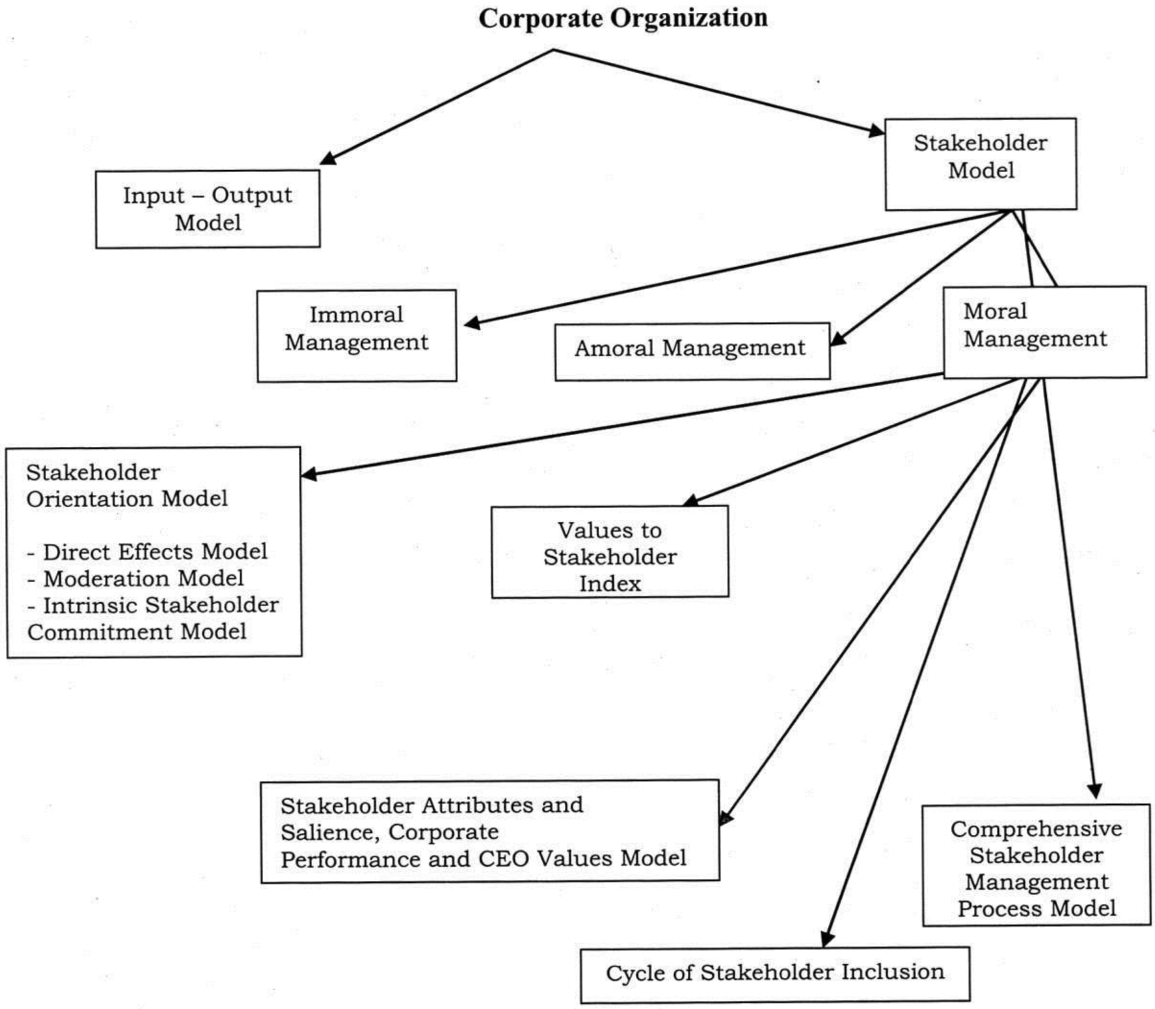
Crossing in the US and of Paramalat in Europe exposed instances of accounting irregularities and financial mismanagement and also revealed the enormous financial assets appropriated by the leaders of these enterprises. The collective question raised by many is – 'How could organisations make decisions that harmed their stakeholders and reward egregious behaviour on the part of their senior executives?' Even the proposed regulatory solutions only dealt with the symptoms and aimed at strengthening the structure of Corporate Governance.

Thus, it is evident that the need for a change in the corporate organisations' approach towards Corporate Stakeholders Management and to ensure the Pareto optimisation of the welfare of all the stakeholders of a corporate organization is the highest now than ever before.

A preliminary literature review reveals that a lot of theoretical grounding has been provided by a number of scholars, researchers and academicians for the need to implement Stakeholders Management in corporate organisations. However, there is an apparently acute dearth of implementation frameworks which detail this process. In the Indian context, the concept of Corporate Stakeholders Management is not new and has been exemplified by a number of reputed corporate organisations for many decades now. Infact, ample literature is available regarding the practice of Stakeholders Management by kingdoms and traders of ancient times in India.

However, there is a need to formalize this process in the current organisational / industrial set

Fig. 1: Introduction to Corporate Stakeholders Management Models



2) To put it in simple words, **Stakeholders Management** refers to the organisational philosophy wherein the organisation's overriding aim / priority is to contribute to its stakeholders' welfare during the organisational decision making process to the extent possible, within the constraints of justice, fairness and economic interests.

up with appropriate processes and procedures so that it becomes a part of the organisational philosophy and strategy.

This paper, based on a preliminary literature review, highlights three main aspects relating to Corporate Stakeholders Management:

1. The Stakeholder Model of Organisation vs. the traditional Input – Output Model
2. Management Approaches to Stakeholders Management
3. Models of Stakeholders Management as proposed by a number of academicians, researchers and scholars.

These three aspects are depicted in detail in the Figure 1 that follows.

2. Modeling A Corporation

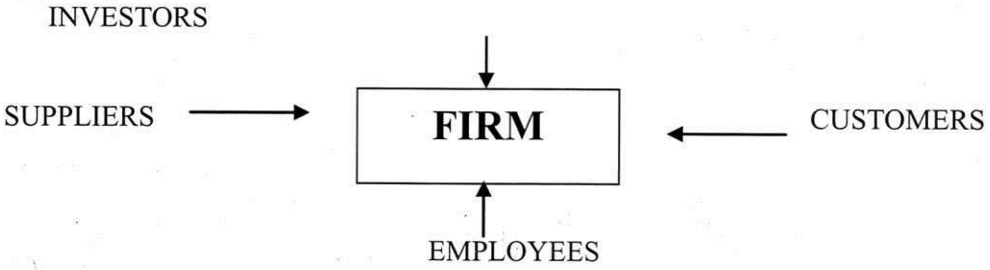
Input – Output Model Vs Stakeholder Model

The distinction between a stakeholder conception of the corporation and a conventional input-output perspective is highlighted by the contrasting models mentioned below as given by Donaldson & Preston (1995):

2.1 Input / Output Model

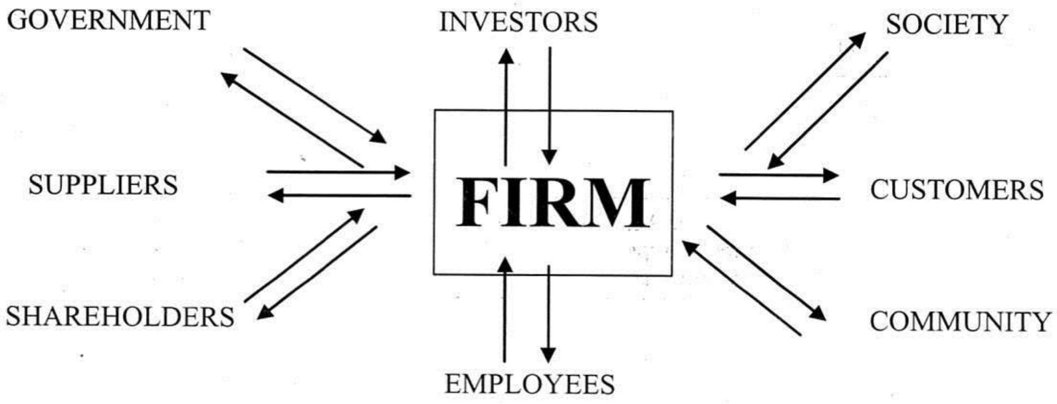
Investors, Employees and Suppliers are depicted as contributing inputs, which the firm transforms into outputs for the benefit of customers. To be sure, each contributor of inputs expects to receive appropriate compensation, but the liberal economics, or 'Adam Smith' interpretation, of this model in long-run equilibrium is that input contributors, at the margin, receive only 'normal' or 'market competitive' benefits (i.e., the benefits that they would obtain from some alternative use of their resources and time). Individual contributors, who are particularly advantaged, such as possessors of scarce locations or skills, will of course, receive 'rents', but the rewards of the marginal contributors will only be 'normal'. As a result of competition throughout the

Fig. 2: Input – Output Model



(Source: Donaldson, Tom & Preston Lee (1995) "The Stakeholder Theory of the Corporation: Concepts, Evidences & Implications", *Academy of Management Review*, Vol. 20 (1))

Fig. 3: The Stakeholder Model



(Source: Donaldson, Tom & Preston Lee (1995) "The Stakeholder Theory of the Corporation: Concepts, Evidences & Implications", *Academy of Management Review*, Vol. 20 (1)) system, the bulk of the benefits will go to the customers.

2.2 The Stakeholder Model

The Stakeholder Model contrasts explicitly with the Input-Output Model in all its variations. All persons or groups with legitimate interests participating in an enterprise do so to obtain benefits and there is no prima facie priority of one set of interests and benefits over another. The following diagram depicts the Stakeholder Model:

In the next section we see the three distinct models of Management Morality in order to distinguish between the real and apparent aspects of Stakeholders Management.

3. Management Approaches to Stakeholders Management Stakeholder Thinking in three Models of Management Morality

Carroll (1995) states that the purpose of developing three models of management morality – Immoral, Amoral and Moral, is to establish a basis upon which we might expound the linkages between the firm's ethical responsibilities and its major stakeholder groups. The author's views as regards these three models are given below:

3.1 Immoral Management

Carrol (1995) states, "Immoral Management is characterised by those managers whose decisions, actions or behaviour suggests an active opposition to what is deemed ethical or right. The decisions of immoral managers are discordant with accepted principles of ethical behaviour. These behaviours or decisions suggest or imply an active negation of what is moral. These managers are focused on their own personal success or their organisation's success to the exclusion of consideration for other stakeholders. These managers see ethics and law as barriers or impediments they must overcome to accomplish their goals."

3.2 Amoral Management

Carrol (1995) further states, "Amoral managers are

Table 1: Three Moral Management Models and their Orientation toward Employee Stakeholders

Model of Management Morality	Orientation toward employee stakeholders
Immoral Management	Employees are viewed as factors of production to be used, exploited and manipulated for gain of individual manager or company. No concern is shown for employees' needs / rights / expectations. Short-term focus Coercive, controlling, alienating
Amoral Management	Employees are treated as law requires. Attempts to motivate focus on increasing productivity rather than satisfying employees' growing maturity needs. Employees still seen as factors of production but remunerative approach used. Organisation sees self-interest in treating employees with minimal respect. Organisation structure, pay incentives, rewards all geared toward short and long term productivity.
Moral Management	Employees are a human resource that must be treated with dignity and respect. Goal is to use a leadership style such as consultative / participative that will result in mutual confidence and trust. Commitment is a recurring theme. Employees' rights to due process, privacy, freedom of speech and safety are maximally considered in all decisions. Management seeks out fair dealings with employees.

(Source: Carroll, Archie B. (1995) "Stakeholder Thinking in three models of Management Morality: A perspective with Strategic Implications", Understanding Stakeholder Thinking) neither immoral nor moral but are not sensitive to or aware of the fact that their everyday business decisions may have deleterious effects on other stakeholders. These managers lack ethical perception or awareness. That is, they go through their organisational lives not thinking that their actions have an ethical dimension. Or, they may just be careless or insensitive to the implications of their actions on stakeholders. These managers may be well intentioned, but they do not see that their business decisions and actions may be hurting those with whom they transact business or interact. Typically their orientation is towards the letter of the law as their ethical guide." The authors have described a sub-category of amorality known as 'unintentional amoral managers'. There is also another group that is called 'intentional amoral managers'. These managers according to Carroll simply think that ethical considerations are for private lives, not for business. They believe that business activity resides outside the sphere to which moral judgments apply. Though most amoral managers today are unintentional, there may still exist a few who simply do not see a role for ethics in business or management decision making.

3.3 Moral Management

At the opposite extreme from the immoral management model is the moral management model. Carroll (1995) states, "Moral managers employ and adhere to the ethical norms which reflect a high standard of right behaviour. Moral managers not only conform to accepted and high levels of professional conduct, they also frequently exhibit ethical leadership. Moral managers strive towards profits also, but their pursuit of profits is done with the confines of sound legal and ethical precepts such as justice, due process and the protection of other stakeholders' rights. Moral managers comply both with the letter and spirit of laws. The law is seen as a minimum or floor on ethical behaviour. Moral managers strive to operate well above and beyond what law mandates. Sound moral principles such as justice, rights, utilitarianism and the Golden Rule are employed to guide decision making."

The author in the original article has given a series of descriptive statements to characterise how each moral model would view or be oriented towards 4 key stakeholder groups: Owner / Shareholder, Customers, Employees, Local Community. In this paper to indicate the same, only the Employee stakeholder has been described from the Immoral, Amoral and Moral viewpoints in Table 1 that follows. The other three stakeholders described by the author in the original paper are similar in nature as shown for the employees.

It is anticipated that these specific descriptions will provide for a richer and fuller appreciation of how stakeholder thinking is a vital attribute of management morality.

Thus we observe from the above stated models of Management Morality that the Moral Management approach is the one which is in line with the Stakeholders approach to business. In the Moral Management approach as in the Stakeholders Management view of business, the Stakeholders' welfare and interests are taken care of both in letter and spirit.

The ancient Indian literature on business and economic organisations gives a lot of insights on the moral management approach to business. References on moral management stakeholder welfare are found in the ancient Indian texts such as the *Manusmriti, Kautilya's Arthashastra, Shanti Parva & Vidura Neeti (Udyoga Parva)* from the *Mahabharata* and even the *Valmiki Ramayana.* Shah & Bhaskar (2008) have given a detailed account of the oriental and occidental management practices which are worthy of emulation by modern corporate organisations.

The next section provides a review of various theoretical models proposed by various scholars, researchers and academicians which facilitate the implementation of Stakeholders Management in corporate organisations.

4. Models of Corporate Stakeholders Management

In this section, five models of Stakeholders Management as proposed by various scholars, researchers and academicians have been identified. These give insights into the application and the consequent benefits and limitations of the application in various circumstances and situations.

4.1. Stakeholder Orientation Models

4.1.1 Strategic Stakeholder Management Model

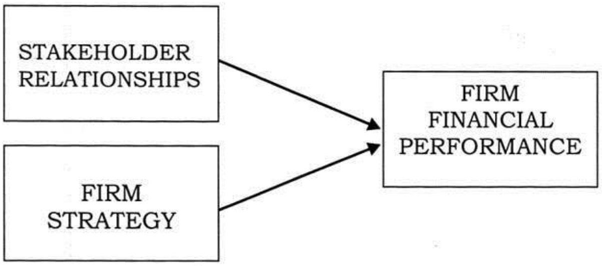
Berman, Wicks, Kotha & Jones (1999), mention that in this model, the concerns of stakeholders enter a firm's decision making processes only if they have strategic value to the firm. The figures given below depict the connection between stakeholder relationships, corporate strategy and corporate financial performance as postulated in this model.

Both models – Direct Effects Model and Moderation Model elaborated below rest on the supposition that the objective of the managers is to maximise profits, not to advance the morally legitimate claims of stakeholders other than the shareholders.

- **Direct Effects Model**

In this model, managers' attitudes and actions toward stakeholders are perceived as having a direct effect on firm financial performance, independent of firm strategy.

Fig. 4: Direct Effects Model

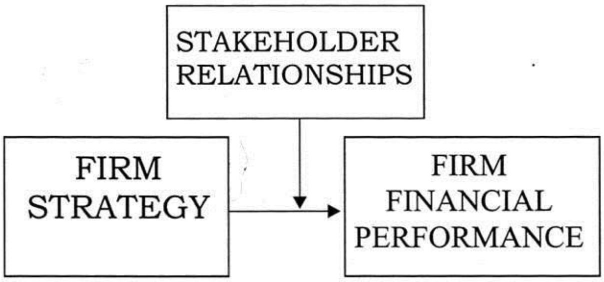


(Source: Berman, S.L.; Wicks, A.C.; Kotha Suresh & Thomas Jones (1999) "Does Stakeholder Orientation Matter? The Relationship between Stakeholders Management Models and Firm Financial Performance", *The Academy of Management Journal*, Vol.42 (5))

- **Moderation Model**

In this model, managerial orientation toward stakeholders does impact firm strategy by moderating the relationship between strategy and financial performance.

Fig. 5: Moderation Model



(Source: Berman, S.L.; Wicks, A.C.; Kotha Suresh & Thomas Jones (1999) "Does Stakeholder Orientation Matter? The Relationship between Stakeholder Management Models and Firm Financial Performance", *The Academy of Management Journal*, Vol. 42(5))

4.1.2 Intrinsic Stakeholder Commitment Model

In this model, managerial relationships with stakeholders are based on normative, moral commitments rather than on a desire to use those stakeholders solely to maximise profits. In short, a firm establishes certain fundamental moral principles that guide how it does business – particularly with respect to how it treats stakeholders – and uses those principles to drive decision making.

Donaldson and Preston (1995) captured the implications of this view for Stakeholders Management quite well by stating that, "Stakeholders interests have intrinsic worth. That is, certain claims of stakeholders are based on fundamental moral principles unrelated to stakeholders' instrumental value to a corporation. A firm cannot ignore or abridge these claims simply because honouring them does not serve its strategic interests. In a sense, these claims are independent of and should be addressed prior to corporate strategic considerations. Stakeholders interests are thought to form the foundation of corporate strategy itself, representing 'what we are' and 'what we stand for' as a company. Given such a stakeholder orientation, a firm shapes its strategy around certain moral obligations to its stakeholders." Thus the approach that the organisation has towards its stakeholders forms the very foundation of the company's philosophy. We have examples of Indian organisations like the Tatas who have very detailed guidelines to be followed with respect to each of its stakeholders. International organisations like Hewlett Packard and Johnson and Johnson also have such details mentioned in their landmark documents such as the 'HP Way' and the 'J&J Credo'. There have been instances in the past where in times of difficulties or ethical dilemmas, these organisations have stuck to the principles highlighted in their organisational vision/mission statements.

Donaldson and Preston (1995) further state, "The second genesis of a normative stakeholder orientation based on moral principles is the argument that making a strategic commitment to morality is not only conceptually flawed but is also ineffective. Strategically applying ethical principles – that is, acting according to moral principles only when doing so is to your advantage – is by definition, not following ethical principles at all." This dichotomy in thought, word and deed wherein the company states that it stands for something but actually has contradictory intentions does not stand in good stead for the organisation in the long run. The last decade has been witness to such organisations in the international corporate world.

In addition, Quinn & Jones (1995) argued that if the purpose of acting ethically is to acquire a good reputation that, in turn, will provide a firm with economic benefits, why not pursue the good reputation directly without the intellectual excursion into moral philosophy?

However, any approach with a focus on stakeholders' welfare does not harm the organisations' prospects for success as against its competitors. From a practical perspective, Jones (1995) states that the instrumental benefits of Stakeholders Management paradoxically result only from a genuine commitment to ethical principles. He has argued that firms that create and sustain stakeholder relationships based on mutual trust and

Fig. 6: The Intrinsic Stakeholder Commitment Model

(Source: Berman, S.L.; Wicks, A.C.; Kotha Suresh & Thomas Jones (1999) "Does Stakeholder Orientation Matter? The Relationship between Stakeholder Management Models and Firm Financial Performance", *the Academy of Management Journal*, Vol.42 (5))

cooperation will have a competitive advantage over those that do not.

If a firm's commitment to trust and cooperation is strategic rather than intrinsic, it will be difficult for the firm to maintain the sincere manner and reputation required for its differential desirability as an economic partner. In other words, trustworthiness, honesty and integrity are difficult to fake. Thus, in order to reap the instrumental benefits of Stakeholders Management, a firm must be committed to ethical relationships with stakeholders regardless of ethical benefits. Strategically applied moral commitments are not really moral and, paradoxically, cannot lead to the strategic outcomes desired. [Barney & Hansen (1994)]

The model based on the above mentioned moral approach is called the **Intrinsic Stakeholder Commitment Model** because the interests of stakeholders have intrinsic value, enter a firm's decision making prior to strategic considerations and form a moral foundation for corporate strategy itself. The figure below depicts the connection between stakeholder relationships, corporate strategy and corporate performance postulated in this model.

Observation: We see in this model that the stakeholders' interests, relationships and their welfare get priority in the organisational decision making process. The firm strategy is formulated keeping these as a priority under all circumstances and the firm financial performance is an outcome of this. And if the above discussion is anything to go by, there is no doubt that an organisation following this approach to management would be as successful if not more as compared to an organisation having a purely strategic approach with its stakeholders.

4.2 Values to Stakeholder Index

Stainer & Gully (1999) state that, "A prerequisite for the success of a values based approach is that each business is actually able to identify its own set of values which, concurrently, is supporting its operations and is shared by its stakeholders in a multi cultural environment. For this purpose, an all embracing index has been developed to incorporate targeted outcomes for the organisation's major stakeholders. Each ingredient is weighted according to management priorities and is dependent on the organisation's culture, characteristics, size and structure – an example is shown below. The elements are then aggregated to form the Value to Stakeholders Index. Such an index provides a way of modeling values for business excellence, bringing together the many dimensions involved in satisfying all major stakeholders of a business."

$$V = C + R + E + M + S \qquad (1)$$

Where:

V = Values to stakeholders index

C = Customer satisfaction - Consistently meeting customer requirements

R = Resource effectiveness - Achieving profitability and total productivity objectives

E = Employee satisfaction - Quality of work life for employees

M = Market Effectiveness - Achieving objectives with respect to market share and position

S = Social Effectiveness - Achieving objectives on ethical and environmental dimensions

The authors Stainer & Gully feel that, "These factors can be achieved through ensuring compliance with the law, establishing codes of practice and sound Corporate Governance as well as creating ethical awareness within and outside the organisation because a values based approach ought to come from the grassroots. But, the contemporary organisation and its environment are not as simple as a football game; the bottom line of profit is only a crude indicator of the multiple successes on which a thriving company depends. Whilst profit is undeniably important, stakeholder values within the performance measurement scenario should be perceived more as a vital management tool."

Observation: The model highlights the use of a broader set of parameters as stated in the formula to judge the organisational performance rather than just profits alone. This provides a stronger foundation to the business in the long term.

4.3 Stakeholder Attributes and Salience, Corporate Performance and CEO Values Model

Agle, Mitchell & Sonnenfeld (1999) in their research model have proposed that Stakeholder salience will be positively related to the cumulative number of stakeholder attributes – power, legitimacy and urgency – perceived by managers to be present. The authors argued that managerial characteristics are likely to moderate the attribute-salience relationship and because the salience-performance link is implicit in their theory, the CEO values are included as a moderating variable in the model and several performance variables as outcomes are included.

Given below are the various hypotheses relating to the research model:

Hypotheses Regarding CEO Perception of Stakeholder Attributes

Hypothesis 1a: The stakeholder attribute of power will be positively related to the stakeholder salience of shareholders, employees, customers, government and communities.

Hypothesis 1b: The stakeholder attribute of legitimacy will be positively related to the stakeholder salience of shareholders, employees, customers, government and communities.

Hypothesis 1c: The stakeholder attribute of urgency will be positively related to the stakeholder salience of shareholders, employees, customers, government and communities.

Hypothesis 1d: The cumulative number of the stakeholder attributes of power, legitimacy and urgency will be positively related to the stakeholder salience of shareholders, employees, customers, government and communities.

Hypotheses Regarding CEO Values and Stakeholder Salience

Hypothesis 2a: CEO values will affect CEO perceptions of power, legitimacy and urgency and thus will be related to the stakeholder salience of shareholders, employees, customers, government and communities.

Hypothesis 2b: CEO other-regarding values will affect CEO perceptions of power, legitimacy and urgency and thus will be positively related to stakeholder salience for non shareholders (employees, customers, government and communities)

Hypothesis 2c: CEO other regarding values will affect CEO perceptions of power, legitimacy and urgency and thus will be negatively related to stakeholder salience for shareholders.

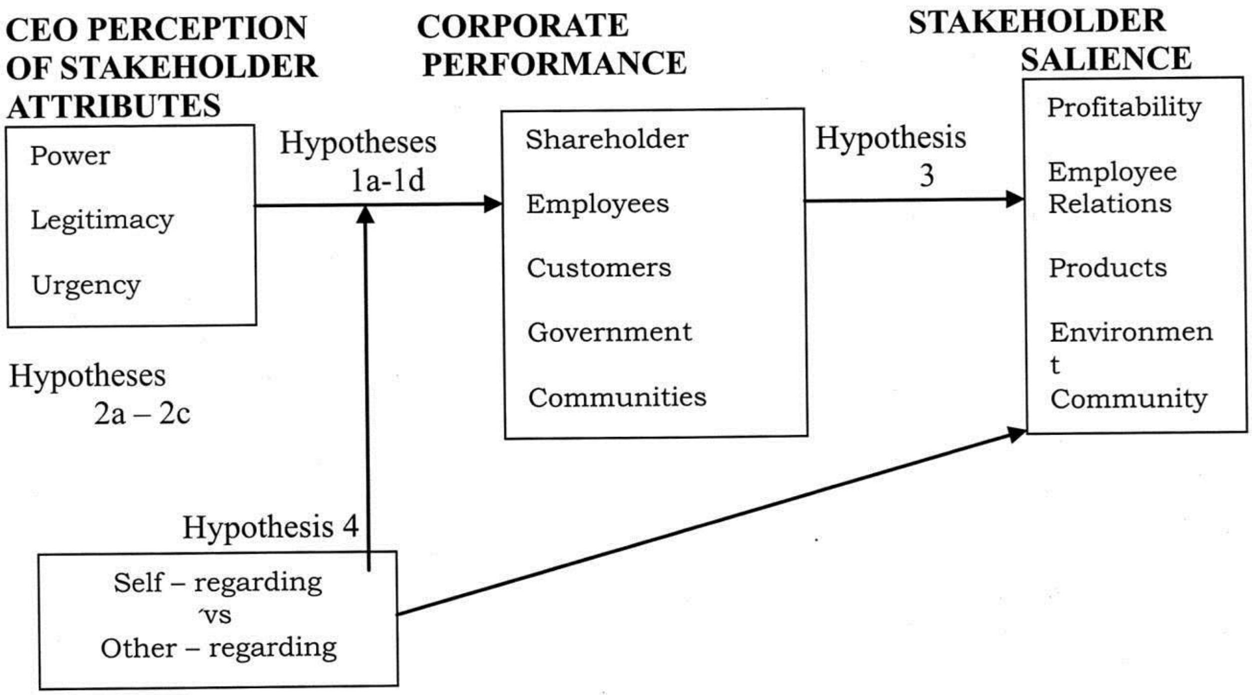


Fig. 7: The Research Model on CEO Perception of Stakeholder Values

(Source: Agle, Bradley R.; Mitchell, Ronald K. & Sonnenfield, Jeffrey A. (1999) "Who Matters to CEOs? An Investigation of Stakeholder Attributes & Salience, Corporate Performance & CEO Values", *Academy of Management Journal*, Vol. 42 (5))

Hypothesis Regarding Corporate Performance

Hypothesis 3: Stakeholder salience as perceived by CEOs will be positively related to corporate performance.

Hypotheses Regarding CEO Values

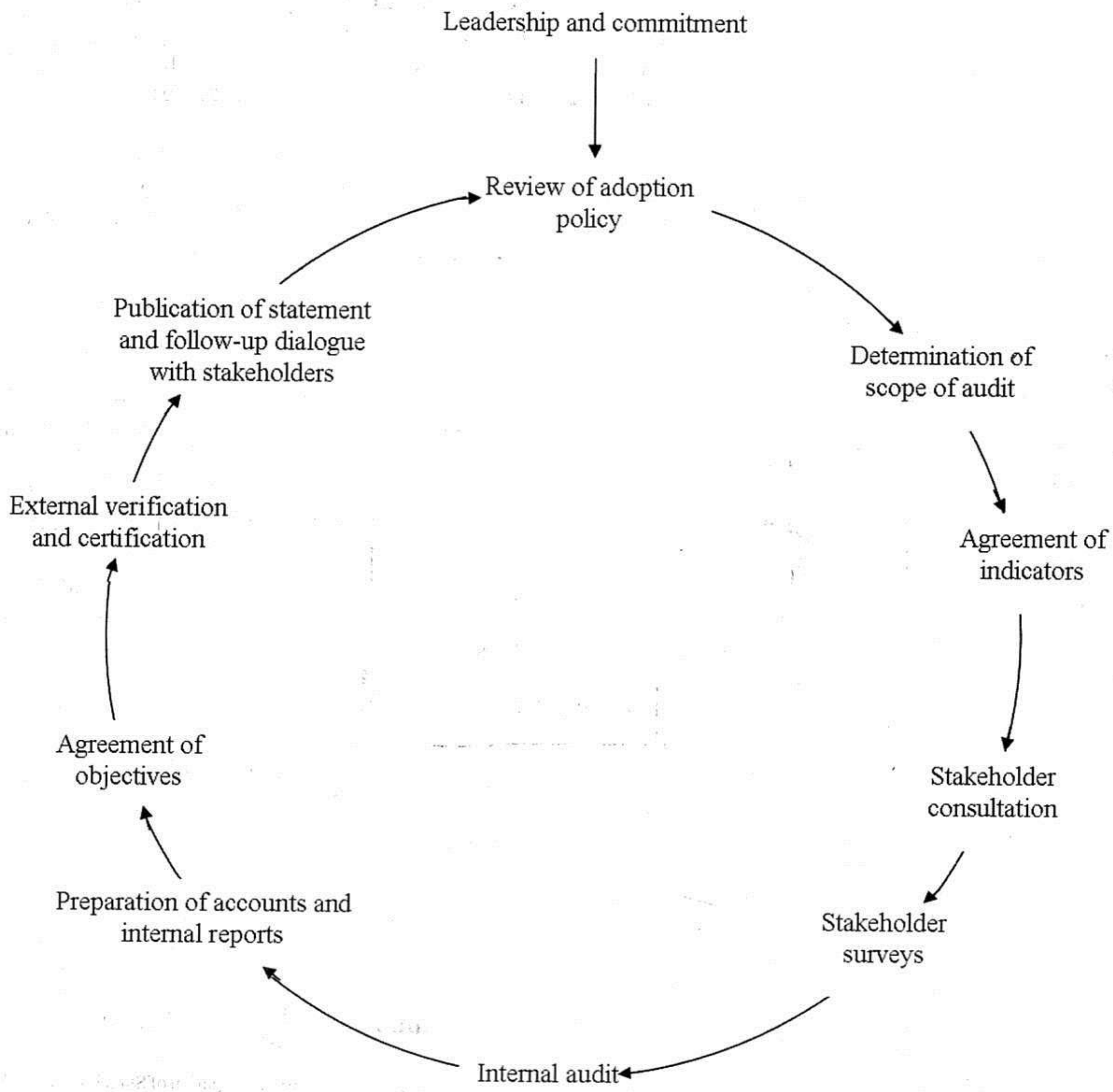
Hypothesis 4a: CEO values will be related to corporate performance

Hypothesis 4b: CEO other regarding values will be positively related to corporate social performance variables (employee relations, product innovation / safety, environmental stewardship and community relations)

Hypothesis 4c: CEO other regarding values will be negatively related to profitability component of corporate performance.

Observation: This model gives great importance to the value system of the top management / head of the organisation, i.e. a purely self-centered approach vs. a broader approach having sufficient consideration for the stakeholders at large. This important variable of CEO values as highlighted in this model is a critical one because CEO values played a major role in the corporate debacles that occurred in the last decade. It was seen in these debacles that the top management and many times the CEO of the organisation gave higher priority to self-interest rather than the institution itself and the consequences have been for all to see. Thus, in the light of these recent real world experiences, a broader focus to business becomes inevitable in the larger interest of the organisation itself.

Fig. 8: Cycle of Inclusion



(Source: Wheeler, David & Maria Sillanpaa (1998) "Including the Stakeholder: The Business Case", Long Range Planning, Vol. 31 (2))

4.4 Cycle of Stakeholder Inclusion

Wheeler & Sillanpaa (1998) mention of the continuous improvement cycles which are used for quality management and environment and safety management which are cyclical in nature. They follow the mantra 'think, plan, do, check'. They also fit in neatly within systems which may be externally certified by bodies accredited under national, European or international (ISO) standards. These continuous improvement cycles according to these authors, must be linked to the cycle of dialogue and inclusion for stakeholders. Thus, a product quality standard means nothing if there is no active dialogue between suppliers, business partners, employees and customers. An occupational safety and health management system necessarily needs to link with processes of dialogue and inclusion with employees.

A generalised cycle of inclusion may be used for auditing and improving relationships with employees, customers, investors and indeed any social stakeholder group is indicated in the diagram adapted from the authors' work.

The steps in this cycle of inclusion as described by the authors are very briefly stated below:

Leadership and Commitment

The firm's leadership, management, mission and core principles must be united in a stakeholder-inclusive ethos.

Review or Adoption of Policy

Before any assessment or audit of social relationships, a company should be aware of its explicit and implicit intentions with respect to each stakeholder group.

Determination of Audit Scope

For each stakeholder group there may be numerical and geographical constraints on the scope of stakeholder dialogue which may be feasible. Thus the audit scope needs to be determined.

Agreement of Benchmarks and Performance Indicators

There are two types of measure for assessing the quality of human relationships: those based on quantifiable norms and standards and those based on perceptions. Quantitative measures in business are frequently described as benchmarks or performance indicators. These differ from one stakeholder to another and need to be agreed upon.

Stakeholder Consultation and Surveys

Perception-based measures are arguably the most important barometer of human relationships. In order to systematically measure the perceived quality of relationships between other stakeholders and the firm, techniques similar to market research need to be deployed.

Internal Audits, Preparations of Accounts and Internal Reports

Whether it is financial control, environmental management or social performance, formal processes of management systems audit, information collection, accounting and reporting are essential if the issue is to be managed effectively. Audits should be linked to a set of accounts (numerical and qualitative indicators) which allow people to measure progress. Internal reports to management should be constructed so that where systems are failing or at risk of failing they may be corrected.

Agreement of objectives

Setting organisational goals and objectives should be iterative. Objectives should be consistent with both organisational direction and stakeholder aspirations. It is all about maintaining a balance between the various needs or aspirations and the available resources.

Verification and Certification

The penultimate step in a cycle of stakeholder inclusion is external verification. As noted earlier, independent verification is now accepted practice in financial accounting, environmental management and quality. It is also of enormous value in assessing and improving the quality of relationships with stakeholders.

Publication of Statement and Dialogue with Stakeholders

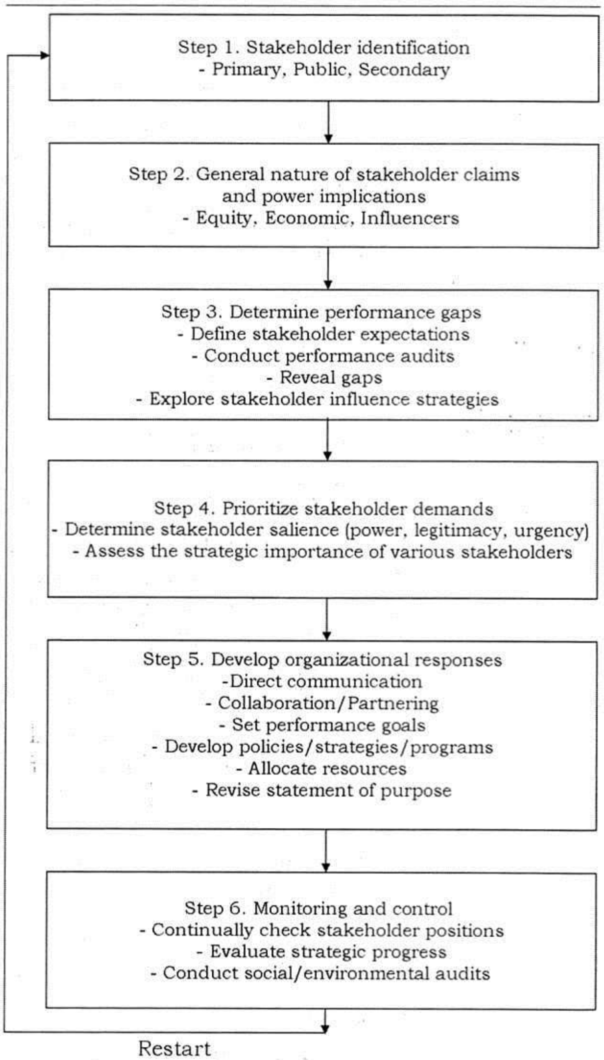
In order to make the cycle of inclusion complete, it is important that effective communication of results occurs. Stakeholders who have been consulted need to know about the output of the consultation, and the company's response.

Observation: This model highlights the fact that it's not enough if the organisation claims its intentions for doing well for its stakeholders. There is a need for a consultative and iterative process with each of the organisational stakeholders; to find out from each of them, what is in their best interest and also have intra organisational systems and procedures to facilitate its actual implementation.

4.5 Comprehensive Stakeholder Management Process Model

Preble (2005) has proposed this model. The synthesis of a wide array of Stakeholders Management theory, buttressed with examples of stakeholder initiatives taken by several visible organisations and integrated into a ***Comprehensive Stakeholder Management Process Model***, is made by the author. He states that, "An organisation and its managers must start using the process with the recognition that adopting a stakeholder perspective and pursuing proactive Stakeholders Management techniques will materially advance the functioning and health of their organisation as they develop an improved and ongoing fit to an ever-changing external operating environment." While the stakeholder philosophy is fairly straightforward conceptually, the diagram illustrates that its implementation is much more complex. Thus a systematic step-by-step process is suggested by Preble (2005) to help assure successful implementation and has been quoted below:

Fig. 9: Comprehensive Stakeholder Management Process Model



(Source: Preble, John F. (2005) "Toward a Comprehensive Model of Stakeholder Management", *Business & Society Review*, Vol. 110 (4))

Step 1: Stakeholder Identification

The author has chosen the Clarkson (1995) typology because it has the dual advantage of being both straightforward and comprehensive. It consists of division of stakeholders into Primary, Public and Secondary stakeholders. The proper attitude to adopt, as argued by Donaldson and Preston (1995), is that the interests of all stakeholders are of intrinsic value and merit consideration by the firm.

Step 2: General Nature of Stakeholder Claims

It is useful once stakeholders have been identified (step 1) to make an initial assessment as to the general nature of the various claims or expectations that these stakeholders might have on the firm. These stakes help to define what type of power a stakeholder possesses and what kind of a response would be appropriate for the firm to consider relative to each stakeholder.

Step 3: Determine Performance Gaps

This step involves assessing each stakeholder's expectations, needs, and/or demands on various issues and comparing them to an organisation's behaviour on these dimensions to see if performance gaps exist. Once gaps are identified, strategies can be devised to reduce these gaps and therefore minimize the potential conflict that could result in disruptive and costly stakeholder actions against the firm.

Step 4: Prioritise Stakeholder Demands

While the author has taken the position that all stakeholder entities merit consideration, and has tried initially to identify all relevant stakeholder groups, it is also recognized that managers and organisations have limits on their time, cognitive information processing capabilities and resources. Thus, this step will focus on ways to help sort out which stakeholder groups will command or deserve managerial attention at different points in time, i.e., be perceived as having priority status.

Step 5: Develop Organisational Responses

Dialogue and engagement are recommended for definitive stakeholders, for strategically important stakeholders where high levels of dependency exist, for dangerous stakeholders who threaten direct confrontation / sabotage, and for stakeholders who aren't clearly understood by the firm.

With all of the above steps completed it is an opportune time to reflect on an organisation's 'statement of purpose' or 'mission statement' and to assess how well stakeholder relations are reflected in it. Campbell (1997), in arguing the case in favour of stakeholders, says that a statement of purpose should include an explanation of the nature of the 'deal' each stakeholder might expect from its relationship with the organisation.

Step 6: Monitoring and Control

Stakeholder positions on issues are likely to change, sometimes dramatically, over time calling for continuous monitoring of stakeholder expectations lest the organisation be caught off-guard or be pursuing stakeholder strategies that are no longer relevant. From the firm's perspective, stakeholder programmes need to be constantly evaluated and monitored to assure that progress toward goals is actually being made.

Observations

The above mentioned frameworks give us a glimpse into the variety of models proposed by a number of scholars in this field to facilitate the implementation of Corporate Stakeholders Management across organisations. These also facilitate in ensuring that stakeholder welfare optimisation becomes a philosophy integrated with organisational strategy, guiding organisational functioning and also a major deciding factor during decision making at different levels of management hierarchy within and across organisations. However each of these frameworks is contextual and caters towards the relative fulfillment of various aspects relating to Corporate Stakeholders Management. There is a need to identify / propose a model which helps in bridging the gaps identified earlier.

5. Gaps in Research

The five models stated above are based on a preliminary literature review. What is revealed from observing these is that some of the models do not indicate as to how the needs of the various stakeholders of an organisation are to be fulfilled while realizing the goals of the organisation. All of the models have also not indicated the interrelationship which exists within these stakeholders' needs. Further, it is observed that they do not indicate the tradeoffs which would have to be attempted for realising Pareto Optimality of the organisation. It is also observed that none of these models indicate how Corporate Stakeholders Management can be actually implemented in an organisation on a day to day basis. However, the model by Preble (2005) does provide the general sequence to be adopted for the implementation. A detailed model which helps organisations interested in pursuing this approach but not having any specific guidelines on how to go about actually doing it, is required. These aspects need to be further explored and incorporated in any attempt at model building for facilitating the implementation of Stakeholders Management in corporate organisations.

6. Conclusion

In the current circumstances in the international business world, a Stakeholders approach to business will go a long way in providing a sustainable solution to stem the tide of corporate catastrophes and would also contribute to the extent possible for the welfare of all the organisational constituents.

What is required today is a belief by corporate organisations that they are going to run a business which is sustainable over a period of time. It has been observed on several occasions that wherever there is a predominance of a stakeholder in bringing about a higher degree of influence on the manner in which that corporate citizen should behave, that kind of influence has led to the organisation's failure. There are many examples which the authors have identified at the start of this paper. And all that has come out of a simple term called 'greed' which is either from the shareholders or from the employees or the senior management. It is proven beyond doubt that such behaviour leads to such kind of results. However, if there is a collective commitment at defining success which has the approval of all the stakeholders in an equal proportion or fashion, the organisation will end up having a sustainable growth pattern. Any incident where a stakeholder's interests are compromised for a period of time, it is seen that instability emerges in that business model. The skewed approach to business wherein a particular stakeholder is preferred at the cost of others can give corporate organisations or the industry as a whole some advantage for a few years but it cannot give a sustainable advantage lifelong if the business approach is not in line with certain laid down principles.

Dedication

The authors dedicate this endeavour to the Revered Chancellor of Sri Sathya Sai University – Bhagavan Sri Sathya Sai Baba.

References

Agle, Bradley R.; Mitchell, Ronald K. & Sonnenfield, Jeffrey A. (1999) Who Matters to CEOs? An Investigation of Stakeholder Attributes & Salience, Corporate Performance & CEO Values. *The Academy of Management Journal*, 42 (5): 507-525.

Berman, S.L.; Wicks, A.C.; Kotha Suresh & Thomas Jones (1999) Does Stakeholder Orientation Matter? The Relationship Between Stakeholder Management Models and Firm Financial Performance. *The Academy of Management Journal*, 42(5): 488-506.

Brenner, S.N. & Cochran, P. (1991) The Stakeholder Theory of the firm: Implications for Business and Society Theory and Research, in Mahon, J.F. (ed.), International Association for Business and Society 1991 Proceedings, 449-467.

Carroll, Archie B. (1995) Stakeholder Thinking in three models of Management Morality: A perspective with Strategic Implications. Understanding Stakeholder Thinking, 47-74.

Clarkson, Max B.E. (1995) A Stakeholder framework for Analysing & Evaluating Corporate Social Performance. *The Academy of Management Review*, 20(1): 92-117.

Donaldson, Tom & Preston Lee (1995) The Stakeholder Theory of the Corporation: Concepts, Evidences & Implications. *The Academy of Management Review*, 20 (1): 65-91.

Freeman, Edward R. (1984) Strategic Management: A Stakeholder Approach. Pitman Publishing, Boston.

Frooman, Jeff (1999) Stakeholder Influence Strategies. *The Academy of Management Review*, 24(2): 191-205.

Goodpaster, Kenneth E. (1991) Business Ethics & Stakeholder Analysis, Business Ethics Quarterly, 1:53-73.

Gopinath C. (2005) Trusteeship As a Moral Foundation for Business. Business and Society Review, 110 (3): 331-344.

Halme, Minna & Nasi Juha (1992) Stakeholder Pressure Against Immoral Management: A Case Study of Company's Destruction, IABS 1992 Proceedings, 276-284.

Harrison, Jeffrey S. & Caron H. St. John (1996) Managing & Partnering with External Stakeholders. *Academy of Management Executive*, 10 (2): 46 – 60.

Jones, T.M. (1995) Instrumental Stakeholder Theory: A Synthesis of Ethics & Economics. *The Academy of Management Review*, 20: 404-437.

Preble, John F. (2005) Toward a Comprehensive Model of Stakeholder Management. *Business & Society Review*, 110 (4): 407 – 431.

Quinn, D & Jones, T. (1995) An agent morality view of business policy. *The Academy of Management Review*, 20(1): 22-42.

Shah, Shashank (2005), Literature Review on Stakeholder Management. Unpublished M.Phil. Mimeo, Sri Sathya Sai University, Prashanti Nilayam, Andhra Pradesh.

Shah, Shashank (2006) Corporate Stakeholder Management: Framework Development. Unpublished M.Phil. Dissertation, Sri Sathya Sai University, Prashanti Nilayam, Andhra Pradesh.

Shah, Shashank and A Sudhir Bhaskar (2008) Corporate Stakeholder Management: Western & Indian Perspectives – An Overview. *Journal of Human Values*, Management Centre for Human Values, Indian Institute of Management Calcutta, 14 (1): 73-93.

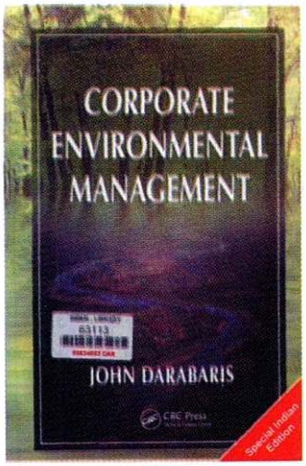
Shrivastava, Paul (1995) Industrial/Environmental Crises and Corporate Social Responsibility. *Journal of Socio Economics*, Spring Issue.

Stainer L.; Stainer A. & Gully A. (1999) Ethics and Performance Management. *International Journal of Technology Management*, 17 (7/8): 776-783.

Vinten, Gerald (2000) The Stakeholder Manager. Management Decision, 38 (6): 377 – 383.

Wheeler, David & Maria Sillanpaa (1998) Including the Stakeholder: The Business Case. *Long Range Planning*, 31 (2): 201 – 210.

Wood, D.J. & R.E. Jones (1995) Stakeholder Mismatching: A theoretical problem in empirical research on corporate social performance. *International Journal of Organizational Analysis*, 3: 229-267.



Corporate Environmental Management

By John Darabaris
Published CRC Press

Original UK price: £ 24.99 Special reprint price: Rs 495.00
© 2008 by Taylor & Francis Group, LLCISBN 978-1-4200-5546-7 (alk. paper)

In most industrialised nations, strong campaigns were undertaken to identify the sources, causes and effects of environmental pollution. Development of Science and Technology has helped to identify the sources and dangers to specific businesses and specific actions. Programmes were swiftly implemented that significantly dealt with the situation via "end-of-pipe" regulations that restricted emissions of air and water pollutants from industries. The recent 2009 United Nations Climate Change Conference, commonly known as the Copenhagen Summit, held in December, 2009 at the Bella Center in Copenhagen, Denmark, underlined that industrialized nations have increasingly shifted their emphasis from direct end-of-pipe regulations on industrial pollution to more market-oriented measures that encourage creative solutions to reducing environmental loads and costs both short-term and long-term.

End-of-pipe regulations required Industries / Corporate Business Community to comply with emission standards for gases, water and noise emanating from production sites. Industries / Corporate Business Community complied with the legal emission standards by installing treatment facilities for gas and water emissions. However, the controls were viewed as being problematic because they restricted operations and increased costs. As such, pollution controls did little to encourage Corporate Competition to resolve environmental problems on a larger scale.

In this new era, the view of environmental problems has undergone a shift from localized industrial pollution to a broader realization of their collective impact on global environmental problems. Environmental problems are key areas of concern for the global community in the 21st century. A sustainable global community is emerging that is geared toward preserving limited resources and the natural ecology and to do so requires resource conservation and the reduction of environmental pollution loads across all human activities. There are many global environmental factors that need to be addressed using a sound Corporate Environmental Management.

The goal of Corporate Environmental Management is threefold:

- To provide a basis for independent assessment of environmental management that marries various standardized approaches for measuring components (e.g., environmental audits for facilities, ISO 14000 compliance) with the larger and more sophisticated goals of overall corporate management objectives;
- To provide summary inputs regarding various global environmental management initiatives and developments that may be of interest to the target audience (with full recognition that this is a moving target); and
- To provide technical and management insights and suggestions to aid environmental management professionals and their corporate management structure in their development and implementation of initiatives, as well as providing interested investment and stakeholder communities a basis for independent evaluation.
- The Target Audience is also threefold:
- To provide senior management and boards of directors a concise, independent approach to assessing their respective environmental management programmes from a senior executive perspective;
- To provide the investment community with an independent perspective for evaluating corporate environmental management performance of their portfolio (and prospective portfolio) as well as

updates on the emerging environmental stance within the investment community and its regulatory bodies (e.g., SEC); and finally,

- To provide the environmental management community itself with suggestions and implementation strategies for basic issues such as health and safety, clean air, clean water, CERCLA, and NRDA, as well as emerging issues such as risk management, conservation science, and sustainable development reporting.

This book focuses on the emerging relationship between Corporate Management and the Environment where environmental factors increasingly play a key role in Corporate Competition and generate a need for environmental assessments of companies. The new, more market-oriented regulatory approach to environmental problems is aimed toward encouraging Industries / Corporate Business Community to find creative solutions to their global impact by reducing carbon dioxide and other greenhouse emissions, curtailing household and corporate waste generation with actively promoting recycling and introducing the PRTR (Pollutant Release and Transfer Register) system for reporting and registering potent harmful emissions and transport of waste that manage the problem on large scale. As part of this effort, green procurement initiatives were enacted that promote purchases of environmentally friendly products. Also basic laws were developed to promote a recycling-oriented society and regulate tracking of emission audits. These efforts are aimed at curbing emissions on regional and global scales. These laws form the legal framework for waste management and recycling. The best management system should minimize the generation of harmful chemical waste via manufacturing methods and processes, raw material selection and product compositions. This improvement will have significant implications not only in preventing direct contamination risk but in avoiding the risk of marketplace rejection or exclusion from customers and consequent competitive disadvantage.

Both the manufacturing and retail communities are increasingly recognizing the market power of green purchasing - the activity of purchasing products and services with the smallest environmental impact thereby encouraging companies to become more environmentally responsive. The approach is based on the idea that "green consumers" use their purchasing power in the consumer market to reward businesses that actively engage in environmental issues and to prompt reluctant businesses to do more. The green purchasing movement has been- rapidly growing among businesses, organizations, and government offices thereby effectively promoting green markets. There is hope that this will increasingly shift market demand toward green products leading to lower prices. More progress has occurred as cost savings are increasingly identified through these "green procurement" efforts. Large assembly and processing companies are increasingly procuring raw materials and components meeting their environmental specifications. Markets are clearly becoming more selective regarding environmental factors. In the future, even more emphasis is expected in business-to-business green transactions.

Environmental Management in the classic sense refers to the development and execution of environmental strategies to assure sustained corporate growth. The crux is the implementation of an Environmental Management System (EMS) based on seven principles:

1. Commitment of top management
2. Development of an environmental plan and organizational structure
3. Company-wide participation of all employees
4. Efficient use of management resources
5. Sustained effort to reduce waste generation
6. Detection and minimization of environmental risks
7. Disclosure to stakeholders and investment community

Of these, Corporate Commitment is the key - without which no Corporate Environmental Management programme can succeed. A growing number of companies are establishing environmental management capabilities via environmental performance reporting, sustainable development reporting and since the mid-1990s, ISO 14001 certification. Companies have been even releasing environmental audits and management assessments, but there is a bevy of parties interested in seeing such assessments formally developed. Besides consumers, business customers and suppliers, companies are surrounded by a variety of stakeholders - groups with an interest in company's activities such as shareholders, banks, investors, local residents and government agencies. As the severity of environmental problems has become clearer, stakeholders have increasingly demanded that companies be assessed on their environmental risks and merits that potentially impact their investment.

But it is now understood that the corporate survival has an environmental dimension, so whereas it is unlikely that poor environmental management will result in immediate business failure, there is little doubt that in the future competence in environmental management will become an increasingly important factor in price competitiveness, financing and business performance. In short, corporate survival will rest in part on environmental factors and poor environmental decisions and unacceptable environmental risk could prove damaging. International investment companies are now selling "eco-funds" (environmentally responsible stock investment trust funds). These funds are groundbreaking financial products in two respects: for confronting the issue of environmental responsibility and for investing selectively in companies based on environmental criteria.

This book on **Corporate Environmental Management** details how to effectively develop, implement and assess a sophisticated Corporate Environmental Management Programme and is a valuable guide to Managers who are responsible for their corporation's environmental performance; to solving the numerous environmental concerns faced in Corporate Business Houses and help toward the successful completion of the development, implementation and assessment process. The book elucidates that the goal of Corporate Business Houses is not just environmental management; it is the degree to which sound environmental management contributes to sustainable development, as defined by the United Nations World Commission on Environment and Development. This calls for "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Sustainability can also be defined as the ability of the company to continue into the long-term through excellence in performance and stewardship.

The author of the book, **John Darabaris,** currently in a management capacity, was formerly a division Vice President with Kearney/Centaur, has conducted numerous Corporate Environmental Management Assessments and Benchmarking Studies as well as "Best Practice" studies. He is an experienced Environmental Management Professional in both Environmental Management and Regulatory Strategy as related to complex, sophisticated industry environmental activities. He possesses extensive experience both as a licensed Professional Engineer and Certified Public Accountant and examines the major issues that Managers encounter during the course of developing a programme. He employs an approach that is readily familiar to readers with a business background using numerous self-explaining graphical aids, a total of 82 as Exhibits in relevant places in the Chapters of the Book to quickly and clearly illustrate each point.

With a background that combines graduate degrees in Geologic Engineering and MBA in Finance, the author provides unique insights into the breadth of technical, regulatory and management issues that Corporate Environmental Managers face in today's complex environmental corrective-action management world.

The book delves into specialty areas such as EPA, RCRA, CHRCLA, Clean Air and Clean Water Acts. In addition, it covers risk management, health and safety and emergency management issues and discusses evolving international trading criteria and international initiatives such as sustainable development reporting and international standards.

The salient features of this book on Corporate Environmental Management can be summed up in the fact that it,

- Provides the first focused and comprehensive survey of the technical, regulatory, and managerial issues affecting corporate environmental managers
- Offers authoritative direction on key technical programs for managers responsible for environmental performance
- Presents an interdisciplinary perspective relevant to both technical and business management

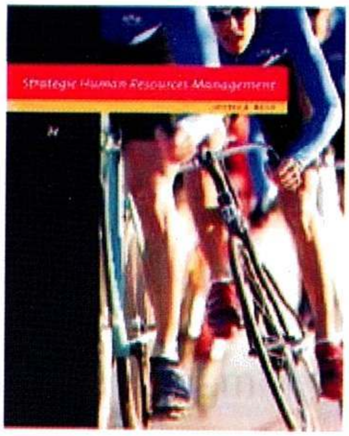
The book addresses various issues in well-organised Chapters: 1) Introduction, 2) Environmental Management Assessments, 3) Lines of Inquiry, 4) Assessment Model and Analytical Framework, 5) Internal Survey, 6)Corporate Commitment, 7) Communication, 8) Functional Implementation, 9) Measurement Systems, 10) Benchmark Survey , 11) External Survey, 12) Natural Resource Damage Assessment-Proactive Strategies, 13) Environmental Risk Assessment Issues, 14) Emergency Response Analysis, 15) Corporate Health and Safety System, 16) Environmental Risk Management at Banking Institutions, 17) Global Warming, 18) Assessment of International Trends and 19)Summary.

The first part of the book, discusses assessment, while the second part provides technical details regarding management and investment concerns. As such, the book offers insight into how to measure the effectiveness of corporate environmental programmes and covers an array of EPA and International Environmental Initiatives.

The Corporate Environmental Management has a fourth goal and target audience to provide a sound cross-over primer for the academic community providing a science and regulatory perspective to the Managers, Technocrats, Bureaucrats, Scientists, Students & Corporate Business Communities – the stakeholders for Sustainable Development.

Dr. Viswaranjan Somanath
Reader, Post Graduate Department of Environment Management, Chhatrapati Shahu Institute of Business Education and Research (SIBER), (Autonomous Institute) Kolhapur – 416 004 Maharashtra, INDIA
E-mail: viswaranjansomanath@gmail.com

BOOK REVIEW



Strategic Human Resource Management

By Jeffery A. Mello
Edition Number: 3
ISBN: 981-243-897-1
No. of Pages: 475
Thomson Press

Strategic Human Resource Management has evoked keen interest and a lot of debate among HR professionals and practioners.

The Context of Strategic Human resource Management

This book examines the traditional functional HR areas from a strategic perspective. This text is organized into two sections. The first section consists of seven chapters which discusses the conceptual framework of Strategic Human Resource Management with special emphasis on a conceptual model for the practice of Strategic HR. The chapters discussed under this section include.

1. An Investment Perspective of Human Resource Management
2. Trends Affecting Human Resource Management
3. Strategic Planning
4. Evolving / Strategic Role of Human Resource Management
5. Human Resource Planning
6. Design and Redesign of work systems
7. Employment Laws

Chapter I

The First chapter focuses on the investment perspective of Human Resource Management where special emphasis is on the sources of employee value. The author, while analyzing the strategic view of Human Resources, views employees as assets which increase the organizational value when the organization spends time and resources in developing proper policies and programmes. This chapter also discusses the sources of employees value, Implication of **valuating** Human assets for individuals and organization and factors influencing an organization's investment orientation. A case study on how South West Airlines achieved competitive edge by linking the employee needs and organizational capabilities are also discussed in this chapter.

Chapter II

The second section discusses the various trends affecting Human Resource Management. Factors like technology, workforce, demographic changes and diversity and their impact on HRM and the manner in which the HR has to strategically respond to these changes are **luadly** explained in this chapter.

Chapter III

This chapter deals with the meaning of Strategic Human Resource Management, the strategic Management Process, strategic models like Industrial Organization Model and Resource Based View Model. The author has provided a contrasting view of the two models of strategy in detail. While explaining the Strategic Management Process, the author explains about the importance of Mission Statement, the need for the organization to do a detailed environmental scanning and a thorough Self assessment of its capabilities before establishing its goals, objectives and strategy. A brief description about the Five P Model of SHRM is also given in this chapter.

Chapter IV

The fourth chapter discusses the evolving strategic role of Human resource management. The possible roles assumed by the HR function in line with evolving strategies, the HR role in knowledge based economy, and the critical competencies needed for SHRM function and the barriers to Strategic HRM are some of the topics which have been highlighted in this chapter. A model of SHRM has been presented towards the end of this chapter.

Chapter V

The meaning of Human Resource Planning, Objectives of Human Resource Planning, types of planning and the various levels in which the HR become Strategically reactive are some of the discussions on which the chapter focuses.

Chapter VI

This section focuses on changing nature of work which requires organization to focus on work design and redesign and evolve appropriate HR strategies to meet the ever changing workers' needs and aspirations. The section also highlights the role of HR as a change agent which drives, facilitates and strategizes change in organizations.

Chapter VII

The employment law is one of the key strategic areas of HR in which the managers are ill prepared to manage. The law regulating the employment relationship are numerous and very complex. As there is a lot of ambiguity in the new as well as old laws, the mangers who are involved in strategic decision making at all levels of the organization have to be kept well informed. The chapter focuses more on U.S employment laws and strategies for managing sexual harassment.

It also discusses about the sources of employees value, Implication of valuating Human assets for individuals and organization, factors influencing an organization investment orientation

Implementation of Strategic Human Resource Management

The second section which consists of chapters 8-14 explains various strategic issues faced by an organization while developing various policies and procedures pertaining to the traditional functional areas of HR like Recruitment, Training & Development, Performance Management, Compensation Management, Labor Relations etc to cope with the everchanging competitive business world. The chapters discussed under this section include

1. Staffing
2. Training & Development
3. Performance Management and Feedback
4. Compensation
5. Labor Relations
6. Employee Separation
7. International Human Resource Management
8. Case Studies

Chapter VIII

An organization success and achievement of its strategic objectives rest upon its staffing function; therefore, it is vital for the organization to employ individuals who have the capacity and desire to contribute to its mission.

This section focuses on the various recruitment methods, procedures, selection procedure and various challenges faced by an organization in staffing and selecting employees for overseas assignments. It also discusses about the effective staffing strategy which ensures efficiency and generation of a qualified talent pool which in turn contributes to the success of the organization.

Chapter IX

Training and development is one of the key strategic issues for an organization: Since an organization does not possess ownership on its human assets, it becomes necessary for the organization to determine the extent to which their human assets are viable investments. In order to achieve its strategic objectives, the organization should have a holistic view of training and development with regard to the kinds if employees and the skills and knowledge bases they should have. This section discusses different aspects of training and development, benefits of training, planning and strategizing training and integrating training and development with performance management systems and compensation.

Chapter X

In this chapter the use of the PMS system, measures of evaluation and the errors which characterize the appraisal process are discussed in detail. This chapter also highlights the need for integrating PMS with Organization strategy, since the PMS can significantly impact organizational performance and processes.

Chapter XI

In the present day environment, organizations face a number of key strategic issues in setting their compensation policies and programmes. The challenge for the HR professional is to design and deliver appropriate compensation strategies in order to remain competitive in the market. The link between compensation and strategy is essential for ensuring optimal performance. This Section discusses about the concepts of Equity, Internal Equity, External equity and various legal issues in compensation which the organization has to take in to consideration while designing an appropriate compensation system and integrating it with its strategic initiatives.

Chapter XII

This chapter discusses labor relations in the American context. The topics discussed in this chapter include, National Labor Relations Act, Collective Bargaining, the nature of Unions today and the strategies required for HR professionals to bargain with the unions of 21st Century.

Chapter XIII

In the era of Mergers and Acquisition, issues like HR programmes and policies that address the employee's separation, a key strategic issue has gained prime importance in ensuring the success of the organization. In this regard, the chapter focuses on issues like employee separation, work force management strategies, employee turnover, strategies for reducing turnover, strategies for retaining high performers, and issues and policies related to retired workers.

Chapter XIV

This section discusses the challenges and strategies for the organization in managing the global workforce. The section also discusses the Strategic HR issues such as Expatriation, Selection, Orientation, Managing Expats and Repatriation in international Assignments and how to manage the same.

The book also includes Real World examples, Case Studies, Discussion Questions, Experiential Exercises, and Innovative Internet Exercises at the end of each chapter.

The important feature of this book is the Opening Vignettes, which relates the subject matter to a well known organization.

This text book will be of good help to faculty members, students and practitioners from a strategic perspective.

Dr. S. Lakshminaryanan
Faculty, Manipal Institute of Management,
MIT Campus, Manipal – 576104, INDIA
E-mail:biju_7316@yahoo.com

South Asian Journal of Management Research (SAJMR)

(Published in January and July Every Year)

Membership Form

Yearly Subscription: Individual Rs. 400
Institutional Rs. 500 (India)
US $ 25 (Outside India)

Please start my subscription to South Asian Journal of Management Research (SAJMR)

Name: ______________________

Address: ______________________

____

City: ______________ ZIP/PIN Code: __________

State: ______________________

Country: ______________________

Phone No: ______________________

E-mail: ______________________

Send your payments by demand draft in favour of **Editor, South Asian Journal of Management Research (SAJMR)**, payable at Kolhapur, India, to

The Editor
South Asian Journal of Management Research (SAJMR)
Chh. Shahu Institute of Business Education and Research (SIBER)
University Road, Kolhapur 416004, Maharashtra State, INDIA

Instructions to Authors

South Asian Journal of Management Research (SAJMR) is planned to be an archival journal of research pertaining to managerial aspects in various areas of human activities. This journal is a publication of Chhatrapathi Shahu Institute of Business Education and Research (SIBER) Kolhapur, India. SIBER is a unique institute of its kind in the entire Indian subcontinent imparting postgraduate professional education in the fields of business management, social work administration, environmental studies and computer applications. Management thoughts and managerial research are the common factors that link these otherwise diverse fields. Having completed three decades, the institute now desires to cater to the international community by creating a platform for sharing the outputs of managerial research in these as well as other areas of human activities. We believe that the socio-economic and political environments in South Asian countries are more or less similar that we will be able to share the same media for this purpose. SAJMR is the realization of this vision.

Scope of the Journal

The Journal publishes original research papers pertaining to the managerial aspects of (but not limited to) Business, Industry, Information Technology, Environmental Studies, Public Administration and Social Work Administration. The journal will also consider publishing full-fledged review papers in some of these areas.

Content blend

The journal prefers to publish rigorous papers with sound methodology leading to advanced body of knowledge. Conceptual and empirical research papers, review papers, theoretical studies, case studies, simulation studies and model building will be considered for publication.

Frequency

Biannual (January and July)

Editorial Policy

SAJMR is a refereed research journal. Only original articles will be accepted for publication. The nature of the article should confine to the specification given in content blend. The manuscript submitted for publication would be screened by the editorial board for its relevance. Appropriate manuscripts would be put through blindfold reviews by two experts. On the basis of reviewers reports the editor will take a decision. Published manuscripts will be the exclusive copyright of SAJMR. The copyright includes electronic distribution as well. Accepted or otherwise the review reports will be made available to the authors of all reviewed articles.

Instructions to Authors

1. We expect the papers to have word length between 3000 and 7000.
2. First page of the manuscript should contain only the title of the paper, name(s) of author(s), name(s) and full address (es) of organisation(s) (along with phone, fax and e-mail) where the work has been carried out. The corresponding author should be marked with an asterik (*).
3. An abstract of 150 words should be included at the beginning of the paper.
4. Abstract should be followed by relevant key words.
5. The paper must be typed on MS Word with Times New Roman font, 1.5-line spacing, A4 size paper, 1.5" margin on left side and 1" margin on all other sides. The main heading should be of 16-font size and it should appear in bold characters. The rest of the paper including the sub headings and sub-sub headings should be of 12-font size.
6. Tables, Sketches and graphs can be included.
7. Section headings should be numbered serially as 1, 2, . . and it should be in bold characters. Sub sections headings should be numbered as 1.1,1.2,.. and it should appear in italics. If sub-sub sections are there they should be numbered as 1.1.1,1.1.2, ...and it should appear in italics.
8. All headings should appear in title cases.
9. A short biography (one paragraph per author) of the author(s) should appear at the end of the paper.
10. References must be written in the following model.

Journal reference

Starbuck, W.H. & Mezias, J.M. (1996) Opening Pandora's box: Studying the accuracy of managers' perceptions. *Journal of Organisational Behaviour,* 17:99-117.

Book reference

Cummins, Thomas G. & Huse, Edger E. (1998) Organisational Development and Change. West Publishing Company, St. Paul, New York.

Submission of Papers

1. The manuscript should be submitted through email as an attachment file in MS Word to the Editor Dr. Babu Thomas (E-mail: sajmr@siberindia.co.in).
2. The author(s) of the research paper should give an undertaking while submitting the paper that the manuscript submitted to the journal has not been published or submitted simultaneously elsewhere and the manuscript is their original work. The duly signed undertaking should be sent to the editor by post.
3. If asked to revise, the authors have to resubmit the articles within a period of 30 days.
4. Each author will get a soft copy of the paper and a free journal copy in which their paper is published.

SOUTH ASIAN JOURNAL OF MANAGEMENT RESEARCH
(SAJMR)

ISSN 0974-763X

Contents of Vol. 1 No. 1 January 2009

Contents Vol. 1 No. 2 July 2009

The Editor

South Asian Journal of Management Research (SAJMR)

Chh. Shahu Institute of Business Education & Research (SIBER)

University Road, Kolhapur - 416 004, Maharashtra State, INDIA
Contact: 91-231-2535706 / 07 Fax: 91-231-2535708
Website: www.siberindia.co.in, Email: sajmr@siberindia.co.in