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# CONTENTS

# SHOBHIT UNIVERSITY, MEERUT

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

# SCHOOL OF BUSINESS STUDIES

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

# *NICE JOURNAL OF BUSINESS*

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

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

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

# From the Editor's Desk

It is a matter of great pleasure and privilege for me to place before the readers the present issue (Volume 6, Number 1: January-June 2011) of the *NICE Journal of Business*. The issue contains articles on a variety of topics of current interest in business. These include: finance and stock market operations, marketing and advertising, organisational behaviour and human resource management, production and operations management, and economic environment.

The problem of black money and corruption at high places has been engaging the attention of all concerned citizens in India. The problem has assumed alarming proportions and is threatening the economy and polity of the nation. Dr. Ram Singh discusses the underlying causes and consequences of black money in India, and proposes some workable measures to curb the menace.

For accelerating the growth of the Indian capital market, many factors have played a vital role, including the conduct of sound macroeconomic policies, stock market reforms, privatisation, and economic liberalisation. Dr. Vinod Kumar and Dr. Prabhat Mittal analyse the co-integration relationship of the Indian and major global stock market indices, through Johansen's co-integration method. They find that there is a co-integration relationship among the global indices with a long-term stability.

Financial derivatives are often blamed for price volatility. The two schools of thought advance their testimonies either to support or to oppose the argument. But no conclusive theory has ever come to support either of them. In their article, Professor A.K. Sarkar and Dr. Shailendra Rastogi throw light on the gold- and silver-based derivatives and their contribution to price volatility, when they are introduced in India.

Dr. Shyam Bahadur Katuwal examines the workers' desire to participate in management and the unwillingness of the management, arguing that it delays decision-making and that workers lack maturity, necessary for making rational decisions. He, however, predicts bright prospects for the scheme in Nepal due to growing faith and interest of people in democracy and adequate media support, younger generation's increasing interest in industrial jobs, and the entry of multinational companies.

For successful operations, an organisation needs a competent, productive, and stable work-force. Dr. Ravindra Kumar and Ms. Lalita Singh examine one of the major traits of an employee, namely, emotional intelligence, and assess its impact on their job satisfaction, team spirit, and responsiveness to change. The authors find that the employees having higher emotional intelligence have more job satisfaction and better team spirit. They, however, note that the employees' emotional intelligence is not positively related to their responsiveness to change.

During a short-run surge in demand, manufacturing companies often face the dilemma whether or not to accept a new order. The change in variable factors plays an important role in increasing a company's production level. Mr. Satyanarayanan Jambunathan, Dr. Amalendu Jyotishi, and Dr. E. Meera analyse the technical efficiency of a firm, illustrating the case of Blue Star Ltd. They find raw material and labour costs as determinants of sales for measuring the technical efficiency of the company for a one-time, short-run surge.

Brand equity is an important intangible asset that has psychological and financial value to the firm. Enhancing brand equity has become an important strategy for marketers. It has become a fertile area for research scholars. Professor R.D. Sharma, Dr. Gurjeet Kaur, and Ms. Neetu Mahajan seek to explore the relationship between brand equity, customer satisfaction, and customer loyalty, in the context of passenger car. They find that brand equity and customer satisfaction have a positive effect on customer loyalty.

The composition of work and family life spheres has significantly changed over the years for employees - males as well as females. Dr. Debajani Sahoo examines the employees' feelings towards, and expectations from, their workplace, and the impact of their demographic variables on their efficiency. She finds that the employees' friendly work culture, flexible work hours, supportive team members, and counselling programmes go a long way in promoting work-life balance.

Organisational stress arises out of heavy work-load and other problems faced by an employee at his work place. Mrs. Nidhi Turan and Professor Sultan Singh seek to ascertain the association between different stress manifestations and employees' demographic variables. They find that the majority of employees attributed specified demographic variables to their organisational role.

Surrogate advertising, the practice of promoting a product in the guise of another, when the advertisement of the former is banned under the law, is a problem which has ethical and legal dimensions. Mrs. Ruchi Gupta elaborates the concept of surrogate advertising, describes the use of such advertising by liquor and tobacco companies in India, and analyses the relevant regulatory measures and the cases of surrogate advertising. The measures for controlling the menace have been proposed.

The section on book reviews contains seven items, penned by subject experts in the relevant fields. The books reviewed pertain to subjects, such as challenges faced in marketing, understanding people, strategic management, organisational behaviour, knowledge management, corporate communication, and Keynes' thoughts on management.

I express my gratitude to the eminent scholars and expert book-reviewers for their precious contribution to the journal. Several experts made available their time and expertise for assessing the articles received for publication and making critical comments and suggestions for improving their quality. They truly deserve my sincere thanks.

I owe a special word of thanks to Mr. Shobhit Kumar, Chancellor; Kunwar Shekhar Vijendra, Pro-Chancellor; and Professor Anoop Swarup, Vice-Chancellor, Shobhit University; for their valuable guidance and keen interest in this endeavour to promote and preserve business research.

**D.P.S. VERMA**

***Editor***

## PERSPECTIVE

# BLACK MONEY IN INDIA
# Causes and Consequences

**Ram Singh***

### INTRODUCTION

The issues of black income and corruption at high places have attracted considerable attention from different quarters of society in India. Some eminent social activists, including a yoga *guru*, have started serious campaign for eradication of these scourges. The demand for getting back the money, believed to have been stacked in the Swiss banks, has been getting louder by the day. However, the Central government has failed to come out with concrete action plan to tackle the inter-twined menace of black money and corruption. The foot-dragging approach of the Central government on the issue has immensely annoyed the Supreme Court of India, which has gone all the way to set up a Special Investigation Team (SIT), to trace and bring the black money hidden overseas. During the Monsoon session (August 2011), both houses of Parliament witnessed many raucous scenes over the issue of corruption, with the combined opposition stalling the proceedings.

The black income is that part of income which should have been reported to the income tax authorities, but has not been done. The black income can be generated from legal as well as illegal activities. When a producer or a service-provider understates his income, disclosing only a part of it to the tax authorities, the undisclosed income amounts to black income. The income generated by illegal and unethical activities, such as gambling, black-marketing, prostitution, drug-trafficking, and terrorism, is surely the black income. Black money, in fact, refers to the ill-gotten money, generally in cash. Another related term, 'black economy', means business activities and income which people do not record and account for in order to avoid paying taxes to the government.

People know several things about black income and money in India. They know that these things do exist. They also know the means that are used to create and transfer illegal income. Yet, they do not know several things about black income and money. They do not know precisely how much of black money is hoarded within the country, and what amount stands siphoned-off to the foreign bank accounts and other tax-havens. In this background, the claims like 'a sum of $1500 billion (` 67,50,000 crore) Indian money is lying in the Swiss bank accounts alone, which, if brought back, will be enough to pay ` 1,00,000 to every poor in the country!' are amusing to say the least.[1]

The naive or the immature assertions and the people making them apart, the problem is rather serious. It is understandable that even the apex court has been influenced by the immature claims. However, there is an inadequate understanding of the underlying causes behind the generation of

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black income. Consequently, the official measures to control the creation of black money have failed to deliver the desired results. Similarly, in the past, the government has had little success in reining in the massive illegal outflows of funds to overseas banks. In the absence of a comprehensive understanding of the issues involved, it will not be entirely surprising if the apex court-constituted SIT turns out to be yet another attempt of barking at the wrong tree.

This note seeks to discuss the underlying causes and the consequences of the generation of black income. Moreover, it suggests the measures that can help in controlling the generation of such income and its illegal outflow. The article is divided into 4 sections. After this introductory section, the magnitude of the problem is highlighted in Section 2. Section 3 explores the activities and processes that lead to the generation of illegitimate income. Finally, in Section 4, necessary remedial measures are proposed.

## EXTENT AND DIMENSIONS OF BLACK MONEY AND INCOME

The phenomenon of black income is a well-known and unfortunate reality of the Indian economy. Yet, the precise estimates of black money have remained elusive, despite numerous studies conducted by economists since the early 1950s. The first estimates of the black income in India were made in 1955 by a noted economist, Nicholas Kaldor, who estimated it to be about 4-5 per cent of the GDP.[2] In 1969, the Wanchoo Committee estimated the absolute size of black income to be ₹7,000 crore. By 1980-81, it said to have accounted for as much as 18 per cent of the GDP. The Raja Chelliah Committee (1980-81) revised the figure upwards. For the early 1980s, the committee estimated the size to be about 21 per cent of the GDP. Kumar (2002) estimated it to be at least 50 per cent of the GDP. Various studies have put the size of the black income in the range of 40 to 50 per cent of the GDP.[3]

Research on the subject enables us to draw several plausible conclusions about the magnitude of the illegality in the economy. Even if it is taken at 40 per cent, the implications are profound. For instance, the official estimates of the GDP for the year 2011-12 reveals that the black income worth at least ₹35,92,344 crore will be generated during the current year alone! Presumably, the hidden income falls under the highest tax-slab. So if unearthed, the black income will be taxed at the rate of 20 to 30 per cent. Even at the rate of 20 per cent, the income tax on the black income can generate a tax revenue worth ₹7,18,469 crore in the current year, and much more during the subsequent years. It is reported that India has more black money than the rest of the world, combined. India, topping the list with almost $1500 billions of black money in the Swiss banks, is followed by Russia $470 billions, UK $390 billions, Ukraine $100 billions, and China $96 billions. The amount of $1500 billion is 13 times larger than India's foreign debt[4].

The research also provides fairly reliable estimates of the money illegally transferred to foreign countries. Again, even if one goes by the lowest among the available estimates, the magnitude is confounding. According to a study, during the year 1948 and 2008, at least $462 billion (that is, ₹ 20,79,000 crore)[5] have been siphoned-off through manipulation of trade accounts, abusive transfer pricing, etc.[6] This amount is assumed to be stashed away in tax havens and shell companies overseas. It is worth stressing that the above figure, though large by itself, appears to be a gross under-estimate of the total illegal outflows. Since it does not include the funds transferred through illegal activities, including *hawala*, smuggling, and drug-trafficking, on which data are not available. In order for the illegal activities to flourish it is necessary that the large amount of black money is accessible to the participants. The *hawala* market is used to illegally transfer money to several countries. This system is unique in that there is no physical transfer of currency.[7]

It will help to put the above numbers in perspective. The additional revenue that can be generated by taxing the black income will be enough to enable the Central government to avoid all the borrowings, and simultaneously double the budgetted expenditure on infrastructure, rural development, agriculture sector, primary education, and various social welfare schemes. Alternatively, it will be sufficient to finance universal food, health, education, and employment programmes throughout the country. Similarly, a fraction of the black money transferred abroad will be sufficient to liquidate the whole of India's external debt. It seems, a large fraction of India's external debt has been used to finance the flight of capital to overseas tax-haven and bank accounts!

The black money can provide life-line to the terrorism and other criminal activities, such as drug and human trafficking. Without black money, such activities will attract smaller number of potential participants. Apart from facilitating the criminal activities, the black money inflicts huge damage to the legal part of the economy, and seriously harms the legitimate interests of the honest taxpayer. For instance, illicit financial flows across borders immensely add to the volatility of financial markets, at times endangering the growth and macro-economic stability. Besides, the black money is often the primary cause behind the continuous rise in the real-estate prices in India. It is due to the black money parked in the sector that the housing prices have risen almost ten-fold since 2000. Even during the 2008-09 economic slow-down, when the BSE index fell down by 37 per cent, the decline in the real-estate prices was a meagre, 15 per cent. In fact, in spite of the steep rise in the prices of food and other commodities in recent years, no commodity has experienced the price rise comparable to the sky-rocketing housing prices.

## THE UNDERLYING CAUSES

Several commentators have attributed the generation of black money to the high income, corporate, stamp-duty, and other tax rates. Tax evasion is said to be a major contributor to the underground economy in the country, which, in turn, is believed to be the main driver of India's illicit cash outflows. They favour the expansion of the tax base and improvement in the tax collection by reducing the tax rates. These steps, it is argued, have potential to curtail illicit flows. This set of analysts argues for a drastic reduction in the tax rates and levies in order to induce people to report their income truthfully. Some commentators go to the extent of suggesting tax amnesty to induce the black money holders reveal their actual wealth. In addition to the steep tax rates, it is argued that the numerous public sectors restrictions related to controls, licensing, and the *permit raj* system on trades and manufacturing have paved the way for the creation of the black money. It is argued that the 'licensing and permit' system led to corruption at all levels and generation of the black income and money to pay the required bribe.

In a similar vein, the illicit outflow of funds is attributed to high custom duties and the trade restrictions in the past. Again, it is argued that illegal outflow to overseas banks can be minimised by removing the restrictions imposed on international financial flows. However, the high tax rates and regulatory measures, at best can provide only a partial explanation for the unusually high level of illegality in the economy. In fact, the higher the tax rate, greater shall be the benefits from its avoidance; and lower shall be the incentive to report true income and transaction price. Amusingly, however, the black income has increased in direct proportion to the decline in tax rates. For instance, since 1971, the highest tax rate has declined from 97.5 per cent to 30 per cent. Yet, the black income has grown up from 7 per cent of the GDP in 1971 to 50 per cent in 2010! Similarly, as much as two-thirds of the illegal outflows pertain to the post-liberalisation era, the period that has seen a drastic cut in the custom duties and other restrictions on financial flows. It is important to highlight that some tax exemptions have also led to thecreation of black income, rather than mitigating the problem. The export duty exemption is a case in point. It is widely believed that the direct tax exemption granted to 100 per cent export-oriented units has induced large-scale round-tripping of the black money in the past.[8]

There is much more to the issue than what meets the eye. In fact, the real causes responsible for the generation of black income lie elsewhere.

The real-estate sector is the breeding ground for the black income. A typical real-estate project requires 50 to 60 regulatory approvals, including the infamous 'change-in-land-use' clearance. The property developer has to pay a huge bribe to get such clearances. The bribe and 'informal fees' are said to increase the cost of housing projects by at least 25 to 30 per cent. The land developers and builders pass the costs of bribe and kick-backs on to the final buyer. However, they would generate black money to pay the bribe. They do so by under-stating their income and over-stating the expenses. Due to unreasonably high prices, even the layman has incentive to generate black income to buy a house, wherever possible. Finally, to save on the stamp-duty and other taxes, the buyers and sellers in the property market leave 20-30 per cent of the transactions unreported, further adding to the pool of black money. While it is difficult to put the exact amount of black income generated by the real-estate sector, it will not be unreasonable to argue that this sector is the single largest contributor to the pool of black money and income in India.

The size of kick-backs is huge and has actually come to dictate the decision-making of the State governments, especially when it comes to acquiring land for real-estate firms. The States have recently started to use the emergency provision to acquire land for various sorts of business activities, including those which may not even remotely serve any public purpose.

The last decade has experienced a phenomenal rise in the number of compulsory acquisition for real-estate companies. Many a time, the State governments acquired agricultural land, citing public purpose, but subsequently transferred it to these companies. The States have been able to do all this by exploiting ambiguities in the archaic legislation, the Land Acquisition Act, 1894. The judicial apathy on this crucial issue has showed a ruthless trampling of the farmers' rights. Unlike its generous approach on the issue of compensation, the question whether land acquisition is in public interest or not, has been left by the judiciary to the discretion of the States. The courts have, in a number of cases, annulled the acquisition, but largely on procedural grounds; for the most part, they have not questioned the legitimacy of the acquisition *per se*.

In such a scenario, the private commercial interests, rather than the public purpose, have come to dictate the decision-making of the State governments. This phenomenon has become specially pronounced during the 11th Five-year Plan. The Plan has made the 'Special Economic Zones' and other 'public-private partnerships', the mainstay for making provisions of public goods. Such partnerships are formed to tap private funds for infrastructure and public services, such as education and health. On its part, the government concerned acquires the land and transfers the control rights over it to the partner companies, on the basis of a long-term and renewable lease. In such cases, the excess land obtained is used by the companies for real-estate and other commercial purposes. After acquisition, companies make huge fortunes by leasing out the 'developed' land. At times, they charge as much as 100-150 times higher than what they paid for the land, making the compensation received by the farmers look a pittance. Several State governments and the Central government departments have formed such 'partnerships'. Indeed, many 'partnerships' are formed just to enable the companies to pursue their private interests in the name of public projects. Delhi Airport, Pasco project in Orissa, and the Yamuna Expressway and the Ganga expressway development projects in Uttar Pradesh are only a few examples. With increasing reliance on private funding of public goods, such practices are bound to multiply and become subtler. Unfortunately, the new Land Acquisition Bill has miserably failed to take note of these devious tools for transferring land to real-estate companies, builders, and colonisers.

The States of Haryana and Uttar Pradesh seem to have 'out-performed' each other, when it comes to misusing the land acquisition law. The

State of Uttar Pradesh has excessive proclivity for misusing the emergency provisions. On this ground itself, since April 2011, courts have struck down the acquisition of about a thousand hectares in Greater Noida alone. In several instances, the State acquired land, citing the public purpose, but subsequently diverted it towards the private ends. Haryana's track record is even worse. For instance, about 1500 acres of high-value agricultural land, situated in close vicinity of Gurgaon city, was acquired, citing public purpose. Later on, it was transferred to the Reliance Special Economic Zone, a project whose future has been uncertain even after a lapse of 5 years. The courts have reprimanded the State government for blatant abuse of the law, including misuse of emergency clause, acquisition of cultivated agricultural land when the barren land was available, de-notification of the acquired land, and for non-payment of due compensation. Recently, the Supreme Court rebuked it for adopting 'pick-and-choose' policy of acquiring land to favour the powerful. Indeed, the State seems to be an epitome of abusive practices that have come to plague the existing law.

Next in the line of the leading contributors of the black income is the service sector of the economy. Services, by nature, are intangible and in most cases; personalised. Therefore, there is a tremendous scope for the service-providers to avoid taxes by manipulating bills and invoices. For some activities, such as legal, accounting, and medical services, transactions are cash-based and generally go unreported. There is a lot of illegality in the transport services.

Moreover, corruption in public procurement and contracting is also an ever-expending source of black money. The government agencies spend huge sums on the purchase of goods and services for various welfare programmes and for their own use. In reality, substandard goods and services are procured, and only a part of the total spending concerns the actual cost; the rest is pocketed by the corrupt officials and contractors. As regards the government contracting, the example of 2G Spectrum is enough to illustrate the extent of corruption and the black money involved. For auction of the spectrum, the Comptroller and Auditor General's (CAG) estimated the loss suffered by the public at ` 1,76,000 crore. Even if this figure is an overestimate, analysts agree that the scam has generated at least ` 50,000 crore as black money. Moreover, all the dimensions of the black money generated during Commonwealth Games 2010 are yet to come to the fore. However, the recent CAG report suggests that huge sums have been pocketed by corrupt decision-makers and contracting firms.

Government officials enjoy huge discretionary powers in awarding of contracts and tenders. They engage in preferential treatment for selected bidders at the expense of quality. Many construction activities, such as road building, are State-funded and are dominated by mafias, consisting of corrupt public works officials, materials suppliers, politicians, and construction contractors. Due to poor quality of construction and material substitution, roads and highways need repairs after every monsoon season.

The macro-level data also corroborates the inference that the real estate, the service, and the public sectors are the major sources of black income, though other sectors also contribute to that. Since 1991, the share of these sectors in the GDP has increased substantially, and so has the size of black income and money. This period is also marked by increasing economic inequality between *the* haves and the have-nots. Plausibly, most of the black money lies with the rich realtors, professionals, bureaucrats, *netas*, and other high-net-worth individuals. Therefore, the set of people who can curb the illegal economy are also its beneficiaries. So, it is not really surprising that black income continues to grow bigger with each passing year.

## WORKABLE REMEDIES

The several peculiar solutions have been proposed for eradicating the black money: Declare the illegal funds, including those presumably stashed in Switzerland, as national assets; impose jail terms on the culprits, and confiscate the whole money if the owner does not declare it or bring it back by a specified date. These measures are meaningless to say the least.

It is pertinent to remark that till date not a single property has been proved *benami* and confiscated, though there has been a law empowering the authorities to do so since 1988. Detection and confiscation of illegal funds is even harder. First of all, the crooks and their overseas banks might not be waiting for the government to come and trawl through their account – unless the illegality of the money is established. Moreover, a large part of the transferred funds does not go to bank accounts or stay there for long; it gets invested in shell (cover) companies through complex arrangements. For example, in the 18 Indian accounts traced with the LGT Bank in Liechtenstein, only ₹39.66 crore have been found to be deposited during 2002-04. The tax authorities are having hard time establishing the illegality of these funds. On top of it, the offenders are using their ill-gotten resources to scuttle the investigation. The apex court is absolutely right in attributing the laggardly-paced investigation to the nexus of the keeper and the breaker of the law.

Someone has rightly said: Corruption is authority plus monopoly minus transparency." If the government and the SC-constituted SIT are serious about eradicating the menace, they should target the corrupt practices in the reality sector - mother source and the reservoir of the black money. There is a need to ensure time-bound and single-window clearances for projects. Application may be received on-line. The details of official decisions on approval requests should be available publically, along with the data on property transactions. These steps will help to curtail arbitrary powers of the *babus* to extract pay-offs, thereby reducing the need to generate illegitimate funds.

The scope of the Goods and Services Tax (GST) should be expended to real-estate sector and the micro-services. The GST requires separate vouchers from the seller and the buyer. So, unilateral mis-reporting or non-reporting of the transactions can be detected and punished. Moreover, by granting input tax-credit, it reduces the incentive to under-report the transaction value. Due to relatively easy detection of mis-reporting under it, the parties involved have reduced incentive to under-report the transaction price. As the reporting scenario improves, the scope for generation of black income will get reduced inevitably. Furthermore, the tax collection will also improve.

Moreover, there is an urgent need to bring objectivity and transparency in public procurement and contracting, to pass a comprehensive law that can govern the procurement of goods and services in the public as well as the private sector. The law should make competitive and transparent bidding, a pre-requisite for the procurement process. These provisions will go a long way in reducing the scope of bribe and pay-offs, which have come to become a major cost component for the contractors and suppliers of goods and services in the public sector.

As to the illegal outflows of funds, it is crucial to identify the ultimate beneficiary of international wired transactions. It will help to control the terrorism and other criminal activities. The manipulated export and import accounts, along with the Abusive Transfer Pricing (ATP), are the other major conduits for illegal outflow of the funds. The government should use the available data on international trade. Moreover, it should independently collect comprehensive real-time data on quantities and prices from exporters and importers. The enriched data-set can be used to detect trade mis-invoicings and the related parties transactions. Moreover, the use of tax-havens and the 'double taxation avoidance agreements' for money laundering should be stopped. The government should re-negotiate on all of the 77 agreements, to require the partner countries to share information on the reported profit and tax payments by the Indian companies as well as the MNCs. This measure, by detecting inconsistencies, can help reduce the scope of the ATP.

Moreover, there is a need to make the tax and foreign exchange laws more stringent and, at the same time less complex. However, the simple but stringent law is only a necessary condition: it is not a sufficient one. In the past, the *Foreign Exchange Regulation Act* had very stringent conditions. Yet, due to poor implementation of the law by corrupt officials, it could not deter the outflow of the funds on a massive scale. The new legislation should provide for strict penalty against corrupt enforcement officials.

Finally, the government would do well to learn a lesson or two from the experience of Honk Kong, which is a primer in learning as to how a corrupt system can be transformed into a paragon of transparency and efficiency. The government may reconsider seriously to negotiate and revise the existing Double Tax Avoidance Treaty (DTAA). In this regard, in August 2010, the government of India revised the DTAA, to provide for necessary mechanism for investigation of black money in the Swiss banks. The revision, expected to become active in January 2012, will allow the government to make inquiries from the Swiss banks in case they have any specific information (Dasgupta, 2011).

It is widely agreed that the credit for this transformation goes to its formidable anti-corruption agency, called the 'Independent Commission against Corruption'. The country needs a similar body, whether we call it 'Lokpal' or anything else. What is crucial is that it must be independent and transparent in its functioning.

## NOTES

1. This unsubstantiated figure has been reported in the print as well as the visual media.
2. The GDP of a country is a measure of total income generated by the factors of productions within the boundaries of the country. Generally, it can be divided into five categories: (1) Wages, salaries, and supplementary labour income; (2) corporate profits; (3) interest and miscellaneous investment income; (4) Farm income; and (5) income from non-farm unincorporated business.
3. For a comprehensive coverage of various issues pertaining to black economy in India, see Kumar (2002) and Gupta and Gupta (1982).
4. *www.timesofindia.comhttp://articles.timesofindia.indiatimes.com collections*, Julian Assange, 26 April, 2011, *www.economictimes.com http://articles.economicstimes.indiatimes.com*, date 08 March, 2011.
5. 1$=₹45, approximately.
6. See Kar (2011).
7. This mechanism is referred to as the *'hundi'* in Bangladesh and the 'chit fund' in Sri Lanka.
8. 'Round-tripping' of black money refers to the phenomenon in which people first shift the black money abroad and then bring it back by over-stating the export income. This way they get to legalise their black income and avoid paying tax on it.

## REFERENCES

Dasgupta, Ashok, *The Hindu*, August 4, 2011

Gupta, Poonam, and Sanjeev Gupta (1982), "Estimates of the Unreported Economy in India", *Economic and Political Weekly*, Vol. 17, No. 3, pp. 69-75

Kar, Dev (2011), "An Empirical Study on the Transfer of Black Money from India: 1948-2008", *Economic and Political Weekly*, Vol. 46, No. XLVI, pp. 45-54

Kumar, Arun (2002), *Black Economy in India* (New Delhi: Penguin Books India)

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**Dr. Deepa Sharma,** Assistant Professor, Maharaja Agrasen College, University of Delhi, Delhi

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

**Prof. J.B. Singh,** Professor of Statistics and Operations Research, Shobhit University, Meerut

**Dr. K.N. Badhani,** Associate Professor, Kumaun University, Nainital

**Prof. Pikay Richardson,** Manchester Business School, Manchester (UK)

**Prof. Prem Vrat,** Professor of Eminence, Management Development Institute, Gurgaon, Former Vice-Chancellor, UP Technical University, Lucknow, and Director, IIT-Roorkee

**Prof. Sandeep Kulshreshtha,** Indian Institute of Tourism and Travel Management, Gwalior

**Prof. Sanjay Mishra,** School of Business, University of Kansas, U.S.A

**Dr. Savita Hanspal,** Associate Professor, Kamla Nehru College, Delhi; currently Medgar Evers College, Central University of New York, New York

**Prof. Suresh Agrawal,** Department of Business Economics, University of Delhi South Campus, New Delhi

**Dr. Ved Pal,** Associate Professor, Haryana School of Business, Guru Jambheshwar University, Hisar

## RESEARCH PAPERS

# JOHANSEN CO-INTEGRATION ANALYSIS OF INDIAN AND MAJOR GLOBAL STOCK MARKET INDICES
## An Empirical Study

**Vinod Kumar* and Prabhat Mittal****

**Abstract**

*A substantial amount of recent research has greatly enhanced the understanding of financial integration of the world's major stock markets and has generated a great deal of interest among practitioners, academic researchers, and investors, especially the Foreign Institutional Investors (FIIs'). Several factors, such as the conduct of sound macroeconomic policies, stock market reforms, privatisation, and financial liberalisation, have played a vital role in improving and accelerating the growth of the Indian capital market. This paper brings out that the series of stock indices in the international markets are correlated with the Indian stock indices when the statistical methodology of first-order difference stationary by the Unit-root test is applied. On the basis of the result of the unit root test, we have focussed on the issue of empirical analysis of co-integration relationship of India's emerging stock market index, Standard & Poor's (S&P) CNX NIFTY with major global indices of the US, the UK, Germany, Hong Kong, and Japan. The paper uses historical data of weekly logarithmic returns from January 1, 2005 to December 30, 2008 (pre-2008 period), with 181 observations, and from January 1, 2009 to April 15, 2011 (post-2008) with 101 observations, and carries out the Augmented Dickey Fuller Unit root test and co-integration test. The period has been chosen to understand the connectivity of these markets during the period of sub-prime crisis and post-sub-prime revival of these economies. The empirical result shows that there exists a co-integration relationship among the global indices with a long-term stability. The study is expected to benefit the investors in these countries to take decisions on their portfolio and to minimise the risk.*

**Key words:** ***Co-integration, Johansen's method, Equity market, Augmented Dickey-Fuller Unit root test***

### INTRODUCTION AND MOTIVATION FOR THE STUDY

Globalisation and the deluge of foreign investments in India have enhanced the financial integration of the Indian equity markets with the world's major stock markets, generating a great deal of interest among practitioners, academic researchers, and investors, especially among Foreign Institutional Investors (FIIs). The existence of linkages across different national stock markets has important implications for investors who seek diversification

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opportunities in foreign markets. When different markets are inter-related, through such linkages, price movements in any one market would be representative of the group behaviour, which would reduce the possibilities for portfolio diversification. The portfolio manager can determine country weights in an international equity portfolio and use co-integration analysis in selecting baskets of stocks from several markets in different countries that are co-integrated with the world Index.

Co-integration analysis detects common stochastic trends in the price series and is useful for long-term investment analysis. Traditional money managers depended on correlation analysis of returns. Correlation analysis is conducted after differencing the original price series. Such differencing, while makes the series stationary, removes important long-term information from the series. Thus, it has become important for investors, portfolio managers, and policy makers to understand the stochastic trends in the major equity market.

## REVIEW OF LITERATURE

Research into relationship and global integration between stock market returns of different countries have always been the areas of great concern for international fund managers and researchers. Several recent academic studies have examined whether or not two or more indices of stock prices are co-integrated (Epps, 1979; Cerchi, and Havenner, 1988; Chan and Lai 1993; Bachman, *et al*. 1996; Choudhry, 1997; Crowder and Wohar, 1998; Srivastava 2007). Most of the aforementioned studies have examined the co-integration among international stock prices in a bivariate or multivariate framework. Bachman *et al*. (1996) have summarised several plausible explanations in favour of co-integration of international prices. Such explanations include the liberalisation of international trade and the opening of domestic capital market to foreigners, the transfer of technology, and the relaxation of restrictions on the domestic ownership of capital stock by foreigners. Inter-linkages among several indices of stock prices and international capital markets have serious implications for portfolio diversification as well as macroeconomic policies of the countries concerned. Evidence of co-integration among several indices of stock prices also suggests that the series have a tendency to move together in the long-run, even if experiencing short-term volatility from their equilibrium path.

Knowledge of co-integration is also important in view of the fact that if two economic time-series are co-integrated, there must be a causal relationship in at least one direction. Some of the research studies have found that the co-integration does not exist and, therefore, it makes sense to diversify amongst these unrelated markets.

Taylor and Tonks (1989) studied the integration of the UK market with the markets of the U.S., Germany, Netherlands, and Japan, using monthly data on stock price indices for the sub-periods, April 1973 to September 1979 and October 1979 to June 1986, and employed a bivariate co-integration technique (Engle and Granger, 1987). They found that stock price index of the U.K. was co-integrated with the stock price index of the U.S., Germany, and the Netherlands and Japan for the later period . Taylor and Tonks did not find any co-integration either for the group as a whole or for the pairs of markets. Based on these results, they suggested that there was no long-term gain from diversification for the U.K investors after the abolition of the exchange control.

The results indicate that there are relatively less significant interrelationships between the sectors in different markets, with most of these accounted for by the larger markets in France, Germany, and Italy. The evidence also suggests that the consumer discretionary, financial, and material sectors are relatively more interrelated than the consumer staples and industrial sectors. This has clear implication for portfolio diversification and asset pricing in the European Union (EU). The data employed in the study consisted of value-weighted equity sector indices for six selected E U markets, namely, Belgium, Finland, France, Germany, Ireland, and Italy. The markets selected are considered to be representative of the diversity within the EU, encompassing both the large and small markets. All the data was obtained from Morgan Stanley Capital International and encompasses the period from 1 January 1999 to 29 February 2002.

The extent to which the recent financial crisis has changed the inter-relations of the Asian stock markets is a focal point in many recent studies. Applying the co-integration technique to the daily data from 1977 to 1999, Fernandez-Serrano and Sosvilla-Rivero (2001) found no evidence of the long-run relationship among Asia's top five stock markets of Japan, Taiwan, South Korea, Singapore, and Hong Kong. Several other studies investigated how the financial crisis affected their relationship with the U.S. Market. Sheng and Tu (2000) examined the changing patterns of linkages among the North-East and South-East Asian market with the U.S. market, during the 2008 crisis. Moon et al. (2001) investigated the impact of the crisis on the stock market integration in the East Asian as well as the U.S. markets in both the short and the long-run.

Bachman, *et al.* (1996) suggested several plausible explanations in favour of co-integration of international prices to explain liberalisation of international trade, transfer of technology, and lifting on barriers on the domestic ownership of capital stock by foreigners. Some evidence of unidirectional causality from the TSX composite index to the TSX venture composite index was obtained by Cho and Ogwang **(**2006**).** Other studies (see Ghosh, Saidi and Johnson 1999; Siklos and Ng, 2001), using different frameworks, methodology, data, and periods addressed the issue of capital market integration in emerging economies in the Asia-Pacific region. Major findings of the studies concluded that the Japanese market played a more significant role than the US markets in the integration of Asian stock markets. Some Asia-Pacific markets were found to be individually influenced by the US or Japanese stock markets, while others are not with either. Manning (2002) noted that equity indices for Hong Kong, Indonesia, Japan, Korea, Malaysia, the Philippines, Singapore, Taiwan, and Thailand were jointly co-integrated through the 1990s with and without the US influence.

Srivastava (2007) suggested a mixed result of benefits and drawbacks for international investors, while examining the integration and correlation of major Asian markets and the US stock market at the time when the movements in stock markets were perceived to be induced by (FIIs). Analysis of stock market linkages in the emerging markets suggest that the international investors have enough opportunities for portfolio diversification (Grubel, 1968) by investing in most of the Pacific basin countries. Though some of the researches (*e.g.,* Yang and Lim 2002) found some studies of short-term linkages and obtained a significant difference between the pre-and-post Asian crises, and ruled out the existence of a long-term equilibrium trending relationship among the East Asian stock markets. This paper find that despite existing restrictions on capital flows, the Indian market belongs to the group of the Asian markets co-integrated within them and with the US market.

Asia's new-found position as the world's great new economic hope has witnessed these markets rise sharply, and the fund managers in the area have been quick to take advantage. Further, relative to the markets in the West, the Asian markets are almost certain to experience fabulous investments over the long term. Given the near-consensus on de-coupling, the obvious place for the next bubble to form will be in the Asian and emerging market asset prices and the related commodity markets.

Thus, a sustained research effort in markets, like India, is of considerable interest and value. The association between the trends in the US and the Asian markets, during the year 2008 and post-2008 is quite apparent from the graphical exposition on historical price movement of major stock indices (**Figure 1**).

## OBJECTIVE OF THE STUDY

The major objective of the study is to ascertain the much discussed *a priori* relationship between various financial markets through the co-movement of their stock market indices. This relationship has become very important during the last few years primarily because of the globalisation. Various researches all over the world have sought to determine the co-integration by different statistical methodologies. We seek to do this analysis with one of the most appropriate statistical techniques applied to the co-integration of the Indian stock market, with prominent international stock markets. The findings of the study shall be useful for various FII's, hedge funds, international pension funds, portfolio managers, and investors seeking for greener pastures for better returns on their investment. The study takes into consideration the implications of the financial crisis of the world by choosing the period of pre- and the post-sub-prime crisis in the US.

## DATA, DESCRIPTIVE STATISTICS AND RESEARCH METHODOLOGY

Week logarithmic returns from a broad spectrum of equity market indices, representing major developed markets from around the world, were analysed for the period between January 1, 2005 and December 30, 2008, with 181 observations and post-2008 from January 1, 2009 to April 15, 2011, with 101 observations, to study the co-integration of these markets with S& P CNX Nifty of the Indian stock exchange during pre-and post-2008 periods. However, for the co-integration analysis, out of the total of 1,555, daily observations considered for the study, (94 observations), were omitted because of holidays and different schedules in those countries. The study uses weekly (Friday) stock price indices of the developed countries, namely, the US (NASDAQ, DOW JONES), the UK (FTSE), Germany (DAX), Hong Kong (H Seng Index, HSI), and Japan (NIKKEI). Raw data pertaining to the weekly index of S & P CNX Nifty and other global equity closing stock price index ($P_{it}$) for the period was obtained from the NSE websites *(www.nseindia.com* and *www.yahoofinance.com)* **Tables 1** and **2** present the summary statistics of weekly market returns for the pre-and post-2008 periods.

The mean, minimum and maximum values represent the average, lowest, and highest returns, respectively. Mean values indicate an average

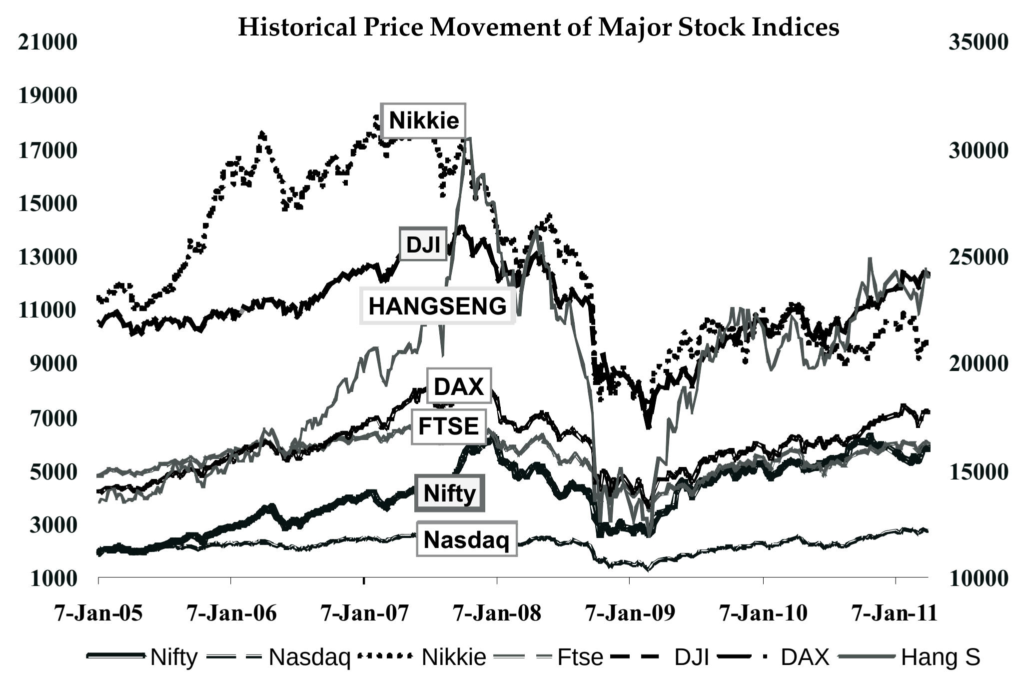


**Figure 1: Historical Price Movement of Major Stock Indices (January 2005 to April 2011)**

**Table 1**
**Sample Statistics for Week Returns from January 1, 2005 to December 31, 2008**

| INDICES | Mean | Median | Std D | Min | Max | Skew | Kurt | J-B test | p-value |
|---|---|---|---|---|---|---|---|---|---|
| *DAX* | 0.047% | 0.487% | 0.0358 | -24.35% | 14.94% | -1.648 | 14.019 | 1476 | 0.000 |
| *DJI* | -0.117% | 0.150% | 0.0276 | -20.03% | 10.70% | -1.805 | 15.729 | 1854 | 0.000 |
| *FTSE* | -0.069% | 0.156% | 0.0314 | -23.63% | 12.58% | -2.078 | 19.519 | 2836 | 0.000 |
| *HANGSANG* | 0.060% | 0.401% | 0.0349 | -17.82% | 11.72% | -0.934 | 5.153 | 212.8 | 0.000 |
| *NASDAQ* | -0.160% | 0.220% | 0.0312 | -16.60% | 10.37% | -1.102 | 5.926 | 283.7 | 0.000 |
| *S & P CNX NIFTY* | **0.234%** | **0.923%** | **0.0385** | **-17.38%** | **11.04%** | **-1.074** | **3.416** | **115.8** | **0.000** |

negative returns, and standard deviation values suggest the daily volatility of around 3 per cent before 2008. Table 1 and 2 reveals that the S&P CNX NIFTY of the Indian stock market exhibited higher weekly average returns of around 0.23 per cent in pre-2008 and 0.63 per cent in post-2008, among the other global indices, pointing to their high level of inherent risk. Interestingly, it can also be observed that the Nifty index has remarkably improved by 173 per cent in index levels indicating a strong revival signal from the global financial crisis.

NIFTY, along with HANGSANG, has shown half of their returns above 0.92 per cent and 0.40 per cent during the years 2005 to 2008, and 0.77 per cent and 0.67 per cent, during the post-2008. The largest week range of returns in pre-2008 period are observed in DAX and NIKKEI indices, with the largest lower individual returns of (-) 24 per cent and (-)27 per cent to maximum of 15 per cent and 11 per cent, respectively.

Clearly, all series are non-normal is reflected in the skewness (not equal to zero), during pre-and-post2008. Furthermore, comparing the data with the normal distribution, all return series have relatively large value of kurtosis (>3), suggesting that the underlying data are leptokurtic, or fat-tailed and sharply peaked about the mean in pre-2008 period. The Jarque-Bera (1987) test, an asymptotic test of normality, indicates that none of the data series is normally distributed. The test statistic is computed as 1:π $\frac{n}{6}[S^2 + \frac{(k-3)^2}{4}]$ π, where S is the skewness, and k is kurtosis. It has a $\chi^2$ distribution with 2 degrees of freedom. For a normally distributed variable, skewness is zero, and k-3 = 0 so that the test statistic is zero. At the 5 per cent level of significance, we reject the null of normal distribution if the test statistic is ≥ 5.9914.

**Tables 3** and **4** present the correlation matrices of weekly logarithmic returns based on the stock indices. As shown in the tables, a significant correlation different from zero exists among the indices of the developed markets and India (Nifty). Furthermore, the NIFTY was found to be highly correlated with HANG SANG DAX

**Table 2**
**Sample Statistics for Week Returns from January 1, 2009 to April 15, 2011**

| INDICES | Mean | Median | Std D | Min | Max | Skew | Kurt | J-B test | p-value |
|---|---|---|---|---|---|---|---|---|---|
| *DAX* | 0.420% | 0.550% | 0.0350 | -9.47% | 10.67% | -0.116 | 3.597 | 1.73 | 0.422 |
| *DJI* | 0.360% | 0.401% | 0.0285 | -6.37% | 8.63% | 0.028 | 3.475 | 0.96 | 0.618 |
| *FTSE* | 0.332% | 0.460% | 0.0296 | -8.14% | 7.11% | -0.305 | 3.712 | 3.70 | 0.157 |
| *HANGSANG* | 0.457% | 0.674% | 0.0388 | -8.12% | 13.07% | 0.467 | 3.704 | 5.76 | 0.056 |
| *NASDAQ* | 0.564% | 0.636% | 0.0331 | -8.28% | 10.11% | 0.015 | 3.344 | 0.50 | 0.779 |
| *S & P CNX NIFTY* | **0.632%** | **0.771%** | **0.0385** | **-8.88%** | **14.36%** | **0.554** | **4.762** | **18.23** | **0.000** |
| *NIKKEI* | 0.109% | 0.532% | 0.0367 | -10.78% | 13.08% | 0.203 | 4.284 | 7.63 | 0.022 |

**Table 3**
**Correlation Matrix among India and Developed Markets during Pre-2008 period**

| INDICES | DAX | DJI | FTSE | HANGSANG | NASDAQ | NIFTY | NIKKEI |
|---|---|---|---|---|---|---|---|
| *DAX* | 1.000 | 0.866*** | 0.913*** | 0.655*** | 0.841*** | **0.626*** ** | 0.79*** |
| *DJI* | | 1.000 | 0.862*** | 0.611*** | 0.912*** | **0.543*** ** | 0.739*** |
| *FTSE* | | | 1.000 | 0.658*** | 0.811*** | **0.557*** ** | 0.771*** |
| *HSANG* | | | | 1.000 | 0.652*** | **0.669*** ** | 0.724*** |
| *NASDAQ* | | | | | 1.000 | **0.594*** ** | 0.734*** |
| *NIFTY* | | | | | | **1.000** | 0.586*** |
| *NIKKEI* | | | | | | | 1.000 |

**Table 4**
**Correlation Matrix among India and Developed Markets during Post-2008 Period**

| INDICES | DAX | DJI | FTSE | HANGSANG | NASDAQ | NIFTY | NIKKEI |
|---|---|---|---|---|---|---|---|
| *DAX* | 1.000 | 0.866*** | 0.883*** | 0.701*** | 0.883*** | **0.599*** ** | 0.658*** |
| *DJI* | | 1.000 | 0.881*** | 0.708*** | 0.93*** | **0.571*** ** | 0.67*** |
| *FTSE* | | | 1.000 | 0.709*** | 0.866*** | **0.564*** ** | 0.662*** |
| *HSANG* | | | | 1.000 | 0.702*** | **0.734*** ** | 0.758*** |
| *NASDAQ* | | | | | 1.000 | **0.584*** ** | 0.674*** |
| *NIFTY* | | | | | | **1.000** | 0.573*** |
| *NIKKEI* | | | | | | | 1.000 |

in comparison to the DJI, FTSE, and NASDAQ indices. In fact, the correlation of the Indian Nifty Index with HANG SANG (0.734) has shown an improvement in post-2008 period.

## Time-Series Testing Methodology

There are several preliminary steps to using the time-series data in econometric analysis. Initially it is essential to determine the form in which the data can be used for any subsequent estimation, in many instances using macroeconomic data in their levels leads to serious econometric problems. Regression of a time-series variable on another time-series variable may exhibit high variation, i.e., $R^2$ in the explained variable due to regression model even without a meaningful relationship between the two. This situation exemplifies the problem of spurious regression. The problem results due to existence of non-stationary (trends) in the time-series variables and the high $R^2$ observed may be due to the Presence of the trend, not due to a true relationship between the two. The fundamental methodological problem with this is the use of OLS to analyse the relationship between several non-stationary variables. There are four cases to consider when working with non-stationary variables (Enders, 2004).

1. When all variables are stationary, the classical regression model (i.e., OLS) is appropriate.
2. When the sequences of the dependent and explanatory variables of the different orders, are integrated, regression results are meaningless.
3. When the sequences of the same order are integrated and the residual sequence contains a stochastic trend, the regression is spurious (Granger and Newbold, 1974). The results from such spurious regressions are meaningless as all errors are permanent.
4. The non-stationary sequences of the same order are integrated and the residual sequence is stationary; that is, the sequences are co-integrated. This necessitates the estimation of an error-correction model.

In order to avoid the problem of spurious regressions, it is necessary to remove the trend in the series prior to undertaking any estimation. The traditional detrending procedure separates the trend from the cyclical component of the series.

This procedure is appropriate for trend-stationary (TS) time-series. However, many macroeconomic time-series are difference stationary (DS).[1] DS-type time-series are non-stationary and they contain unit roots.[2] The DS-type sequences must be differenced prior to any meaningful econometric estimation. If ordinary least squares (OLS) estimation techniques are applied to un-differenced DS-type sequences, resulting error terms are serially correlated. This renders any subsequent hypothesis tests unreliable.

The actual determination of whether a variable is TS–type or DS-type is based upon the results of unit root tests. Numerous unit root tests have been presented in economic literature; the most common test, and the one we use , is the Augmented Dickey-Fuller test[3] (ADF), test statistic based on $\Delta Y_t = \beta_1 + \beta_2 t + \delta Y_{t-1} + \alpha \sum_{k=1}^{m} \Delta Y_{t-k}$

where $\mu_t$ is a white noise error term and

$\Delta Y_{t-1} = Y_{t-1} - Y_{t-2}$. ADF test statistic will test the null $\mathbf{H_0}$: $\delta$**=0** against the alternative hypothesis, $\mathbf{H_1}$: $\delta \neq \mathbf{0}$. If one can reject the null hypothesis that a series possesses a unit root, then the series is TS, or integrated of order zero (I(0)). If one cannot reject the null of a unit root, then the series is DS. Subsequent unit root tests on differenced DS series determine the form in which the data may be used in regressions. The most common occurrence is that the first differences of the time-series are stationary; in this case the series is said to be integrated of order one (I(1)), and no further differencing the data or unit root testing is required.

When multiple individual time-series variables are found to be integrated to order one, an additional test is required to determine whether long-term relationship exists among the variables. Co-integration analysis can be used to evaluate the co-movement of a long-term asset price within an equilibrium model. Firstly, co-integration analysis establishes a long-term relationship by calculating long-run equilibrium asset prices. Next, correlations within an error correction model are estimated. Therefore, stochastic trends common to the respective time-series are found prior to the co-integration analysis. If the co-integration analysis indicates that there is a co-integrating vector, we infer that the tested series will not drift apart in the long-run, and will revert to equilibrium levels, following any short-term drift that may take place. In contrast, if no co-integrating vector is found, it can be inferred that diversifying a stock portfolio amongst the markets in question does provide benefit.

There are two main co-integration methods that have consistently been used throughout past studies, which are:

1) Engle-Grangers Two-Step Estimation Method; and

2) Johansen's Maximum Likelihood Method, using either the Trace Statistic and/or the Maximum Eigen value Statistic.

The present study uses Johansen's Method due to reasons mainly relating to the shortcomings of Engle-Grangers Two-Step Estimation Method. The Two-Step Estimation Method is very easy to run. However, it needs a larger sample size to avoid possible estimation errors and can only be run on a maximum of two variables (Brooks 2008). It also doesn't allow for hypothesis testing on the co-integrating relationships themselves, unlike Johansen's method (Brooks, 2008). Since the paper considers a total of 7 markets, a multivariate framework is required, allowing for the possible discovery of more than one co-integrating vector, which the Engle-Granger Method cannot accomplish. In this situation, Johansen's Method better suits the data, due to the fact that it can examine more than two test variables, and can treat all test variables as endogenous.

## Johansen's Co-integration Method

The Johansen process is a maximum-likelihood method that determines the number of co-integrating vectors in a non-stationary time-series Vector Auto-Regression (VAR), with restrictions imposed, known as the Vector Error Correction model (VEC). Johansen's estimation model is as follows:

$$\Delta Y_t = \mu + \sum^{m} \tau_i \Delta Y_{t-k} + \boldsymbol{\beta}\ ' Y_{t-1} + \varepsilon_t$$

where,

$\boldsymbol{Y_t}$= (n x 1) vector of all the non-stationary indices in the study

$\tau$ = (n x n) matrix of co-efficient

$\alpha$ = (n x r) matrix of error-correction co-efficient, where $r$ is the number of co-integrating relationships in the variables, so that $0 < r < n$.

This measures the speed at which the variables adjust to their equilibrium. (Also known as the adjustment parameter)

$\beta$ = (n x r) matrix of $r$ co-integrating vectors, so that $0 < r < n$.

This is what represents the long-run co-integrating relationship between the variables. In determining lag lengths for the Johansen's procedure, we chose between using Akaike's Information Criteria (AIC) and the Schwarz's Bayesian Information Criterion (SBIC) processes. The SBIC is usually more consistent but inefficient, while AIC is not as consistent but is usually more efficient (Brooks, 2008). Johansen (1991) defines two different test statistics for co-integration under his method: the Trace Test and the Maximum Eigen value Test. The Trace test is a joint test that tests the null hypothesis of no co-integration ($H_0$: r = 0) against the alternative hypothesis of co-integration ($H_1$: r > 0). The Maximum Eigen value test conducts tests on each eigen value separately. It tests the null hypothesis that the number of co-integrating vectors is equal to $r$ against the alternative of $r+1$ co-integrating vectors, (Brooks, 2008).

$$\lambda_{trace}(r) = -T \sum_{i=r+1}^{g} \ln(1-\hat{\lambda}_i)$$

$$\lambda_{\max}(r, r+1) = -T \ln(1-\hat{\lambda}_{r+1})$$

where,

r = number of co-integrating vectors

$\hat{\lambda}_i$ = estimated $i$th ordered eigen value from the matrices. *A significantly non-zero eigen value indicates a significant co-integrating vector.*

## TEST RESULTS AND DISCUSSIONS

**Table 5** summarises the augmented Dickey-Fuller test results for the null hypothesis of unit root test, based on returns computed using first difference of logs of prices is rejected, implying the index series are stationary with integration of order 1. In each case, the sequences are shown to be I(1). All testing are conducted, using the E-views 5.0 statistical software.

Since the market index series of the same order is integrated, co-integration analysis is used to determine whether the index series becomes stationary in a linear combination. The tests for existence co-integration among the different time-series variables are conducted in the paper using Multivariate Johansen's method of co-integration analysis.

**Table 5**
**ADF Unit Root Tests based on First Differences of Logs of Prices**

| INDICES | Pre-2008 | Post-2008 |
|---|---|---|
| *DAX* | -16.343a | -9.346 a |
| *DJI* | -14.600 a | -9.235 a |
| *FTSE* | -16.016 a | -9.847 a |
| *HSANG* | -12.559 a | -9.985 a |
| *NASDAQ* | -13.704 a | -9.012 a |
| *NIKKEI* | -14.273 a | -10.134 a |

*Note:* Pre-2008 period: The critical values for ADF test are: -3.483, -2.885, and -2.575 at 1%, 5% and 10%, respectively.
Post-2008 period: The critical values for ADF test are: -3.510, -2.890, and -2.580 at 1%, 5% and 10%, respectively
a *significant at 1% level*
b *significant at 5% level*

### Johansen Test Results: Pre-2008 Period

Included observations = 176, after adjustments

Trend assumption = Linear Deterministic Trend

Series included =Weekly log returns of NIFTY, NASDAQ, NIKKIE, FTSE, HANGSENG, DJI, DAX

The trace test in **Table 6** indicates the existence of six co-integrating equation at the 5 per cent

**Table 6**
**Pre-2008 Johansen Co-integration Results-Trace Test**

| Hypothesised No. of CE(s) | Eigen value | Trace Statistic | 0.05 Critical Value | Prob.** |
|---|---|---|---|---|
| *None* * | 0.304 | 275.913 | 125.615 | 0.000* |
| *At most 1* * | 0.261 | 212.222 | 95.754 | 0.000* |
| *At most 2* * | 0.249 | 159.042 | 69.819 | 0.000* |
| *At most 3* * | 0.190 | 108.612 | 47.856 | 0.000* |
| *At most 4* * | 0.154 | 71.531 | 29.797 | 0.000* |
| *At most 5* * | 0.123 | 42.012 | 15.495 | 0.000* |
| *At most 6* * | 0.102 | 18.882 | 3.841 | 0.000* |

*Note:* * denotes rejection of the hypothesis at the 0.05 level.
**MacKinnon-Haug-Michelis (1999) p-values.

significance level. These co-integrating equation means that linear combinations exist between the variables that force these indices to have a relationship over the entire period of 2005 to 08, despite potential deviation from equilibrium levels in the short-run. In order to confirm the results of the Johansen's Trace test, **Table 7** presents the result of Maximum Eigen value test during pre-2008 period.

The Maximum Eigen value Test also shows six co-integrating equations at the 5 per cent level confirming the Trace Test. Therefore, these two tests confirm a co-integrating relationship over the pre-2008 (2005-08) sample period. Analysing the normalised co-integrating co-efficient in the VECM allows us to understand how the indices adjust during the pre-2008 period. The results are summarised in Table 8.

Since the existence of co-integrating equations is identified, we can say that stable equilibrium relationship does exist. The results are normalised on the NIFTY index in India. Due to the normalization process, the signs are reversed to enable proper interpretation. The HANGSENG, FTSE, and the DAX are statistically significant in the first co-integration equation. Results in the co-integration co-efficient table indicate, 1 per cent increase in the HANGSENG and the DAX leads to around 6 to 21 per cent increase in the NIFTY in the long-run. The NASDAQ, FTSE, and the DJI have negative relationship with the NIFTY, although only the FTSE indicates significance at the 5 per cent level in the first co-integrating equation.

### Johansen Test Results: Post-2008 Period

Included observations = 96, after adjustments

Trend assumption = Linear Deterministic Trend

**Table 7**
**Pre-2008 Johansen Co-integration Results-Max Eigen Value Test**

| Hypothesised No. of CE(s) | Eigen value | Max-Eigen Statistic | 0.05 Critical Value | Prob.** |
|---|---|---|---|---|
| *None* * | 0.304 | 63.690 | 46.231 | 0.000* |
| *At most 1* * | 0.261 | 53.180 | 40.078 | 0.001* |
| *At most 2* * | 0.249 | 50.431 | 33.877 | 0.000* |
| *At most 3* * | 0.190 | 37.081 | 27.584 | 0.002* |
| *At most 4* * | 0.154 | 29.518 | 21.132 | 0.003* |
| *At most 5* * | 0.123 | 23.130 | 14.265 | 0.002* |
| *At most 6* * | 0.102 | 18.882 | 3.841 | 0.000* |

*Note:* * denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

**Table 8**
**Pre-2008 Normalised Co-integrating Coefficients**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **1** | **Co-integrating Equation(s):** | | | | **Log Likelihood** | | **3220.357** |
| | *NIFTY* | *NASDAQ* | *NIKKIE* | *HANGS* | *FTSE* | *DJI* | *DAX* |
| | 1 | -6.993 | 0.683 | 6.758* | -32.641* | -0.763 | 21.176* |
| | | (-3.920) | (-2.366) | (-2.007) | (-5.465) | (-5.229) | (-4.338) |
| **2** | **Co-integrating Equation(s):** | | | | **Log Likelihood** | | **3246.947** |
| | *NIFTY* | *NASDAQ* | *NIKKIE* | *HANGS* | *FTSE* | *DJI* | *DAX* |
| | 1 | 0 | 0.600* | -0.827* | 0.008 | 2.615* | -2.805* |
| | | | (-0.278) | (-0.234) | (-0.648) | (-0.535) | (-0.496) |
| | 0 | 1 | -0.012 | -1.085* | 4.669* | 0.483 | -3.429* |
| | | | (-0.349) | (-0.294) | (-0.814) | (-0.672) | (-0.623) |
| **3** | **Co-integrating Equation(s):** | | | | **Log Likelihood** | | **3272.162** |
| | **NIFTY** | **NASDAQ** | **NIKKIE** | **HANGS** | **FTSE** | **DJI** | **DAX** |
| | 1 | 0 | 0 | 3.003* | -16.300* | -3.218 | 8.722* |
| | | | | (-1.054) | (-2.837) | (-2.419) | (-2.164) |
| | 0 | 1 | 0 | -1.160* | 4.989* | 0.597 | -3.655* |
| | | | | (-0.315) | (-0.848) | (-0.723) | (-0.647) |
| | 0 | 0 | 1 | -6.380* | 27.167* | 9.717* | -19.201* |
| | | | | (-1.942) | (-5.228) | (-4.458) | (-3.988) |
| **4** | **Co-integrating Equation(s):** | | | | **Log Likelihood** | | **3290.703** |
| | **NIFTY** | **NASDAQ** | **NIKKIE** | **HANGS** | **FTSE** | **DJI** | **DAX** |
| | 1 | 0 | 0 | 0 | -4.835* | 0.791* | 1.630* |
| | | | | | (-0.760) | (-0.651) | (-0.577) |
| | 0 | 1 | 0 | 0 | 0.561* | -0.951* | -0.916* |
| | | | | | (-0.252) | (-0.216) | (-0.192) |
| | 0 | 0 | 1 | 0 | 2.809* | 1.199 | -4.135* |
| | | | | | (-0.787) | (-0.674) | (-0.598) |
| | 0 | 0 | 0 | 1 | -3.818* | -1.335* | 2.362* |
| | | | | | (-0.729) | (-0.625) | (-0.554) |
| **5** | **Co-integrating Equation(s):** | | | | **Log Likelihood** | | **3305.462** |
| | **NIFTY** | **NASDAQ** | **NIKKIE** | **HANGS** | **FTSE** | **DJI** | **DAX** |
| | 1 | 0 | 0 | 0 | 0 | 0.329 | -1.062* |
| | | | | | | (-0.445) | (-0.351) |
| | 0 | 1 | 0 | 0 | 0 | -0.897* | -0.604* |
| | | | | | | (-0.20499) | (-0.162) |
| | 0 | 0 | 1 | 0 | 0 | 1.468* | -2.570* |
| | | | | | | (-0.465) | (-0.366) |
| | 0 | 0 | 0 | 1 | 0 | -1.700* | 0.236 |
| | | | | | | (-0.395) | (-0.311) |
| | 0 | 0 | 0 | 0 | 1 | -0.096 | -0.557* |
| | | | | | | (-0.133) | (-0.105) |
| **6** | *Co-integrating Equation(s):* | | | | *Log Likelihood* | | *3317.027* |
| | *NIFTY* | *NASDAQ* | *NIKKIE* | *HANGS* | *FTSE* | *DJI* | *DAX* |
| | 1 | 0 | 0 | 0 | 0 | 0 | -0.808* |
| | | | | | | | (-0.161) |
| | 0 | 1 | 0 | 0 | 0 | 0 | -1.297* |
| | | | | | | | (-0.094) |
| | 0 | 0 | 1 | 0 | 0 | 0 | -1.438* |
| | | | | | | | (-0.132) |
| | 0 | 0 | 0 | 1 | 0 | 0 | -1.076* |
| | | | | | | | (-0.138) |
| | 0 | 0 | 0 | 0 | 1 | 0 | -0.631* |
| | | | | | | | (-0.048) |
| | 0 | 0 | 0 | 0 | 0 | 1 | -0.772* |
| | | | | | | | (-0.062) |

Series included =Weekly log returns of NIFTY, NASDAQ, NIKKIE, FTSE, HANGSENG, DJI, DAX

The Trace Test in **Table 9** indicates the existence of six co-integrating equation at the 5 per cent significance level. These co-integrating equation means that linear combinations exist between the variables that force these indices to have a relationship over the entire period of post-2008, despite potential deviation from equilibrium levels in the short-term. In order to confirm the results of the Johansen's Trace test, the results of the Maximum Eigen value test during post-2008 period are presented in **Table 10**.

The Maximum Eigen value Test also shows six co-integrating equations at the 5 per cent level confirming the Trace Test. Therefore, these two tests confirm a co-integrating relationship over the post-2008 (Jan, 2009 to April, 2011) sample period. Analysis of the normalised co-integrating co-efficient in the VECM shows how the indices adjust during the post-2008 period. The results are shown in **Table 11**.

In the first co-integrating vector, the results are normalised on NIFTY index of India. In the post-2008 period, the NASDAQ, NIKKIE, HANGSENG, and the DJI are found to be statistically significant at 5 per cent level. Results in the co-integration co-efficient table indicates that 1 per cent increase in NASDAQ, FTSE, and DAX leads to around 4 per cent and 1 per cent increase in the NIFTY, respectively, in the long-run. The NIKKEI, HANGSENG, and the DJI have negative relationship with the NIFTY and indicate significance at the 5 per cent level in the first co-integrating equation.

## CONCLUSION

Through analysis of the multivariate Johansen Co-integration Trace and Max Eigen value tests, in-depth information was found regarding the

**Table 9**
**Post-2008 Johansen Co-integration Results-Trace Test**

| Hypothesized No. of CE(s) | Eigen value | Trace Statistic | 0.05 Critical Value | Prob.** |
|---|---|---|---|---|
| ***None**** | 0.463 | 225.570 | 125.615 | 0.000* |
| *At most 1 ** | 0.366 | 165.805 | 95.754 | 0.000* |
| *At most 2 ** | 0.351 | 122.029 | 69.819 | 0.000* |
| *At most 3 ** | 0.317 | 80.538 | 47.856 | 0.000* |
| *At most 4 ** | 0.193 | 43.945 | 29.797 | 0.001* |
| *At most 5 ** | 0.148 | 23.387 | 15.495 | 0.003* |
| *At most 6 ** | 0.080 | 8.018 | 3.841 | 0.005* |
| | | | | |

*Note:* * denotes the rejection of the hypothesis at the 0.05 level.
**MacKinnon-Haug-Michelis (1999) p-values.

**Table 10**
**Post-2008 Johansen Co-integration Results-Max Eigen Value Test**

| Hypothesized No. of CE(s) | Eigen value | Max-Eigen Statistic | 0.05 Critical Value | Prob.** |
|---|---|---|---|---|
| ***None **** | 0.463 | 59.765 | 46.231 | 0.001* |
| *At most 1 ** | 0.366 | 43.776 | 40.078 | 0.018* |
| *At most 2 ** | 0.351 | 41.491 | 33.877 | 0.005* |
| *At most 3 ** | 0.317 | 36.593 | 27.584 | 0.003* |
| *At most 4 ** | 0.193 | 20.558 | 21.132 | 0.044* |
| *At most 5 ** | 0.148 | 15.368 | 14.265 | 0.033* |
| *At most 6 ** | 0.080 | 8.018 | 3.841 | 0.005* |

**Table 11**
**Post-2008 Normalised Co-integrating Coefficients**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| *1* | **Co-integrating Equation(s):** | | | | **Log Likelihood** | | *1825.67* |
| | *NIFTY* | *NASDAQ* | *NIKKIE* | *HANGS* | *FTSE* | *DJI* | *DAX* |
| | 1 | 4.317* | -2.668* | -1.771* | 1.005 | -3.036* | 0.965 |
| | | (-0.846) | (-0.411) | (-0.371) | (-0.714) | (-0.839) | (-0.673) |
| *2* | **Co-integrating Equation(s):** | | | | **Log Likelihood** | | *1868.31* |
| | *NIFTY* | *NASDAQ* | *NIKKIE* | *HANGS* | *FTSE* | *DJI* | *DAX* |
| | 1 | 0 | 0.013 | 0.284 | 3.265 | -3.716* | -4.066* |
| | | | (-0.866) | (-0.915) | (-1.802) | (-1.885) | (-1.730) |
| | 0 | 1 | -0.621* | -0.476* | -0.524 | 0.158 | 1.165* |
| | | | (-0.203) | (-0.215) | (-0.424) | (-0.443) | (-0.407) |
| *3* | **Co-integrating Equation(s):** | | | | **Log Likelihood** | | *1886.60* |
| | *NIFTY* | *NASDAQ* | *NIKKIE* | *HANGS* | *FTSE* | *DJI* | *DAX* |
| | 1 | 0 | 0 | 0.260 | 3.267 | -3.714* | -3.990* |
| | | | | (-0.902) | (-1.773) | (-1.855) | (-1.562) |
| | 0 | 1 | 0 | 0.675 | -0.588 | 0.061 | -2.435* |
| | | | | (-0.371) | (-0.730) | (-0.764) | (-0.643) |
| | 0 | 0 | 1 | 1.853* | -0.104 | -0.155 | -5.796* |
| | | | | (-0.901) | (-1.770) | (-1.852) | (-1.560) |
| *4* | **Co-integrating Equation(s):** | | | | **Log Likelihood** | | *1896.88* |
| | *NIFTY* | *NASDAQ* | *NIKKIE* | *HANGS* | *FTSE* | *DJI* | *DAX* |
| | 1 | 0 | 0 | 0 | 2.727 | -2.932 | -3.447* |
| | | | | | (-1.483) | (-1.565) | (-1.231) |
| | 0 | 1 | 0 | 0 | -1.988* | 2.090* | -1.028* |
| | | | | | (-0.457) | (-0.483) | (-0.380) |
| | 0 | 0 | 1 | 0 | -3.947* | 5.412* | -1.933* |
| | | | | | (-0.934) | (-0.986) | (-0.776) |
| | 0 | 0 | 0 | 1 | 2.073 | -3.004* | -2.084* |
| | | | | | (-1.064) | (-1.124) | (-0.884) |
| *5* | **Co-integrating Equation(s):** | | | | **Log Likelihood** | | *3305.462* |
| | *NIFTY* | *NASDAQ* | *NIKKIE* | *HANGS* | *FTSE* | *DJI* | *DAX* |
| | 1 | 0 | 0 | 0 | 0 | 1.563 | -4.255* |
| | | | | | | (-0.993) | (-0.901) |
| | 0 | 1 | 0 | 0 | 0 | -1.188* | -0.439 |
| | | | | | | (-0.316) | (-0.287) |
| | 0 | 0 | 1 | 0 | 0 | -1.094 | -0.765* |
| | | | | | | (-0.551) | (-0.501) |
| | 0 | 0 | 0 | 1 | 0 | 0.414* | -2.698 |
| | | | | | | (-0.665) | (-0.604) |
| | 0 | 0 | 0 | 0 | 1 | -1.648* | 0.296 |
| | | | | | | (-0.251) | (-0.227) |
| *6* | *Co-integrating Equation(s):* | | | | *Log Likelihood* | | *1904.57* |
| | *NIFTY* | *NASDAQ* | *NIKKIE* | *HANGS* | *FTSE* | *DJI* | *DAX* |
| | 1 | 0 | 0 | 0 | 0 | 0 | -3.924* |
| | | | | | | | (-0.524) |
| | 0 | 1 | 0 | 0 | 0 | 0 | -0.690* |
| | | | | | | | (-0.118) |
| | 0 | 0 | 1 | 0 | 0 | 0 | -0.996* |
| | | | | | | | (-0.155) |
| | 0 | 0 | 0 | 1 | 0 | 0 | -2.610 |
| | | | | | | | (-0.292) |
| | 0 | 0 | 0 | 0 | 1 | 0 | -0.052 |
| | | | | | | | (-0.191) |
| | 0 | 0 | 0 | 0 | 0 | 1 | -0.772* |
| | | | | | | | (-0.062) |

relationship between the different indices of developed countries, namely the US (NASDAQ, DOW JONES), the UK (FTSE), Germany (DAX), Hong Kong (Hang Seng Index, HSI), and Japan (NIKKEI), with India's S&P CNX Nifty Index. The series of daily stock prices (and weekly logarithmic returns) were analysed for a period between the pre-2008 (Jan, 2005 to Dec, 2008) and the post-2008 (Jan, 2009 to April, 2011). The findings of the study suggest the significant existence of co-integration of the developed markets with India.

The results obtained indicate the existence of six co-integrating vectors in the pre-and post-2008 sample periods. The implications derived from the multivariate test are that the NASDAQ and the DJI is the leading cause of disequilibrium in the system, thereby feeling the effects of an economic shock before the other indices. Following the integration of the shock into the NASDAQ and the DJI, the disturbance is filtered through the remaining indices in the system, all of which are statistically significant. Based on the results of the pre-and post-2008 sample periods, both showing evidence of co-integration, the nature of the results implies that the global economic crisis may have not affected these findings. The existence of linear combinations of the developed markets (co-integrating variables) with S&P CNX Nifty forces these indices to have a long-term equilibrium relationship. It shows that the indices are perfectly correlated in the long-run and diversification among these cannot benefit international portfolio investors. However, there can be excess returns in the short-run.

Stock returns of the seven developed markets and India are found to be positively correlated. The extent of co-movements grew stronger during the crisis, reflecting the contagion effect of the financial turmoil. Equity market co-movements, according to Gilmore and McManus (2006), can arise from international trade, increase in capital mobility, relaxation of controls on international capital movements, as well as the creation of economic unions. We can, thus, infer from Gilmore and McManus (2006) that the level of co-integration between stock market indices is largely based on the prevailing regulatory and political environment.

Furthermore, in order to allow a complete picture of the co-integration pattern existing within India and other developed stock markets - USA, Europe, and Hong Kong, it could be advantageous to include higher frequency data – perhaps hourly data, rather than the daily data used in this study. The five-year sample period with pre-and-post 2008 periods cover approximately one cycle. However, if long-term co-integration patterns were to be analysed, a longer time period would be needed to ensure validity of the results. Also, a larger selection of markets along with more emerging markets of the Asian economies could be tested to gain a more holistic view. It is also to mention that the Johansen procedure of co-integration analysis has a high probability of generating outliers, as well as high variance. It is also very sensitive to the lag length selected for the Vector Error Correction Model (Brooks, 2008). An additional limitation of this study is the fact that the co-integration testing conducted is static, and, therefore, not accurate in terms of predicting co-integrating relationship in the future.

## NOTES

1. The main difference between these two types of time-series variables is the fact that TS type variables return to the deterministic trend function, whereas no such tendency exists with the DS type of time-series variables. Nelson and Plosser (1982) and McCallum (1993) provide a more detailed explanation of this point.
2. A time-series variable is weekly stationary if its mean, variance, and covariance are finite, and if all of these are independent of time. If the variance increases over time, then the time-series becomes explosive. Given this fact, such time-series variables should not be used for hypothesis testing.
3. Detailed explanations of these tests can be found in Dickey and Fuller (1979), Holden and Thompson (1992), and other studies.

## REFERENCES

Bachman, D., J. J. Choi, B.N. Jeon, and K.J. Kopecky (1996), "Common factors in International Stock Prices: Evidence from a Co-integration Study", *International Review of Financial Analysis,* Vol. 5, pp. 39-53

Brooks, C. (2008), "Introductory Econometrics for Finance": 2nd ed., (Cambridge, UK: Cambridge University Press)

Cerchi, M. and A. Havenner (1988), "Co-integration of Stock Prices: The Random Walk on Wall Street Revisited", *Journal of Economic Dynamics and Control*, Vol. 12, pp. 333-346

Chan, K. C., and P. Lai (1993), "Unit Root and Co-integration Tests of World of Stock Prices", *International Financial Market Integration*, pp. 278-287

Cho, D. I., and T. Ogwang (2006), "Testing for Co-integration and Causality between Composite Index and TSX Venture Composite Index", *Research Luncheon Speaker Series-Fall 2006, www.bus.brocku.ca*

Choudhry, T. (1997), "Stochastic Trends in Stock Prices: Evidence from Latin American Markets", *Journal of Macroeconomics*, Vol. 19, pp. 285-304

Crowder, W. J. and M. E. Wohar (1998), "Co-integration, Forecasting and International Stock Prices", *Global Finance Journal*, Vol. 9, pp. 181-204

Dickey, D.A., and W.A. Fuller (1979), "Distribution of the Estimators for Autoregressive Time-series with a Unit Root," *Journal of the American Statistical Association*, Vol. 74, pp. 427–431

Engle, R.F., and C.W.J. Granger (1987), "Co-integration and Error Correction: Representation, Estimation, and Testing", *Econometrica*, Vol. 55, No. 2, pp. 251-76

Epps, T.W. (1979), "Co-movements in stock prices in the very short run," *Journal of the American Statistical Association,* Vol. 74, pp. 291-298

Fernandez-Serrano, J.L., and S. Sosvilla-Rivero (2001), "Modelling Evolving Long-run Relationships: The linkages between Stock Markets in Asia", *Japan and the World Economy,* Vol. 13, No. 2, pp. 145-160

Ghosh, Asim, R. Saidi, and K.H. Johnson (1999), "Who Moves the Asia-Pacific Stock Markets: U.S. or Japan? Empirical Evidence Based on the theory of Co-integration", *The financial Review*, Vol. 34, No. 1, pp. 159-170

Granger, C.W.J., and P. Newbold (1974), "Spurious Regressions in Econometrics", *Journal of Econometrics*, Vol. 2, pp. 111-120

Grubel, H. (1968), "International Diversified Portfolios: Welfare Gains and Capital Flows", *American Economic Reviews,* Vol. 58, pp. 1299-1314

Holder, K., and J. Thompson (1992), "Co-integration: An Introductory Survey", British Review of Economic Issues, Vol. 14, pp. 1-55

Jarque, C., and A. Bera (1987), "Test for normality of observations and regression residuals", *International Statistical review, Vol.* 55, pp. 163-172

Johansen, S. (1991), "Estimation and Hypothesis Testing of Co-integrating Vectors in Gaussian Vector Autoregressive Models", *Econometrica*, Vol. 59, pp. 1551–1580

Manning, N. (2002), "Common Trends and Convergences/ South East Asian Equity markets, 1988-1999", *Journal of International Money and Finance,* Vol. 21, pp. 183-202

McCallum B.T. (1993). "Unit roots in macroeconomic time-series: some critical issues," *Economic Quarterly, Federal Reserve Bank of Richmond,* Spring: pp. 13-44

McCallum, R. A. (1993), "Overcoming incomplete perception with utile distinction memory", In *Machine Learning: Proceedings of the Tenth International Conference*.

Morgan Kaufmann, M.A. Amherst, W.S. Moon, (2001), "Currency crisis and Stock market Integration: A Comparison of East Asian and European Experiences", *Journal of International and Area Studies,* Vol. 8, pp. 41-56

Nelson C. R., and C. I. Plosser (1982), "Trends and random walks in macroeconomic time-series: Some evidence and implications", *Journal of Monetary Economics*, Vol. 10, No. 2, pp.139-162

Sheng, H.C., and A.H. Tu (2000), "A Study of Co-integration and Variance Decomposition among National Equity Indices Before and During the Period of the Asian Financial Crisis", *Journal of Multinational Financial Management*, Vol. 10, pp. 345-365

Siklos, Pierre L., and Patrick Ng (2001), "Integration among Asia-Pacific and International Stock Markets: Common Stochastic trends and Regime Shifts", *Pacific Common review,* Vol. 6, pp. 89-110

Srivastava, A. (2007), "Co-integration of Asian Markets with US Markets: International diversification Perspectives", *Global Business Review*, Vol. 8, pp. 251-261

Taylor, M.P., and I. Tonks (1989), "The Internationalisation of Stock Markets and the Abolition of U.K. Exchange Control", *The Review of Economics and Statistics*, MIT Press, Vol. 71, No. 2, pp. 332-336

Yang, T., and J.J. Lim (2002), "Crisis, Contagion, and East Asian Stock Markets", Working Paper *Economics and Finance No. 1*

# IMPACT OF GOLD AND SILVER FUTURES ON THE SPOT RATE VOLATILITY
## An Indian Perspective

**A.K. Sarkar* and Shailesh Rastogi****

**Abstract**

*Gold and silver have always been popular in the Indian society, mainly for purposes of jewellery and ornaments. Prices have been on a rise for both the precious metals for quite some time. All over the world, derivatives have often been blamed for the price manipulation in commodities, including gold and silver. In India, derivatives based on the two commodities were introduced in 2003. This paper seeks to assess the impact on the prices of these metals as a result of the introduction of derivatives on them. GARCH (1, 1) model has been used to assess the impact.*

**Key words:** ***Gold, Silver futures, Spot-rate volatility, GARCH model***

### INTRODUCTION

The collapse of equity markets and the arrival of low interest rates have increased the investor's presence in alternative investments, such as gold. In India, gold has traditionally played a multi-faceted role. Apart from being used for adornment purpose, it has also served as an asset of the last resort and a hedge against inflation and currency depreciation. But, more importantly, it has most often been treated as an investment. Gold supply primarily comes from mine production, official- sector sales of global central banks, old gold scrap, and net disinvestments of invested gold. Out of the total supply of 3870 tonnes, last year (2010), 66 per cent was from mine production, 20 per cent from old gold scrap, and 14 per cent from the official-sector sales. Demand globally emanates from the fabrication (jewellery and other fabrication), bar hoarding, net producer-hedging, and implied investment. Gold continues to occupy a prominent part of the rural Indian economy, and a significant part of the rural credit market revolves around the bullion as security. India is the largest consumer of gold in the world accounting for more than 23 per cent of the total annual world demand. According to unofficial estimates, India has more than 13,000 tonnes of hoarded gold, which translates to around rs. 6,50,000 crore. In spite of its predominant position, especially in the gold market, where India is the largest importer, the country has traditionally been a price-seeker in the global bullion market.

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Consequent upon the changes in the Gold Policy, announced by the Government of India, in 1997, under the Export-Import Policy 1997 to 2002, the bullion trading received a major fillip. As per the policy, scheduled commercial banks are authorised by the Reserve Bank of India (RBI) to import gold and silver for sale in the domestic market without an import license or surrendering the Special Import License (SIL). Bullion is imported into India by banks and four designated trading agencies acting as canalising agents and consignees for overseas suppliers, who, in turn, sell to the domestic wholesale traders, fabricators, etc. The price risk is borne either by the fabricator or the consumer. The wholesale traders, fabricators, and investors do not have any effective tool to hedge their price risk in gold or silver.

India is the largest consumer of gold in the world. With minimal domestic supply, the demand is met mainly from imports. The price of gold depends on a number of factors, which makes it very difficult to predict. In a fashion similar to shares, gold is an asset-class by itself. In fact, in many villages and small towns of India, gold is preferred to bank deposits as a savings and investment instrument. Till early years of of the 21st century, to gain from price volatility, one would have to hoard and trade in gold, physically. That is not the case any longer. With the commodity futures market operating in full swing, one may not like to stock gold to make profit from price movements. There are several costs associated with the process of physically stocking gold. These costs include the cost of the gold itself, the cost of carrying it, the cost of physical storage, finance cost, and the cost its safety. No such costs are involved in the case of futures, which are levered instruments. In this way, by putting small amount of money, one gets access to much bigger quantity of the Gold. Since a futures contract is an obligation to buy or sell a specific quantity of the commodity, one does not have to pay for the entire value of the commodity. Buying or selling futures obligates one to take delivery, or give delivery, of the underlying commodity at a particular date in the future. While futures might have some advantages, there is also a danger of loosing big as the investors' risk is also magnified, and one must therefore, tread carefully in this area.

The prices of gold and silver have shown high volatility as well as an upsurge in the market during the latter part of the first decade of the 21st century. This change has been witnessed at the international level which has impacted India as well. The practitioners as well as the academia are looking for an explanation for such unprecedented situation. This rise in volatility has often been attributed to the introduction of the derivatives and this criticism has not been limited to gold and silver, but to other commodities as well. This served as the motivation for doing this study.

The futures market performs two important functions: (1) hedging of risk, and (2) price discovery. These are the vital responses which prompt the policy-makers to start the derivatives instrument for trading. In general, the futures markets are found to respond faster to new information than the spot markets, since the transaction cost is lower and the degree of leverage attainable is higher. It is the opponent of derivatives trading who put forth their argument that instead of serving its purpose, the derivative trading encourages speculation and hoarding. In this study, we have attempted to ascertain the impact of the introduction of derivatives trading on the spot prices of gold and silver.

The paper has unfolded in two sub-sections of the section besides three other sections. In the next two sub-sections, literature review and objectives of the study are presented. In the second section, data and research methodology used in the study are described. In the third section, results are discussed. The conclusion and policy implications of the study form part of the last section.

## THEORETICAL FOUNDATIONS AND LITERATURE REVIEW

A financial time-series has three things different from a normal time-series:

1. Leptokurtic distribution of the series of the return of financial assets;
2. Volatility clustering; and
3. Leverage effect.

Therefore, a financial time-series, especially the volatility can not be modelled in the normal way. To model such time-series, a time-varying volatility model is required. Engel (1982) proposed, for the first time, to incorporate the time-varying nature of volatility, using the ARCH Process. The work of Engle (1982) was improved by Bollerslev (1986), who incorporated GARCH models to overcome some of the lacunae of the ARCH models, like over-fitting and breach of non-negativity constraint. Many researchers have found the GARCH family of models to outperform the other models. Different researchers used different markets and methods to communicate the same thing in the following research papers:

*Studies based on the data from the US:*

1. Akgiray (1989);
2. Pagan and Schwert (1990);
3. Brailsford and Faff (1996); and
4. Brooks (1998).

*Studies based on the data taken from Europe:*

- Corhay and Rad (1994)

*Studies based on the data from the Asian countries:*

- Anderson and Bollerslev (1998)

The researchers have found that the GARCH family of models provide more accurate forecast of the volatility of returns of the financial assets. Out of the aforesaid, three special features of the financial time-series data (leptokurtic distribution, volatility clustering, and leverage effect), the leptokurtic and volatility clustering nature of the financial return data has been captured by the GARCH models, but the asymmetric behaviour has not been captured. To resolve the issue, Nelson (1991), Zakoian (1994), and GJR (1993) proposed the EGARCH, the TARCH, and the GJR models, respectively, which can capture the tendencies of the asymmetric nature of the financial data (Engle and Victor 1993) too.

The simplest, and yet quite useful, is the GARCH (1, 1) process, which is also termed as the generic or vanilla GARCH model. Here, we have used GARCH (1, 1) model because of its simplicity. Karmakar (2005) has favoured GARCH (1, 1) model of conditional volatility to reflect stock returns. The model does not take care of the leverage effect present in the financial data and sometimes the violation of the non-negativity constraint is also found. However, the model is considered to be an excellent one for a wide range of financial data (Bollerslev, *et al*., 1992). We find that this sufficed our purpose of comparison of the conditional volatility during both the periods taken for study.

Various studies have been conducted to assess the impact of derivatives trading on the underlying spot market price volatility. Most of these studies were conducted on the US or European markets and on the stock markets rather on commodities markets. There are two schools of thoughts on this issue. According to one school of thought, it has been witnessed in some countries that the introduction of the derivatives has decreased the volatility of the spot market (Gulen and Stewart, 2000). The proponents of this approach have found that futures market does an important role of price discovery. Theissen (2002) has found that price discovery is positively related to volume market shares as liquidity and informed trading are expected to concentrate in one market which may happen with the help of derivatives markets. The model proposed by Danthine (1978) implies that the futures trading increases the market depth and reduces the spot market volatility. The second school of thought has the opposite view on the subject and advocates that the derivatives trading has created trouble in the spot market and has increased the volatility of the spot market. Marberly (1989), Brorsen (1991), and Lee and Ohk (1992) have reported a volatility increase in the highly developed markets, like the US, the UK and Japan.

But there has been no consensus achieved in this context of the impact of the introduction of the derivatives market on the spot-rate prices. This ambiguity has been found across the board irrespective of the underlying security of derivatives. The results have been unambiguous for different commodity derivatives as well as for equity derivatives. This implies that without generalisation and prejudice we need to incorporate the study to ascertain the impact of introduction of derivatives on the gold and silver prices. This study has attempted to analyse the impact of introduction of the gold and silver future on the spot-rate volatility.

## OBJECTIVES OF THE STUDY

The study has two objectives:

1. To ascertain the impact of introduction of gold and silver-based futures on the spot rate volatility of the two. (It has been frequently debated in the literature which is not yet clear on the outcome of the introduction of the futures market upon the volatility of the spot rates); and
2. To estimate the change in the volatility of the spot rates of gold and silver.

The methodology used in the study for the first objective can only establish the fact whether there is any significant impact on the spot-rate volatility. The second objective of the study is concerned with the impact: whether the volatility has gone up or down, and if it has changed, then what amount of change has taken place.

## DATA AND METHODOLOGY

Let $R_t$ be the rate of return of any stock or portfolio from time t-1 to t using log differences and $I_{t-1}$ be the information set at time t-1, then the conditional mean equation will be:

$R_t = E(R_t \mid I_t) + \varepsilon_t R_t = E(R_t/I_t) + \varepsilon_t$ or

$$R_t = m + \varepsilon_t \qquad ...(1)$$

where:

$E(R_t \mid I_t)$= Conditional expected value of $R_t$ which is equal to *m*

$\varepsilon_t$ = the error term at time '*t*'

Engel (1982) put forth that the conditional variance $h_t$, can be modelled as a function of the lagged $\varepsilon_{'s}$. The most developed model made by him is the ARCH (q) model.

$$h_t = \omega + \alpha_1 e^2_{t-1} + \alpha_2 e^2_{t-2} ............ + \alpha_q w^2_{t-q} \qquad ...(2)$$

Bollerslev (1986) generalised the ARCH (q) models to the GARCH (p,q) models

$$h_t = \omega + \alpha_1 e^2_{t-1} + \alpha_2 e^2_{t-2} ............ + \alpha_9 w^2_{t-q} + \beta_1 h_{t-1} + \beta_2 h_{t-2} + ............ + \beta_p h_{t-p} \qquad ....(3)$$

where:

$\omega\ \omega > 0, \alpha_1, \alpha_{2...}\ \alpha_q \geq 0, \beta_1, \beta_{2...}\ \beta_p \geq 0.$

The GARCH (p,q) process as defined above is stationary, when:

$(\alpha 1 + \alpha 1 + ... ... ... \alpha_\alpha) + (\beta_1 + \beta_1 + ... ... ... \beta_1) < 1$

The same equation for GARCH (1, 1) is:

$$h_t = \omega + \alpha_1 \varepsilon^2_{t-1} + \beta_1 h_{t-1} \qquad ...(4)$$

where:

$\omega\omega > 0$, $\alpha_1 \geq 0$, $\beta_1 \geq 0$, and the stationary condition for GARCH (1, 1) is: $\alpha_1 + \beta_1 < 1$

The data for the study has been collected from the websites *www.gold.org* for gold and *www.silverinstitute.org* for silver. The daily data has been collected from January 01, 2001 to December 31, 2006 of the prices of both the commodities taken in the study. In November 2003, the gold futures started operating in India. Due to lag-effect on the prices, we have assumed that the impact of gold and silver futures will be made effective from January 2004, instead of November 2003.

Further, in the conditional equation (Equation 4), one more variable, D, the dummy variable, has been introduced. The value of D is zero before the period of introduction of futures on the said commodity and the value of D has been taken as '1' for the period after the introduction of futures in India (i.e. before January 2004 and after January 2004. These two periods have been taken for the study). This way, the new conditional equation will be:

**Table 1**
**Results of GARCH (1, 1) Model**
**(Conditional Variance Equation with Dummy Variable)**

| Series | Coefficient of Dummy Variable | Standard Error | Z-Statistics | p-value |
|---|---|---|---|---|
| Gold Prices Return Series | -0.000002 | 0.00000465 | -0.430945 | 0.67 |
| Silver Prices Return Series | 0.00000155 | 0.00000119 | 1.298752 | 0.19 |

$$h_t = \omega + \alpha_1\varepsilon^2_{t-1} + \beta_1 h_{t-1} + \gamma D \quad ...(5)$$

For the first objective, the value of coefficient of D variable, '$\gamma$', is studied in the equation (5). If the value of '$\gamma$' comes out to be significant, this can be interpreted that the impact on the volatility of spot rate of gold (and silver) is significant.

For serving the second objective, two measures of the volatility have been used. The first measure is the traditional measure of volatility, the standard deviation of the price return series. The second measure is the ($\alpha+\beta$) value which is calculated in the GARCH (1, 1) model and estimated from Equation 4.

## RESULTS

### The GARCH Model

The results of the GARCH model are summarised in **Table 1**.

As shown in the table, both the series (of gold and silver) do not have significant change after the introduction of derivatives. In gold return series the coefficient of dummy variable is -0.000002 and it has been found to be insignificant as the p-value is 0.67 (>=.05). In the silver return series, the coefficient of dummy variables is 0.00000155 and this also has been found to be insignificant as p-value is 0.19 (>=.05).

### Measures of Volatility

The measures of volatility in the Pre- and Post-Gold and Silver Futures Periods are summarised in **Table 2,** before the gold and silver futures and after the futures.

## CONCLUSION AND POLICY IMPLICATIONS

In India, the importance of gold and silver, especially for the ornaments, is so strong that the impact on their prices can not be significant for a mere introduction of their derivatives. Derivatives might have added as a new tool to hedge and buy gold and silver on delivery, so that the adverse impact of price can be checked. The reason of there being no impact of derivatives on the prices can also be attributed to the reduction in the volatility due to stabilisation which might have been caused because of the introduction of the derivatives in these commodities. Thus, the reasons can not be ascertained with certainty. However, it can be

**Table 2**
**Measures of Volatility**
**(Pre- and Post-Gold and Silver Futures Periods)**

| **Standard Deviation** | **Pre-Futures** | **Post-Futures** |
|---|---|---|
| Gold Prices Return Series | 0.009549 | 0.011494 |
| Silver Prices Return Series | 0.010921 | 0.020362 |
| **($\alpha+\beta$) in GARCH(1,1) model** | **Pre-Futures** | **Post-Futures** |
| Gold Prices Return Series | (0.133432+.5666696=) 0.70 | (0.038137+.957931=) 0.99 |
| Silver Prices Return Series | (0.045095+.948406=) 0.99 | (0.42870+.949987=) 0.99 |

concluded with certainty that the introduction of derivatives in the gold and silver futures has no impact in their price volatility in India.

The main implication of the findings of the study is that the policy-makers should not entertain the hypothesis that derivatives market of gold and silver has adversely impacted the spot markets in India. These results are in consonance with the study of Pavabutr, *et al*. (2010) that the introduction of gold and silver futures in India has increased the depth of the market and have helped in the price discovery in the spot market. The implication of this study has far-reaching repercussions—that in the case of the other commodities derivatives market as well, nothing can be generalised regarding the impact of derivatives market on the spot market volatility.

## REFERENCES


Akgiray, V. (1989), "Conditional Heteroscedasticity in Time Series of Stock Returns: Evidence and Forecast", *Journal of Business*, Vol. 62, No. 1, pp. 55-88

Anderson, T.G., and T. Bollerslev (1998), "The Effects of Stock Index Futures Trading on Stock Index Volatility: An Analysis of the Asymmetric Response of Volatility to News", *The Journal of Futures Market*, Vol. 18, No. 2, pp. 151-166

Bollerslev, T. (1986), "Generalised Autoregressive Conditional Heteroscedasticity," *Journal of Econometrics*, Vol. 31, No. 3, pp. 307-327

Bollerslev, T., Ray C. Chou, and Kenneth Kroner (1992), "ARCH Modeling in Finance: A Review of theory and Empirical Evidence", *Journal of Econometrics*, Vol. 52, No. 1 and 2, pp. 5-59

Brailsford, Timothy J., and Robert W. Faff (1996), "An Evaluation of Volatility Techniques", *Journal of Banking and Finance*, Vol. 20, No. 3, pp. 419-438

Brooks, C. (1998), "Predicting Stock Index Volatility: Can Market Volume Help?", *Journal of Forecasting*, Vol. 17, No. 1, pp. 59-80

Brorsen, B.W. (1991), "Futures Trading, Transactions Costs, and Stock Market Volatility", *Journal of Futures Market*, Vol. 11, No. 2, pp. 153-163

Corhay, A., and T. Rad (1994), "Statistical Properties of Daily Returns: Evidence from European Stock Markets", *Journal of Business Finance and Accounting*, Vol. 21, No. 2, pp. 271-282

Danthine, J. (1978), "Information, Futures Prices and Stabilising Speculation", *Journal of Economic Theory*, Vol. 17, No. 1, pp. 79-98

Engle, R.F. (1982), "Autoregressive Conditional Heteroscedasticity with Estimates of the Variance of the United Kingdom Inflation", *Econometrica,* Vol. 50, No. 4, pp. 987-1007

Engle, R.F., and Vector K. Ng (1993), "Measuring and Testing the Impact of News on Volatility", *Journal of Finance,* Vol. 48, No. 5, pp. 1749-1778

Glosten, Lawrence R., Ravi Jagannathan, and David E. Runkle (1993), "On the Relation between the Expected Value and the Volatility of the Nominal Excess Returns on Stocks", *Journal of Finance*, Vol. 48, No. 2, pp. 1779-1791

Gulen, Mayhew H., and M. Stewart (2000), "Stock Index Future Trading and Volatility in International Equity Markets", *Journal of Futures Markets*, Vol. 20, No. 7 pp. 661-685

Karmakar, Madhusudan (2005), "Modeling Conditional Volatility of the Indian Stock Markets", *Vikalpa,* Vol. 30, No. 3, pp. 21-37

Lee, S.B., and K.Y. Ohk (1992), "Stock Index Futures Listing Structural Change in Time Varying Volatility", *Journal of Futures Markets*, Vol. 12, No. 5, pp. 493-509

Maberly, Edwin D. (1987), "An Analysis of Trading and Non-trading Period Returns for the Valueline Composite Index: Spot versus Future: A Note", *Journal of Futures Market*, Vol. 7, No. 5, pp. 497-500

Nelson, D. (1991), "Conditional Heteroscedasticity in Asset Returns: A New Approach", *Econometrica*, Vol. 59, No. 2, pp. 347-370

Pagan, A., and G.W. Schwert (1990), "Alternative Models for Conditional Stock Volatilities", *Journal of Econometrics*, Vol. 45, No. 1, pp. 267-290

Pavabutr, Pantisa, and Piyamas Chaihetphon (2010), "Price Discovery in the Indian Gold Futures Market", *Journal of Economic and Finance*, Vol. 34, No. 4, pp. 455-467

Theissen, E. (2002), "Price Discovery in Floor and Screen Trading System", *Journal of Empirical Finance*, Vol. 9, No. 4, pp. 455-474

Zakoian, J.M. (1994), "Threshold Heteroscedastic Models", *Journal of Economic Dynamics and Control*, Vol. 18, No. 5, pp. 931-955

# WORKERS' PARTICIPATION IN DECISION-MAKING
## Perception of Workers and Managers

**Shyam Bahadur Katuwal***

**Abstract**

*This study examines the perception of workers and the management towards the scheme of workers' participation in management (WPM), in Nepal. The data was collected from 372 workers and 103 managers through a structured questionnaire. The study has revealed that the workers have a strong desire for participation in the decision-making in their organisation. However, the managers' desire towards the involvement of workers, in decision-making, was low. There has been no significant relationship between the views of the workers and the management regarding the scheme of WPM. The study has also revealed a strong desire of the workers to participate in defining and controlling their everyday work and the issues which they feel potential and significant to their personal benefit. The management has shown their reluctance to involve workers in the decision-making of the organisation on the ground that it delays decision-making and that the workers were still not mature enough to contribute to rational decisions. However, the perception of workers and management shows a propensity for workers' participation in decision-making. Enterprises should, therefore, initiate the scheme of workers' participation in decision-making by minimising the problems involved in implementing the scheme.*

**Key words:** ***Workers' participation in management, Workers' perception, Managers' perception, Managerial acceptance, Nepal***

## INTRODUCTION

In the context of globalisation, human resource management (HRM) has assumed a new dimension as traditional system was not able to achieve the desired results, essential for the security and survival of an organisation. Consequently, the contribution of the HR in an organisation has emerged as a key element of success and the top-level managers are now realising that the HR or the 'people's side of the business' is essential for the long-term survival of the business (Bhatti and Qureshi, 2007: p. 55). Owing to this realisation, strategic human resource functions have replaced the traditional functions to provide a sound basis to the business organisations for securing the specific roles in the context of commercial activities. In Nepal, the last twenty years have witnessed a systematic change in the field of industrial relations. The ban on trade unions has been lifted with the restoration of democracy in 1990. Afterwards, cultural change has accompanied the political

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change along with the structural changes in the economy and industrial relations. Most of the well-established norms and cultural values in the Nepalese industries have been abandoned or have withered away with this political change. The major changes include the change in attitudes and feelings of labour and management towards each other. Both of them have the common desire of creating a world of work in which their interests have been addressed and satisfied.

Employees' participation in decision-making in organisations, also known as 'industrial democracy', empowers human resources, and creates a feeling of organisational citizenship among them, which ultimately contributes to overall performance and improved human relations. Markey (2001) supported the hypothesis that effectiveness of employees' participation positively correlates with the quality of work-environment. Thus, participatory management has to be introduced in every organisation where the power is shared among the people, work is conducted by consensus, and multi-disciplinary team approach is adopted to produce high quality goods and services and let the organisation have competitive advantage in the globalisation process.

Workers' participation in management (WPM) is a process in which influence is shared among individuals who are otherwise hierarchically unequal (Wagner, 1994). It refers to any arrangement which is designed to involve low-cadre employees (workers) in the important decision-making within the workplace (Noah, 2008). This implies that rather than saddling only a group within the enterprise (for instance, management) with the responsibility of making decisions, all those who are to be affected by these decisions (including the workers) would be involved in its formulation and implementation (Noah, 2008).

WPM is the act of sharing decision-making with others to achieve organisational objectives (Knoop, 1991). It has become an integral part of modern management, as it contributes to increase employees' job satisfaction and organisational commitment (Guthrie, 2001, and Witt *et al.*, 2000). The practice of WPM balances the involvement of managers and their subordinates in information processing, decision-making, and problem-solving endeavours (Wagner, 1994).

McGregor (1960) contended that workers' participation consisted basically in creating opportunity under suitable conditions for people to influence decisions which affects them. It is a special case of delegation in which the subordinate gain greater control and freedom of choice with respect to bridging the communication gap between the management and the workers. This creates a sense of belongingness among the workers as well as a congenial environment where both, the management and the workers would voluntarily contribute to healthy industrial relations.

As employees are more involved in the day-to-day as well as the strategic management of the firm, their loyalty, responsibility, and efforts increase accordingly, and their efficiency also gets enhanced. From the managerial perspective, workers' involvement and participation in decision-making reduce the transaction cost, thus, improving the firm's performance (Milgrom and Roberts, 1990). In contrast, a high level of workers' involvement may encourage them to increase their share in the firm's surplus, leading to efficiency (Mizrahi, 2002). Markey and Monat (1997) argued that workers' involvement in management might also reduce the workload of supervisors, encourage skill development in the workforce, and contribute to improved labour relations.

WPM has been considered as a means of reducing wastage, labour turnover, and labour absenteeism, with increased productivity (Kumar and Tripathi, 1991: p. 374). According to Markey (2006), an extensive literature review has argued that the employee participation has the capacity to enhance the quality of decision-making, by broadening inputs, promoting commitment to the outcomes of decision, improving motivation, cooperation, and communication in the workplace.

Heller (1971) observed that WPM trains subordinates to make better decisions, facilitates change management, and improves communication. By effective participation, workers and management feel close to each other and work for the development and prosperity of the industry and the nation (Batra and Bhatia, 1994: p. 17).

It is argued that the firms' efficiency and stability, as well as workers' satisfaction, can be achieved through participatory decision-making. For this purpose, employees are advised to take part in making such rules and the government intervention is also required, otherwise managers will make rules that allow them to retain control of the key points in the decision-making process (Mizrahi, 2002).

The continuum of the WPM varies from information-sharing at the one end and the co-determination which implies nearly a full control or even joint ownership (Sodhi, *et al*., 1995: p.13), at the other. However, employee participation in managerial decision has attracted a little attention in Nepal, though many other countries have experienced considerable benefits in terms of improved quality, lower production costs, and greater competitiveness. There are numerous examples of employee participation, in a various forms, being used successfully in other countries, but such practices have been ignored in Nepal. There may be certain fundamental aspects which prevent the application of workers participation in Nepal.

Some managers seem reluctant to involve subordinates in the organisational decision-making process saying that workers' ambitions and aspirations should not be encroached upon the employer's liberty (Singh, 1991). At the same time, there is a positive view regarding the scheme. The followers of the scheme view that the employees must have the maximum governing power in the organisation as they invest most of their lives in the organisation with their toils and that is why they must have the right to share authority and power of managing the enterprises. Employee's participation is quite weak in the public sector as compared to the private sector, in Malaysia (Parasuraman, *et al.*, 2011).

In the face of such a controversy, it is difficult to introduce the scheme of WPM successfully without developing certain favourable situations from the side of management, workers, and the government. The success of this scheme depends upon the willingness of the management for sharing its prerogatives and rights with the workers, favourable rules and regulation of government, and the ability and interest of the workers in participation. The key factors for the success of the scheme from the side of management are organisational philosophy and values of the top management towards human development (Pandey, 1989), favourable organisational climate (Sahu, 1983), democratic style of management and supervisor (Heller, *et al.*, 1988), and positive attitude or perception of managers to the skills of sub-ordinates. Similarly, the pre-requisites for effective participation, from the side of the workers, include education, knowledge, skill and the ability to participate, experiences, activeness, and acceptance of the idea of the workers' participation by trade unions (Sodhi, *et al*. 1995).

## STATEMENT OF THE PROBLEM

In a democratic society, employees in the organisations also demand their participation in every aspect of organisational decisions. It is difficult for them to cope with the authoritative management at the work place. However, in some cases, workers and management show their disinclination for active workers' involvement in decision-making. It is one of the major causes of the problems in practising the WPM.

With the increasing exposure of employees to the democratic society, rising education and wider contact with the people of diverse views and aspirations, employees desire to share the power with management for control over the organisation of work, shape their career development, and satisfy their aspirations by removing the artificial barriers, the WPM has become essential in every organisation.

The world-wide decline of trade union density (Vissa, 2002) has weakened their bargaining power to fulfill the right of the workers through the process of voluntary collective bargaining and industrial actions (*e. g.*, strikes). As the number of trade unions fall, the number of collective agreements will also be reduced, as in the case of Taiwan (Lee, 2010). In this context, the relationship between employer and employees is to be re-defined from new paradigms and perspective, where the two feel satisfied, protected, and respected. It is the workers' participation that provides mutual benefits and respect to both the employees and the employer. Thus, WPM is inevitable component of the modern organisational management.

In spite of this fact, refusal of management to recognise the importance of the human factor in the growth and development of the organisation through involvement of employees in its managerial decision would create a situation, which demands immediate attention to avoid those human problems that impede the progress of an organisation. Being a social animal, the worker brings his personality, hopes, aspirations, anxieties, feelings, and attitude to the work-place, and desires to satisfy them in his work. However, when the worker finds that his work and potential are controlled by strict management, he may have negative behaviour like absenteeism, apathy, low commitment, and low productivity. Such negative behaviour, created due to strict management control, has raised the problem of healthy industrial relations. The present study seeks to obtain the answer to the following questions with a view to solving the problem of human aspirations and thereby creating a healthy work environment in the Nepalese work-settings.

1. What is the workers' propensity for participation in management in Nepal?
2. What are the preferred areas of workers' desire to participate and the managers views in the areas?

**Rationale of the Study**

The involvement of workers in managerial decision-making is considered as a means for inducing motivation in the workers, leading to positive work attitude and high productivity. The success and failure of any organisational programme depend on the interest of the parties involved. Sharma (1976) has observed that the success of a programme, like workers' participation in management, depends on the attitudes and outlook of the management and the employees. It is a common observation that the workers in different countries desire to take part in decision-making (Walker, 1972: p. 1181). Nepal is no exception to this.

The studies conducted in Nepal have also shown that the Nepalese workers' desire to participate in different level and areas of decision-making process in the enterprises (Koirala, 1987; Shrestha, 1991; and Adhikari, 2000). However, the WPM programme of has not been successfully practised in the Nepalese organisations.

The study focuses on human factor to ascertain the workers' keenness to participate in different organisational decisions, desired form of participation, relationship between the workers' desire to participate, and the management's acceptance of the scheme. Thus, the rationale for the study is anchored on the need to raise the level of workers' participation in each and every context of organisation by assessing the desire of workers and management, since WPM is considered as a means of inducing motivation among the workers leading to positive work attitude and high productivity in the organisation. It is also known to be a tool for creating congenial working environment-providing opportunity to exercise innate potential and willingness of employees to pursue organisational goals and raising the productivity level.

**LITERATURE SURVEY**

Despite intense environmental variations of participation, there are certain barriers which impede the process of actual participation of workers in the management. The underlying attitude of management to the programme, apathetic views of management, and suspicions of the unions, lack of education and skills of the workers, distrust and adverse relationship between the management and the unions, inadequate legal provisions, and secretiveness of management have been considered as the major barriers to participation (Sodhi, *et al*., 1995: p. 13).

The study by Noah (2008) revealed that employees demonstrated a high interest in participation in the decision-making within their work places. However, the actual level of involvement in management decision making, demonstrated by the employees, was found to be relatively low. This study further shows the significant relationship between education and employees' involvement in decision making, in Nigerian organisations. The study revealed a growing desire of non-management employees in the Nigerian work environment to exercise greater involvement in the decision-making process of the enterprises.

One study has identified lack of supportive climate, poor communication, un-cooperative managerial practices, non-existence of trade union's role, inadequate collective bargaining, disinterest of the government and inadequate provisions in laws, unfavourable political condition, improper education, orientation and training to the actors of industrial relations about the scheme, to be the causes of low level of workers' participation in management in the developing countries, like Nepal (Koirala, 1987: pp. 359-360).

Besides the situational factors, human factors also determine the extent of participation in a particular enterprise. Human factors cover workers' propensity to participate and management's acceptance of their participation. The workers' propensity to participate is influenced by the attitudes, capacities, and the perceived power of the parties concerned (Walker, 1972). The study of Emamgholizadeh, *et al*. (2009) revealed that a greater degree of participation is associated with significantly higher level of competence, meaningfulness, impact, and self-determination of the workers. A study conducted by Ajayi and Owoeye (2005) in the construction industry of Nigeria, showed that management decision followed by secrecy / insecurity and lack of trust by the management on the union were the three major reasons of not allowing workers to participate in decision-making.

The researchers have pointed out that the lack of proper appreciation on the part of management, workers' attitudes, and behaviour as well as the role of government are equally responsible for the improper implementation of workers' participation scheme (Acharya, 2001; Adhikari, 2000; Koirala, 1987; and Shrestha, 1991).

The findings of a study, conducted in the public, private, and the local government sectors in Western Australia, support the arguments that employees not only believe that the participation in decision-making offers them substantial benefits, contributes to the performance effectiveness, and leads to greater gains in the workplace, but also suggests that they are more ambivalent about increasing the task demands and the gains received for the extra effort (Scott-Ladd and Marshall, 2004). The study further revealed that these benefits did not contribute to increased job satisfaction or commitment despite participation in decision-making, having a direct positive influence on job satisfaction, which, in turn, increases employee's commitment (Scott-Ladd and Marshall, 2004).

These controversies, dilemmas, and difficulties challenge the successful implementation of the scheme without thorough study on the attitudes of its partners. This study focuses the same.

## OBJECTIVES AND HYPOTHESES

This study has two major objectives:

1. To measure the workers' desire for their participation; in management and
2. To ascertain the patterns and areas of desired and accepted level of the workers' participation in management.

The following null hypotheses were formulated to achieve the above-mentioned research objectives:

1. There is no significant difference between the desire of workers and the management about the scheme of WPM.
2. The workers and the management do not differ in respect to the areas of the former's involvement in the organisational decisions.

## RESEARCH METHODOLOGY AND THE DATA BASE

The data was collected through the pre-tested interview schedule, from 372 workers and 103 managerial personnel from the four big textile factories in Nepal. Workers' desired extent of participation in management was obtained through the eleven decision-making items on a 5-point rating scale, ranging from 'not at all' (1), 'to a little extent' (2), 'to some extent' (3), 'quite a lot of extent' (4), and 'to a great extent' (5). These items were chosen mainly from the study of Gani (1991), with certain modification to suit the study. The responses were numerically coded to make the data actionable. In order to derive the participation level, the score on each item was added. Thus, the total score ranged between 11 and 55, with 33 as the neutral score. The participation scores were divided into high and low groups, taking the neutral score as the criterion point.

Based on the total scores of individual worker on the statements, keeping the neutral score value as the cut-off point, the workers were divided into high and low participation-intended workers. The numbers of such workers were, 303 and 69, respectively. As regarding the areas of participation, mean score was considered to deflect the most desired and least desired area of participation. The same process was also applied to divide managerial personnel into high and low participation groups, in both the cases.

## FINDINGS AND DISCUSSION

With the onset of the 21st century, numerous changes have occurred in the business world. Modern society and employers of Nepal are not like those of the eighteenth century. Today, labour exploitation is almost impossible because of the rise of trade unions and the entry of well-informed workers in job market. Consequently, employees' attitude towards their employer and the employer's attitude towards their employees have changed drastically. A massive change has occurred in the vision of the parties concerned with labour relations. Labour-management relations can not be maintained today without taking into consideration the feelings and psycho-social concerns of the workers. Approaching labour-management relations merely along economic and physical terms does not make any sense. Thus, this section of the study attempts to highlight the empirical findings about the issue in which workers want to share their views with the management and how far the management shows a positive attitude towards the views of the workers in relations to the scheme of workers' participation in management.

### Desired Extent of Workers' Participation

The success of participation programme depends on the degree of workers' desire for participation and its acceptance by the management. The managerial acceptance, however, depends on the workers' capacity to participate as perceived by the management itself. Based on the total scores on the element of participation covered in the questionnaire, the distribution of the workers and managerial personnel in terms of their desired extent of WPM has been presented in **Table 1**.

The table reveals the difference between the extent of workers' desire to participate and the managerial acceptance of it.

**Table 1**
**Desired Extent of Participation by Workers and Managerial Acceptance**

| *Desired Extent of Participation* | *Workers* | *Management* | *Total* |
|---|---|---|---|
| Low | 69 (18.55) | 73 (70.87) | 142(29.9) |
| High | 303 (81.45) | 30 (29.13) | 333(70.1) |
| Total | 372 (100) | 103 (100) | 475(100) |

*Note:* The figures in parentheses indicate percentages. *Chi-square=105.3823*(significant)

**Table 2**
**Attitudes of Workers and Management towards the Areas of WPM**

| Decision Areas | Workers' Desire | | Management Acceptance | |
|---|---|---|---|---|
| | Mean Scores | Rank | Mean Scores | Rank |
| Overall policy formulation | 3.73 | 7 | 2.17 | 9 |
| Profit allocation | 3.60 | 8 | 2.47 | 6 |
| Business policy | 2.91 | 10 | 2.14 | 10 |
| Recruitment and selection | 2.29 | 11 | 2.09 | 11 |
| Punishment and reward | 4.12 | 2 | 2.25 | 8 |
| Training and development | 3.39 | 9 | 3.26 | 3 |
| Determination of wages & benefits | 4.23 | 1 | 2.46 | 7 |
| Promotion policy | 4.11 | 3 | 2.68 | 5 |
| Other personnel areas | 3.88 | 6 | 2.96 | 4 |
| Welfare facilities | 4.01 | 4 | 3.85 | 1 |
| Working conditions | 3.92 | 5 | 3.81 | 2 |

*Note:* $r_s = 0.3545$, and $P > 0.05$. The rank is based on the mean scores

As shown in the table, more than four-fifths of the workers (81.45 per cent) had a higher level of desire for participation for in decision-making process and the rest (18.55 per cent) showed low desire for participation.

As the calculated value of the Chi-square is greater than the table value, the statistical analysis clearly rejects the hypothesis, that the view of the management regarding the workers' participation in management is the same as that of the workers.. This implies that the workers and the management differ in terms of their desire to involve workers in managerial decisions. The table also indicates that only 29.13 per cent of managerial personnel had shown a higher degree of acceptance for the workers' participation in decision-making against the desire of 81.45 per cent of workers. The majority of managers (70.87 per cent) expressed a low desire for acceptance of the scheme. It indicates that the managers were unfavourable to the scheme. They were reluctant in granting the authority to the workers in the management's decision-making.

The opposite quantum of views of the workers and the management indicates that the workers desire to participate in decision-making was high, but the desire of management's keenness to accept was low. This finding supports the findings of Arya (1989), Gani (1991), Koirala (1987), and Shrestha (1991).

### Desired Areas of Participation

As is evident from Table 1, the maximum number of workers had shown high desire to involve workers in decision-making process, but low desire on the part of managerial personnel. In this respect, the study has also sought to analyse the area of the worker's desire to participate and the managerial views in the areas. The differences in the areas of workers' desire to participate and the degree of acceptance of management to these areas have been shown in **Table 2.**

The scheme of WPM is successful when the areas and level of desire and their acceptance of participation perceived by workers and managerial personnel, respectively, are high and the gap between them is narrow. Therefore, with a view to determine the difference between the attitudes of the workers to be involved in decision-making and managers' acceptance of the participation of workers in different areas of decision were assessed in this section.

Table 2 shows the workers' and managerial perceptions towards the desired areas of worker's participation in management. It is revealed that the workers expectation of for participation in all areas was higher than their acceptance by the management. The importance given by the workers and managers to different decision areas for participation was also different, except for business policy, recruitment, and selection of workers. They had given different priority for participation in managerial decisions. While the workers gave highest priority to the wages and other fringe benefits (Rank 1), the management assigned the top priority to welfare facilities. The second priority for the workers was about the decision on their punishment and reward, whereas, the second priority for the management was the working conditions. Similarly, the third, fourth, and the fifth priorities of the workers were the promotion, welfare facilities, and working condition, respectively. Management had given the same rank to the training and development, other personnel policies, and promotional policies, respectively. Nevertheless, the least priority area of the workers and the management was the same, i.e., the issue of business policy and the workers' recruitment and selection, both assigned them as 10th and 11th ranks, respectively.

Thus, there is a marked difference between the workers and management with respect to their areas of interests for the workers' participation in decision-making. On the whole, there was no significant relationship between the desired areas of workers' to participate in decision-making and acceptance of these areas by managers. This conclusion is supported by the insignificant rank order correlation coefficient ($r_s = 0.3545$).

The insignificant correlation coefficient indicates that the ranking of the workers and managerial personnel regarding the involvement of workers in the decision-making areas were not significantly related with each other. That means, the managers' views were not the same as the opinion expressed by the workers regarding the areas of workers' involvement in decision-making. The finding is similar to most of the findings of the previous studies reviewed earlier in this paper.

Though the scheme of WPM was considered as a synergistic technique of management, the opinion of the workers and the management has been found to be different. The workers' representatives desired to expand the scope of participation among others, by involving workers in the major issues of employment and benefits, including price fixation, profit utilisation, and the recruitment. Management, as opposed to the workers, expressed the irdesire to involve workers in the social issues as economic and personnel issues were as their prerogative areas and it would be an encroachment over management prerogative in case of workers' involvement in these areas.

## CONCLUSION AND POLICY IMPLICATIONS

The study has revealed that though the practice of indirect and informal participation has already existed in some organisations in Nepal, there is no strong evidence of direct participation. Based on the analysis of the attitudes of the workers and the managers, it can be concluded that the workers demonstrated high interest in management decision–making than their counterpart (management), indicating the disinclination of the management towards the scheme. The workers express their willingness to participate in defining and controlling day-to-day work and in the issues which they feel potential and significant to their personal benefits. Though the management had shown its reluctance to involve workers in managerial decision-making, they intended to involve them in social issues since the workers' participation in the economic and the personnel issues would be an encroachment over the prerogative rights of management.

However, the ever-growing workers' desire for political democracy, involvement of young generation in management, who were well exposed to media and modern management, entry of multinational and foreign companies, there are no valid reason that prevented participation to be successfully practised in Nepal.

Similarly, with the continued decline of trade union density due to multiplicity of trade unions on the basis of political ideologies, continuous rise of the service sector, and the emergence of hi-tech manufacturing industries, in which union membership is rare and pro-employees policy of government has transformed the process and method of determining the terms and conditions of employment in the workplaces, from collective bargaining to joint effort (i.e., WPM).

The, following measures might prove effective in removing the obstacles in the effective workers' participation in Nepal:

1. Educational programmes for workers to inform them about their rights and the areas of their involvement in decision-making;
2. Training programme for workers to equip them for their decision-making role in managerial functions;
3. Liberalise management structure, so as to allow for greater workers' involvement.
4. Provision of incentives to workers for their meaningful participation in management and
5. Enactment of laws for establishing workers' participation in the organisation's decision-making effectively, and protecting the interest of the labour.

## REFERENCES


Acharya, G.P. (2001), *Trade Unionism and Industrial Relations in Nepal*, unpublished Ph.D. thesis (Kathmandu: Faculty of Management, Tribhuvan University)

Adhikari, D.B. (2000*), Dimensions of Industrial Relations in Nepal*, unpublished Ph.D. thesis (Varanasi: Department of Sociology, Banaras Hindu University)

Ajayi, M.O., and C.O. Owoeye (2005), "Workers' Participation in Decision-making in the Nigerian Construction Industry," *Journal of Land Use and Development Studies,* Vol. 1, No. 1, pp. 13-24

Arya, P.P. (1989*), Labour-Management Relations in Public-sector Undertakings* (New Delhi: Deep and Deep Publications)

Batra, G.S., and B.S. Bhatia (1994),"Emerging Aspects of Workers' Participation in Management: A Case Study of the Pinjore Unit of HMT. Limited", *Management and Labour Studies,* Vol. 19, No. 1, pp. 17-29

Bhatti, K.H., and T.M. Qureshi (2007), "Impact of Employee Participation on Job Satisfaction, Employee Commitment, and Employee Productivity", *International Review of Business Research Papers*, Vol. 3, No. 2, pp. 54–68

Emamgholizadeh, S., S.R. Borghei, and H.Z. Matien (2009), "Study of the Relation between Employees' Participation in Organisational Decision-Making and Empowerment in Mazanderan", *Iranian Journal of Management Studies,* Vol. 2, No. 2, pp. 77–95

Gani, A. (1991), *Labour-Management Relations: A Study in Jammu and Kashmir,* (New Delhi: Concept Publishing Company)

Guthrie, J.P. (2001),"High-involvement Work Practices, Turnover, and Productivity: Evidence from New Zealand", *Academy of Management Journal*, Vol. 44, pp. 180-190

Heller, F.A. (1971), *Managerial Decision Making (*London: Sage).

Heller, F.A *et al*. (1988), *Decision in Organisations: A Three-Country Study* (London: Sage)

Knoop, R.T. (1991), "Achievement of Work Values and Participative Decision-Making", *Psychological Reports*, Vol. 58, pp. 775-781

Koirala, U.K. (1987), *Worker's Participation in Management: An Intensive Study of Jute Industry of Nepal,* unpublished Ph. D. thesis (Allahabad: Department of Commerce and Business Administration, University of Allahabad)

Kumar, A., and S.K. Tripathi (1991), "Shop Improvement Group: The New Participation that Succeeds in Rourkela Steel Plant", *The Indian Journal of Labour Economics,* Vol. 34, No. 4, pp. 374-378

Lee, Joseph S. (2010), "Globalisation and Changing Industrial Relations in Taiwan's Banking Industry", *The Indian Journal of Industrial Relations*, Vol. 45, No. 4, pp. 609-621

Markey, R., and J. Monat (eds.), (1997), *Innovation and Employee Participation Through Work Councils: International Case Studies* (Aldershot: Avebury)

Markey, R. (2001), "Introduction: Global Pattern of Participation", In R. Markey, P. Gollan, A. Hodgkinson, A. Chouraqui, and U. Veersma (eds.), *Models of Employee Participation in a Changing Environment: Diversity and Interaction* (Aldershot: Ashgate)

Markey, R. (2006), "The Internationalisation of Representative Employee Participation and its Impact in the Asia Pacific", *Asia Pacific Journal of Human Resources*, Vol. 44(December), pp. 342-363

McGregor, D. (1960), *The Human Side of Enterprises* (New York: McGraw-Hill)

Milgrom, P., and J. Roberts (1990), "Bargaining Costs, Influence Costs, and Organisation of Economic Activity", In Alt, J.E.and Shepsle, K.A. (eds.), Perspectives on Positive Political Economy, (Cambridge: Cambridge University Press)

Mizrahi, S. (2002), Workers' Participation in Decision-making Processes and Firm Stability", *British Journal of Industrial Relations*, Vol. 40, No. 4, pp. 689-707

Noah, Yusuf (2008), "A Study of Worker Participation in Management Decision Making Within Selected Establishments in Lagos, Nigeria", *Journal of Social Science*, Vol. 17, No. 1, pp. 31-39

Pandey, S.N. (1989), *Human Side of Tata Steel* (New Delhi: Tata McGraw-Hill Publishing Company)

Parasuraman, S. B. Rahman, and B. Rathakrishnan (2011), "Employee Participation in the Public Sector in Malaysia: A General Overview", *Journal of Arts, Science & Commerce*, Vol. 2, No.1, pp. 55-69

Sahu, B. (1983), "Participative Management in India: Findings of an Empirical Study", *Decision*, Vol. 10, No. 2, pp. 69-82

Scott-Ladd, B., and V. Marshal (2004), "Participation in Decision Making: A Matter of Context?" *The Leadership & Organisation Development Journal*, Vol. 25, No. 8, pp. 646-662

Sharma, N.K. (1976), "Workers' Participation in India", *Indian Finance*, Vol. 98, pp. 488-492

Shrestha, G.K. (1991), *Labour Management in Nepal: A Study of Public Sector Undertakings,* unpublished Ph.D. thesis (Kathmandu: Faculty of Management, Tribhuvan University)

Singh, B.P. (1991),"Workers Participation in Management: Development and Suggestions", *The Indian Journal of Labour Economics*, Vol. 34, No. 4, pp. 379-382

Sodhi, J.S. and R. J. Joshi (1995), In *Search of Participation,* (New Delhi: Sri Ram Centre for Industrial Relations and Human Resources)

Vissa, J. (2002), "Why Fewer Workers Join Unions in Europe: A Social Custom Explanation of Membership Trends", *British Journal of Industrial Relations*, Vol. 40, No. 3, pp. 403–430

Wagner, A.J. (1994), "Participation's Effects on Performance and Satisfaction: A Reconsideration of Research Evidence", Academy *of Management Review*", Vol. 19, pp. 312–330

Walker, K.F. (1972), "Workers' Participation in Management: An International Perspective", *Lok Udyog*, Vol. 5, No. 12, pp. 1173-1187

Witt, L.A., M.C. Andrews, and K.M. Kacmar (2000), "The Role of Participation in Decision-making in the Organisational Politics – Job Satisfaction Relationship", H*uman Relations*, Vol. 53, No. 3, pp. 341-358


If we both exchange one dollar,
Both of us have one dollar each;
But if we exchange one good thought,
Both of us have two good thoughts.

**Abraham Lincoln**

Grow old along with me,
The best is yet to come, the rest of life.

**Robert Browning**

Prayer is not a spare wheel,
That you pull out when you are in trouble;
Use it as a steering wheel,
That keeps you on the right path throughout the journey of your life.

Difference between God and man:
God gives and forgives,
Man gets and forgets.

# INFLUENCE OF EMOTIONAL INTELLIGENCE ON JOB SATISFACTION, TEAM SPIRIT AND RESPONSIVENESS TO CHANGE

**Ravinder Kumar*** **and Lalita Singh****

**Abstract**

*The success of any enterprise depends on the acceptability of its product in the market, which needs customer loyalty, enhanced productivity, and improved quality. It is not possible without a stable, competent, creative, and productive workforce. This study seeks to examine one of the important traits which make an employee productive for any organisation – emotional intelligence (EI), and to ascertain its impact on essential traits of employees, namely, job satisfaction, team spirit, and responsiveness to change. The primary data for the study was collected from a sample of 100 respondents, with diverse work profiles from selected service-sector organisations, located in the National Capital Region of Delhi. For measuring the level of emotional intelligence, team spirit, and responsiveness to change, three widely-accepted batteries were used and to collect the data on job satisfaction, a questionnaire was prepared. Inferences were drawn by using descriptive statistics (frequency distribution and cross-tabulation), bivariate correlation, and Chi-square test, with the help of the SPSS. The study has revealed that people with higher EI are more satisfied with their job and have a more effective team spirit than others. It has also been found that EI is not positively related with the responsiveness to change.*

**Key words:** ***Emotional intelligence, Job satisfaction, Team spirit, Responsiveness to change***

## INTRODUCTION

Emotional intelligence (EI) refers to the ability, skill, or a self-perceived ability to identify, assess, and control one's emotions. It incorporates a set of conceptually-related psychological processes, involving the processing of affective information (Mayer and Geher, 1996). These include the appraisal and expression, assimilation in thoughts, understanding, and the regulation and management of emotions (Zeidner, Matthews, and Roberts, 2004). Since an employee often has to meet the challenges and complexities of the job, it is necessary to address the issues of emotional stress on him. The better he handles the stress, the better he will be able to perform. Thus, in order to stay emotionally stable and to perform better, an employee should fine-tune himself to

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suit the rapidly-evolving work-styles and job-settings. Some research studies have stressed on the role of EI in job performance. One such study assessed the characteristics of engineers at Lucent Technologies (now Alcatel-Lucent) who were rated as stars by their peers. The researchers concluded that the stars were better at relating to others and that it was EI, and not IQ, which characterised high performers (Langton, Robbins, and Judge, 2010). Another illuminating study looked at the success and failure of 11 American Presidents – from Franklin D. Roosevelt to Bill Clinton. They were evaluated on six qualities – communication, organisation, political skill, vision, cognitive style, and emotional intelligence. It was found that the key quality which differentiated the successful (such as Roosevelt, Kennedy, and Reagan) from the unsuccessful (such as Johnson, Carter, and Nixon) was EI (Greenstein, 2001). Keeping such issues in view, the present study was undertaken to explore the importance of EI by exploring its relationship with certain other factors which are essential for any employee to perform effectively in the present competitive environment. An attempt has also been made to assess the impact of a person's age and gender on his emotional intelligence.

## LITERATURE REVIEW

Emotional intelligence has its root in Thorndike's construct of social intelligence (1920). Further development in this matter took place in 1983, when Gardner put forward the idea of inter-personal intelligence as an aspect of multiple-intelligence. It was, however, Payne (1985) who, in his doctoral work, introduced the term 'Emotional Intelligence'. The construct of EI found its way into academic literature through the scholarly efforts of Salovey and Mayer (1990). They claimed that EI is an indicator of the success of one's professional and personal life and consisted of four dimensions: perception and appraisal of emotions, facilitation of thoughts using emotions, understanding emotional knowledge, and regulating emotional thoughts and display toward goals.

In most of the studies, EI has been viewed as a factor which has a potential to contribute to more positive attitude, behaviour, and outcome. It has been conceptualised as an ability (Ciarrochi, Chan, and Caputi, 2000; Mayer, Salovey, and Caruso, 2000) or a personality trait (Schutte, *et al*., 1998); the ability to use emotions adaptively (Salovey and Mayer, 1990; Mayer, Salovey, and Caruso, 2000). Bar-On (2006) has viewed EI as a non-cognitive intelligence which is defined as an array of emotional, personal, and social abilities and skills that influence an individual's ability to cope effectively with the environmental demands and pressures. Empirical studies have found that EI has strong relationship with crucial work-related aspects and, hence, must be considered as an important aspect of any organisation (Goleman, 1995). A closely-related stream of research has focussed on explaining and predicting the outcomes of job behaviour and attitudes in various occupations, and has emphasised that EI predicts better performance (Sitarenios, 1998).

### Emotional Intelligence and Job Satisfaction

Job satisfaction has been described as an extremely complex construct so that no single model can unfathom its meaning (Hagerdron, 2000). It refers to the evaluation of the job in all its ramifications, and has, as its antecedents, factors such as financial rewards, resources to get the job completed, interest, challenge, use of valued skills, variety, occupational prestige, autonomy, relations with co-workers and supervisors, involvement in decision-making, and comfort factors, such as working hours, physical environment, and travel time (Adeyemo, 2007). Locke (1976) has defined job satisfaction as a pleasurable or positive emotional state, resulting from the appraisal of one's job or job experience. It is affected by various factors, such as promotional avenues, opportunity to interact with peers, variety of duties, and high degree of control over work methods (Villard, 2004). Study by Maghradi (1999) has demonstrated the importance of job satisfaction to an organisation in terms of its efficiency, productivity, employee relations, absenteeism, and turnover.

While Smith, Kendall, and Hulin (1969)

have found that job satisfaction is positively related to the construct of EI. Schutte, *et al*. (1998) discovered a positive relationship between EI and work attitude. Studies have also shown that people with a high level of EI lead more effectively (Caruso, Mayer and Salovey, 2002), are efficient job-performers, engage in organisational citizenship behaviour, feel satisfied with their job, and are committed, both to their career and their organisation. In short, EI is strongly associated with work-attitude, job performance, and job satisfaction.

EI can create a pleasant workplace and affect employees' job satisfaction, efficient management, and organisational development (Patra, 2004). Most of the people respond differently when they are under stress. In these circumstances, their emotions over-ride their mental performance. By developing EI, individuals learn to study their reactions and to control their emotional patterns. Once put in right direction, emotions create assurance and commitment, which, in turn, increase job satisfaction and productivity (Cooper, 1998). It is found that gradual learning of skills to control and to respond correctly to emotions, improves communication at workplace, increases productivity, and decreases inter-personal problems (Caruso, Mayer, and Salovey, 2002).

**Emotional Intelligence and Team-Spirit**

A team consists of a number of persons, having complementary competencies (abilities, skills, and knowledge), are committed to common performance goals and working relationship for which they are mutually accountable. According to Griffen (1993), team is a community formed with many people, who complement the abilities of each other, are responsible to each other, and try to achieve the aim with group effectiveness. Teams are a growing phenomenon at today's workplace and are an extremely popular work design in all types of organisations (Stevens and Campion, 2006), because they have better potential to provide benefits, provided the team members are selected carefully so that a strong trend in management is observed by re-organising companies into teams over the recent years (Luca and Tarricone, 2001).

According to Harris and Harris (1996), team work is a group with a common purpose through which members develop mutual relationship for achievement of goals/ tasks. A team is more creative and productive when it achieves a high level of participation, co-operation, and collaboration among the members (Druskat and Wolff, 2001). They suggest three basic conditions that must be present in a team: trust among the members, group identity, and group efficacy. At the heart of these conditions lie an individual's emotions. Thus, the conditions essential for effective team work can only arise in an environment where emotions are properly-handled among the team members.

Goleman (1998) suggested that individuals who had developed EI would be able to communicate better, thus, making their intentions more clear. He emphasised that people with better EI would be well-suited to deal with team work due to their enhanced social skills. One important element in teamwork is EI, because team's success depends not only on the intellect but also on the quality of interaction between the team members. The extent theory on EI (Goleman, 1995; and Salovey and Mayer, 1990) suggested several individual characteristics that underlie success in teams, on the basis of an individual's ability to understand and manage his emotions. Druksat and Wolff (2001) claim that the members who have high EI improve the EI of the group. Furthermore, if one has low EI, he reduces the EI level of the entire group (Cooper, 1998).

**Emotional Intelligence and Responsiveness to Change**

A debate has continually existed over the reactions that individual employees have towards change. Some researchers have argued that employees tend to resist organisational change in general (Judson 1991; Odiorne 1981; Strebel 1996). Dent and Goldberg (1999) observed that the term 'resistance' should be removed from the literature as it does not reflect the complex interactions that occur during the change. Piderit (2000) takes a more conciliatory view, suggesting that the ambivalence that employees feel towards change does not always produce resistance, but generally produces confusion. Examining organisational behaviour, researchers have identified change as having the potential to elicit a broad range of emotions whether the transformation is a major re-structure or a minor re-organisation (Mossholder et al., 2000). Change can be perceived either as a challenge or an opportunity, and triggers positive emotions such as excitement, enthusiasm, and creativity (Goleman, Boyatzis, and McKee, 2002). Change, may, however, be threatening and create negative emotions, such as anger, fear, anxiety, cynicism, resentment, and withdrawal (French, *et al.*, 1993). Obviously, change poses significant challenges to both, those who implement and thosewho are affected by those (O'Neill and Lenn, 1995).

Ashkanasy, *et al*. (2002) discuss the advantages of emotionally intelligent individuals in coping with stress in the workplace and identify one of the possible causes of stress to be the organisational change. The only article to examine the importance of EI in organisational change is Huy's (1999), which suggests that EI assists individuals to adapt to and facilitate changes in receptivity, mobilisation, and learning during change.

Emotional understanding contributes to coping with stress and change at the workplace (Jordan, Ashkanasy, and Hartel, 2002; Ryan and Macky, 1998). The notion put forward by some EI scholars is that an individual with high EI may be more effective in managing change than the one having low EI (Goleman, 1998). Emotions have also been shown to determine affect-driven behaviour, such as impulsive acts, organisational citizenship behaviour, and transient effort (Weiss and Cropanzano, 1996).

**Emotional Intelligence and Gender and Age**

Studies have been conducted on whether or not males and females differ significantly in the general level of EI. Goleman (1998) has argued that there existed no gender differences in EI, admitting that while men and women might have different profiles of strengths and weaknesses in different areas of EI, the overall level of their EI is same. However, studies by Mayer and Geher (1996), and, recently, by Mandell and Pherwani (2003) have found that women score higher on measures of EI than men, both in professional and personal settings. Brackett, Mayer, and Warner (2004) have found that females score higher than males on EI when measured by the Mayer-Salovey-Caruso Emotional Intelligence Test. However, when using self-report measures, such as the Bar-On Emotion Quotient Inventory (EQ-i) and the Self-Report EI Test (SREIT), they have found no evidence of gender differences.

Some scholars have found that while women are more aware of their emotions, show more empathy, and are more adept inter-personally, men are more self-confident optimistic, and can handle stress more effectively. Generally, both males and females have equal abilities to develop their EI (Dimitriades, 2007), however, men and women as a group tend to have a shared gender-specific profile of strong and weak points (Bar-On, 2006). Brackett, Mayer, and Warner (2004) found that the EI was related to positive life experiences, in which an experience was an amalgamated variable. In their study, they examined everyday life and EI, and found that there was a high correlation between negative coping skills and low EI for men. This was not the case for the female population in the study. The authors suggest that this could be related to the fact that men have problems identifying and expressing emotions. In their prior meta-analysis, Van Rooy and Viswesvaran (2004) conceptualised EI as the set of abilities (verbal and nonverbal) that enable a person to generate, recognise, express, understand, and evaluate their own, and other's emotions in order to guide thinking and action that successfully cope with environmental demands and pressures. It was also found that the age of the participants was strongly related to higher EI and work performance (Higgs, 2004).

Thus, emotional intelligence should be an important trait of any employee which can make him a balanced personality to work effectively in any organisation. On the other hand, if any organisation is to flourish in the competitive world, it should have employees who are satisfied with their job, reflect positive response towards the changes, and are successful team players. The above studies support the importance of the above-mentioned factors and their relationship with EI individually, but none of them has explored the level of employee's EI and its impact on his job satisfaction, ability to work in team, and the ability to handle change successfully. The present study was undertaken to bridge the gap in this important area of organisational behaviour.

## RESEARCH OBJECTIVES AND HYPOTHESES

The study has three primary objectives:

1. To evaluate the role of EI in job satisfaction;
2. To ascertain the contribution of EI in improving team spirit; and
3. To examine the relationship between EI and responsiveness to change.

The secondary objective of the study is to examine the relationship of an employee's EI with his age and gender.

The following hypotheses were formulated for testing:

**$H_{01}$:** The level of an employee's emotional intelligence has no association with his job satisfaction.

**$H_{02}$:** The level of his emotional intelligence has no association with his team spirit.

**$H_{03}$:** The level of his emotional intelligence has no association with his responsiveness to change.

Hypothesis 3 is to be tested on two parameters: (1) EI vs. pre-disposition towards change; and (2) EI vs. gut feeling towards change

## RESEARCH METHODOLOGY

An exploratory research was conducted with the non-probability sampling method. A sample of 100 employees, working in the National Capital Region of Delhi, was taken. The primary data was collected by using widely accepted batteries (standard scoring key included) pertaining to the employees' EI (from *Practical Guide to Emotional Intelligence* by Dalip Singh, (2001), team-playing attitude (from University of South Australia: '*Working in Teams' On-line Workshop:* Handout: *Teamwork Skills Questionnaire.)*, responsiveness to change *(from Ergonomics. 1993; 36(6):627-44)*, and for measuring job satisfaction, a structured questionnaire was prepared. In order to identify the important attributes which determine the employee's job satisfaction, 19 employees working in various organisations were interviewed. On the basis of their responses, a list of 20 attributes was prepared (see **Exhibit 1**) for constructing the final questionnaire. The secondary data was gathered from the relevant published sources.

**Exhibit 1**

List of Attributes considered for the Survey

**(a) Job Satisfaction**

1. Growth opportunities
2. Working environment
3. Reward and recognition
4. Future of organisation
5. Unbiased approach toward gender
6. Treating everyone equally
7. Treating employee with respect and dignity
8. Conducting business in an open and honest manner
9. Providing clear direction and effective feedback
10. Regular performance appraisal
11. Job satisfaction level
12. Compensation satisfaction level
13. Feeling of job security
14. Working Overtime
15. Communication
16. Paid fairly well as compared to others

17. Medicare
18. Amount of vacation
19. Holiday allowance
20. Retirement programme

**(b) Responsiveness to Change**

1. Thoroughness
2. Control
3. Hesitancy
4. Social resistance
5. Optimising
6. Principled
7. Instinctiveness

**(c) Team Spirit**

1. Opinion
2. Contribution
3. Problem identification
4. Initiatives
5. Suggest directions
6. Listening actively
7. Positive feedback
8. Compromise
9. Help relieving tension
10. Talking
11. Arrangements
12. Track happenings
13. Solution-provider
14. Responsibility
15. Having good time in team

The data analysis was done using descriptive statistics (frequency distribution and cross-tabulation) and bivariate correlation. Hypothesis testing was done using the Chi-square test for each category, computing averages, and percentages of the values obtained.

### Hypothesis Testing

For testing Hypothesis 1, the respondents' EI and job satisfaction level were measured (**Table 1**) and then the Chi-square test was applied to check the relationship between the two (**Table 2**).

**Table 1**
**Job Satisfaction and Emotional Intelligence Classification: Cross-tabulation**

| Measures of Job Satisfaction | Measures of Emotional Intelligence | | | | |
|---|---|---|---|---|---|
| | High | Average | Below Average | Poor | Total |
| 'Not at all satisfied' | 0 | 0 | 1 | 0 | 1 |
| 'Not very satisfied' | 1 | 7 | 0 | 1 | 9 |
| 'Somewhat satisfied' | 5 | 32 | 3 | 2 | 42 |
| 'Very satisfied' | 8 | 24 | 2 | 0 | 34 |
| 'Extremely satisfied' | 4 | 7 | 1 | 2 | 14 |
| Total | 18 | 70 | 7 | 5 | 100 |

**Table 2**
**Application of Chi-square Test**

| Particulars | Value | Df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 22.430(a) | 12 | 0.033 |
| Likelihood Ratio | 15.858 | 12 | 0.198 |
| No. of Valid Cases | 100 | | |

As shown in the table, while the calculated value of $\chi 2$ is 22.430, its table value is 21.00. Since the calculated Chi-square value is greater than its table value, $\mathbf{H_{01}}$ is rejected. This suggests that EI is positively correlated with the level of job satisfaction. This is further supported by the correlation value of +0.123, significant at 0.05 level (**Table 9**).

For testing Hypothesis 2, the team spirit indicators of respondents were measured and cross-tabulated with their EI scores (**Table 3**). The Chi-square test was again applied (**Table 4**).

As shown in the table, the calculated value of $\chi 2$ is 64.883, its table value of $\chi 2$ is 12.60. Since the calculated value of the Chi-square is greater than its table value, $\mathbf{H_{02}}$ is rejected, suggesting that EI is positively related with team spirit and the result becomes stronger with a correlation value of 0.486, significant at 0.01 level **(Table 9)**.

For verifying Hypothesis 3, the relationship

**Table 3**
**Team Spirit Score and Emotional Intelligence Classification: Cross-tabulation**

| Team Spirit Classification | EI Scores | | | | Total |
|---|---|---|---|---|---|
| | High | Average | Below Average | Poor | |
| Very Effective Team Player | 9 | 9 | 0 | 0 | 18 |
| Effective Team Player | 9 | 57 | 3 | 0 | 69 |
| Learn | 0 | 4 | 4 | 5 | 13 |
| Total | 18 | 70 | 7 | 5 | **100** |

**Table 4**
**Application of Chi-square Test**

| | Value | df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-square | 64.883(a) | 6 | 0.000 |
| Likelihood Ratio | 48.230 | 6 | 0.000 |
| No. of Valid Cases | 100 | | |

between the level of employees' EI and their responsiveness to change was measured on the basis of two parameters (pre-disposition towards change and gut feeling towards change) and was cross-tabulated with the level of the respondents' EI (**Tables 5** and **7**). For checking the nature of relationship existing between the two, the Chi-square test was applied (**Tables 6** and **8**).

As shown in table 6, while the calculated value of $\chi 2$ is 41.828, its table value is 21.00. The calculated value of Chi-square being greater than its table value suggests that $\mathbf{H}_{03}$ is rejected. Thus, EI is associated with responsiveness to change in the context of pre-disposition towards change. This is further supported by the correlation value -0.551, significant at 0.01 level, but the relationship disagrees to our assumption of positive correlation with EI. This can be interpreted as an inverse relation, i.e., the higher the EI, the lesser shall be the pre-disposition towards change. In other words, people having higher EI tend to change, although at a slower pace.

**Table 5**
**Pre-disposition towards Change and Emotional Intelligence Classification: Cross-tabulation**

| | Emotional Intelligence Scores | | | | Total |
|---|---|---|---|---|---|
| Pre-disposition Towards Change | High | Average | Below Average | Poor | |
| INF | 14 | 19 | 0 | 0 | 33 |
| QINF | 3 | 33 | 2 | 0 | 38 |
| QFREI | 1 | 8 | 3 | 2 | 14 |
| FREI | 0 | 8 | 2 | 2 | 12 |
| VFREI-Always | 0 | 2 | 0 | 1 | 3 |
| Total | 18 | 70 | 7 | 5 | 100 |

INF=Infrequent, QINF=Quite infrequent, QFREQ=quite frequent, FREQ=Frequently, VFREI=Very frequently

**Table 6**
**Application of Chi-square Test**

| | Value | Df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-square | 41.828(a) | 12 | 0.000 |
| Likelihood Ratio | 41.645 | 12 | 0.000 |
| No of Valid Cases | 100 | | |

**Table 7**
**Emotional Intelligence vs. Gut Feeling towards Change: Cross-tabulation**

| Gut Feeling | EI Classification | | | | Total |
|---|---|---|---|---|---|
| | High | Average | Below Average | Poor | |
| VIF-Never | 5 | 0 | 0 | 0 | 5 |
| INF | 6 | 11 | 0 | 0 | 17 |
| QINF | 6 | 35 | 2 | 0 | 43 |
| QFREQ | 1 | 18 | 3 | 0 | 22 |
| FREQ | 0 | 4 | 2 | 2 | 8 |
| VFREQ-Always | 0 | 2 | 0 | 3 | 5 |
| Total | 18 | 70 | 7 | 5 | 100 |

INF = Infrequent, QINF = Quite infrequent, QFREI = Quite frequent, FREQ = Frequently, VFREI = Very frequently

**Table 8**
**Application of Chi-square Test**

| | Value | Df | Asymp. Sig. (2-sided) |
|---|---|---|---|
| Pearson Chi-Square | 80.667(a) | 15 | 0.000 |
| Likelihood Ratio | 57.738 | 15 | 0.000 |
| No of Valid Cases | 100 | | |

As shown in the table, at 15 degrees of freedom, the calculated value of $\chi2$ is 80.667, whereas its table value of $\chi2$ is 25.00. Thus, the Chi-square calculated is greater than the table value, suggesting the rejection of $\mathbf{H}_{03}$. Thus, EI is associated with responsiveness to change in the context of the gut feeling towards change. This is further supported by the correlation value -0.660, significant at 0.01 level, but the association does not support our assumption of positive correlation with EI. This can be interpreted as strong inverse relation - higher the EI, the lesser is the dependence on the gut feeling to respond to the change; or people having higher EI show reduced tendency to act on the gut feeling and respond to the change in a thorough and planned way.

The correlation result (+0.568) is also depicted in **Figure 1**. It is also noted that EI is positively correlated to age, supporting the view that EI increases with age. Moreover, EI is negatively related to responsiveness to change for both the selected parameters, viz., pre-disposition towards change (-0.551) and gut feeling to respond to the change (-0.660). This indicates an inverse

**Table 9**
**Correlations (Bivariate Pearson' Correlation Test, SPSS Ver. 12.0)**

| | | Age | Emotional intelligence | Pre-disposition towards change | Gut feeling to respond to the change | Job satisfaction level | Team spirit |
|---|---|---|---|---|---|---|---|
| Emotional Intelligence | Pearson Correlation | 0.568(**) | 1 | | | | |
| | Sig. (2-tailed) | 0.000 | | | | | |
| | N | 100 | 100 | | | | |
| Pre-disposition towards Changes | Pearson Correlation | -0.745(**) | -0.551(**) | 1 | | | |
| | Sig. (2-tailed) | 0.000 | 0.000 | . | | | |
| | N | 100 | 100 | 100 | | | |
| Gut feeling to respond to the change | Pearson Correlation | -0.495(**) | -0.660(**) | 0.509(**) | 1 | | |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.000 | | | |
| | N | 100 | 100 | 100 | 100 | | |
| Job satisfaction level | Pearson Correlation | 0.320(**) | 0.123(*) | -0.230(*) | -0.043 | 1 | |
| | Sig. (2-tailed) | 0.001 | 0.224 | 0.021 | 0.673 | . | |
| | N | 100 | 100 | 100 | 100 | 100 | |
| Team spirit | Pearson Correlation | 0.344(**) | 0.486(**) | -0.209(*) | -0.363(**) | 0.126 | 1 |
| | Sig. (2-tailed) | 0.000 | 0.000 | 0.037 | 0.000 | 0.212 | 0.000 |
| | N | 100 | 100 | 100 | 100 | 100 | 100 |

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

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

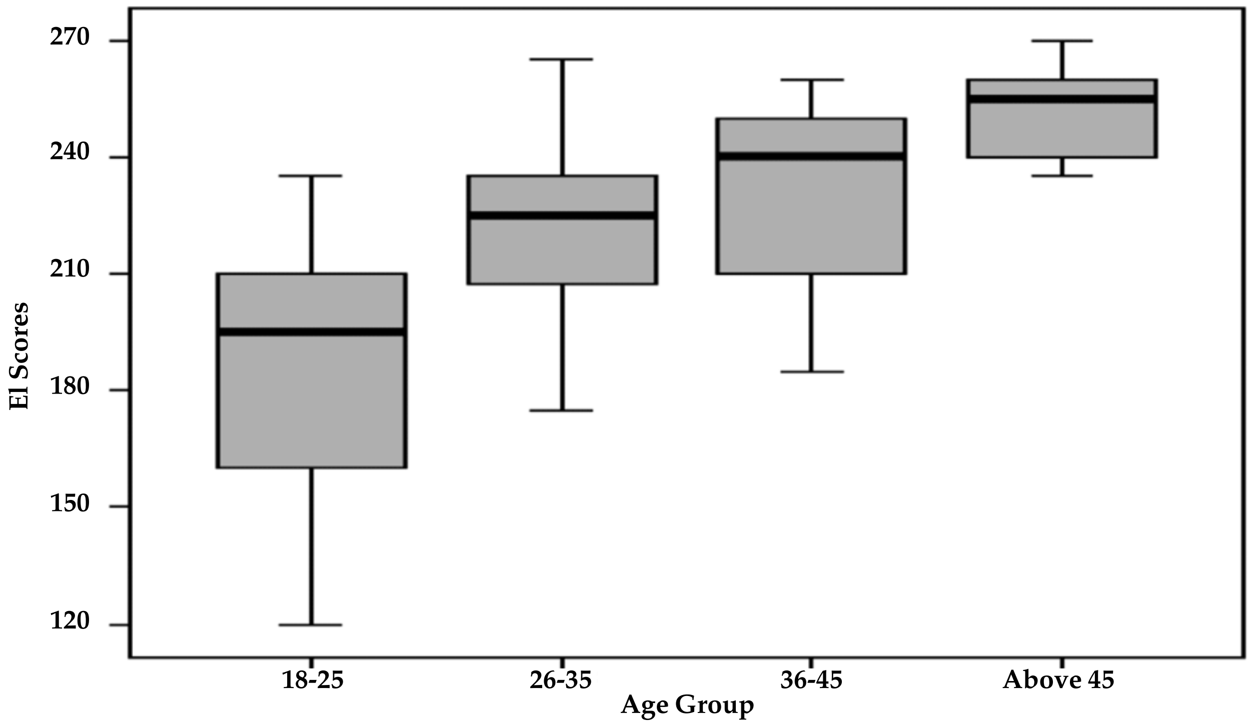


**Figure 1**
**Correlation between Age and Emotional Intelligence**

relationship, suggesting that people with a high EI level do not pre-dispose towards change and if they do, they do not rely on the gut feeling to respond to the change.

It is also noted that EI has a positive correlation (+0.486) with team spirit, suggesting that people with higher EI level are better at team spirit. Age was also found to have a firm negative correlation with pre-disposition to change (-0.745) and gut feeling (-0.495) (Table 9), indicating that as people grow older, they prefer less to make changes and rely less on their gut feeling to respond to the change. It is interesting to observe a positive correlation between pre-disposition towards change and the gut feeling (+0.509) (Table 9). However, explicit influence of gender was not clearly evident on the level of EI (**Figure 2**).

## CONCLUSION

The study has revealed that EI is positively correlated with age, job satisfaction level, and team spirit, and negatively correlated with the responsiveness to change. Moreover, it is affected by age, it boosts as people grow older. Explicit influence of gender was not clearly evident on the level of EI. The EI measurement can serve as a tool to understand the employees and their personality, perception, and attitudes towards professional and personal life.

A few suggestions might help organisations to be more efficient and competitive. The use of EI measurement through a reliable and standard measure can help the organisation to build an efficient workforce. Employees can be assessed for team spirit development programmes to suit the need of the positions they hold in the organisation. EI tool can be effective for an organisation's HR department for succession planning by identifying emotionally stable, motivated, professionally qualified, and socially-empowered employees for taking key positions in the organisation.

## REFERENCES

Adeyemo, D.A. (2007), "Emotional Intelligence and

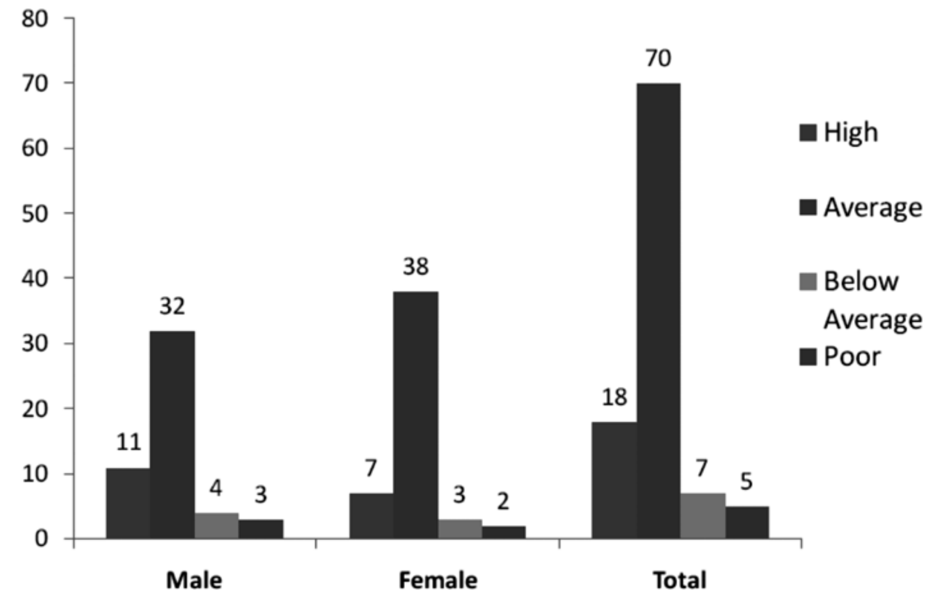


**Figure 2**
**Gender Distribution and Level of Emotional Intelligence**

the Relationship between Job Satisfaction and Organisational Commitment of Employees in Public Parastatals in Oyo State, Nigeria", *Pakistan Journal of Social Sciences,* Vol. 4, No. 2, pp. 324-330

Ashkanasy, N.M., C.E.J. Hajtel, and C.S. Daus (2002), "Diversity and Emotions: The New Frontiers in Organisational Behaviour Research", *Journal of Management,* Vol. 28, No. 3, pp. 307-338

Bar-On, R. (2006), "The Bar-On Model of Emotional-Social Intelligence (ESI)". *Psicothema,* Vol. 18, pp. 13-25

Brackett, Marc A., John D. Mayer, and Rebecca M. Warner (2004), "Emotional Intelligence and its Relation to Everyday Behaviour", *Personality and Individual Differences*, Vol. 36, pp. 1387–1402

Caruso, D., J. Mayer, and P. Salovey (2002), "Emotional Intelligence and Emotional Leadership", *Multiple Intelligence and Leadership* (Mahwah, NJ: Lawrence Erlbaum Associates), pp. 55-74

Ciarrochi, J., A. Chan, and P. Caputi (2000), "A Critical Evaluation of the Emotional Intelligence Construct", *Personality and Individual Differences,* Vol. 28, pp. 539–61

Cooper, R. (1998), "Sentimental Value", *People Management* (London), Vol. 4, No. 7, pp. 48-50

Dent, E.B., and S.G. Goldberg (1999), "Challenging Resistance to Change", *Journal of Applied Behavioural Sciences*, Vol. 35, No.1, pp. 25-41

Dimitriades, Z.S. (2007), "Managing Emotionally Intelligent Service Workers; Personal and Positional Effects in Greek Context, *Journal of European Industrial Training*, Vol. 31, No. 3, pp. 223-240

Druskat, V.U., and S.B. Wolff (2001), "Building the Emotional Intelligence of Groups", *Harvard Business Review,* Vol.79, No. 3, pp. 81-90

French D.J., R.J. West, J. Elander, and J.M. Wilding (1993), "Decision-making Style, Driving Style, and Self-reported Involvement in Road Traffic Accidents", *Ergonomics,* Vol. 36, No. 6, pp. 627-644

Gardner, H. (1983), *Frames of Mind* (New York: Basic Books)

Goleman, D. (1995), *Emotional Intelligence: Why it Can Matter More Than IQ* (New York: Bantam)

Goleman, D. (1998), *Working with Emotional Intelligence* (New York: Bantam)

Goleman, D., R. Boyatzis, and A. McKee (2002), *Primal Leadership: Realizing the Power of Emotional Intelligence* (Boston, MA: Harvard Business School Publishing)

Greenstein, F.I. (2001), *The Presidential Difference: Leadership Style from FDR to Clinton* (NJ: Princeton University Press)

Griffen, R.W. (1993), *Management* (Boston, MA: Houghton Mifflin Company)

Hagerdron, L.S., ed. (2000), "Conceptualizing Faculty Job Satisfaction: Components, Theories, and Outcomes", *What Contribute to Job Satisfaction among Faculty and Staff?* (San Francisco: Jossey Bass)

Harris, P.R., and K.G. Harris (1996), "Managing Effectively Through Teams", *Team Performance Management: International Journal*, Vol. 2, pp. 23-36

Higgs, M. (2004), "A Study of the Relationship between Emotional Intelligence and Performance in the UK Call Centres", *Journal of Managerial Psychology*, Vol. 19, No. 4, pp. 442-454

Huy, Q.N. (1999), "Emotional Capability, Emotional Intelligence, and Radical Change", *Academy of Management Review,* Vol. 24, No. 2, pp. 325-345

Judson, S. (1991), *Changing Behaviour in Organisations: Minimizing Resistance to Change* (Cambridge, MA: Basis Blackwell)

Langton, N., S. Robbins, and T. Judge (2010), *Organisational Behaviour: Concepts, Controversies, Applications,* V Canadian edn. (Toronto, Ontario: Pearson Education Canada)

Luca, J., and P. Tarricone (2001), "Does Emotional Intelligence affect Successful Team Work?", *Paper* presented at the 18th Conference of the Australasian Society for Computers, Melbourne, Australia

Maghradi, A.S. (1999), "Assessing the Effect of Job Satisfaction on Managers", *International Journal of Value-based Management,* Vol. 12, No. 1, pp. 1-12

Mandell, B., and S. Pherwani (2003), "Relationship between Emotional Intelligence and TL Style: A Gender Comparison", *Journal of Business &Psychology*, Vol. 17, No. 3, pp. 387-404

Mayer, J.D., P. Salovey, and D.R. Caruso (2000)," Models of Emotional Intelligence", in R. J. Sternberg (ed.), *Handbook of Intelligence* (Cambridge, England: Cambridge University Press), pp. 396–420

Mayer, J.D., and G. Geher (1996), "Emotional Intelligence and the Identification of Emotion", *Intelligence*, Vol. 22, pp. 89-113

Mossholder, K.W., R.P. Settoon, A.A. Armenakis, and S.G. Harris (2000), "Emotion during Organisational Transformations: An Interactive Model of Surviver's Reactions", *Group and Organisation Management,* Vol. 25, No. 3, pp. 220-243

Odiorne, G.S. (1981), *The Change Resisters: How They Prevent Progress and What Managers Can Do About Them* (Englewood Cliffs, NJ: Prentice-Hall)

O'Neill, H.M., and D.J. Lenn (1995), "Voices of survivors: Words that Downsizing CEOs Should Hear", *Academy of Management Executive,* Vol. 9, No. 4, pp. 23-34

Patra, S. (2004), "Role of Emotional Intelligence in Educational Management", *Journal of Indian Education*, Vol. 30, No. 1, pp. 98-104

Payne, Wayne Leon (1985), *A Study of Emotions: Developing Emotional Intelligence*", A Doctoral thesis submitted to the Union Institute, Cincinnati, Ohio (USA)

Piderit, S.K. (2000), "Rethinking Resistance and Recognising Ambivalence: A Multi-dimensional View of Attitudes toward an Organisational Change", *Academy of Management Review*, Vol. 25, pp. 783-794

Ryan, L., and Macky, K (1998), "Down-sizing Organisations: Uses, Outcomes, and Strategies", *Asia-Pacific Journal of Human Resources*, Vol. 36, No. 2, pp. 29-45

Salovey, P., and J.D. Mayer (1990), "Emotional Intelligence", *Imagination, Cognition, and Intelligenc*e, Vol. 9, pp. 185–211

Schutte, N.S., J.M. Malouff, L.E. Hall, D.J. Haggerty, J.T. Cooper, C.J. Golden, and L. Dornheim (1998), "Development and Validation of a Measure of Emotional Intelligence", *Personality and Individual Differences,* Vol. 25, pp. 167-177

Singh, Dalip (2001), *Emotional Intelligence at Work: A Professional Guide* (New Delhi: Response Books)

Sitarenios, G (1998), *Emotional Intelligence in the prediction of Sales Success in the Finance Industry* (Ottawa, Canada: Multi-health System)

Smith, P.C., L.M. Kendall, and C.L. Hulin (1969), *The Measurement of Satisfaction in Work and Retirement: A Strategy for the Study of Attitudes,* (Chicago: Rand McNally)

Stevens and Campion (2006), "Emotional Intelligence and Propensity to be a Team Player", *E-Journal of Applied Psychology*, Vol. 2, No. 2, pp. 19-29

Strebel, P. (1996), 'Why Do Employees Resist Change?' *Harvard Business Review,* Vol. 74, No. 3, pp. 86-92

Thorndike, R.K. (1920), "Intelligence and Its Uses", *Harper's Magazine*, Vol. 140, pp. 227-335

Van Rooy, D., and C. Viswesvaran (2004), "Emotional Intelligence: A Meta-analytic Investigation of Predictive Validity and Nomological Net", *Journal of Vocational Behaviour*, Vol. 65, pp. 71–95

Villard, J.A. (2004), *Determining the Relationship between Job Satisfaction of County Extension Unit Employees and the Level of Emotional Intelligence of Extension County Chairs* (LINK Ltd., Ohio)

Weiss, H.M., and R. Cropanzano (1996), "Affective Events Theory: A Theoretical Discussion of the Structure, Causes, and Consequences of Affective Experiences at Work", *Research in Organisational Behaviour,* Vol. 18, pp. 1-74

Zeidner, M., G. Matthews, and Roberts (2004), "Emotional Intelligence in the Work Place: A Critical Review", *Applied Psychology: An International Review,* Vol. 53, No. 3, pp. 371–399

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# TECHNICAL EFFICIENCY ANALYSIS FOR DECISION-MAKING
## The Case of an Air-Conditioner Manufacturing Company

**Satyanarayanan Jambunathan*, Amalendu Jyotishi** and E. Meera*****

**Abstract**

*Manufacturing companies often face dilemma during the short-run surge in demand, where it is desirable to infuse technological changes or capital investment to enhance the production. However, with the changes in variable factors, like labour and raw material, and the minimum re-organisation of production process, the firm has to consider the option where higher production level can be achieved. The measurement of efficiency in such cases enables a firm to determine the optimum level of efficiency in view of its potential. In this study, we analyse the technical efficiency, illustrating the case of Blue Star Ltd. This case is analysed by measuring technical efficiency of net sales with respect to raw material and labour cost as determining variables, in a hypothetical scenario of one-time short-run surge in demand. The results are further examined from the perspective of decision-making.*

**Key words:** ***Production function, Technical efficiency, Decision-making, Blue Star, India***

## INTRODUCTION

It is often difficult for a manufacturing company to decide, whether to accept a new order which is of one-time nature. The new order would involve immediate increase in the production. In such a situation, the firm's measurement and the level of efficiency from its own potential would help to recognise its capacity to deliver in the short-run. However, a simple measure of efficiency that considers only the ratio of the output to the input would fail to recognise the magnitude and the vector of variables impacting the output. Besides, there would also be a question on the robustness of such results. To measure it, a deeper understanding of efficiency and appropriate methods, would be useful. In this paper, we attempt to do so with an illustration considering the case of an air-conditioner manufacturing company, namely, Blue Star Ltd. Through a few hypothetical combinations, the case is formulated and analysed.

In the process of analysing the short-run production situation, we illustrate the application of the law of variable proportion, and the measurement of efficiency, especially the technical efficiency.

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## ABOUT THE ORGANISATION

Founded in 1943, Blue Star is India's largest air-conditioning company, with an annual turnover of ₹ 25,740 million[1]. It has a network of 29 offices, 5 modern manufacturing facilities, with over 700 dealers and around 2,600 employees[2]. It claims to fulfill the air-conditioning need of a large number of customers and to have established leadership in the field of commercial refrigeration. Skyscrapers, such as Air India building, Express towers, and the Oberoi Hotel, Mumbai, are the few names from the long list of the projects that Blue Star has executed over the years. Blue Star's production has been on continuous rise over the years. It has foreign collaborations in the area of technological advancement. Its production has increased over five times during the last decade.

Its share capital has not undergone much change since March 2006. But the reserves have increased considerably, from ₹15.472 million (March 2006) to ₹47.369 million (2010). Its total debt decreased from ₹7.587 million to ₹0.892 million from the period. Further, except the buyback of shares in 2000, 2002, and 2003, the company has not issued any additional share capital, for the past 10 years. Blue Star, thus, provides an interesting case to analyse the efficiency of a firm, especially in the context of short-run surge in demand.

## PREMISE OF THE CASE

Let us put the situation of short-run surge in demand from a hypothetical case. Suppose, company 'X' which has a large requirement of air-conditioning plants for their new realty development project, is considering Blue Star as a viable vendor. X's requirement is to procure facility for worth ` 1,000 million. The time-frame specified for Blue Star is 6 months as its own dead line for the completion of the realty project is also nearing.

X's Expression of Interest is appreciated by the head of sales for Blue Star, but before agreeing to the terms of supply, the head of the sales department would like to take the opinion from certain other departments, such as operations and finance, and the company's General Manager, as the value of the order is high and the completion time is challenging.

Blue Star's is core management team is contemplating the possible new venture, but, at the same time, they would not overlook the challenges that the venture would bring to them. For a better understanding of the process and consequences, the management would like to analyse the available information before coming to any conclusion. Before carrying out the analyses, it is necessary to specify the assumptions made.

### Assumptions

1. Blue Star expects marginal change in demand for its regular product line.
2. The new order requirement is one-time and the probability of getting any order with the similar product specification in future is low.
3. Production can be increased only by increasing the variable inputs, i.e., labour and raw material.
4. The company would avoid cutting down the production level of any other product in order to facilitate the new.
4. The company is not outsourcing any of its manufacturing activity in order to meet the requirement of the new project.
5. The new project's requirement is different from their existing ones. Thus, the inventory carried over from the previous year will not be useful, or is assumed to be zero.
6. Net sales will act as a proxy to the production to ease the analysis, as the computation of production data would include the opening and ending inventory, resulting in complex computation depending upon the mode of inventory analysis the firm has adopted.

Since the variable factors can only be changed to meet the requirement, labour cost and raw material costs are considered to be the two independent variables and the net sale is a dependent variable (as a proxy for production) in the analysis. This would help in analysing the impact of above-mentioned variable factors on net sales. With the value and statistical reliability of coefficients, the requirement of new order regarding the volumes of raw material to be introduced and the required labour force, would be met. This is a fit case for understanding the 'law of variable proportion' in economics. Through econometric tools, one can also measure the technical, allocative, and economic efficiency for understanding the actual and the potential efficiency level, which would help in taking a decision in the short run.

## SHORT-RUN DECISION-MAKING PROCESS: A REVIEW

Economic planning and decision-making vary in short-run and long-run. Forecasting is frequently used in economics, but the long-run models are difficult to validate, compared to the short-run models. A sound decision-making involves analysing the problem to achieve the optimal result. The firms consider the following objectives in their decision-making; (1) consistent rational choices; and (2) value-maximising within the specified constraints. The following studies reveal the various facets of decision-making.

Lola (1981) argues that for short-run situations, it is reasonable to consider the probability of coming out ahead instead of, or in addition to, the long-run expectation. He discusses the changes that might be required, in theories of rational choice when the prescriptions of rational models violate common sense.

The Activity-based Costing (ABC) provides the information for assessing the economic consequences of resource allocation decisions. But it ignores the constrained activities and the opportunity cost of using these activities' resources in the firm's operations. Theeuwes and Adriaansen (1994) observes that ABC is unsuitable for operational decision-making since it fails to reflect the cost of resources which are fixed and the ability to incorporate the effect of constrained activities in the short-run.

Kottemann, *et al.* (2009) formalise a simulation approach that expands the scope of previous findings regarding 'unaided' versus 'what-if analysis-aided' decision-making and suggest that relative performance is quite sensitive to task conditions. John (2009) applies the concept of moral imagination to the challenges of making entrepreneurial decisions under uncertainty and examines the extent to which the entrepreneurs use moral imagination to integrate the ethical dimensions of pioneering situations into their decision-making.

Cantor, *and MacDonald* (2009) conclude that individuals who take an abstract problem-solving approach can perform better than those who take a concrete approach in the context of limited information. However, the impact of both the approaches is negligible, when complete information is available.

Kim, *et al.* (2010) propose a model of weight assignment using a pseudo-Bayesian approach that reflects investors' behavioural biases. The model allows the investors to assign weights to provide a quantitative link between some market anomalies and investors' behavioural biases. The seriousness of an anomaly can be quantitatively assessed by investigating into its dependency on weights, thus, enabling the formation of new hypotheses other than the short-run under-reaction and long-run over-reaction.

### Economic Effiency: The Concept

Conventionally, efficiency of a firm's performance is understood through the ratio of output and input wherein input productivity per unit is the under-current of efficiency. It is also computed through total-factor productivity (TFP). Increase in TFP results in long-term technology improvement or innovation. TFP is not measured directly but is referred to as the residual, called Solow residual, which accounts for the effects in total output, not input. The Solow residual accurately measures TFP growth if: (1) The production function is neo-classical, (2) There is perfect competition in factor markets, (3) The growth rate of the inputs is measured accurately. In real business cycle models, the indicator chosen for productivity is usually the TFP - a concept that derives from a neo-classical production function (a Cobb-Douglas type of production function in the overwhelming majority of cases).

Comin, *et al*. (2006) examined the direct measures of technology adoption for 75 different technologies and showed that the cross-country differences in technology are almost four-times larger than that in the income per capita. They also found that technology is positively correlated to income per capita and cross-country variation in TFP is, to a large extent, determined by the cross-country variation in physical technology. Baier, *et al*. (2006) determine the TFP growth and the relative importance of physical and human capital, using the data from 145 countries for a long period. The data from 23 countries for over 100 years were examined. The study revealed that only 14 per cent of the average output growth per worker was associated with TFP growth and the variance of TFP growth across countries was associated with negative TFP growth. Sharma, *et al*. (2007) applied the stochastic frontier production model to the lower 48 states of the U.S., from 1977 to 2000, to de-compose the sources of the TFP growth into technological progress, changes in technical efficiency, and changes in economies of scale. The study concluded that the technological progress comprised the majority of the TFP growth. They also found that differences in efficiency change explained the cross-State differences in the TFP growth.

The above studies, on the TFP used fairly long-period data. Using TFP for a short-term productivity analysis, which we undertake in the study of Blue Star, will not surface our problem requirement. Growth accounting exercises and the TFP are open to the criticism. Some economists believe that the method and its results are invalid. Rangelova (2008) made a critical assessment of the measure of TFP from a current position, which is on the grounds of the neo-classical model of economic growth. He further analysed the nature of TFP to bring out the unrealistic basis on which the concept was formed. It also examined the theoretical and applied weaknesses of TFP.

The performance of a firm is judged after utilising the concepts of economic efficiency, which is generally assumed to be made up of two components – Technical efficiency (TE) and Allocative efficiency.

Technical Efficiency is defined and measured as the ratio of the firm's actual observed output to its own maximum possible frontier output for a given level of input (Kalirajan and Shand, 1994).

Allocative Efficiency is defined as the ability and willingness of an economic unit to equate its specific Marginal Value Product (MVP) with its Marginal Cost (MC). Quantification of these measures is useful in three ways: (1) It serves as measures *per se.* These facilitate comparisons across similar economic units for over a period of time for the same unit, thus, indicating relative efficiency. (2) Where it reveals variation in efficiency among economic units for over a period of time, further analysis can be undertaken to identify the factors causing such variations. (3) It has policy implications for the improvement of efficiency (Kalirajan and Shand, 1994).

The theory of economic efficiency is widely used to identify the levels of performance in terms of technical and allocative efficiency. While arriving at the economic efficiency, researchers have used time-series and/or cross-section data. At times, these are pooled to obtain panel estimates. There are models, utilised under cross-section, firm-specific, and input-specific, over a period. The results of such models provide an insight on the economic efficiency of the given system. Such results could be used to understand the relative efficiency of the firm with its own potential.

The measurement of technical efficiency has proved difficult and complex the literature provides a range of methodologies both at the micro (or firm) level and at the macro (or industry) level. The measurement of allocative efficiency and economic efficiency is relatively less controversial. While the concept of TE is as old as neo-classical economics, the methods of measurement are not. TE basically describes the production technology. Generally, economics of production is understood using isoquants, production functions, cost functions, or profit functions. These provide four different tools of measuring technical efficiency. The basic assumption underlying the measurement of TE is that a gap normally exists between a firm's actual and potential levels of performance. This carries the conceptual implications explained with a diagram, for understanding the measurement of technical efficiency (see **Figure 1**).

In neo-classical theory, all firms operate at their potential TE at a point along the frontier FF′. Any inefficiency, therefore, will be solely allocative. Thus, if a firm operating on its frontier FF′, with inputs $X_1$ and output $Y_1$ at B; at the point of tangency with its price line PP′, it will be generating maximum profit, $g_{1.}$ At this point, there will be no allocative or economic inefficiency. It should be noted that when a firm operates on its technical frontiers, allocative (in)efficiency would be the same as economic (in)efficiency, because of the technical assumption of potential technical efficiency. Thus, if a firm is operating at a point $A_1$ on its frontier, using $X_2$ input and $Y_2$ output, its profit may be $g_2$, and its allocative/economic inefficiency will be $g_2/g_{1.}$

In practice, many firms operate at less than potential technical efficiency due to various factors that prevent them from operating at their optimum technical frontier. In such situation, a firm operates on an actual or perceived production function, which is below the potential frontier (e.g., on AA′ in the figure). At $X_2$ input, it operates at point C, produces $y_3$ output, and earns $g_3$ profit. On actual production, point C is allocatively inefficient. To maximise its profit $g_4$, it would have to operate at D, use input $x_3$, and produce $y_4$ output. At D, however, it would not achieve potential economic efficiency, for by definition, potential economic efficiency can only be achieved with potential technical efficiency, i.e., at B.

To be consistent with neo-classical production theory, efficiency in long-run equilibrium should only be measured in relation to the frontier production function (FF′). Thus, if a firm was operating at C on its actual or perceived production function, its economic efficiency would be measured by the ratio $g_3/g_1$ and the TE, by the ratio $y_3/y_{2,}$ for the given input level of $x_2$.

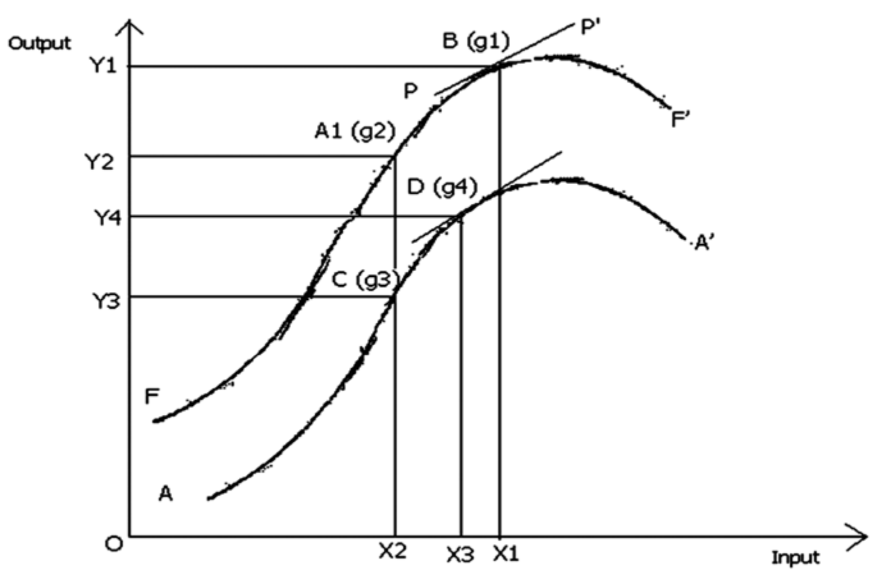


**Figure 1**
**Explanation of Allocative and Technical Efficiency**

## AN OVERVIEW OF MAJOR ESTIMATION METHODS

There is a long tradition of measuring efficiency in the applied economics literature. Both stochastic and deterministic approaches are used for measuring efficiency. The examples of deterministic approach include the early work of Farrell (1957), which follows a non-parametric estimation of the frontier. A piece-wise linear envelope is estimated such that all observed data points lie either on frontier or below it. This approach, also known as Free Disposal Hull (FDH) analysis, considers all the points lying on the frontier as efficient. Other non-parametric deterministic approach includes Data Envelopment Analysis (DEA). DEA developed by Charnes, *et al*. (1978) is a relatively new measure of performance appraisal, widely used in the service-sector firms. DEA uses linear programming methods to construct a linear envelope, bounding the data relative to which an efficient point can be located. The departure from such point allows a measure of relative efficiency.

TE has evolved through the years, generating considerable progress in the theoretical foundations of measurement and has propelled a vast amount of applied work, both in developed and developing countries, to assess the performance of different sectors and firms within sectors. The potential use of non-stochastic and non-parametric DEA approach for TE measurement, which is available, can be used specifically for a production process, which has multiple inputs and outputs. However, there are certain inherent problems in using programming approach for the present kind of studies. First, the linearity assumption in the case of linear programming does not validate the economics logic of diminishing returns to scale. Second, the deterministic nature of programming approaches neglect the uncertainties associated with the economics of production. Besides, programming approaches limit the identification of relative efficiency. Third, in programming approaches, like DEA, the level of TE is determined in relation to most dominant observations in the sample. Moreover, DEA is used for business with different geographical locations performing similar tasks where a single overall measure is not sufficient to measure performance. Thus, comparison in the firm's performance is made in relation to actual observations in the sample. In Stochastic Production Frontier (SPF) approach, on the other hand, the level of TE is measured in relation to its own potential, which is not observable in the sample. Therefore, while DEA can facilitate identification of benchmark of excellence in a given sample of observations, the SPF approach can indicate whether a firm's performance is adequate in terms of realising its own potential. Fourth, while DEA is extremely sensitive to selection of variables and data errors, the SPF approach can be used for testing the various hypotheses concerning technological parameters and firm specific characteristics (Jyotishi, 2008).

Furthermore, programming approaches can be suitable when the inputs are known and the problem lies in the choice of inputs with a particular proportion, i.e., there is *a priori* information on the nature of the variables. However, such approaches are highly unsatisfactory in the case of explorative research, intended to understand nature and extent of different inputs determining the output. In other words, technical maximisation problem can be better solved by the production function approach (Dorfman, *et al*. 1958). Therefore, we consider stochastic and parametric frontier analysis, called Stochastic Production Frontier (SPF) approach for computing TE.

## METHODOLOGY

### The Basic Model

Efficiency of a firm refers to its performance in utilisation of resources at its disposal. It is either compared with the normative desired level or with that of any other firm. A firm is said to be technically efficient for a given technology, if it fully realises its own TE potential and produces on its outer-bound production frontier, within its socio-economic and physical environment. Production frontier represents the firm's production function wherein it sets a limit or outer bound on the observed levels of output or dependent variable in such a way that no observed value of output is expected to lie above the production function. If **y = f (X),** wherein, *X* represents input and *y* the output, then a firm is said to be technically efficient if:

$Y^0 = f(X^0)$

And, it is technically inefficient if:

$Y^0 < f(X^0)$

Similarly, if the function is differentiable, then the firm is allocatively efficient if:

$f_i(X^0) / f_j(X^0) = y_X / p_X$

where, $y_X$ is the marginal product and $p_X$ is the price of input *X*.

Farrell (1957) introduced the concept of TE and argued that the frontier production of a firm can be compared within the peer group and not with some arbitrary standard norms. Timmer (1971) modified the procedure in a number of ways. He used Cobb-Douglas type specification to estimate frontier output and evolved an output-based measure of efficiency (cited in Bhende, 2000).

We attempted log linear (Cobb-Douglas type production function) as well as linear functions. Specificity of using a Cobb-Douglas model is often discussed in the literature pertaining to agricultural production (Jyotishi, 2008), where uncertainty due to external factors is high. But such compelling specifications do not often arise in the context of manufacturing. This provides flexibility in choice of model based on appropriateness and statistical robustness. In our case, better results of linear functions over the log linear functions prompted us to choose a linear model. In the result and analysis section, we further justify the usage of linear model over log linear model. The functional form of the model is as follows:

$$Y_i = \beta_0 + \beta_j \sum_{j=1}^{n} x_j + \varepsilon_i$$

$Y_i$ = Total output of the ith observation.

$x_{ii}$ = jth input for the ith observation

$\beta_j$ = Coefficients of different inputs

$\varepsilon_i$ = Error term

This model can be re-written in the following format:

$$Y_i = \beta_0 + \beta_j \sum_{j=1}^{n} x_{ij} + \varepsilon_i$$

The above equation is estimated for using ordinary least square (OLS) technique to yield best linear unbiased estimates of ß coefficients. This will give the estimated figure of '*y*'.

The intercept $\beta_0$ is then corrected by shifting the function until no residual is positive and at least one of them becomes zero, by adding the largest error-term of the estimated function to the intercept. The new production function with shift in intercept is the Frontier Production Function and gives the maximum output obtainable for a given level of input denoted by $Y_i^*$. $Y_i/Y_i^*$ will give the level of technical efficiency of each firm or observation unit. Here, the efficiency level would range from 0 to 1, where 1 stands for 100 per cent efficiency.

## DATABASE

To analyse the trend and to decide the future course of action, whether to accept the new project or not, quarterly data was analysed for the period starting from Quarter1 of 2001-02 to Quarter of 3 2010-11. The data was collected from the official website of Blue Star. Thus, we gathered 39 quarters data of net sales, staff cost, and raw material cost, expressed in Indian rupee (₹). The descriptive statistics of these variables are given in **Table 1**.

**Table 1**
**Descriptive Statistics of the Variables (in ₹)**

| Variables | Mean | Std. Deviation | N |
|---|---|---|---|
| Net Sales | 3783658974.36 | 2197179169.648 | 39 |
| Labour Cost | 286202564.10 | 144732198.228 | 39 |
| Raw Material | 2846787179.49 | 1570907037.046 | 39 |

## DATA ANALYSIS AND RESULTS

We opted for a linear function over the Coubb-Douglas type log linear function because linear model showed better results in terms of coefficient of determination and statistical significance of the variables in question. Subsequently, other basic test results, such as the problems of auto-correlation, multi-colinearity, and heteroscadasticity test, appeared to be more favourable for the linear model over the log linear model. The results of all these tests are analysed below. The comparable values of the log linear models are also stated, wherever required, in order to justify the choice of the model. The Durbin-Watson value was found to be 2.134, as against 2.462 for the log linear model, suggesting that the linear model is more appropriate in dealing with the auto-correlation problem.

We also examined the existence of multi-collinearity problem among the variables in the regression model. Usually, tolerance and the inverse of it, Variance Inflation Factor (VIF), are considered as the two diagnostic factors that indicate the presence of multi-collinearity. As a rule of thumb, if tolerance value is less than 0.1 and VIF is more than 10, it is a cause of concern for the presence of multi-collinearity. However, in the models where standard error is very high, accompanied by a non-significant *t*-statistics, it would be a matter of concern even if VIF is 2.5 or tolerance is less than 0.4. In our case, *t*-value being significant, VIF 8.246, and tolerance 0.121 (see **Table 2**), we can reasonably assume the absence of multicollinearity problem.

We also attempted to identify the presence of heteroscadasticity by plotting regression standardised residuals against the dependent variable is also identified. The graph did not reveal any pattern and, hence, the problem of heteroscadasticity. Therefore, the linear model specification appears to be appropriate. The coefficient of determination being 0.97 shows the influence of these two independent variables in determining the relation. This also helps us to assume that other factors including capital are constant for the study period. This argument further gains strength from the company's history that reveals that except for the buy-back of shares in 2000, 2002, and 2003, the company has not gone for additional share issue or bonus issue for 10 years.

Using the coefficients of the independent variables and the method stated earlier, we computed the TE for each observation point. Quarter 4 of 2009-10 seems to be the most technically-efficient point, with minimum TE of 0.5, and the average of the study period was at 0.75 (**Figure 2**).

As shown in the figure, the firm was operating between 50 and 100 per cent of efficiency over the last 39 quarters. Besides, there was a gradual increase in the firm's efficiency level over the years. From about 60 per cent level of efficiency between 2001 and 2004, the firm enhanced its internal capability with 90 per cent efficiency in last two years, albeit with some decline in the first three quarters of 2009-10. It is also observed that the efficiency level usually surges in the fourth quarter due to annual adjustments in financial details. Besides, there could be seasonal aspects of business corresponding to the increasing expectation for upcoming summer season.

**Table 2**
**Coefficients of Factors Determining Net Sales**

| Model | Unstandardised Coefficients | | Standardised Coefficients | *t* | Sig. | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|
| | B | Std. Error | Beta | | | Tolerance | VIF |
| (Constant) | -3.133E8 | 1.288E8 | | -2.433 | 0.020 | | |
| Labour Cost | 4.693 | 1.155 | 0.309 | 4.065 | 0.000 | 0.121 | 8.246 |
| Raw Material | 0.967 | 0.106 | 0.692 | 9.093 | 0.000 | 0.121 | 8.246 |

*Note*: R-square =0 .975; Adjusted R-square =0 .973;

ANOVA (F statistics) significant at 1 per cent level; Durbin-Watson Value = 2.134

Dependent variable: Net sales

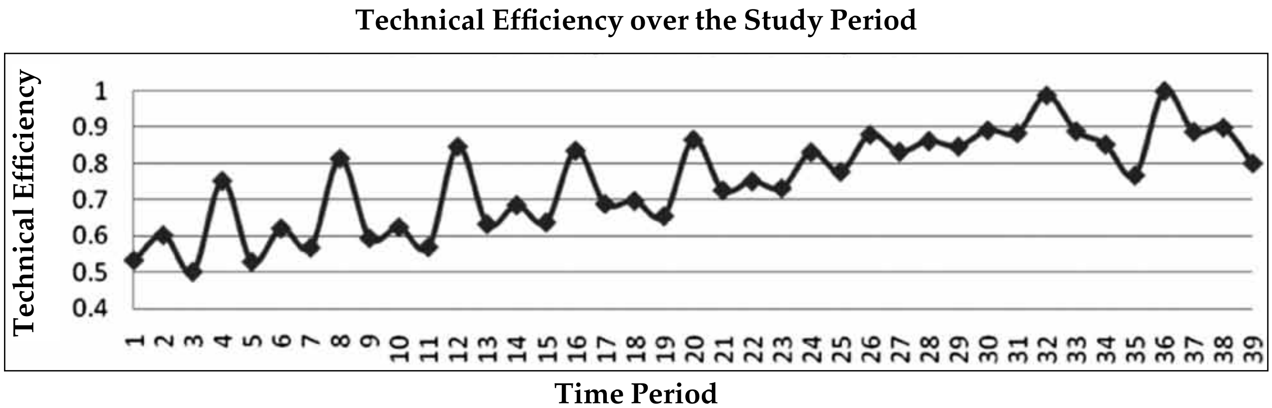


**Figure 2**
**Technical Efficiency of Blue Star from 2001-02(Q1) to 2010-11(Q3).**

Therefore, it was not surprising that the highest TE was achieved only in the fourth quarter.

## THE DECISION DILEMMA

In the given scenario, the firm was operating at around 90 per cent level of efficiency during the last eight quarters, if the organisation faces a situation of sudden surge in demand due to expression of interest by Company 'X' that requires ` 1,000 million worth business in the next two quarters, will Blue Star be in a position to accept the contract? This decision dilemma can be understood by analysing the production function of TE. By restricting ourselves to TE analysis, we attempted to identify the potential level of output with the given level of inputs. Therefore, the economics principle applied here is the Law of Variable Proportion and not the Law of Returns to Scale that attempts to understand allocative efficiency as well.

The relative efficiency of Blue Star in the first quarter was lower as compared to the other quarters. In such a situation, the management has to look at the TE, without committing any long-term capital investment for this specific purpose, knowing that the surge in demand was temporary. Therefore, the guiding principle that would help in decision-making is the gap between the potential and the actual levels of efficiency. Along with this, the decision makers also have to know how the inputs statistically contribute to the output. The asset utilisation ratios of the company over the past 10 years indicate a gradual decline (**Figure 3**). This poses a question: can the company really utilise its assets to the fullest capacity as desired to

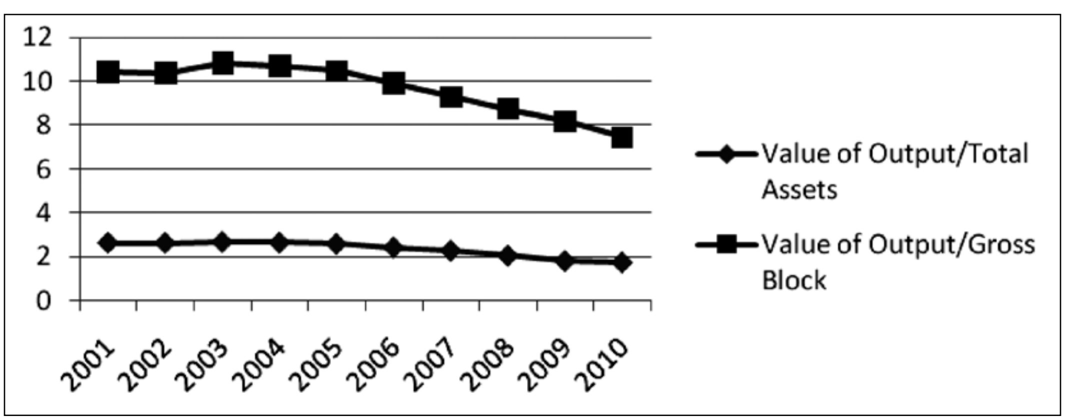


**Figure 3**
**Asset Utilisation of Blue Star – 2001 Q3 to 2010 Q3**

*Source:* Capitaline Database

meet the requirements of customer. Therefore, the decision-makers need to analyse the inputs that can be changed in the short-run before arriving at the decision. Even after meeting the client requirement, the decision may result in a series of threats and opportunities for the company.

**Opportunities**

Taking the new order and meeting the client requirement on time would result in a great opportunity for the company. It would earn high revenue and profit for the current fiscal year. With the production going up with the increase in variable proportion and direct sales to the client, Blue Star would also minimize the selling expenses. This deal may also result in a long-term alliance with the client, which would help in building and focussing a new business model based on large demand. Moreover, meeting the client's requirement, while meeting the market demand, would boost the morale and build the confidence for future contracts. Operating at full efficiency level would help in higher benchmarking, which will result in higher output, better utilisation of resources, and economy of scale.

**Threats**

Cutting down the market supply for regular products in order to maintain the costumer's demand, may result in their decreased demand in the next year, since the costumer might perceive that the product was not available in the market. Furthermore, procurement of raw material from other suppliers in order to meet the order, may result in compromising the company's procurement policy on quality of the raw material and increasing labour cost for a one-time contract, on a hire-and-fire policy may bring insecurity among the existing full-time employees.

**Deciding on the Best Course of Action**

Arriving at the best course of action is a point of discussion and a debatable issue, by looking at the current operational efficiency level. Over the last eight quarters, the efficiency level was about 90 per cent, while the average was 75 per cent. There is room to operate at 100 per cent efficiency level as achieved in Q4 of 2009-10 and would be the best operating level for any firm in any industry, although operating at the 100 per cent level has been a dream for many companies which not even the best of them has fulfilled.

There lies a possibility of taking the order and cutting down the current market supply of the existing product. However, this would have an impact on the future demand of the regular product, as discussed earlier. **Figure 4a** and **b** represents the supply curve for the firm, with the company opting to take the order, the supply curve will shift from S1 to S2, with a right-hand

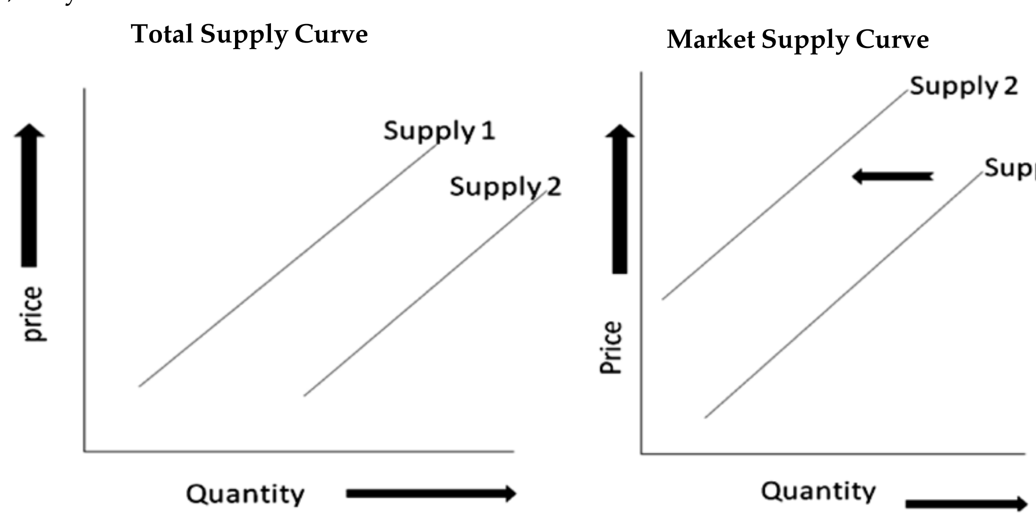


**Figure 4a & b**
**Shift of Supply with Reference to the Possible Decision for Blue Star**

side shift stating the increase in the total supply, whereas there would be a left-side shift in the market supply of the regular product, if the firm decides to cut down the regular product supply to meet the client's demand. The strategic decision that the management should take has to be based on looking at the opportunity and threats, discussed earlier. The management has also to consider at the consequences of such decision.

## CONCLUSION

We presented a case with actual data of an organisation creating a fictitious situation of increase in one-time demand. This case could be analysed using the economic principles of short-run production function and measurement of technical efficiency. Such methods are useful, especially when quick assessment has to be done to take an appropriate decision. Besides, while measuring technical efficiency, since the organisation is benchmarked against its own potential, the risks in achieving it is less. However, once decided, the tasks are much more strenuous to achieve the efficiency level. In such situation, insightful information on organisational functioning would be one of the most important factors that could help achieving the efficiency level.

One, however, has to be cautious while using these tools for taking decision. Various factors, including choice of variables, time period of data, authenticity of data, use of measurement tools, and, above all, the firm's mission and vision strategies, need to be carefully considered before making the decision.

## NOTES

1. US$ = Rs. 44.33 as on May 2, 2011
2. Blue Star's official *website: http://www.bluestarindia.com*

## REFERENCES

Bhende, M. J. (2000), *Cropping Pattern and Resource Use Efficiency in Major Crops: A Case Study of Karnataka* (Bangalore: Project Report, ADRTC, Institute for Social and Economic Change)

Baier, S.l., P.D. Gerald, Jr., and R. Tamura (2006), "How Important are Capital and Total Factor Productivity for Economic Growth?", *Economic Inquiry*, Vol. 44, No. 1, pp. 23–49

Charnes, A., W.W. Cooper, and E. Rhodes (1978), "Measuring the Efficiency of Decision-Making Units," *European Journal of Operations Research*, Vol. 2, No. 6, pp. 429-444

Comin, D., B. Hobijn, and E. Rovito (2006), "Five Facts you Need to Know about Technology Diffusion", (*NBER Working Paper* No.,11928)

Cantor, David E., and J.R. MacDonald (2009), "Decision-making in the Supply Chain: Examining Problem Solving Approaches and Information Availability", *Journal of Operations Management*, Vol. 27, No. 3, pp. 220-232

Dorfman, R., P. A. Samuelson, and R. M. Solow (1958), *Linear Programming and Economic Analysis* (New York: McGraw-Hill)

Farrell, M.J. (1957), "The Measurement of Productive Efficiency", *Journal of the Royal Statistical Society* - Series A, Vol. 120, No. 3, pp. 235-278

John, F.M. (2009), "A Field Study of Entrepreneurial Decision-making and Moral Imagination", *Journal of Business Venturing, Special Issue "Ethics and Entrepreneurship"*, Vol. 24, No. 5, pp. 491-504

Jyotishi, A. (2008), "Efficiency of Small Farm Swidden System: Cases from Orissa", *ICFAI Journal of Agricultural Economics*, Vol., 5 No. 3, pp. 72-85

Kalirajan, K.P., and R.T. Shand (1994), *Economics in Disequilibrium: An Approach from the Frontier* (New Delhi: Macmillan)

Kim, Lam, T. Liu, and W. Wong (2010), "A Pseudo-Bayesian Model in Financial Decision-Making with Implications to Market Volatility, Under- and Over-reaction", *European Journal of Operational Research*, Vol. 203, No. 1, pp. 166-175

Kottemann, J.E., K.M. Boyer-Wright, J.F. Kincaid, and F.D. Davis (2009), "Understanding Decision-Support Effectiveness: A Computer Simulation Approach", *Systems, Man, and Cybernetics*, Vol. 39, No. 1, pp. 57 – 65

Lola, L.L. (1981), "Decision- Making in the Short Run", *Journal of Experimental Psychology: Human Learning and Memory*, Vol. 7, No. 5, pp. 377-385

Rangelova, R. (2008), "A Criticism of the Concept and Measure for Total Factor Productivity", *Economic Thought Journal*, Vol. 8, No. 3, pp. 30-49

Sharma, S.C., K. Sylwester, and H. Margono (2007), "Decomposition of Total Factor Productivity Growth in U.S. States", *The Quarterly Review of Economics and Finance*, Vol. 47, No. 2, pp. 215-241

Theeuwes, J., and J. Adriaansen (1994), "Towards an Integrated Accounting Framework for Manufacturing Improvement", *International Journal of Production Economics*, Vol. 36, No. 1, pp. 85-96

Timmer, C.P. (1971), "Using a Probabilistic Frontier Production Function to Measure Technical Efficiency", *Journal of Political Economy*, Vol. 79, No. 4, pp. 776-794

# GUIDELINES FOR WRITING BOOK REVIEW

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

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

1. The reviewer should begin with a listing of the bibliographical details of the book, comprising the name(s) of the author(s), full title and sub-title of the book (as they appear on the cover), details of the place and name of the publisher, year of publication, number of pages in the book, whether hardbound or paperback, and the price, if mentioned.
2. The review can range from 1000 to 3000 words, depending on the topic and the importance of the book.
3. The review should engage with the theme of the book and the issues and problems raised, and should make a rigorous attempt to identify and assess the main set of arguments put forth by the author.
4. The review should be written in a manner and style that would qualify it as a short article in its own right.
5. The reviewer should provide a confirmation that this review has not been sent for publication elsewhere and that the authors will cede copyright, if it is accepted for publication in NICE Journal of Business.
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***Thus, the review should be an objective assessment of the book, indicating its specific strengths and weaknesses, and an overall assessment by the reviewer.***

# RELATIONSHIP BETWEEN BRAND EQUITY, CUSTOMER SATISFACTION AND CUSTOMER LOYALTY
## A Study in Passenger Car

**R.D. Sharma*, Gurjeet Kaur** and Neetu Mahajan*****

**Abstract**

*Brand equity has been identified as a valuable competitive advantage for many organisations. The brand which has high brand equity is an organisation's powerful asset and enhances customer satisfaction and loyalty. This paper examines the relationship between brand equity, customer satisfaction, and customer loyalty on the basis of the following information about consumer durables, in the city of Jammu, collected from 350 respondents, selected through systematic sampling. The study reveals that the brand equity and customer satisfaction exerts a positive influence on customer loyalty. Brand equity also reflects direct and positive impact on customer satisfaction. Moreover, the social networking sites can be used to gather group members' opinion about their favourite cars, their features, and videos, which can enable prospects to make meaningful comparisons and appropriate purchase decision.*

**Key words**: ***Brand equity, Customer satisfaction, Customer loyalty, Passenger car***

## INTRODUCTION

Brand equity has assumed much importance to organisations in recent years. It is a set of assets and liabilities linked to a brand, its name and symbol that add to or subtract from the value provided by a product or service to a firm and its customers (Aaker, 1991). Organisations develop brand as a way to attract and retain customers by promoting value, image, and lifestyle (Rooney, 1995). Although, to create a brand from scratch requires huge investment (Motameni and Shahrokhi, 1998), but brands have various advantages to the firm, such as an opportunity for successful extension, resilience against competitors, promotional pressures, and creation of barriers to competitors' entry. A brand is undoubtly an asset for a company. Its financial performance is significantly affected by its brand equity (Lassar, Mittal, and Sharma, 1995). Therefore, brand equity is considered to be one of the key drivers of the success of a firm (Prasad and Dev, 2000).

There are three view-points for considering brand equity:

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(1) the consumer perspective,

(2) the financial perspective, and

(3) the combined perspective.

While the consumer perspective subsumes the two multi-dimensional concepts, i.e., brand strength and brand value, brand strength is based on perception and behaviour of customers that allow the brand to enjoy sustainable and differentiated competitive advantage. Moreover, brand values are the gains that accrue when the brand's strength is leveraged to obtain superior current and future profits. The financial perspectives are based on the incremental discounted future cash flows that would result from a branded product's revenue over the revenue of an unbranded product (Simon and Sullivan, 1993). Finally, combined perspective incorporates both the consumer brand equity and the financial brand equity (Kim, *et al*., 2003).

Moreover, brand equity is considered as an asset (and liability) linked to a brand's name and symbol that adds to (or subtract from) the value provided by a product or service to a firm and/or that firm's customers (Aaker, 1991).

Without brand awareness there is no brand equity, as awareness is a necessary condition for the creation of brand image (Esch, *et al*., 2009). The recognition of brand awareness is the ability of a buyer to recognise or recall that the brand is a member of a certain product category (Aaker, 1991, p. 61), and brand image is the mental picture or perception of a brand of a product or service, including symbolic meanings that consumers associate with the specific attributes of a product or a service (Ogba and Tan, 2009). Brand image comprises the attributes and benefits associated with a brand that makes it distinctive, thereby distinguishing the firm's offering from that of the competitors (Davis, *et al.,* 2009). Hence, brand image is made up of brand association (Koubaa, 2008) and these associations differentiate positions and create positive feelings and attitudes toward the brand (Simms and Trott, 2006). Brand association is anything linked in memory to a brand, which includes favourability, uniqueness of perceived attributes, and benefits from the brand (Keller, 1993). However, as noted by Aaker (1991), Keller (1993), and Pappu, *et al.* (2005), consumers who hold favourable associations towards a brand, have favourable perceptions of quality and vice versa. Perceived quality has emerged as an important concern over the past few years because organisations attempt to achieve a competitive advantage through improved services (Stafford, *et al.*, 1999). According to Zeithaml (1988), perceived quality can be divided into product quality and service quality. Product quality comprised of seven dimensions, viz., performance, features, conformance with specification, reliability, durability, service ability, and fit and finish, whereas service quality includes tangibles, reliability, competence, responsiveness, and empathy.

Besides service quality, service firms attract customers through their promises. Customer's decision to purchase is grounded on the trust that the firm will fulfil his/her needs. Further, human interaction during the service delivery process re-inforces customer's trust and effectively strengthens the relationship (Kandampully, 1998). Certain researchers considered trust as a confidence in an exchange partner's reliability and integrity (Wong and Sohal, 2002). Further, trust is not only an attitude towards a person, but it is also directed towards an intangible object, such as a brand (Delgado-Ballester and Munuera-Aleman, 2001). It is a component of brand loyalty and companies strive to ensure that trust is never breached. In this context, Copeland (1923) was the first to suggest a phenomenon related to brand loyalty, which he labelled as 'brand insistence'. Further, Day (1969) proposed brand loyalty as repeated purchases prompted by strong disposition (Lau and Lee, 1999). Brand loyalty cannot be analysed without considering its relationship with awareness, reputation, perceived quality, image, innovation, promotion, brand extension, customer back ground, and satisfaction (Moisescu, 2007).

Customer satisfaction is generally defined as a feeling or judgement by customers towards products or services after they have used them (Jamal and Naser, 2003). In fact, there are at least two different concepts of customer satisfaction, one is transaction-specific and other is cumulative. Transaction-specific satisfaction provides specific diagnostic information about a particular product or service encountered (Lam, *et al.*, 2004). In contrast, cumulative customer satisfaction is an overall evaluation based on the total purchase and consumption experiences with a product or service overtime (Anderson, *et al.*, 1994), which is more fundamental and useful than transaction–specific consumer satisfaction in predicting a consumer's subsequent behaviour and a firm's past, present, and future performance. Though customer satisfaction is essential for a firm's survival (Rampersad, 2001), the customers who are retained may not always be satisfied, and satisfied customers may not always be retained (Dick and Basu, 1994). So, this creates a challenge for maintaining high level of service, awareness of customer expectations, and improvement in service or product (Pizam and Ellis, 1999). Moreover, it is generally argued that if customers are satisfied with a particular product or service offering after its use, they are likely to engage in a repeat purchase and try line extensions. Furthermore, while the satisfied customers are likely to convey their favourable experiences to others and thus, engage in positive word-of-mouth advertising, dissatisfied consumers are likely to switch brands and engage in negative word-of-mouth advertising (Naser, *et al*., 1999).

High customer satisfaction has many benefits for the firm, such as increased loyalty for current suppliers, reduced price elasticity, insulation of current suppliers from competitors, lower cost in future transactions, reduced failure costs, lower cost of attracting new customers, and an enhanced reputation for the firm (Anderson, *et al*., 1994).

Marketers often seek information on how to build customer loyalty (Bowen and Chen, 2001), which is a feeling of commitment on the part of the consumer to a product, brand, marketer, or services above and beyond that of the competitors in the marketplace, which results in repeated purchases (Manimaran, 2010). Customer loyalty is concerned with the likelihood of customer returning, making business referrals, providing strong word-of-mouth references, and publicity (Bowen and Shoemaker, 1998). Loyal customers are less likely to switch to a competitor due to price inducement and these customers make more purchases compared to less loyal customers (Baldinger and Rubinson, 1996). Customers may be loyal due to high switching barriers or the lack of real alternatives; they may also be loyal because they are satisfied, thus want to continue the relationship (Andreason and Lindestad, 1998). As most barriers appear to be of limited durability, companies tend to approach satisfaction as the only viable strategy in the long run. Another important element of loyalty is the intended support of the product expressed in communicating one's experiences, i.e., positive word-of-mouth. Thus, when a company's customers recommend the product to others, this reflects a high degree of loyalty (Selnes, 1993).

Rundle-Thiele (2005) examined loyalty as situational loyalty, price sensitivity, propensity to be loyal, attitudinal loyalty, and complaining behaviour. Furthermore, the dimensions of customer loyalty, i.e., recommendation and patronage, were studied by Lam, *et al*. (2004). Therefore, we focus on the four dimensions of customer loyalty: recommendation, patronage, price sensitivity, and complaining behaviour.

The present study is an offshoot of the related literature pertaining to customer satisfaction, customer loyalty, and brand equity and the relationship of customer satisfaction and brand equity with customer loyalty. The related literature appears to have examined either the relationship of customer satisfaction and customer loyalty or simply has analysed the relationship of service quality with customer loyalty; service quality with customer satisfaction. In this regard, most relevant studies have been considered for analysing the research gap and thus, establishing the basic rationale for conducting research pursuit in this direction.

Olsen (2002) examined the relationship

between perceived quality performance, customer satisfaction, and relative loyalty (frequent purchasing behaviour) in the sea-food product items. However, the study ignored other multi-dimensional approaches of loyalty, viz., word-of-mouth communication, purchase intentions, price sensitivity, and complaining behaviour.

Delgado-Ballester and Munuera-Aleman (2001) found that brand trust has a significant effect on customer commitment, which in turn influences customers' price tolerance. They also concluded that the overall satisfaction is an antecedent of brand trust.

Ahangar (2011) noted that five factors of service quality (responsiveness, reliability, efficiency, privacy of information, and easiness to use) have a strong impact on customer satisfaction. However, the present study also analyses the relationship between customer satisfaction and customer loyalty and between brand equity and customer loyalty.

Vanniarajan and Gurunathan (2009) found that service quality has a significant positive impact on customer loyalty but through customer satisfaction. The study ignored trust and image while analysing customer loyalty.

On the whole, the present study besides covering customer satisfaction and customer loyalty; customer loyalty and brand equity; customer satisfaction and brand equity with customer loyalty, has also analysed the relationship of customer satisfaction and brand equity with customer loyalty by considering broader view of brand equity by including six dimensions, viz., brand awareness, brand image, brand association, brand trust, brand loyalty, and perceived quality and four dimensions of customer loyalty, viz., recommendation, patronage, complaining behaviour and price insensitivity for product (i.e., car) which were earlier considered individually.

## OBJECTIVES AND HYPOTHESES

The study has three objectives:

1. To examine the influence of customer satisfaction on customer loyalty;
2. To ascertain the influence of brand equity (i.e., brand awareness, brand trust, and perceived quality) on customer satisfaction; and
3. To assess the influence of brand equity on customer loyalty.

In order to achieve the above objectives, three null hypotheses have been formulated.

Customer satisfaction is considered as a key driver of the long-term relationship between suppliers and buyers (Geyskens, *et al.*, 1999). In this regard, Fornell (1992) stated that high customer loyalty is mainly caused by high customer satisfaction. Anderson and Sullivan (1993) found that repurchase intentions are positively influenced by satisfaction across product categories. Mittal and Lassar (1998) noted that high degree of satisfaction does not translate into loyalty whereas Mittal, *et al.* (1999) concluded that customers' satisfaction with dealers positively affects brand repurchase intentions. Further, Lam, *et al.* (2004) found that recommendation and patronage dimensions of customer loyalty are positively related to customer satisfaction in courier service industry and thus, such customers are willing to repeat patronising the service providers and recommend them to others. Bennett and Thiele (2004) observed that the relationship between satisfaction and loyalty is positive but high level of satisfaction do not always yield high level of loyalty. Thus, our first hypothesis is as follows:

**$H_{01}$**: There is no significant effect of customer satisfaction on customer loyalty

Customers' perceptions regarding brand consist of brand awareness and brand image (Keller, 1998). Awareness of a brand is not enough to ensure a brand's success, as it is not sufficient to offer superior value to consumers and to differentiate an offering from those of competitors, which can be achieved by brand image (Simms and Trott, 2006). Kim, *et al.* (2003) viewed that strong brand awareness positively affects brand satisfaction to shape favourable attitude. Further, Kandampully and Suhartanto (2000) found that a desirable image leads to customer satisfaction while an undesirable image leads to dissatisfaction. Recently, Wu and Batmukh (2010) found that brand equity has a direct and significant influence on customer satisfaction.

Olsen (2002) observed that the relationship between product quality and satisfaction is much stronger for comparative evaluation of several product alternatives rather than as a non-comparative or individual evaluation of products in sea food products (home frozen, frozen from supermarket, fresh from supermarket, and fresh from seafood store). Furthermore, Atilgan, *et al.* (2005) suggested that perceived quality creates customer satisfaction and value by consistently and profitably meeting customers' need in a beverage market of Turkey.

Razzaque and Boon (2003) found a significant effect of trust on satisfaction. Moreover, when a customers' feeling of faith in the provider is satisfied, his satisfaction is enhanced over time (Chiou and Droge, 2006). Hence, our second hypothesis is:

**$H_{02}$**: There is no significant influence of brand equity on customer satisfaction.

In a competitive market, consumers generally do not continue to purchase a brand towards which they are ambivalent or for which they hold negative evaluation (Johnson and Fornell, 1991). In this regard, Vogel, *et al*. (2008) observed that brand equity has a strong impact on loyalty intentions. Further, Taylor, *et al.* (2004) found that brand equity was significantly related to attitudinal loyalty.

Aydin and Ozer (2008) showed that perceived service quality was a necessary but not a significant condition for customer loyalty. Cronin and Taylor (1992) found that service quality did not appear to have a significant (positive) effect on repurchase intentions. Lau and Lee (1999) found that trust in a brand is positively related to loyalty in the case of consumer goods. Corbitt, *et al.* (2003) confirmed a strong positive effect of trust on customer loyalty. Moreover, Akbar and Parvez (2009) noted that trust has positive and significant correlation with customer loyalty. Deng, *et al.* (2010) also supported the findings that trust influences customer loyalty. Thus, our third hypothesis is:

**$H_{03}$**: There is no significant influence of brand equity on customer loyalty.

## RESEARCH METHODOLOGY

The data was collected through an instrument specifically developed for the study covering almost all the aspects of brand equity, i.e., brand awareness, brand image, brand association, perceived quality, brand trust, and brand loyalty; customer satisfaction, and customer loyalty (i.e., recommendation, patronage, complaining behaviour and price insensitivity). Some items were kept in negative form so as to have internal cross-checking and to ensure that the respondents were actively involved in the interview.

Brand equity comprised of 75 items pertaining to brand awareness, brand association, brand image, perceived quality, brand trust, and brand loyalty, which were based on Pappu, *et al.* (2005); Kim, *et al.* (2003); Ladhari and Morales, (2008). The items related to customer satisfaction comprised 15 items, which were adapted from various studies, viz., Bennett and Thiele, (2004); Robinson, *et al.* (2005). While customer loyalty was determined through recommendation (3 items); patronage (2 items); price insensitivity (4 items), and complaining behaviour (5 items), customer loyalty in general included five items, which were taken from Lam, *et al*. (2004), and Ganesh, *et al*. (2000),

For measuring the nature and extent of brand equity, customer satisfaction, and customer loyalty among customers of car, the primary data was gathered from the customers who owned and were driving a car. The respondents were residing in a city of Northern India, with a population of 71,600 as per the Telephone Directory (2006-2007).

To determine the sample size, a pilot survey was conducted during the end of 2007. For the selection of the respondents, a list was obtained from the office of Public Health Engineering Department, which consisted of approximately 1000 households. Out of these households, 5 per cent (i.e., 50) were selected using 2-digit abridged random number table, which was used to work out the mean and variance in the population so as to determine the appropriate sample size. Although the sample size came to be 369, it was rounded off to 370. These respondents were selected from telephone directory (2007-08) through systematic sampling technique. The first respondent was selected purely on a random basis and thereafter, every 193rd respondent was contacted for the collection of the data. Out of the 370 respondents, about 350 customers supplied proper information.

### Data Purification

For data purification, factor analysis was carried out using the SPSS (15.0 version), as it helps in reducing the large number of dimensions into a few manageable and meaningful sets. Finally, out of 109 items, 25 items got grouped under 8 factors, viz., interpersonal relations, price insensitivity, brand quality, recommendation, customer loyalty, brand awareness, social and economic loss, and customer satisfaction, with 72 per cent variance (**Table 1**).

Convergent validity was examined to confirm the relationship between 'on the whole, you feel loyal towards your brand' and the eight factors pertaining to customer loyalty, brand equity, and customer satisfaction. The scores obtained on the 7-point Likert's scale with respect to 'overall you feel loyal towards your brand' were classified into three groups, viz., below average (1-3), average (4), and above average (5-7) to make interpretation more logical (Churchill 2008). The overall mean score of 4.87 was proved convergently valid as the majority of the respondents fall under 'above average' region of 'on the whole, you feel loyal towards your brand', by assigning 4.89 mean value.

The relationship between 'on the whole,, you feel loyal towards your brand' and the 25 dimensions grouped under eight factors was established with the help of multiple regressions. The equation indicates that brand trust, customer satisfaction and interpersonal relations have an insignificant influence on customer loyalty, as indicated by the significance values of 0.419, 0.727, and 0.109, respectively. However, the remaining factors, viz., price insensitivity, brand quality, brand awareness, and recommendation significantly influence customer loyalty, as reflected by the significance values of 0.000, 0.001, 0.002, and 0.029, respectively.

Further, the regression results reveal that multiple correlations (R) between the dependent and the independent variables arrived at 0.560,

**Table 1**
**Factorial Profile of Brand Equity, Customer Satisfaction, and Customer Loyalty**

| Rounds | No. of Factors Extended | Variance Explained | Items Emerged | Iterations | No. of Items Deleted | Extent of Factor Loading | KMO | Bartlzett |
|---|---|---|---|---|---|---|---|---|
| 1 | 30 | 68.552 | 109 | 30 | 30 | Above 0.50 | 0.824 | 13445.747 |
| 2 | 21 | 66.020 | 79 | 34 | 12 | Above 0.50 | 0.834 | 11535.381 |
| 3 | 18 | 66.539 | 67 | 12 | 9 | Above 0.50 | 0.837 | 9842.888 |
| 4 | 16 | 67.334 | 58 | 29 | 1 | Above 0.50 | 0.838 | 8516.794 |
| 5 | 16 | 68.001 | 57 | 41 | 5 | Above 0.55 | 0.838 | 8399.511 |
| 6 | 14 | 66.490 | 52 | 8 | 2 | Above 0.55 | 0.839 | 7541.951 |
| 7 | 14 | 67.802 | 50 | 8 | 3 | Above 0.60 | 0.839 | 7286.734 |
| 8 | 14 | 69.282 | 47 | 8 | 8 | Above 0.65 | 0.831 | 6899.490 |
| 9 | 12 | 69.171 | 39 | 8 | 2 | Above 0.65 | 0.790 | 5565.905 |
| 10 | 11 | 68.822 | 37 | 10 | 8 | Above 0.65 | 0.790 | 5368.889 |
| 11 | 8 | 65.696 | 29 | 8 | 4 | Above 0.65 | 0.786 | 4391.302 |
| 12 | 8 | 72.294 | 25 | 6 | - | Above 0.65 | 0.778 | 4138.917 |

**Table 2**
**Influence of Different Factors on Dependent Variable: Model Summary of Regression**

| Model | Unstandardised Coefficients | | Standardised Coefficients | | | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|
| | B | Std. Error | Beta | *t* | Sig | Tolerance | VIF |
| (Constant) | -0.047 | 0.639 | | -0.074 | 0.941 | | |
| Customer Loyalty | 0.182 | 0.038 | 0.263 | 4.744 | 0.000 | 0.664 | 1.506 |
| Price Insensitivity | 0.138 | 0.040 | 0.187 | 3.433 | 0.001 | 0.690 | 1.450 |
| Brand Quality | 0.240 | 0.077 | 0.153 | 3.131 | 0.002 | 0.854 | 1.171 |
| Brand Awareness | 0.143 | 0.065 | 0.107 | 2.195 | 0.029 | 0.853 | 1.172 |
| Recommendation | 0.252 | 0.071 | 0.175 | 3.557 | 0.000 | 0.842 | 1.187 |
| Brand Trust | 0.028 | 0.034 | 0.037 | 0.809 | 0.419 | 0.969 | 1.032 |
| Customer Satisfaction | 0-.029 | 0.084 | -0.017 | -0.349 | 0.727 | 0.890 | 1.123 |
| Interpersonal Relations | 0.108 | 0.067 | 0.076 | 1.606 | 0.109 | 0.900 | 1.111 |

*Note:* Dependent Variable: overall you feel loyal towards your brand.
Predictors: (Constant), Interpersonal relations, Price Insensitivity Brand trust, Customer satisfaction, Brand quality, Recommendation, Brand awareness, Customer loyalty.

which shows a positive and a moderate association between customer loyalty and the given eight factors. The value of coefficient of determination (0.314) indicates 31 per cent of the variation in customer loyalty, being explained by its eight factors. Further, the result of multi-collinearity is also acceptable, as the tolerance value is near to 1 and the VIF is less than 10 (**Table 2**).

The internal consistency of the data collected was judged through statistical tests, like Split-half and Cronbach's alpha. The split-half test was applied by dividing the respondents into two equal halves to judge if the variation in both the halves is within the range of sampling error. The data was proved reliable both before and after its purification, as such both the groups accorded similar mean values (before factor analysis Group I: 5.36, Group II: 5.30, and after factor analysis Group I: 5.02 and Group II: 5.02). Further, Cronbach's alpha value was computed in order to examine the internal consistency and comparability. For the individual factors also the coefficient alpha values proved authentic.

All the hypotheses were tested with the help of regression analysis. The results provide support for $H_{02}$ and $H_{03}$. However, $H_{01}$ stands rejected as customer satisfaction exerts a positive and significant influence on customer loyalty ($\beta$=0.180; p=0.01). Brand equity exerts a positive influence on customer satisfaction ($\beta$=0.244; sig<0.05) and brand equity does so on customer loyalty ($\beta$=0.239; sig=0.000) (**Table 3**).

**Table 3**
**Hypotheses Testing Through Regression Analysis**

| Hypotheses | β value | Sig. | Support |
|---|---|---|---|
| H1: Customer Satisfaction ⟶ Customer Loyalty | .180 | .01 | No |
| H2: Brand Equity ⟶ Customer Satisfaction | .244 | 0.05 | Yes |
| H3: Brand Equity ⟶ Customer Loyalty | .239 | .000 | Yes |

## DATA ANALYSIS AND FINDINGS

The first factor, i.e., interpersonal relations, consists of six dimensions, viz., 'well trained staff', 'telephonic entertainment of queries', 'maintenance of long-term relations', 'patient hearing to individual requirement', 'sincere and reliable dealer', and 'knowledgeable and confident staff'. Out of these six dimensions, a 'well trained staff' has contributed highest towards interpersonal relations (0.848) but customers are not highly contented with the training of the staff (5.27). Further, 'entertaining telephonic inquiry' was the second highest factor (0.804). Thus, it reflects that interaction on telephone restricts the evaluation of service delivery to such an extent that customers have to base their perceptions solely on the interpersonal traits of contact employees. The third important dimension of this factor was 'maintenance of long-term relations'. Further, respondents were more satisfied with 'patient hearing to individual's requirement' (5.33) (**Table 4**) than 'sincere and reliable dealer' (5.24), though the satisfaction level is not high. Thus, it can be concluded that customers are also not very much satisfied with the knowledge and confidence of the staff (5.26). The staff must possess expert knowledge and skills to deliver specified service and an ability to deliver the right mix of services to meet customers' needs.

The second factor, namely, price insensitivity, contains three variables: 'non-price based buying decisions', 'no influence of price on brand loyalty', and 'no switching in case of attractive price elsewhere'. Out of the three variables, 'no switching in case of attractive prices elsewhere' obtained the highest mean value (4.45) as compared to other variables. Thus, it can be concluded that for some customers high price means better quality and prestige and they are willing to pay more for the high quality.

The next factor consists of four variables, namely, 'superior/good quality', 'durability of brand, 'extremely high quality', and 'consistent quality'. Out of these, 'superior/good quality' obtained the mean value of 6.02. Thus, the results indicate that the customer perceptions about quality of the brand and its value can influence customer satisfaction and, in turn, purchase intentions.

The fourth factor, namely, recommendation, consists of three variables: 'recommendation to others', 'encouragement to buy own brand', and 'positive word-of-mouth'. Out of the three dimensions, positive word-of-mouth for their product had a mean value of 5.59 whereas 'recommendation to others' generated a mean value of 5.39. This shows that loyal customers not only increase the value of business but also assist in lowering the costs associated with attracting new customers.

The factor 'customer loyalty' consists of two items, namely, 'preference for own brand even in case of attractive discounts elsewhere' and 'preference for own brand irrespective of higher prices'. The analysis of customer loyalty reveals that loyal customers do not require heavy promotional efforts for persuasion. They happily pay premium prices for the benefits and quality of the brand that alternative brands cannot provide.

Brand awareness emerging as the sixth factor comprises three variables, viz., 'timely advertisements', 'effective advertising', and 'effective promotion through posters and banners' Out of these three, 'effective advertisements' got the mean value of 5.45. However, the customers were not very much contented with the 'timely advertisements' of their brand (5.36), thus, indicating the necessity for appealing and effective advertisements on television for consumers to visit their websites, so that they can be made aware about the changes in their brand well in time.

The next factor (social and economic loss) entails two variables, viz., 'economic loss due to broken relations' and 'emotional attachment'. 'Emotional attachment' obtained slightly higher mean value (2.63) as compared to 'economic loss due to broken relations' (2.24). Thus, it can be concluded that the customers are not emotionally attached with the brand, as they can prefer other brands offering superior quality on the same price.

Lastly, customer satisfaction has two dimensions: 'satisfactory show room interiors' and 'satisfactory buying decision'. Thus, it can be concluded that success of any company depends on its ability to satisfy customers. Moreover, the tangible physical environment (i.e., physical facilities and equipments) plays a significant role in determining customer re-patronage intentions

**Table 4**
**Mean, Standard Deviation, Factor Loading, Communalities, Variance Explained, and Cronbach Alpha for Various Factors**

| Factor | Factor wise Dimensions | Mean | S.D | F.L | Comm. | Variance explained | Cronbach Alpha |
|---|---|---|---|---|---|---|---|
| F1 | Interpersonal relations | 5.22 | | | | | |
| PQ17 | 'Well trained staff' | 5.27 | 0.97 | 0.848 | 0.731 | | |
| PQ16 | 'Telephonic entertainment of queries' | 5.17 | 1.10 | 0.804 | 0.685 | | |
| PQ18 | 'Maintenance of long-term relations' | 5.30 | 0.94 | 0.798 | 0.649 | | |
| PQ15 | 'Patient hearing to individual's requirement' | 5.33 | 0.96 | 0.771 | 0.647 | | |
| PQ19 | 'Sincere and reliable dealer' | 5.24 | 0.92 | 0.758 | 0.661 | 14.594 | 0.880 |
| PQ13 | 'Knowledgeable and confident staff' | 5.26 | | 0.696 | 0.561 | | |
| F2 | Price insensitivity | | | | | | |
| PS4 | 'Not price based buying decisions' | 4.25 | 1.76 | 0.925 | 0.872 | | |
| PS3 | 'No influence of price for brand loyalty' | 4.22 | 1.63 | 0.921 | 0.872 | | |
| PS1 | 'No switching in case of attractive prices elsewhere' | 4.48 | 1.92 | 0.770 | 0.746 | 26.530 | |
| F3 | Brand quality | 5.89 | | | | | |
| PQ8 | 'Superior/ good quality' | 6.02 | 0.89 | 0.851 | 0.755 | | |
| PQ9 | 'Durability of brand' | 5.97 | 0.82 | 0.838 | 0.734 | | |
| PQ10 | 'Extremely high' | 5.80 | 0.86 | 0.748 | 0.580 | | |
| PQ7 | 'Consistent quality' | 5.75 | 0.872 | 0.708 | 0.597 | 36.700 | .821 |
| F4 | Recommendation | 5.53 | | | | | |
| Rec1 | 'Recommendation to others' | 5.39 | 0.89 | 0.860 | 0.785 | | |
| Rec3 | 'Positive word-of-mouth' | 5.59 | 0.82 | 0.779 | 0.730 | 44.852 | 0.767 |
| Rec2 | 'Encouragement to buy own brand' | 5.55 | 0.92 | 0.723 | 0.651 | | |
| F5 | Customer loyalty | 4.71 | | | | | |
| CL3 | 'Preference of own brand even in case of attractive discounts offered by other brands' | 4.69 | 1.58 | 0.892 | 0.942 | | |
| CL2 | 'Preference for own brand irrespective of higher prices' | 4.72 | 1.59 | 0.883 | 0.934 | 52.403 | 0.974 |
| F6 | Brand awareness | 5.37 | | | | | |
| BAW4 | 'Timely advertisement' | 5.36 | 0.06 | 0.818 | 0.659 | | |
| BAW2 | 'Effective advertisement' | 5.45 | 1.00 | 0.764 | 0.691 | | |
| BAW6 | 'Effective promotion through posters and banners' | 5.30 | 0.98 | 0.714 | 0.562 | 59.907 | 0.701 |
| F7 | Social and Economic Loss | 2.43 | | | | | |
| BTC15 | 'Economic loss due to broken relations' | 2.24 | 1.49 | 0.896 | 0.820 | | |
| BTC12 | 'Emotional attachment.' | 2.63 | 1.68 | 0.882 | 0.786 | 66.57 | 0.778 |
| F8 | Customer satisfaction | 5.51 | | | | | |
| CS11 | 'Satisfactory show room interiors' | 5.52 | 0.701 | 0.820 | 0.738 | 72.294 | 0.622 |
| CS13 | 'Satisfactory buying decisions' | 5.49 | 0.751 | 0.809 | 0.742 | | |

*Note:* Abbreviations:- F.L- Factor Loading, S.D- Standard Deviation, V.E- Variance Explained, Comm- Communalities and willingness to recommend (Pizam and Ellis, 1999).

## CONCLUSION AND POLICY IMPLICATIONS

The factors and their dimensions used in the study provide an insight into the constituents of brand equity, customer satisfaction, and customer loyalty for passenger car. Since promotion is critical in developing equity, companies have to provide a valuable product that will get used or seen by other people. In order to promote their product, companies might offer *e*-books, free pens, free T-shirts, caps, and bags to their customers, as these things people use and expose their brand to others. Further, social networking sites can be used to put prospect's reference group members' reviews about their favourite car, its videos, and reviews about the different features of the car, which can be placed to enable them for making comparisons and purchase decision.

Moreover, it is essential for companies to encourage the existing customers to 'spread good words' by actively promoting the reward system to them, whereas an adequate amount of efforts should be applied to reduce the negative word-of-mouth of unhappy customers.

Finally, companies have to focus on physical environment, including aesthetics, layout, accessibility, cleanliness, seating comfort, electronic equipment, and display because they have a significant effect on customer satisfaction. Furthermore, companies must identify cultural, social, personal, and psychological factors in order to make more attractive and useful product/ brand as per the customer's buying decisions.

## REFERENCES

Aaker, David A. (1991), *Managing Brand Equity: Capitalising on the Value of a Brandname* (New York: Free Press)

Ahangar, Reza Gharoie (2011), "An Investigation into the Determinant of Customers' Preferences and Satisfaction of Internet Banking (Empirical Study of Iranian Banking Industry)", *Journal of Applied Sciences*, Vol. 11, No. 3, pp. 426-437

Akbar, Mohammad Muzahid, and Noorjahan Parvez (2009), "Impact of Service Quality, Trust, and Customer Satisfaction on Customer Loyalty", *ABAC Journal*, Vol. 29, No. 1, pp. 24-38

Anderson, E.W., Claes Fornell, and Donald R. Lehmann (1994), "Customer Satisfaction, Market Share, and Profitability: Findings from Sweden", *Journal of Marketing*, Vol. 58, No. 3, pp. 53-66

Anderson, E.W., and Mary W. Sullivan (1993), "The Antecedents and Consequences of Customer Satisfaction for Firms", *Marketing Science*, Vol. 12, No. 2, pp. 125-143

Andreassen, Tor Wallin, and Bodil Lindestad (1998), "Customer Loyalty and Complex Services: The Impact of Corporate on Quality, Customer Satisfaction, and Loyalty for Customers with Varying Degrees of Service Expertise", *International Journal of Service Industry Management*, Vol. 9, No. 1, pp. 7-17

Atilgan, Eda, Safak Aksoy, and Serken Akinci (2005), "Determinants of the Brand Equity: A Verification Approach in the Beverage Industry in Turkey", *Marketing Intelligence and Planning*, Vol. 23, No. 3, pp. 237-248

Aydin, Serkan, and Gokhan Ozer (2008), "The Analysis of Antecedents of Customer Loyalty in the Turkish Mobile Telecommunication Market," *European Journal of Marketing*, Vol. 39, No. 7 and 8, pp. 910-925

Baldinger, A.A., and J. Rubinson (1996), "Brand loyalty: The Link between Attitude and Behaviour", *Journal of Advertising Research*, Vol. 36, No. 6, pp. 22-34

Bennett, Rebekah, and Sharyn Rundle-Thiele (2004), "Customer Satisfaction Should not be the only Goal", *Journal of Services Marketing*, Vol. 18, No. 7, pp. 514-523

Bowen, John T., and Stowe Shoemaker (1998), "Loyalty: A Strategic Commitment", *Cornell Hotel and Restaurant Administration Quarterly*, Vol. 39, February, pp. 12-25

Bowen, John T., and Shiang Lin Chen (2001), "The Relationship between Customer Loyalty and Customer Satisfaction", *International Journal of Contemporary Hospitality Management*, Vol. 13, No. 5, pp. 213-217

Chiou, Jyh-Shen, and Cornelia Droge (2006), "Service Quality, Trust, Specific Asset Investment, and Expertise: Direct and Indirect Effects in a Satisfaction-Loyalty Framework", *Journal of the Academy of Marketing Science*, Vol. 34, No. 4, pp. 613-627

Churchill, Gilbert A., Jr., and Dawn Lacobucci (2008), *Marketing Research Methodology Foundations*, 9th ed. (New Delhi: South Western Cengage Learning)

Copeland, M.T. (1923), "Relation of Consumers' Buying Habits to Marketing Methods", *Harvard Business Review*, Vol. 1, No. 3, pp. 282-289

Corbitt, Brian J., Theerasak Thanasankit, and Han Yi (2003), "Trust and E-Commerce: A Study of Consumer Perceptions", *Electronic Commerce Research and Applications*, Vol. 2, pp. 203–215

Cronin, J. Joseph Jr., and Steven A. Taylor (1992), "Measuring Service Quality: A Re-Examination and Extension", *Journal of Marketing*, Vol. 56 (July), pp. 55-68

Davis, Donna F., Susan L. Golcic, and Adam Marquart (2009), "Measuring Brand Equity for Logistics Services", *International Journal of Logistics Management*, Vol. 20, No. 2, pp. 201-212

Day, G.S. (1969), "A Two-Dimensional Concept of Brand Loyalty", *Journal of Advertising Research*, Vol. 9, No. 3, pp. 29-36

Delgado-Ballester, Elena and Jose Luis Munuera–Aleman (2001), "Brand Trust in the Context of Consumer Loyalty", *European Journal of Marketing*, Vol. 35, No. 11 and 12, pp. 1238-1258

Deng, Zhaohua, Yaobin Lu, Kwok Kee Wei, and Jinlong Zhang (2010), "Understanding Customer Satisfaction and Loyalty: An Empirical Study of Mobile Instant Messages in China", *International Journal of Information Management*, Vol. 30, No. 4, pp. 289-300

Dick, A.S. and K. Basu (1994), "Customer Loyalty: Towards an Integrated Conceptual Framework", *Journal of the Academy of Marketing Science*, Vol. 22, No. 2, pp. 99-113

Esch, Franz-Rudolf, Tobias Langner, Bernd H. Schmitt, and Patrick Geus (2009), "Are Brands Forever? How Brand Knowledge and Relationships Affect Current and Future Purchases", *Journal of Product and Brand Management*, Vol. 15, No. 2, pp. 98-105

Fornell, Claes (1992), "A National Customer Satisfaction Barometer: The Swedish Experience", *Journal of Marketing*, Vol. 56, No. 1, pp. 6-21

Ganesh, Jaishankar, Mark J. Arnold, and Kristy E. Reynolds (2000), "Understanding the Customer Base of Service Providers: An Examination of the Differences between Switchers and Stayers", *Journal of Marketing*, Vol. 64, No. 3, pp. 65-87

Geyskens, Inge, Jan-Benedict E.M. Steenkamp, and Nirmalya Kumar (1999), "A Meta-Analysis of Satisfaction in Marketing Channel Relationships", *Journal of Marketing Research*, Vol. 36, No. 2, pp. 223-238

Jamal, A., and Kamal Naser (2003), "Factors Influencing Customer Satisfaction in the Retail Banking Sector in Pakistan", *International Journal of Commerce and Management*, Vol. 13, No. 2, pp. 29-53

Johnson, M.D, and Claes Fornell (1991), "A Framework for Comparing Customer Satisfaction across Individuals and Product Categories", *Journal of Economic Psychology*, Vol. 12, No. 2, pp. 267- 286

Kandampully, Jay (1998), "Service Quality to Service Loyalty: A Relationship which goes Beyond Customer Services", *Total Quality Management*, Vol. 9, No. 6, pp. 431-443

Kandampully, Jay, and Dwi Suhartanto (2000), "Customer Loyalty in the Hotel Industry: The Role of Customer Satisfaction and Image", *International Journal of Contemporary Hospitality Management*, Vol. 12, No. 6, pp. 346-351

Keller, Kevin Lane (1993), "Conceptualising, Measuring, and Managing Customer-Based Brand Equity", *Journal of Marketing*, Vol. 57 (January), pp. 1-22

Keller, Kevin Lane (1998), *Strategic Brand Management* (Englewood Cliff, NJ: Prentice-Hall)

Kim, Hong-Bumm, Woo Gon Kim, and Jeong A. An (2003), "The Effect of Consumer- Based Brand Equity on Firms' Financial Performance", *Journal of Consumer Marketing*, Vol. 20, No. 4, pp. 335-351

Kim, Young-Ei, and Jung Wan Lee (2010), "Relationship between Corporate Image and Customer Loyalty in Mobile Communications Service markets", *Africa Journal of Business Management*, Vol. 4, No. 18, pp. 4035-4041

Koubaa, Yamen (2008), "Country of Origin, Brand Image Perception, and Brand Image Structure", *Asia Pacific Journal of Marketing*, Vol. 20, No. 2, pp. 139-155

Ladhari, Riadh, and Miguel Morales (2008), "Perceived Service Quality, Perceived Value, and Recommendation: A Study among Canadian Public Library Users", *Library Management*, Vol. 29, No. 4 and 5, pp. 352-366

Lam, Shun Yin, Venkatesh Shankar, M. Krishna Erramilli, and Busan Murthy (2004), "Customer Value, Satisfaction, Loyalty, and Switching Costs: An Illustration from a Business to Business Service Context", *Journal of the Academy of Marketing Science*, Vol. 32, No. 3, pp. 293-311

Lassar, Walfried, Banwari Mittal, and Arun Sharma (1995), "Measuring Customer-Based Brand Equity", *Journal of Consumer Marketing*, Vol. 12, No. 4, pp. 11-19

Lau, Geok Theng, and Sook Han Lee (1999), "Consumers' Trust in a Brand and the Link to Brand Loyalty", *Journal of Market Focussed Management*, Vol. 4, pp. 341-370

Manimaran, S. (2010), "Linkage between Service-Quality and Customer-Loyalty in Commercial Banks", *Journal of Marketing and Communication*, Vol. 6, No. 1, pp. 26-34

Mittal, Banwari, and Walfried M. Lassar (1998), "Why do Customers Switch? The Dynamics of Satisfaction versus Loyalty", *The Journal of Services Marketing*, Vol. 12, No. 3, pp.177-194

Mittal, Vikas, Pankaj Kumar, and Michael M. Tsiros (1999), "Attribute-Level Performance, Satisfaction, and Behavioural Intentions Over Time: A Consumption-System Approach", *Journal of Marketing*, Vol. 63, No. 2 (April), pp. 88-101

Moisescu, Ovidiu Loan (2007), "An Analysis Regarding Descriptive Dimensions of Brand Equity", *http://www.mnmk.ro/documents/2007/2007-15.pdf (accessed on 10 October 2009)*

Motameni, Reza, and Manuchehr Shahrokhi (1998), "Brand Equity Valuation: A Global Perspective", *Journal of Product and Brand Management*, Vol. 7, No. 4, pp. 275–290

Naser, Kamal, Ahmad Jamal, and Khalid Al-Khatib (1999), "Islamic Banking: A Study of Customer Satisfaction and Preferences in Jordon", *International Journal of Bank Marketing*, Vol. 17, No. 3, pp. 135-150

Ogba, Ike-Elechi, and Zhenzhen Tan (2009), "Exploring the Impact of Brand Image on Customer Loyalty and Commitment in China", *Journal of Technology Management in China*, Vol. 4, No. 2, pp. 132-144

Olsen, Svein Ottar (2002), "Comparative Evaluation and the Relationship between Quality, Satisfaction, and Repurchase Loyalty", *Journal of the Academy of Marketing Science*, Vol. 30, No. 3, pp. 240-249

Pappu, Ravi, Pascale G. Quester, and Ray W. Cooksey (2005), "Consumer Based Brand Equity: Improving the Measurement-Empirical Evidence", *Journal of Product and Brand Management*, Vol. 14, No. 3, pp. 143-154

Prasad, Keshav, and Chekitan S. Dev (2000), "Managing Hotel Brand Equity: A Customer- Centric Framework for Assessing Performance", *Cornell Hotel and Restaurant Administration Quarterly*, Vol. 41, No. 3, pp. 22-31

Pizam, Abraham, and Taylor Ellis (1999), "Customer Satisfaction and its Measurement in Hospitality Enterprises", *International Journal of Contemporary Hospitality Management*, Vol. 11, No. 7, pp. 326-339

Rampersad, Hubert (2001), "75 Painful Questions about Your Customer Satisfaction", *The TQM Magazine*, Vol. 13, No. 5, pp. 341-347

Razzaque, Mohammed Abdur, and Tan Gay Boon (2003), "Effects of Dependence and Trust on Channel Satisfaction, Commitment, and Cooperation", *Journal of Business to Business Marketing*, Vol. 10, No. 4, pp. 23-48

Robinson, Camille, Je Anna Abbott, and Stowe Shoemaker (2005), "Recreating Cheers: An Analysis of Relationship Marketing as an Effective Marketing Technique for Quick-Service Restaurants", *International Journal of Contemporary Hospitality Management*, Vol. 17, No. 7, pp. 590–599

Ronney, J. A. (1995), "Branding: A Trend for Today and Tomorrow", *Journal of Product and Brand Management*, Vol. 4, No. 4, pp. 48-55

Rundle-Thiele, Sharyn (2005), "Elaborating Customer Loyalty: Exploring Loyalty to Wine Retailers", *Journal of Retailing and Consumer Services*, Vol. 12, pp. 333-344

Selnes, Fred (1993), "An Examination of the Effect of Product Performance on Brand Reputation, Satisfaction, and loyalty", *European Journal of Marketing*, Vol. 27, No. 9, pp. 19-35

Simms, C.D., and P. Trott (2006), "The Perceptions of the BMW Mini Brand: The Importance of Historical Associations and the Development of a model", *Journal of Product and Brand Management*, Vol. 15, No. 4, pp. 228-238

Simon, Carol J., and Mary Sullivan (1993), "The Measurement and Determinants of Brand Equity: A Financial Approach", *Marketing Science*, Vol. 12, No. 1, pp. 28-52

Stafford, Marla Royne, Victor Prybuto, Brenda P. Wells, and Leon Kappelman (1999), "Assessing the Fit and Stability of Alternative Measures of Service Quality", *The Journal of Applied Business Research*, Vol. 15, No. 2, pp. 13-30

Taylor, Steven A., Kevin Celuch, and Stephen Goodwin (2004), "The Importance of Brand Equity to Customer Loyalty", *Journal of Product and Brand Managemen*t, Vol. 13, No. 4, pp. 217-227

Vanniarajan, T., and P. Gurunathan (2009), "Service Quality and Customer Loyalty in Cellular Service Market: An Application of 'SEM'," *Journal of Marketing and Communication,* Vol. 5, No. 2, pp. 45-54

Vogel, Veerna, Heiner Evanschitzky, and B. Ramaseshan (2008), "Customer Equity Drivers and Future Sales", *Journal of Marketing*, Vol. 72(November), pp. 98-108

Wong, Amy, and Amrik Sohal (2002), "An Examination of the Relationship between Trust, Commitment, and Relationship Quality", *International Journal of Retail and Distribution Management*, Vol. 30, No. 1, pp. 34-50

Wu, Tain-Fung, and Munkh-Ulzii Batmukh (2010), "Exploring the Relationship between Customer Equity and Satisfaction: An Empirical Study of Mongolian Gas Station Channels", *International Journal of Trade, Economics, and Finance*, Vol. 1, No. 2, pp. 160-167

Zeithaml, Valarie A. (1988), "Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence", *Journal of Marketing*, Vol. 52, No. 3, pp. 2-22

# WORK-LIFE BALANCE AS A WORKFORCE MANAGEMENT TOOL

**Debajani Sahoo***

**Abstract**

*The growing demands of the work and family life have led people to stress. The study seeks to ascertain how an employee can happily live both the aspects of life. It is based on a survey of 100 employees, in a Chennai-based automobile firm. In order to make a comparison between the attributes, which play an important role in balancing work and life, simple percentage method has been used. While the Chi-square test is used to describe the magnitude of discrepancy between theory and observation, the weighted average method is used for checking the importance of different items. The study has revealed that healthy practices, like career break, flexible work, flexible time, sharing of workload, maternity leave, adoption leave, parental leave and time-off for dependants, and child-care facilities, should be provided by the employer as per the customised needs of the employees for better productivity of the organisation.*

**Key words:** ***Work-life balance, Workforce management, Stress, Private life***

## INTRODUCTION

Many professionals and workers have difficulty in coping with the often-conflicting demands of home and the workplace. When there is no balance between the work and life activities, stress might occur. Employees with stress lose motivation and productivity. As a common *mantra* says, prevention of stress is better than cure. Before going into an in-depth discussion of work-life balance, let us understand its meaning. According to Lewis, Gamble, and Rapaport (2007), balance is a satisfying, healthy, and productive life that includes work, play, and love; that integrates a range of life activities with attention to self and to personal and spiritual development; and that expresses a person's unique wishes, interests, and values. Work-life balance is more usefully described as the absence of unacceptable levels of conflict between work and non-work demands (Greenhaus and Beutell, 1985).

From the 1950's to the early 21st century, different socio-economic factors were identified, where researchers significantly contributed to the work and personal life of employees. Three categories of such factors are: family and personal life, work, and other factors (Naithani and Jha, 2009). During the second half of the 20th century, increasing work demands encroached on the time of the family and personal life at a faster pace. To recover from that situation, employers acknowledged the need of work-life balance

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programmes to facilitate employees to maintain a healthy balance between the conflicting demands of their work and personal life. However, this growth has been suddenly interrupted by the current economic down-turn. In the name of cost-cutting, an increasing number of organisations have either curtailed work-life balance facilities or are contemplating to do the same, by which males and females face a broad set of daily challenges which many a time create imbalance between their work-life on one hand and personal/family life on the other. Lack of work-life balance not only influences an individual's performance at the workplace but also his personal life. In the current economic scenario, organisations are hard-pressed for higher productivity and can face the challenges of recession better, if their employees are more engaged with work and work place. Organisations, more than ever, need employees with improved work-life balance. Increased competition, down-sizing, and mergers have enhanced the pressure at the workplace. Companies often do not have long-term contracts with their employees. Consequently, the employees have become less dependent on their job.

According to Skinner and Pocock (2008), employees need to develop fall-back positions, by which the authors mean an alternative course of action, if the current job fails. In developing a fall-back position, people should understand and tap their characteristic behaviour. Doing things that one likes will lead to more security and less stress than doing any other type of activities.

There is no doubt that an employee with better work-life balance can make more meaningful contribution to the organisation's growth and success.

## REVIEW OF LITERATURE

The traditional thinking about careers has changed over time. Currently, people have an average of eight jobs throughout the course of their career (Guest, 2002). Jobs are also becoming more apprehensive day by day. The recession after the 'dot-com bubble' and September 11, changed the total work-climate. Even if an employee works well, the person could be dismissed for economic reasons. So, employees are less dependent upon one employer. This implies that companies have to look for new ways to build employees' loyalty (Hudson, 2006).

Research studies have revealed that work-life friendly policies can improve productivity and quality of work. The employees of today put their commitment to organisations only if the management recognises the importance of their personal and family life. Work-life balance has gained its own domain in society, as well as in politics (Lockwood, 2003).

The professionals face a lot of pressure and stimuli from the environment. At the work, they have to prepare for meetings, handle subordinates, and achieve targets. Away from work, they play roles, such as a parent, secretary, or a friend. Reed and Clark (2004) observed that the lack of time was not a reason for a dissatisfied life. They explored some contributing factors to a disappointing personal life, such as being extensively afraid of confronting conflict, and taking a tomorrow-based approach to a problem. When there is no balance between work-life activities and life, stress might occur. In psychology, stress is defined as the tension that appears, when a person is facing a (threatening) disturbance of the balance between burden and carrying capacity (Naithani and Jha, 2009). The causes of such disturbance can be divided into three categories: (1) work-related causes, (2) life-related causes, and (3) person-related causes.

A study, titled, 'Generation and Gender in the Workplace' (2004), conducted by the Families and Work Institute, a non-profit research group in New York, found that Generation X and multinational generation workers are more likely to place equal priority on both career and family and less likely to put work ahead of family than their previous generations. These employees do not want to give priority to work over family, friends, and recreation. The Job Demands-Resources (JD-R) model shows two separate processes. First, high job demands could lead to exhaustion. Second, a shortage of job resources could lead to frustrations and disengagement (Byrne, 2005).

Some research papers revealed that as per employer's feeling, workers should reduce their own stress by simplifying their life and making a better effort to care for their health. Most experts feel that the main responsibility for reducing stress should be stress-management. Traditional stress-management programmes placed the responsibility of reducing stress on the individual, rather than on the organisation, where it belongs. No matter how healthy individual employees are when they start out, they might burn out, if they work in a dysfunctional system.

According to Sylvia Hewlett, President of the Centre for Work-life Policy, if a woman takes time-off to care for children, or older parents, employers tend to see these people as less than fully committed, though their identity is transformed.

A change in the organisational culture is crucial to support the integration of work-life balance in practice. Life and work should not be seen as separate entities. Employees should have space to share their emotional, psychological, and spiritual needs. Trust is needed for creating a place in which people can do their job well and share their common goods (Guest, 2002). Managers should show trust by paying attention to their employees. They should show commitment to them and communicate regularly. Lastly, pride and good-fellowship are needed to transform the organisation to a community in which people feel home (Great Place to Work Institute).

The big pay-roll is no more a motivational tool for young generation, but work-life policies matter much to attract educated intellectuals, especially women, and to retain employees (Naithani and Jha, 2009). A group culture is more supportive than a culture in which one achieves targets individually, making the role of management crucial. Thus, an organisation can become a better place for the employees, which will benefit the is well-being of the employees and, thereby, benefit the overall performance of the company.

**Statement of the Problem**

The lack of work-life balance, result in stress, which would result in employee burn-out. It can also result in loss of motivation for committed employees. This study seeks to shed some light on how professionals can manage the ever-increasing demands of work and personal life. It attempts to get insights and understanding of employee's expectations from their workplace to maintain a balance between work and life.

## RESEARCH OBJECTIVES AND HYPOTHESES

The study was conducted with three objectives:

1. To assess the employees' inner feelings about the work culture of the organisation with respect to the time spent;
2. To ascertain the employees' expectations from their work place in their work-life balance; and
3. To examine the influence of employees' demographic variables on their work efficiency.

The following hypotheses were formulated in order to achieve the above objectives:

**$H_{01}$:**The employees demographic variables do not have any significant impact on this work efficiency.

Kanter (1977) noted that dependent children, long hours of work, commuting time to work, and inflexible jobs have a negative effect on work-life balance. The resources of the professional will deplete the job requires more energy than the energy generated (Greenblatt, 2002).

**$H_{02}$:** The employee's age does not have any impact on his time spent at work place.

Employers can offer a range of different programmes and initiatives, such as flexible working arrangements in the form of part-time, casual, and tele-communicating work. More proactive employers can provide compulsory leave, strict maximum hours, and foster an environment that encourages employees not to continue working after hours. In most cases women, in particular, report stress related to the conflict between work and family.

**$H_{03}$:** The marital status does not have any association with stress-related depression

According to Skinner and Pocock (2008), many organisations face difficulties in implementing worklife-friendly policies. Several factors must be considered: First, diversity exists among employees. The employees involved have their own individual needs and capabilities. Besides their professional role, each of them also has family or private roles to play. Secondly, policy makers, including top management and trade unions, must be considered. Lastly, there are several factors within the company itself, such as company culture, job quality, and decisions-making that have an influence over the work-place. The difficulties in arranging work-life friendly policies are caused by the interactions between the diversity of factors involved.

## RESEARCH METHODOLOGY

This study is based on a primary data collected through survey, using a sample of 100 employees, selected from an automobile firm, based in Chennai. The questionnaire contained both open- and close-ended questions related to employees' demographics and behaviour at work place. To remove vague and ambiguous questions, pre-testing was done with a sample of 25. After pre-testing, we made necessary modifications in the questionnaire. Out of 155 employees, only 120 were chosen on the basis of their availability and openness. Out of those, 100 responses were taken for analysis after preliminary screening. The survey was conducted from December 2009 to March 2010.

The tools and techniques used for analysis are briefly discussed below.

(a) Percentage analysis was used in making comparison between two or more variables to describe their relationship. The following Chi-square test describes the magnitude of discrepancy between theory and observation:

(If $\chi_c^2 = \sum \sum \frac{(o_i - e_j)^2}{e_j} \sim \chi_{(r-1)(c-1)\alpha}$)

$\chi_c^2 > \chi_t^2$

The expected frequency was calculated by using the following formula:

$$e_{ij} = \frac{R_i \times C_i}{n}$$

After calculating the $\chi^2$ value, it can be compared with its table value, at

(r -1) (c - 1) *d.f.*, and at a given level of significance.

The weighted average method was used to find out the relative importance of the different items, that is:

$$\left( \bar{X} = \frac{\sum_{i=1}^{n} f_i x_i}{\sum_{i=1}^{n} f_i} \right)$$

(where summation of all values of $f$ ($\sum_{i=1}^{n} f_i$) is equal to $n$)

## DATA ANALYSIS AND INTERPRETATION

### Respondents' Demographic and other Features

The demographic profile and work culture details of the respondents are given in **Table 1**.

**Table 1**
**(a) Demographic Profile of Respondents**

| Distribution by Age | Percentage of Respondents |
|---|---|
| 18-30 years | 50 |
| 31-40 years | 23 |
| Above 40 years | 27 |
| *Distribution by Marital Status* | |
| Married | 58 |
| Unmarried | 42 |
| **Distribution by Number of Children** | |
| Nil | 36 |
| 1 | 29 |
| 2 | 21 |
| 3 | 14 |
| 4 and above | 0 |

**(b) Other Features of the Respondents**

| | |
|---|---|
| **Helping Hands to Take Care of Children** | |
| Spouse | 51 |
| In-laws | 6 |
| Parents | 43 |
| Servants | 0 |
| Day Care Centres | 0 |
| **Time Spent with Family** | |
| Less than 2 hrs. | 6 |
| 2-3 hrs | 8 |
| 3-4 hrs | 24 |
| 4-5 hrs | 46 |
| More than 5 hrs | 16 |
| **Working days/ week** | |
| Less than 5 days | 0 |
| 5 days | 0 |
| 6 days | 100 |
| 7 days | 0 |
| **Work Culture** | |
| **Attitude towards Work** | **Percentage of respondents** |
| 'Never ' | 2 |
| 'Rarely' | 21 |
| 'Sometimes' | 37 |
| 'Often' | 43 |
| 'Always' | 0 |
| *Work Timing* | |
| General shift | 37 |
| Night Shift | 37 |
| Alternative | 63 |

| | |
|---|---|
| **Feeling about the Amount of Time Spent at Work** | |
| 'Very unhappy' | 7 |
| 'Unhappy' | 12 |
| 'Indifferent' | 24 |
| 'Happy' | 26 |
| 'Very Happy' | 31 |

In order to understand the work culture of the respondents, a few questions were asked on their worry for work, work timings, and feeling about the time spent at work place. As regards the worry of the employees about their work responsibility, it was found that only 2 per cent of the respondents never worried about their work, 21 per cent rarely worried, 34 per cent sometimes, and the rest 43 per cent often worried about the work. As regards the work time, 37 per cent of the respondents worked in general shift or day shift, and almost 63 per cent worked in alternative shifts. Again, 7 per cent of the respondents were very unhappy about the time spent at work, 12 per cent were unhappy, 24 per cent were in-different, 26 per cent were happy, and the rest 31 per cent were very happy about the time spent at work.

Sometimes, employees feel depressed because of heavy work pressure. However, here it is found that 12 per cent of the respondents never felt depressed about work, 19 per cent rarely felt so, 22 per cent sometimes, 28 per cent often, and 19 per cent always felt depressed because of the work pressure.

## Parameters of Work-life Balance

The major parameters which help the respondents to balance their work, family commitments, the hindrances and support on this aspect are summarised in **Table 2**.

As shown in the table, about 42 per cent of the respondents do not have flexible working hours. About 80 per cent of them feel that the time-off for family emergencies can help to balance work and family commitments, while 20 per cent do not feel so. 63 per cent agreed that compressed working week/fortnight will not affect balance in work and family commitments, 17 per cent feel that it will not help for the balance, and 20 per cent do not have compressed working week/fortnight.

As many as 78 per cent respondents felt long working hours as hindrance to balance work and life, while 12 per cent do not feel so, and 10 per cent do not have long working hours. Almost 82 per cent of the respondents felt that working over-time may hinder work-life balance, 9 per cent do not feel so, and 9 per cent of the respondents do not work over time. 46 per cent of the respondents considered weekend work as a hindrance for work-life balance, 12 per cent do not considered it as a hindrance, and the rest 42 per cent do not work during the weekends.

At the same time 65 per cent of the respondents considered support from supervisors, 82 per cent felt support from colleagues, and 95 per cent thought support from team members will help in

**Table 2**
**Parameters for Work-life Balance**

| Parameter | No. of Respondents | | | Percentage of Respondents | | |
|---|---|---|---|---|---|---|
| | Yes | No | Not available to me | Yes | No | Not available to me |
| Flexible working hours | 72 | 7 | 21 | 72 | 7 | 21 |
| Time-off for family emergencies | 80 | 20 | 0 | 80 | 20 | 0 |
| Compressed working week/fortnight | 63 | 17 | 20 | 63 | 17 | 20 |
| *Hindrance in Work life Balance* | | | | | | |
| Long working hours | 78 | 12 | 10 | 78 | 12 | 10 |
| Over time | 82 | 9 | 9 | 82 | 9 | 9 |
| Weekend work | 46 | 12 | 42 | 46 | 12 | 42 |

| Support from others | No. of Respondents | | Percentage of Respondents | |
|---|---|---|---|---|
| | Yes | No | Yes | No |
| Support from manager/supervisor | 65 | 35 | 65 | 35 |
| Support from colleagues | 82 | 18 | 82 | 18 |
| Support from team members | 95 | 5 | 95 | 5 |
| Encouragement to use paid and unpaid parental leave | 97 | 3 | 97 | 3 |

work-life balance. Almost 97 per cent considered encouragement to use paid and unpaid leave as a help to balance work and life.

## Amenities Provided at Workplace

The particulars of the amenities provided to the employees at the work place are given in **Table 3**.

## Worry for Work

Weighted average was used to determine whether the employees were worried about the work when they were not actually there or were traveling for work. The computations are shown in **Table 4**.

$$\bar{x} = \sum \frac{Wx}{x}$$

Total value/Total frequency =282/100 = 2.82 = 3

The above calculations show that the employees sometimes thought or were worried about the work when they were not actually there or were traveling for work.

**Table 3**
**Amenities Provided to Employees at Work place**

| Amenities | No. of Respondents | | Percentage of Respondents | |
|---|---|---|---|---|
| | Yes | No | Yes | No |
| Telephone for use | 20 | 80 | 20 | 80 |
| Counseling services for employees | 72 | 28 | 72 | 28 |
| Health facilities | 100 | 0 | 100 | 0 |

**Table 4**
**Worry for Work**

| | 'Never' | 'Rarely' | 'Sometimes' | 'Often' | 'Always' | Total |
|---|---|---|---|---|---|---|
| Weight (W) | 5 | 4 | 3 | 2 | 1 | 15 |
| Frequency(X) | 2 | 21 | 34 | 43 | 0 | 100 |
| Total Value(Wx) | 10 | 84 | 102 | 86 | 0 | 282 |

### Feelings about Time Spent

The feelings of the employees with respect to time spent at work is shown in **Table 5**.

$$\bar{x} = \sum \frac{Wx}{x}$$

Total value/Total frequency =235/100 =2.35 =2

As shown in the table, the employees felt happy about the amount of time spent at work.

### Depression from Work-load

The weighted average method was used to assess whether the employees felt tired or depressed because of work. The computations are shown in **Table 6**.

$$\bar{x} = \sum \frac{Wx}{x}$$

Total value/Total frequency = 277/100=2.77 =3

As shown in the table, the employees often felt tired or depressed because of the work.

### Support from Work Environment

The impact of other provisions, like paid maternal/ parental leave, by employees is shown in **Table 7**.

As shown in the table, 'encouragement to use paid and unpaid parental leave', having the highest weighted average value (1.97), was the major helping hand for the employees in balancing their work and family, followed by 'support from team members' (1.95), 'support from colleagues' (1.82), and 'support from managers' (1.65), respectively.

In $H_{02}$, it was assumed that there is no significant relationship between the age of the people and their feelings about the amount of time spent at work. The Chi-square test was performed to find the significant relationship between the age

**Table 5**
**Employee's Feelings about the Time Spent**

| | 'Very unhappy' | 'Unhappy' | 'Indifferent' | 'Happy' | 'Very happy' | Total |
|---|---|---|---|---|---|---|
| Weight (W) | 5 | 4 | 3 | 2 | 1 | 15 |
| Frequency(X) | 6 | 12 | 26 | 23 | 33 | 100 |
| TotalValue(Wx) | 30 | 48 | 78 | 46 | 33 | 235 |

**Table 6**
**Depression from Work-load**

| | 'Never' | 'Rarely' | 'Sometimes' | 'Often' | 'Always' | Total |
|---|---|---|---|---|---|---|
| Weight (W) | 5 | 4 | 3 | 2 | 1 | 15 |
| Frequency(X) | 12 | 19 | 22 | 28 | 19 | 100 |
| TotalValue(Wx) | 60 | 76 | 66 | 56 | 19 | 277 |

**Table 7**
**Expected Frequencies on Support from Work Environment in Balancing Work and Life**

| Particulars | Yes(2) | No(1) | X | Sample size(N) | Weighted Average (X/N) |
|---|---|---|---|---|---|
| Support from manager | 65 | 35 | 165 | 100 | 1.65 |
| Support from colleagues | 82 | 18 | 182 | 100 | 1.82 |
| Support from team members | 95 | 5 | 195 | 100 | 1.95 |
| Encouragement to use paid and unpaid parental leave | 97 | 3 | 197 | 100 | 1.97 |

**Table 8**
**Relationship between Age and Feelings about the Time Spent at Work**

| Age | Feeling about the time spent at work | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 'Very Unhappy' | | 'Unhappy' | | 'Indifferent' | | 'Happy' | | 'Very happy' | | Total |
| | *Oi* | *Ei* | *Oi* | *Ei* | *Oi* | *Ei* | *Oi* | *Ei* | *Oi* | *Ei* | |
| Less than 30 years | 2 | 3 | 6 | 6 | 14 | 13 | 13 | 11.5 | 15 | 16.5 | 50 |
| 31-40 years | 2 | 1.38 | 1 | 2.76 | 2 | 5.98 | 4 | 5.29 | 14 | 7.59 | 23 |
| Above 40 years | 2 | 1.62 | 5 | 3.24 | 10 | 7.02 | 6 | 6.21 | 4 | 8.91 | 27 |
| Total | 6 | | 12 | | 26 | | 23 | | 33 | | 100 |

**Table 9**
**Chi-square Test on Relationship between Age and Feelings about the Time Spent at Work**

| Oi | Ei | Oi-Ei | (Oi-Ei)2 | (Oi-Ei)2 / Ei |
|---|---|---|---|---|
| 2 | 3 | -1 | 1 | 0.33 |
| 2 | 1.38 | 0.62 | 0.38 | 0.27 |
| 2 | 1.62 | 0.38 | 0.14 | 0.09 |
| 6 | 6 | 0 | 0 | 0 |
| 1 | 2.76 | -1.76 | 3.09 | 1.11 |
| 5 | 3.24 | 1.76 | 3.09 | 0.95 |
| 14 | 13 | 1 | 1 | 0.08 |
| 2 | 5.98 | -3.98 | 15.84 | 2.65 |
| 10 | 7.02 | 2.98 | 8.88 | 1.26 |
| 13 | 11.5 | 1.5 | 2.25 | 0.19 |
| 4 | 5.29 | -1.29 | 1.66 | 0.31 |
| 6 | 6.21 | -0.21 | 0.04 | 0.006 |
| 15 | 16.5 | -1.5 | 2.25 | 0.14 |
| 14 | 7.59 | 6.41 | 41.08 | 5.41 |
| 4 | 8.91 | -4.91 | 24.11 | 2.70 |
| | | | | $\sum[(Oi-Ei)^2/Ei]$ =15.4 |

of the people and their feelings about the amount of time spent at work. The results are shown in **Tables 8** and **9**.

$$E = \frac{Row\ total \times column\ total}{total\ no{:}\ of\ respondents}$$

$$\aleph^2 = \sum \frac{(Oi - Ei)^2}{Ei}$$

Calculated value = 15.4

Degree of freedom = (*r*-1) (*c*-1) = (3-1) (5-1) = 8

Level of significance= 5 per cent = 0.05

The table value for $v$=8, $N^2_{0.05}$ =15.5

Since the calculated value (15.4) of Chi-square is less than its table value (15.5), the null hypothesis is accepted. Thus, there is no significant relationship between the age of the employee and their feelings about the amount of time spent at work.

Further, for $H_{03}$, we assumed that there was no significant relationship between the marital status of the people and the tiredness/depression caused by the work. The Chi-square test results are shown in **Tables 10** and **11**.

Calculated value= 2.177

Degree of freedom = (*r*-1) (*c*-1) = (2-1) (5-1) = 4

Level of significance= 5 per cent= 0.05

The table value for $v$=4, $N^2_{0.05}$ =9.49

Since the calculated value (2.177) of Chi-square is less than its table value (9.49), the null hypothesis is accepted. Thus, the marital status did not have any relationship with tiredness/depression suffered by employees because of the work.

## FINDINGS AND INTERPRETATION

From the analysis, it was found that 80 per cent of the respondents valued time-off for family emergencies and 97 per cent agreed that

**Table 10**
**Expected Frequencies on Relationship between Employees' Marital Status and Feeling of Tiredness/depression**

| Marital Status | Feeling of Tiredness or depression because of Work | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 'Never' | | 'Rarely' | | 'Sometimes' | | 'Often' | | 'Always' | | Total |
| | *Oi* | *Ei* | *Oi* | *Ei* | *Oi* | *Ei* | *Oi* | *Ei* | *Oi* | *Ei* | |
| Married | 8 | 6.96 | 12 | 11.02 | 10 | 12.76 | 16 | 16.24 | 12 | 11.02 | 58 |
| Unmarried | 4 | 5.04 | 7 | 7.98 | 12 | 9.24 | 12 | 11.76 | 7 | 7.98 | 42 |
| Total | 12 | | 19 | | 22 | | 28 | | 19 | | 100 |

**Table 11**
**Chi-square Calculations on Employees' Marital Status and Depression**

| Oi | Ei | Oi-Ei | (Oi-Ei)2 | (Oi-Ei)2 / Ei |
|---|---|---|---|---|
| 8 | 6.96 | 1.04 | 1.08 | 0.15 |
| 4 | 5.04 | -1.04 | 1.08 | 0.21 |
| 12 | 11.02 | 0.98 | 0.96 | 0.08 |
| 7 | 7.98 | -0.98 | 0.96 | 0.12 |
| 10 | 12.76 | -2.76 | 7.61 | 0.59 |
| 12 | 9.24 | 2.76 | 7.61 | 0.82 |
| 16 | 16.24 | -0.24 | 0.05 | 0.003 |
| 12 | 11.76 | 0.24 | 0.05 | 0.004 |
| 12 | 11.02 | 0.98 | 0.96 | 0.08 |
| 7 | 7.98 | -0.98 | 0.96 | 0.12 |
| | | | | $\sum[(Oi-Ei)^2/Ei]$ =2.177 |

encouragement to use paid and unpaid parental leave helps to balance work and life. Hence, the companies can introduce such encouragement schemes which the employees can use when the need arises. Organisations are concerned with the health of the employees that is why they have introduced the policy of cap on time, where a limit is put on the number of hours overtime that can be worked by the employees. Support from manager or supervisor is considered by 65 per cent of respondents, as a help to balance work and family commitments. So, the management should be more employee-friendly. 82 per cent of the respondents believe that they will be able to balance work and family commitments with the support from colleagues to some extent. Additionally, non-financial incentives can be considered as an extra assistance from the employer.

Employees with supportive work environment (flexibility, control, and supportive culture) reported greater job satisfaction and organisational commitment. The company is concerned with the employees' responsibility to their family, so that flexible working hours is provided to 79 per cent. Almost 72 per cent of the employees considered it helpful to balance work and family commitments. About 69 per cent of the respondents admitted that they sometimes, often, or always felt depressed because of work, which again shows the stress amount. Counselling services for employees were enjoyed by 72 per cent of the employees which can be increased so that the employees can be able to overcome the stress and depression from work. Health facilities provided to 100 per cent employees was considered important. But the level of health facilities must be increased as per the expectation of the employees. 90 per cent of the respondents agreed that the organisation would be more effective if employees had good work-life balance. Support from team members can help the employees to balance work and lives to a great extent. This was agreed by more than 90 per cent of the respondents. So, the company can encourage more team work between employees.

## POLICY IMPLICATIONS

The employers need to hold employees in such a manner that the latter do not dig-up get with the stress and burden of work. Policies like flexible working hours, and time-off for family should be used more prominently in the organisation. Simultaneously, policies like adoption leave, career break, right to request flexible working hours, flexible time, work distribution, maternity leave, parental leave and time-off for dependents, child-care facilities, etc., should be used as per the customised needs of the employees. Time-to-time job rotations and job incentives have to be provided. Health and yoga camps to be provided on regular basis to make the workers get divest of work stress. Social responsibility will have to increase at professional level, by increasing the number of supportive managers within the organisation. The company should focus on creating more supportive work environment. Some sorts of financial schemes can be adopted, by the company, for retired employees.

The employees can be awarded certificates for their outstanding performance, as a token of recognition in addition to the training programmes for increasing their efficiency. Extra focus ought to be given on the training, including technical training and personality development, which is indispensable to the employees. Older professionals already have experience in balancing work and life. They should pay attention to fresh professionals through showing interest and appreciation in the course of clear expectations about them in better relationship and communication. Listen to body and emotions, as needs and interests will change throughout the various stages of life. Seeking work-life balance is a continuous process and, therefore, continuous supervision from the organisation's executives is very necessary.

## CONCLUSION

The work-life programmes in an organisation provide the flexibility and support that help individuals to navigate through the increasing complexities of modern life. It is up to the employer and the employee to work together to facilitate the acculturation of work-life balance into the organisation. Working longer hours does not necessarily contribute to decreased job security, but does contribute to decreased work-life balance. Moreover, lower work-life balance is correlated with increased dissatisfaction at work. The disadvantages of having dissatisfied employees should be a motivating factor behind the acculturation process.

Although work-life balance may be viewed as a utopian dream, society must not fail to respond to the need of individuals when dealing with complex issues arising from the work and the rest of life, especially among individuals, along with their life and career. Many problems associated with stress, including issues of health, well-being, and decreased productivity, society would be wise to foster an environment that proactively engages individuals to reflect on their choices and priorities. Individuals, who seek balance to maintain health and harmony, potentially benefit all aspects of society and business.

## REFERENCES

Byrne, U. (2005), "Work-life Balance: Why are We Talking about it at All?" *Business Information Review*, Vol. 22, No. 1, pp. 53-59

Greenhaus, J.H., and N.J. Beutell (1985), "Sources of Conflict between Work and Family Roles," *Academy of Management Review*, Vol. 10, pp. 76-88

Greenblatt, Edy (2002), "Work life Balance: Wisdom or Whining", *Organisational Dynamics*, Vol. 31, No. 2, pp. 177-193

Guest, D.E. (2002), "Perspectives on the Study of Work-life Balance", *Social Science Information,* Vol. 41, pp. 255-279

Kanter, R.M. (1977), *Work and Family in the United States: A Critical Review and Agenda for Research and Policy* (New York: Russell Sage Foundation)

Lewis, S., R. Gambles, and R. Rapaport (2007), The Constraints of a 'Work–life Balance' Approach: An International Perspective", *International Journal of Human Resource Management*, Vol. 18, No. 3, pp. 360–373

Lockwood, Nancy R. (2003), "Work-Life Balance: Challenges and Solutions", *Society for Human Resource Management Research Quarterly* (USA), pp. 1-11

Naithani, P., and A.N. Jha (2009), "An Empirical Study of Work and Family-life Spheres and Emergence of Work-life Balance Initiatives under Uncertain Economic Scenario", *Growth - MTI*, Vol. 37, No. 1, pp. 69-73

Reed, P.S., and S.M. Clark (2004), Win-Win Workplace Practices: Improved Organisational Results and Improved Quality of Life", *Report* to U.S. Department of Labour Women's Bureau, USA

Skinner, N., and B. Pocock (2008), "Work-life Conflict: Is Work-time or Work-overload more Important?" *Asia Pacific Journal of Human Resources*, Vol. 46, No. 3, pp. 303-315

# EXPLORING THE MANIFESTATIONS OF EMPLOYEE STRESS IN RELATION TO SELECT DEMOGRAPHIC VARIABLES

**Nidhi Turan* and Sultan Singh****

**Abstract**

*With the burgeoning workload and other problems, the employees often face a lot of stress in their organisational roles. The demographic characteristics of employees influence the way such stress is perceived by them. The present paper seeks to measure the association between different manifestations (headache, diabetes, depression, general stress, high blood pressure (BP), ulcer, fatigue, backache or pain) of stress and employees' demographic variables (age, gender, education, and length of work experience). The study has revealed that a majority of the respondents attributed headache, depression, stress, high BP, fatigue, and backache or pain to their roles in the organisation. Moreover, those in the age group of 31-40 years were found to have the highest incidence of headache, diabetes, depression, high BP, ulcer, and fatigue due to their job responsibilities. The gender differences were significant only with respect to depression and high BP. But the differences are not statistically significant across education groups in the case of all the symptoms, except diabetes. The educational group-wise differences were significant with regard to depression, stress, high BP, ulcer and fatigue. Depression and ulcer were found to have significant association with the length of experience.*

**Key words:** ***Organisational stress symptoms, Employee Characteristics (Age, gender, education, and experience)***

## INTRODUCTION

The increasing competition has brought a lot of pressure on employees in modern organisations. The employees get pay based on their performance and their capacity and ability to achieve the targets. The deadlines given for achieving the targets sometimes make people tense because they get lesser time to interact with their peers and subordinates. Some people are expected to perform several things simultaneously to come up to their expectations. Under such situations, the executives feel overloaded with work. The new business strategies, which the firms resort to for meeting the challenges of competition, make it

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imperative to redefine the role of people working with them. But it is not possible to clearly redefine the employees' role everytime, as a result of which the expectations of role-setters are not clearly known to the former. People in organisation do not necessarily get all the resources required to perform their duties. Many conflicting situations in organisations and the pressure of domestic responsibilities are sources of employee stress. All the variables are inter-related and exist as sub-systems within the organisation. Change in any one needs change or adjustment in other elements. Therefore, the employees have a pressure of work due to increased competition, performance-based recruitment, changing socio-cultural environment, and multifarious responsibilities. All these lead to stress, which might manifest itself in different ways, which may include headache, diabetes, depression, general stress, high BP, ulcer, fatigue, backache, and other types of pain.

## LITERATURE REVIEW

In order to formulate the research objectives for the study, we reviewed the relevant research studies on the subject.

According to Rees (1995), stress is a significant problem across occupational groups and the stress management solution has to be tailored to the needs of each group. Thapar (1996) noted various causes of stress, such as personal, relational, occupational, and external.

Moncrief, Babakus, Cravens, and Johnston (1997) found that productivity pressures on sales persons, job uncertainties due to corporate re-structuring, outsourcing of sales operations, growing international competition, and changes in sales strategies had generated extraordinary level of job stress in marketing organisations.

Nhundu (1999) discovered several demographic characteristics and school variables, such as location, status of the school, and sex and work experience of head teachers that influenced the respondents' perception of situations which caused stress.

Patterson (2002) found that police officers with longer military experience were not significantly different from the officers having shorter military experience in terms of the exposure to stress. But the perception of stress was reported by officers with higher education and superior rank.

In a study of the Malaysian managers in MNCs, Manshor, Fontaine, and Choy (2003) observed that demographic variables did influence the level of stress among the managers. Veloutsou and Panigyrakis (2004) examined how the perceived performance and satisfaction on the intention to leave the job was affected by brand managers' role stress. They found that increased role stress was associated with lower level of perceived job performance and job satisfaction. However, the influence of stress on the intention to leave was not found significant.

Pandey (2005) proposed a positive mental health (PMH) model to manage stress, which integrates the concept and basic premises of 'positive psychology' and 'preventive stress management' into a single model.

After analysing different types of role stress affecting employees in a public enterprise, Srivastava (2006) found 'role erosion' to be the most prominent role stressor.

The study of Fernandes (2008) revealed a negative relationship between length of service and role stress among bank employees, in Goa.

Singh and Singh (2009) examined the role of life events stress and work culture on job satisfaction by conducting a study on 210 managers of private-sector organisations and concluded that managers with high stress are more satisfied with the job and their overall satisfaction is also very high.

In view of the findings of the above studies, we were encouraged to examine how organisational stress symptoms vary with the demographic characteristics of people working in the banking and insurance sectors in India.

## OBJECTIVE AND HYPOTHESIS

The study seeks to measure the association between different manifestations of employees' stress and their selected demographic variables, namely, age, gender, education, and length of work experience.

In order to achieve this objective, we formulated the following hypothesis:

**$H_0$:** There is no association between organisational stress symptoms and employees' demographic characteristics.

## RESEARCH METHODOLOGY

This study is based on primary data, collected from 422 employees of selected banking and insurance institutions, located in the National Capital Region (NCR) of Delhi. The sample consisted of 72 per cent males and 28 per cent females. The highest number (44.08 per cent) of the respondents was in the age-group of 21-30 years, followed by the group of 31-40 years (30.81 per cent). The respondents in the age-group of 41-50 years and above 50 years were almost equal (12.32 and 12.80 per cent, respectively). The distribution of respondents by education was: post graduates (48.58 per cent), graduates (36.73 per cent), and others (14.69 per cent). The largest number (45.26 per cent) of the respondents had work experience of up to 5 years. This was closely followed by those who had experience of 5-10 years (41.47 per cent). Those who had experience of 11-20 years were only 11.85 per cent, while the respondents with more than 20 years of experience were only 6 (1.42 per cent).

We sought to measure the incidence of consequences of stressful working by asking the respondents to indicate on a three-point scale, mentioning 'low', 'moderate', or 'high'. The inventory of manifestations, which were the problems emanating from role stress, included headache, diabetes, depression, general stress, high BP, ulcer, fatigue, backache, or pain. For the purpose of working out mean score of these problems, the following weights were assigned:

*Nil*= Zero (0); *Low*=1; *Medium*=2; *High*=3.

Besides working out the incidence in terms of frequencies of responses and their percentage, mean score was computed for the problems. The means and SDs, f values, Chi-square values, and other statistical indicators are analysed according to age, gender, education, and experience of the respondent.

## RESULTS AND DISCUSSION

### Analysis of Stress Symptoms

**Table 1** shows how the respondents attributed different stress-related problems to their organisational roles.

As shown in the table, the largest number of respondents gave 'nil' attribution of their organisational role to the problems like headache (69.91 per cent), diabetes (57.35), stress (42.42), and ulcer (62.09). The number of those who

**Table 1**
**Respondents' Distribution by Degree of Problem Attribution to Organisational Role**

| Problems | NIL | | Low | | Moderate | | High | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % | N | % |
| Headache | 46 | 10.90 | 160 | 37.91 | 135 | 31.99 | 81 | 19.19 | 422 | 100 |
| Diabetes | 295 | 69.91 | 86 | 20.38 | 34 | 8.06 | 7 | 1.66 | 422 | 100 |
| Depression | 242 | 57.35 | 114 | 27.01 | 52 | 12.32 | 14 | 3.32 | 422 | 100 |
| Stress | 179 | 42.42 | 134 | 31.75 | 75 | 17.77 | 34 | 8.06 | 422 | 100 |
| High BP | 137 | 32.46 | 192 | 45.50 | 66 | 15.64 | 25 | 5.92 | 422 | 100 |
| Ulcer | 262 | 62.09 | 143 | 33.89 | 9 | 2.13 | 8 | 1.90 | 422 | 100 |
| Fatigue | 40 | 9.48 | 188 | 44.55 | 118 | 27.96 | 76 | 18.01 | 422 | 100 |
| Backache and Pain | 37 | 8.77 | 211 | 50.00 | 132 | 31.28 | 42 | 9.95 | 422 | 100 |

attributed any problem to their role on the jobs was not very insignificant. Moreover, 'low', 'moderate' and 'high' degree of headache was ascribed by 37.91, 31.99, and 19.19 per cent of the respondents, respectively. Backache and pain was attributed by 50, 31.28, and 9.95 per cent respondents, respectively. Similarly, fatigue was ascribed by 44.55, 27.96, and 18.01 per cent respondents, respectively. Even high BP problem was also attributed to the job at 'low', 'moderate', and 'high' level by 45.50, 15.64, and 5.92 per cent of the respondents, respectively. Counting the 'low', 'moderate', and 'high' degree of problems together, a majority of the respondents have ascribed headache, depression, stress, high BP, fatigue, and backache or pain to their roles on the job.

### Age Effect on Stress

It is of interest to know whether stress symptoms differ across age groups of people. Accordingly, the age-wise means and SDs of the responses and their differences are computed through the F-test, which is shown in **Table 2**. The table also shows the association between the age and the responses by applying the Chi-square test.

As shown in the table, the highest mean value with regard to headache is in the age-group of 31-40 years (mean 1.69, SD=0.94), followed by 41-50 years (mean 1.58, SD = 0.80) 20-30 years (mean 1.55), and above 50 years age-group (mean 1.54, SD=0.95).The results of the F-test and the Chi-square rendered the acceptance of the hypothesis, that there is no significant difference across age groups, and age has no relationship with the level of headache attributed to organisational role.

As to diabetes, the mean values are very low irrespective of the age-group. The highest mean value is in the age group of 31-40 years (mean 0.58, SD=0.86) and the lowest for those above 50 years (mean 0.19, SD=0.48). The results of the F-test and the Chi–square test lead to the rejection of the hypothesis.

As regards depression, the mean values are very low, irrespective of the age-group, but are higher than those computed for diabetes. The highest mean value is again in the age group of 31-40 years (mean 0.76, SD=0.92) and the lowest in the case of those above 50 years (mean 0.48, SD=0.75). These results are in keeping with that obtained with regard to the headache and diabetes. As per the results of the F-test and the Chi-square test, the hypothesis is accepted.

Regarding general stress experienced, the mean values are higher than those worked out in the case of diabetes and depression. The highest mean value in this case is in the age-group of 41-50 years (mean 1.00, SD=0.93) and the lowest for those above 50 years (mean 0.81, SD=0.99). It is worth noting that this trend of results differs

**Table 2**
**Attribution of Problems to Organisational Role: Distribution by Age (Means, SDs , F and $\chi^2$)**

| Problems | Age | | | | | | | | F | P | $\chi^2$ | p |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 20-30 | | 31-40 | | 41-50 | | Above 50 | | | | | |
| | Mean | SD | Mean | SD | Mean | SD | Mean | SD | | | | |
| Headache | 1.55 | 0.9 | 1.69 | 0.94 | 1.58 | 0.80 | 1.54 | 0.95 | 0.72 | 0.5 | 8.7 | 0.5 |
| Diabetes | 0.35 | 0.6 | 0.58 | 0.86 | 0.48 | 0.70 | 0.19 | 0.48 | 4.95* | 0.0 | 20.77* | 0.0 |
| Depression | 0.55 | 0.8 | 0.76 | 0.92 | 0.63 | 0.80 | 0.48 | 0.75 | 2.26 | 0.1 | 13.48 | 0.1 |
| Stress | 0.87 | 0.9 | 0.99 | 1.00 | 1.00 | 0.79 | 0.81 | 0.99 | 0.78 | 0.5 | 4.78 | 0.9 |
| High BP | 0.92 | 0.9 | 1.29 | 2.87 | 0.83 | 0.80 | 0.91 | 0.80 | 1.56 | 0.2 | 12.3 | 0.4 |
| Ulcer | 0.37 | 0.6 | 0.58 | 0.78 | 0.48 | 0.60 | 0.3 | 0.46 | 4.18* | 0.0 | 19.44* | 0.0 |
| Fatigue | 1.55 | 0.9 | 1.65 | 0.90 | 1.42 | 0.90 | 1.39 | 0.96 | 1.52 | 0.2 | 8.33 | 0.5 |
| Backache and Pain | 1.41 | 0.8 | 1.38 | 0.80 | 1.69 | 0.78 | 1.31 | 0.78 | 2.52 | 0.1 | 19.84* | 0.0 |

*Note:* * Significant at 0.05 level

from that obtained with regard to the headache, diabetes, and depression. In terms of the results of the F-test and the Chi-square test, the hypothesis stands accepted.

The finding with regard to high BP is almost in keeping with those obtained for headache. Further, the mean values in this case are higher than those in the case of diabetes, depression, and stress. The highest mean value (mean 1.29, SD=2.87) is in the age-group of 31-40 years and the lowest in the age-group of 41-50 years (mean 0.83, SD=0.79). As per the F-test and the Chi-square test results, the hypothesis is again accepted.

The incidence of ulcer is the lowest of all the other problems and irrespective of the age-groups. The highest mean value falls in the age-group of 31-40 years (mean 0.58, SD=0.78), and the lowest for those above 50 years (mean 0.30, SD=0.46). It can be further noted that the present trend of result is in keeping with that obtained with regard to the diabetes. The results of the F-test and the Chi-square test lead to the rejection of the hypothesis.

The incidence of fatigue is on higher side, irrespective of the age-groups and the results are almost in consonance with the incidence of reported headache. The mean value in this regard is highest for the age-group of 31-40 years (mean 1.65, SD=0.90) and the lowest for those above 50 years (mean 1.39, SD=0.96). The hypothesis again stands accepted as per the results of the F-test and the Chi-square test.

With regard to the problem of backache and pain, the results are in keeping with those of headache and fatigue. Here, the age group of 41-50 years (mean 1.69, SD=0.78) is at the top and those above 50 years (mean 1.31, SD=0.80) at the bottom. The results of the F-test and the Chi-square test reveal that there are no significant differences across age groups, yet age bears a significant association with the level of backache attributed to organisational role of the respondents. Thus, the hypothesis is partially accepted.

### Gender Effect on Stress

Akin to the analysis carried out with regard to the age differences and association of age with the kind of responses, the gender-wise position has been brought out in **Table 3**.

The table shows that headache-related mean scores worked out at higher level in the case of females (mean 1.66, SD=0.92) than the males (mean 1.57, SD=0.92). However, the results of the F-test and the Chi-square test are not significant. Thus, the hypothesis stands accepted.

With regard to diabetes, it is seen that mean scores are at a lower ebb than the other selected manifestations, even though the females depict higher mean values (mean 0.50, SD=0.79) than the

**Table 3**
**Attribution of Problems to Organisational Role: Distribution by Gender (Means, SDs , F and $\chi^2$)**

| Problems | Gender | | | | F | P | $\chi^2$ | P |
|---|---|---|---|---|---|---|---|---|
| | Male | | Female | | | | | |
| | Mean | SD | Mean | SD | | | | |
| Headache | 1.57 | 0.92 | 1.66 | 0.92 | 0.94 | 0.33 | 1.06 | 0.79 |
| Diabetes | 0.38 | 0.67 | 0.50 | 0.79 | 2.64 | 0.10 | 2.92 | 0.40 |
| Depression | 0.57 | 0.81 | 0.74 | 0.87 | 3.71* | 0.05 | 5.35 | 0.15 |
| Stress | 0.86 | 0.96 | 1.04 | 0.96 | 2.94 | 0.09 | 4.44 | 0.22 |
| High BP | 0.90 | 0.82 | 1.34 | 2.98 | 5.44* | 0.02 | 8.56 | 0.07 |
| Ulcer | 0.43 | 0.62 | 0.45 | 0.69 | 0.10 | 0.76 | 1.92 | 0.59 |
| Fatigue | 1.55 | 0.90 | 1.54 | 0.89 | 0.01 | 0.92 | 0.61 | 0.89 |
| Backache and Pain | 1.42 | 0.80 | 1.43 | 0.77 | 0.01 | 0.94 | 4.07 | 0.25 |

*No:* * Significant at 0.05level

males (mean 0.38, SD=0.67). Notwithstanding these differences, their statistical values are insignificant as revealed by the results of the F-test and the Chi-square test. Therefore, the hypothesis is accepted.

Moreover, the problem of depression is higher among the females (mean 0.74, SD=0.87) than the males (mean 0.57, SD=0.81) though, the problem does not appear as acute as evidenced by lower mean scores, irrespective of the gender. However, the gender difference in this regard is significant in terms of the F-test results, but the gender is not significantly associated with the level of this problem. Therefore, the hypothesis is partially accepted. And first line of sixth paragraph (page-6) should be as – As regard the attribution.

Furthermore, general stress is also highest among the females (mean 1.04, SD=0.96) than the males (mean 0.86, SD=0.96). Regarding significance of these differences, the results of the F-test and the Chi-square test evidenced the absence of significant gender differences and association of gender with this problem. Thus, the hypothesis is again accepted.

As Regards the attribution of high BP, it is noticed that its prevalence is higher among the females (mean 1.34, SD=2.98) than the males (mean 0.90, SD=0.82). The results of the F-test depict that inter-gender difference on this count is significant. But the gender association with the incidence of this attribution did not turn out to be significant. Thus, the hypothesis is partially accepted.

The attribution of the problem of ulcer to organisational role is slightly higher among the females (mean 0.45, SD=0.69) than the males (mean 0.43, SD=0.62). The results of the F-test evidences, inter-gender difference in this regard and the gender association with the incidence of this attribution, as shown by the insignificant Chi-square value, are not significant. Therefore, the hypothesis once again stands accepted.

The incidence of fatigue is reported to have been higher than the other problems, except headache, irrespective of the gender. The mean values as regard fatigue are almost equal among males (mean 1.55, SD=0.90) and females (mean 1.54, SD=0.89). The results of the F-test and the Chi-square test support the hypothesis.

Regarding backache and pain, it is noticed that its prevalence is almost equal among the females (mean 1.43, SD=0.77) and the males (mean 1.42, SD=0.80). The results of the F-test show that the inter-gender difference in this regard is not significant and the gender association with the incidence of this attribution did not turn out to be significant. Therefore, the hypothesis is again accepted.

### Effect of Education on Stress

The education level can also be expected to influence the respondents' perception of the role of their nature of work in the stress-related problems. For this purpose, an analysis was carried out from

**Table 4**

**Attribution of Problems to Organisational Role: Distribution by Education level (Means, SDs , F and $\chi^2$)**

| Problems | Education | | | | | | F | P | $\chi^2$ | p |
|---|---|---|---|---|---|---|---|---|---|---|
| | Graduate | | Post graduate | | Others | | | | | |
| | Mean | SD | Mean | SD | Mean | SD | | | | |
| Headache | 1.53 | 0.91 | 1.67 | 0.92 | 1.52 | 0.94 | 1.28 | 0.28 | 9.88 | 0.13 |
| Diabetes | 0.50 | 0.73 | 0.44 | 0.75 | 0.13 | 0.38 | 6.32* | 0.00 | 15.48* | 0.02 |
| Depression | 0.65 | 0.84 | 0.62 | 0.85 | 0.52 | 0.72 | 0.56 | 0.57 | 2.87 | 0.82 |
| Stress | 0.97 | 0.93 | 0.92 | 1.00 | 0.76 | 0.86 | 1.13 | 0.32 | 7.64 | 0.27 |
| High BP | 0.94 | 0.84 | 1.15 | 2.34 | 0.82 | 0.76 | 1.10 | 0.33 | 4.15 | 0.84 |
| Ulcer | 0.43 | 0.64 | 0.47 | 0.67 | 0.34 | 0.48 | 1.08 | 0.34 | 3.61 | 0.73 |
| Fatigue | 1.55 | 0.85 | 1.58 | 0.93 | 1.44 | 0.88 | 0.59 | 0.56 | 4.39 | 0.62 |
| Backache and Pain | 1.41 | 0.78 | 1.41 | 0.78 | 1.52 | 0.82 | 0.50 | 0.61 | 2.78 | 0.84 |

the angle of different educational levels of the respondents. The computations regarding the effect of education on the stress symptoms are summarised in **Table 4**.

As shown in the table, the association of headache with organisational stress related mean scores comes out to be higher in the case of post-graduates (mean 1.67, SD=0.92) than the graduates (mean 1.53, SD=0.91), and others (mean 1.52, SD=0.94). However, the results of the F-test and the Chi-square are not significant. Thus, the hypothesis is accepted.

The mean value in the case of diabetes is at a lower ebb than in the case of other selected manifestations, except ulcer which shows the lowest manifestation as indicated by mean values. The graduates depict higher mean values (mean 0.50, SD=0.73) than the post-graduates (mean 0.44, SD=0.75) and the others (mean 0.13, SD=0.38). These differences are found to be statistically significant as revealed by the results of the F-test and incidence of diabetes is found to be significantly associated with the educational level as supported by the Chi-square test. Therefore, the hypothesis is rejected.

The problem of depression appears to be more acute than in the case of diabetes as depicted by higher mean values, with insignificant differences across educational levels. The graduates depict higher mean values (mean 0.65, SD=0.84) than the post-graduates (mean 0.62, SD=0.85) and the others (mean 0.52, SD=0.72). These differences are found to be statistically insignificant as revealed by the results of the F-test and the incidence of depression is found not to be significantly associated with the educational level, as supported by the Chi-square test. Therefore, the hypothesis stands accepted.

The general stress is seen at a higher ebb than the depression, diabetes, ulcer, and the high BP. The graduates depict higher mean values (mean 0.97, SD=0.93) than the post-graduates (mean 0.92, SD=1.00) and the others (mean 0.76, SD=0.86). However, these differences are not statistically significant as revealed by the results of the F-test, and the incidence stress experienced by the respondents is also not found to be significantly associated with the educational level as supported by the Chi-square test. Therefore, the hypothesis again stands accepted.

The post-graduates depict higher mean values of BP (mean 1.15, SD=2.34) than the graduates (mean 0.94, SD=0.84) and the others (mean 0.82, SD=0.76). These differences are found to be statistically insignificant as revealed by the results of the F-test and the incidence of high BP is also found to be insignificantly associated with the education level, as supported by the Chi-square test. Therefore, the hypothesis is accepted once again.

The problem of ulcer appears to be less acute than the other problems. But the differences according to education do not appear to be significant. The post-graduates depict slightly higher mean values (mean 0.47, SD=0.67) than the graduates (mean 0.43, SD=0.64) and the others (mean 0.34, SD=0.48). Here also, the hypothesis is accepted.

The problem of fatigue appears to be more acute than that of headache and ulcer, as depicted by the higher mean values with insignificant differences across educational levels. The post-graduates depict higher mean values (mean 1.58, SD=0.93) than the graduates (mean 1.55, SD=0.85) and the others (mean 1.44, SD=0.88). These differences are found to be statistically insignificant as revealed by the results of the F-test and the incidence of fatigue is not found significantly associated with educational level, as supported by the Chi-square test. Here again, the hypothesis is accepted.

The problem of backache and pain appears to be more acute than any other problem, except those of diabetes and headache. In this case, the category of others (mean 1.52, SD=0.82) has surpassed the categories of graduates (mean 1.41, SD=0.78) and post-graduates (mean 1.41, SD=0.78). The graduates and post-graduates are on an equal footing. These differences are found to be statistically insignificant as revealed by results of the F-test. The incidence of backache and pain is found not to be significantly associated with the

**Table 5**
**Attribution of Problems to Organisational Role:**
**Distribution by Length of Experience (Means, SDs , F and $\chi^2$)**

| Problems | Years of experience | | | | | | | | F | P | $\chi^2$ | p |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-5 | | 6-10 | | 11-20 | | Above 20 | | | | | |
| | Mean | SD | Mean | SD | Mean | SD | Mean | SD | | | | |
| Headache | 1.57 | 0.90 | 1.58 | 0.95 | 1.64 | 0.88 | 2.33 | 0.82 | 1.39 | 0.25 | 8.93 | 0.44 |
| Diabetes | 0.31 | 0.56 | 0.50 | 0.79 | 0.52 | 0.89 | 0.33 | 0.52 | 2.48 | 0.06 | 15.96 | 0.07 |
| Depression | 0.53 | 0.77 | 0.66 | 0.83 | 0.70 | 0.97 | 1.33 | 0.82 | 2.60* | 0.05 | 17.43 | 0.04 |
| Stress | 0.85 | 0.91 | 0.94 | 0.97 | 0.96 | 1.01 | 2.00 | 1.26 | 2.98* | 0.03 | 16.37 | 0.06 |
| High BP | 0.83 | 0.81 | 1.01 | 0.86 | 1.80 | 4.44 | 1.00 | 1.10 | 4.21* | 0.01 | 20.12 | 0.06 |
| Ulcer | 0.33 | 0.47 | 0.54 | 0.73 | 0.54 | 0.76 | 0.17 | 0.41 | 4.15* | 0.01 | 30.26 | 0.00 |
| Fatigue | 1.59 | 0.88 | 1.50 | 0.88 | 1.42 | 0.93 | 2.50 | 0.84 | 2.91* | 0.03 | 12.48 | 0.19 |
| Backache and Pain | 1.39 | 0.77 | 1.44 | 0.78 | 1.56 | 0.88 | 1.00 | 0.63 | 1.24 | 0.29 | 6.71 | 0.67 |

***Note*:** * Significant at 0.05 level

educational level, as evidenced by the Chi-square test result. Therefore, the hypothesis is accepted.

### Effect of Experience on Stress

Another important demographic variable that can have a telling affect on the respondents' perceptions is the length of their experience. With this premise, means and SDs of the length of the experience and their significant differences were examined. Similarly, the association between length of experiences and nature of responses were examined by applying Chi-square test. The results are shown in **Table 5**.

As shown in the table, headache-related mean scores worked out at the highest level in the case of those having experience of over 20 years (mean 2.33, SD=0.82). The mean values have registered an increase in the length experience of the respondents. Notwithstanding the visible differences across experience groups, the results of the F-test and the Chi-square test are not significant. Thus, the hypothesis is accepted.

With regard to diabetes, it is noticed that the mean scores are at a lower ebb than several other selected manifestations, except ulcer in the case of respondents having different lengths of experience. The problem of diabetes appears to be much sharper in the case of those with 6-10 years of experience (mean 0.50, SD=0.79) and 11-20 years (mean 0.52, SD=0.89) experience groups than those up to 5 years experience (mean 0.31, SD=0.56) and above 20 years (mean 0.33, SD=0.52) experience groups. These differences are found to be statistically insignificant as revealed by the results of the F-test and incidence diabetes is found to be insignificantly associated with the length of experience as evidenced by the Chi-square test. Therefore, the hypothesis again stands accepted.

The reported incidence of depression is higher than the problem of diabetes and the groups with different experience appear to differ prominently from each other. The group having experience of above 20 years has come up at the top (mean 1.33, SD=0.82) and those up to 5 years is at the bottom (mean 0.53, SD=0.77). These differences are found to be statistically significant as revealed by the F-test and the incidence of depression is found to be significantly associated with the length of experience as supported by the Chi-square test, thus rejecting the hypothesis.

The general stress is higher than the problem of diabetes and depression. Further, the groups having different length of experience appear to differ significantly from each other and the trend is just akin to what we have seen with regard to the problem of depression. Here again, the group having experience of above 20 years is at the top (mean 2.00, SD=1.26) and those having experience up to 5 years is at the lowest (mean 0.85, SD=0.91).

As in the case of depression, these differences are also found to be statistically significant as revealed by the F-test and the incidence of depression is also found to be significantly associated with the length of experience as evidenced by the Chi-square test. Therefore, the hypothesis stands rejected.

Regarding the high BP problem, the groups with different lengths of experience appear to differ notably from each other. However, they vary from that obtained in the case of stress and depression. The 11-20 years experience group has come up at the pinnacle in terms of the severity of the problem of high BP (mean 1.80, SD=4.44), followed by 6-10 years experience group (mean 1.01, SD=0.86), above 20 years (mean 1.00, SD=1.10), and up to 5 years (mean 0.83, SD=0.81). These differences are found to be statistically significant as revealed by the F-test, but the incidence high BP has no significant association with length of experience as revealed by the Chi-square test. Therefore, the hypothesis is only partially accepted.

A view of the problem of ulcer provides a slightly different picture. Though the different experience groups notably differ from each other, the problem does not appear to be as acute as any other problem. Here, the ordering of experience groups various from that obtained in the case of other manifestations. The 6-10 years (mean= 0.54, SD=0.73) and 11-20 years (mean=0.54, SD=0.76) experience groups have come at the equal level while having an edge over the others. These are followed by the experience group of up to 5 years (mean =0.33, SD=0.47) and of above 20 years (mean =0.17, SD=0.41). These differences are found to be statistically significant as revealed by the F-test, and the prevalence of ulcer is significantly associated with length of experience as revealed by the Chi-square test, thus rejecting the hypothesis.

With regard to the problem of fatigue also, the different experience groups appear to differ markedly from each other and the ordering of experience groups vary from those obtained in the case of other problems. The above-20-years experience group has come up at the peak in terms of the intensity of the problem of fatigue (mean 2.50, SD=0.84), followed by the experience group of up to 5 years (mean 1.59, SD=0.88), 6-10 years (mean 1.50, SD=0.88), and up to 11-20 years (mean 1.42, SD=0.93). These differences are found to be statistically significant as revealed by the F-test, but the incidence has no significant association with the length of experience as revealed by the result of the Chi-square test. Therefore, the hypothesis is again only partially accepted.

For backache and pain, it is noted that the mean scores are at a lower level than headache and fatigue. The problem appears to be much severe among those having a length of experience of 11-20 years (mean 1.56, SD=0.88), followed by 6-10 years (mean 1.44, SD=0.78), up to 5 years (mean 1.39, SD=0.77), and above 20 years (mean 1.00, SD=0.63) experience groups. These differences are found to be statistically insignificant as revealed by the F-test and the problem is found to be insignificantly associated with the length of experience as evidenced by the Chi-square test. Therefore, the hypothesis is accepted here also.

## CONCLUSION AND POLICY IMPLICATIONS

The study has revealed that a majority of the respondents have ascribed headache, depression, stress, high BP, fatigue, and backache/pain to their roles on the jobs. The 31-40 years age group is found to have the highest incidence of headache, diabetes, depression, high BP, ulcer, and fatigue problems due to job responsibilities. The 41-50 years age group surpassed the others with respect to other remaining problems including stress and backache/pain. The age factor is found to have significantly associated with the problems of diabetes, ulcer, and backache/pain and different age groups significantly differ from each other in this regard. The incidence of headache, diabetes, depression, stress, high BP, ulcer, and backache/pain is higher among the females than the males. The inter-gender significant differences have worked out only with respect to depression and high BP problems. The problem of headache, high BP, ulcer, and fatigue has worked out the highest among post-graduates, while that of diabetes, depression, and general stress among graduates. But these differences are not statistically significant across education in the case of majority of the manifestations, except diabetes which significantly differed across the educational groups. The differences among the respondents based on the length of experience are significant with regard to depression, stress, high BP, ulcer, and fatigue. Depression and ulcer are found to have significant association with the length of experience. As far as the problem of headache, diabetes, and backache/ pain is concerned, the difference by length of experience is not significant and there is no relationship between these problems and the length of employee's service. In terms of the value of the mean scores, the above-20-years experience group has the highest incidence of the problem of headache, depression, stress, and fatigue attributed by them to the organisational role. The study calls for special precautionary measures in the case of the employees in higher age groups, particularly the females.

## REFERENCES

Fernandes, Christo (2008), "Length of Service and Role Stress", *The ICFAI University Journal of Organisational Behaviour,* Vol. 7, No. 3, pp. 17-21

Manshor, A.T., R. Fontaine, and C.S. Choy (2003), "Occupational Stress among Managers: A Malaysian Survey", *Journal of Managerial Psychology,* Vol. 18, No. 6, pp. 622-628

Moncrief, William C., Emin Babakus, David W. Cravens, and Mark Johnston (1997), "Examining the Antecedents and Consequences of Salesperson's Job Stress", *European Journal of Marketing,* Vol. 31, No. 11/12, pp. 786-798

Nhundu, T.J. (1999), "Determinants and Prevalence of Occupational Stress among Zimbabwean School Administrators", *Journal of Educational Administration,* Vol. 37, No. 3, pp. 256-272

Pandey, S.C. (2005), "Time to Manage Stress Positively", *Indian Management,* Vol. 44, No. 1, January, pp. 84-89

Patterson, G.T. (2002), "Predicting the Effects of Military Service Experience on Stressful Occupational Events in Police Officers", *International Journal of Police Strategies and Management,* Vol. 25, No. 3, pp. 602-618

Rees, D.W. (1995), "Work-Related Stress in Health Service Employees", *Journal of Management Psychology,* Vol. 10, No. 3, pp. 4-11

Srivastava, A.K. (2006), "Role Stress in the Public Sector: An Empirical Study", *Management and Change,* Vol. 10, No. 1, pp. 1-10

Singh, A.P., and S. Singh (2009), "Effects of Stress and Work Culture on Job Satisfaction", *The ICFAI University Journal of Organisational Behaviour*, Vol. 8, No. 2, pp. 52-62

Thapar, B.J. (1996), "Stress Management", *Udyog Yug,* Vol. 2, No. 1, pp. 29-32

Veloutsou, C.A., and G.G. Panigyrakis (2004), "Consumer Brand Managers' Job Stress, Job Satisfaction, Perceived Performance, and Intention to Leave", *Journal of Marketing Management,* Vol. 20, Nos. 1& 2, pp. 105-131

## COMMUNICATION

# SURROGATE ADVERTISING
# Concept and Regulatory Measures

**Ruchi Gupta***

**Abstract**

*Surrogate advertising, the practice of promoting a product in the guise of another, when the advertisement of the former is banned by the law, is a problem which is of ethical and legal concern. Such a practice has been used extensively by liquor and tobacco companies in India. The practice needs to be checked if the ban on the liquor and tobacco products is to be implemented in real sense. This paper discusses the concept of surrogate advertising, the use of surrogate advertising by liquor and tobacco companies, the laws regulating the practice, and cases of surrogate advertising in India measures for controlling the menace are also suggested.*

**Key words:** ***Surrogate advertising, Liquor and tobacco industry, Regulatory measures, Decided cases***

## INTRODUCTION

Advertising has often been criticised for promoting such products to people which undermine their health and cause economic harm. Considering the harmful effects of some products, the Government of India banned the advertising of liquor and tobacco products by introducing certain laws and regulations. As a reaction to this, liquor and tobacco manufacturers started seeking other ways of endorsing their products. They found an alternative way of advertising through which they can keep on reminding the consumers about their liquor and tobacco brands. They have introduced various other products in the market with the same or similar brand name. When these products are advertised, it keeps reminding the customers about the liquor and tobacco products with that brand name, the advertisement of which is banned. This phenomenon, known as "surrogate advertising", has become a common practice in Indian advertising.

## CONCEPT OF SURROGATE ADVERTISING

When the laws of a country do not permit advertising of certain products, the advertisers devise certain new means of advertising. Such situation was witnessed when the Government of India banned the advertising of tobacco and liquor products in the country. The manufacturers of tobacco and liquor products introduced various other products, such as soda, fruit juices, cassettes, and CDs in the market with the same brand name

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and sponsored various events and festivals. When such substitute products (surrogates) are advertised, it keeps reminding the customers about the liquor and tobacco products with the same brand name, the advertisement of which is banned. This phenomenon, known as 'surrogate advertising', can be defined as duplicating the brand image of one product extensively to promote another product of the same brand.

Surrogate advertising can also be defined as the strategy used by manufacturers and advertisers to promote a product in the guise of another, when the advertisement of the former is banned by the law of the land. The practice of surrogate advertising has ethical and legal dimensions.

**Genesis of Surrogate Advertising**

Surrogate advertisements took off, not long ago, in the UK, where the British housewives protested strongly against liquor advertisements "luring" away their husbands. The liquor industry found a way around the ban: Surrogate advertisements for cocktail mixers, fruit juices, and soda water using the brand names of the popular liquors.

In India, surrogate advertisements gathered momentum with the amendment to the Cable Television Networks Regulation Rules, 1994, in the year 2000, which prohibits tobacco and liquor advertisements on TV channels.

The Advertising Code, given in Rule 7 (2) (viii) of the Cable Television Networks Regulation Rules, 1994, as amended in 2000, provides that:

No advertisement shall be permitted which promotes directly or indirectly the production, sale or consumption of-

- Cigarettes, tobacco products, wine, alcohol, liquor or other intoxicants; and
- Infant milk substitutes, feeding bottle, or infant food.

This ban on advertising of liquor and tobacco products, led to the ingenuity of the advertisers who came up with '*surrogate advertising*' as a solution to the ban on advertising of liquor and tobacco products.

**Extent of Prevalence**

Direct advertising of liquor and tobacco products was rampant before the enforcement of the Cable Television Networks Regulation Rules, as amended in 2000. Many of us may still recall the famous ads of '*Pan Parag*', with the jingle '*Pan Parag pan masala, Pan Parag*', and Bagpiper's "*Khub jamega rang jab mil baithenge teen yaar- aap, main, aur Bagpiper*". Sponsorship of sports events and cultural events by tobacco companies were methods of promoting tobacco brand names, for instance 'Wills' (a brand of Indian Tobacco Company - ITC), used to sponsor Indian cricket team/matches. '*Manikchand*', manufacturers of *gutkha* (chewing tobacco), patronised the Filmfare awards ceremony. In March 1997, ITC paid US$ 16 million to put its logo on the Indian cricket teams' uniforms. In December 1999, the Four Square brand of GPI ran the 'Gold in Gold' contest, offering gold gift options, which required that entrants to the contest, besides being tobacco users, collect 4 inserts from Four Square Gold cigarette packs. These contests and offers were advertised to entice existing customers and recruit new ones to use their harmful product.

In the absence of any legislative measures to ban advertising and promotion of liquor and tobacco products, it was not easy to control the advertising and promotional activities of companies manufacturing liquor and tobacco products. For instance, the Wills "Made for Each Other" contest became one of the most popular contests sponsored by a cigarette manufacturer in the 1980s. With lucrative offers, including a holiday abroad for the winning couple, it attracted much controversy over glamourising and minimising the dangers of smoking filter cigarettes. One of the requirements for entry to the contest was that either of the couple should be a smoker. A Delhi-based consumer group, Voluntary Organisation in the Interest of Consumer Education (VOICE), protested against the said contest by filing public interest litigation before the Monopolies and Restrictive Trade Practices Commission (MRTPC), terming it unethical. The case was eventually lost by VOICE. Subsequently, VOICE appealed to the Supreme Court against MRTPC's judgment, but lost the case in the Supreme Court as well.

With the Indian government banning the advertising of tobacco and liquor products in the country, it became possible to hold any manufacturer responsible for promoting any such product. However, the ban led to another problem, which the liquor and tobacco industry has caused in the last few years- the problem of surrogate advertising.

**Surrogate Advertising by Liquor Companies**

The liquor industry is a prominent player in the area of surrogate advertising. Surrogate advertisements used by liquor companies include 'Bagpiper' soda, cassettes and CDs, 'Hayward's' soda, 'Royal Challenge' golf accessories and mineral water, 'Kingfisher' mineral water, 'White Mischief' holidays, 'Smirnoff' cassettes and CDs, 'Imperial Blue' cassettes and CDs, and 'Teacher's' achievement awards. These products bear exactly the same brand name and logo, which they used earlier in their liquor advertisements. It was surprising to know that liquor giants, like McDowell's and Seagram's, had entered into new segments, like cassettes and CDs, and mineral water. Later, it was found that the basic aim of such surrogate advertisements was to promote their liquor products, like beer, wine, and vodka. Their brand extensions were just an eyewash to bypass the advertisement ban.

Understanding the gravity of the situation, the Indian Broadcasting Foundation (IBF) decided that the liquor manufacturing units must get production of the advertisement approved both at the storyboard stage and after the production of the commercial. It also ruled that that if liquor companies promote any juice, mineral water or soda, these should be shown in a proper manner and not as trimmings to liquor advertisement. These constitute a welcome step, but the key point lies in its enforcement.

One recent example of surrogate advertising is IPL, which gets sponsorship from certain liquor brands. In 2008, the Health Minister challenged the name of the Bangalore Indian Premier League (IPL) cricket team, 'Royal Challengers' as the authorities felt that it was an obvious and blatant form of surrogate advertising for the liquor brand "Royal Challenge". However, the Supreme Court of India observed that the team was not named 'Royal Challenge', the liquor brand, but 'Royal Challengers'. 'Only those who drink can be attracted by these things', the bench observed in a lighter vein, alluding to the fact that a name would not have any effect on non-drinkers.

**Surrogate Advertising by Tobacco Companies**

The tobacco industry is no far behind in exhibiting its ingenuity to ward off the ban on advertising tobacco products. One can see a trend of surrogate advertisements by companies making tobacco products, like cigarettes and pan masala. Examples, of surrogate advertisements in this category include 'Red and White' Bravery Awards, '*Manikchand'* Filmfare Awards, and Four Square' White water rafting.

Tobacco companies in India are increasingly investing in non-tobacco products by the same brand name, as the tobacco product and are aggressively advertising these products through all available media. *Gutka* brands, such as '*Rajnigandha*', 'Goa 1000', and '*Pan Parag*', skirt the ban on tobacco advertising on television channels by resorting to surrogate advertising for *paan masala* bearing the same brand name. A plethora of advertisements on *paan masala* have mushroomed on media channels. Companies advertise *paan masala*, bearing the same brand name as other tobacco products and highlighting that *paan masala* is a non-tobacco product.

Manikchand launched an attractive scheme for its retailers and distributors in May 2001. The company offered a scratch coupon on purchase of a box of this *gutka*, which gave the purchaser 2, 3, 5 or 10 pouches of *gutka,* absolutely free. This strategy was planned with the intent to coax the retailer to buy bulk stock for sale and to encourage a personal user to buy in bulk, indirectly making him more addicted to the product.

With the broadcasters continuing to telecast advertisements of brands that are also used for cigarettes, tobacco, wine, alcohol, and liquor amongst other products, the Union Ministry of Information and Broadcasting (MIB) recently directed the broadcasting channels to "withdraw all such advertisements else broadcast license will be suspended or cancelled". This move is likely to impact the advertising of brands including those of 'Kingfisher', '*Pan Bahar*', '*Pan Vilas*', '*Chaini Khaini*', and '*Rajnigandha*'. In a recent directive issued to all channels, including the news and current affairs channels, the Union Information and Broadcasting ministry said that it had observed violations of cable laws pertaining to the telecast of such advertisements. The ministry has also directed the companies to withdraw all such advertisements or else face stringent action, including suspension or prohibition of broadcast.

## REGULATORY MEASURES

Surrogate advertisements are not only misleading, but also false and dishonest in many cases. With surrogate advertising so widespread, let us see how various legislative measures in India are intended to control it.

### The Cable Television Networks Regulation Rules,1994{framed under the Cable Television Networks (Regulation) Act, 1995}

In India, surrogate advertisements gathered momentum with the amendment to the Cable Television Networks Regulation Rules in 2000, which prohibited tobacco and liquor advertisements on television.

The Advertising Code, specified under Rule 7 (2) (viii) of Cable Television Networks Regulation Rules, as amended in 2000, prohibits advertisements which promote, directly or indirectly, production, sale or consumption of -

- Cigarettes, tobacco products, wine, alcohol, liquor or other intoxicants; and
- Infant milk substitutes, feeding bottle or infant food.

### The Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply, and Distribution) Act, 2003

This Act seeks to ensure that effective protection is provided to non-smokers from involuntary exposure to tobacco smoke and to protect children and young people from being addicted to the use of tobacco.

Section 3(a) of the Act defines 'advertisement' as 'any visible representation, by way of notice, circular, label, wrapper or other document, and includes any announcement made orally or by any means of producing or transmitting light, sound, smoke, or gas'.

Thus, surrogate advertisements clearly fall within the definition, as it involves making the tobacco labels clearly visible to people through other products by the same name. Moreover the public is always reminded orally of the tobacco's brand name through the advertisements of such other products. So, such advertisements are liable to be a subject matter of this Act and, therefore, subject to its regulatory measures.

According to Section 5(1) of the Act, no person engaged in, or purported to be engaged in the production, supply or distribution of cigarettes or any other tobacco products shall advertise, and no person having control over a medium shall cause to advertise cigarettes or any other tobacco products through that medium, and no person shall take part in any advertisement which directly or indirectly suggests or promotes the use or consumption of cigarettes or any other tobacco products.

Further, as provided under Section 5(3) of the Act, no person, shall, under a contract or otherwise, promote or agree to promote the use or consumption of:

(a) Cigarettes or any other tobacco product; or

(b) Any trade mark or brand name of cigarettes or any other tobacco product in exchange for a sponsorship, gift, prize or scholarship given or agreed to be given by another person.

Certain amendments were made in the above Act in 2005, clarifying that the word 'indirect advertisement' mentioned in Section 5(1), would mean:

1. The use of a name or brand of tobacco products for marketing, promotion or advertising other goods, services and events;
2. The marketing of tobacco products with the aid of a brand name or trademark which is known as, or in use as, a name or brand for other goods and service;
3. The use of particular colours and layout and/or presentation which are associated with particular tobacco products; and
4. The use of tobacco products and smoking situations when advertising other goods and services.

Thus, this section not only restricts advertisement and promotion of tobacco products for direct/indirect pecuniary benefit, but also covers promoting tobacco through brand extensions and sponsorships.

### Advertising Standard Council of India (ASCI) Code

The ASCI is a voluntary self-regulation council, registered as a not-for-profit company, under section 25 of the Companies Act, 1956. It is formed to safeguard against the indiscriminate use of advertising for the promotion of products which are regarded as hazardous to society or to individuals to a degree or of a type which is unacceptable to society at large. The responsibility for the observance of this Code for Self-Regulation in Advertising lies with all who commission, create, place or publish any advertisement or assist in the creation or publishing of any advertisement. All advertisers, advertising agencies and media are expected not to commission, create, place or publish any advertisement which is in contravention of this Code.

Chapter III.6 of the ASCI Code provides that advertisements for products whose advertising is prohibited or restricted by law or by this Code must not circumvent such restrictions by purporting to be advertisements for other products the advertising of which is not prohibited or restricted by law or by this code. In judging whether or not any particular advertisement is an indirect advertisement for product whose advertising is restricted or prohibited, due attention shall be paid to the following:

(a) The visual content of the advertisement must depict only the product being advertised and not the prohibited or restricted product in any form or manner.

(b) The advertisement must not make any direct or indirect reference to the prohibited or restricted products.

(c) The advertisement must not create any nuances or phrases promoting prohibited products.

(d) The advertisement must not use particular colours and layout or presentations associated with prohibited or restricted products.

(e) The advertisement must not use situations typical for promotion of prohibited or restricted products when advertising the other products.

Thus, the ASCI's Code on Advertising expressly prohibits surrogate advertising.

The ASCI's role in regulating advertising in India has often appreciated by various agencies, including the Central Government. However, it lacked the force of legal recognition. The Government of India, at last, took note of this and by, one stroke, on the 2nd August 2006, vide a notification in the Gazette of India Extraordinary, directed that at least as far as TV commercials are concerned, they abide by the ASCI Code. The relevant provision in the Cable Television Networks (Amendment) Rules, 2006, now provides:

"(9) No advertisement which violates the Code for Self-Regulation in Advertising, as adopted by the Advertising Standards Council of India (ASCI), Mumbai, for public exhibition in India, from time to time, shall be carried in the cable service".

### Framework Convention on Tobacco Control

The Framework Convention on Tobacco Control (FCTC) is a convention developed by the World Health Organisation (WHO) as a model code of conduct to be adopted by any country desirous of enforcing strict anti-tobacco rules.

Article 13 of the convention deals with tobacco advertising, promotion, and sponsorship. It provides that even if the constitution does not permit a comprehensive ban on tobacco advertising, it can resort to other ways too, which include the following:

1. Prohibiting advertisements which create an erroneous impression on consumers;
2. Restricting the use of direct/indirect incentives encouraging public use of tobacco;
3. Restricting the media advertising in a period; and
4. Restricting the tobacco sponsorships of public events.

India can follow the detailed guidelines for surrogate advertising given in this convention.

## CASES OF SURROGATE ADVERTISING

### Cases Decided by MRTP Commission

In India, cases of surrogate advertising have been decided by the Supreme Court of India, High Courts, MRTP Commission, Consumer Courts, and the ASCI. In the cases of Phipson & Co. Ltd. and Herbertson Ltd. (UTP inquiries Nos 20 and 22 of 1986, both decided on 3.7.1989.), the MRTP Commission held that the publication of advertisements by liquor manufacturers, ostensibly in the name of any product other than the liquor sold under the identical brand name, intended to circumvent the legal ban on advertising of liquor, did not amount to an unfair trade practice. This decision received adverse public reaction as it virtually gave a green signal to unscrupulous advertisers (Verma, 2001). On September 8, 2000, the Central Government had announced a complete ban on the telecast of alcohol and tobacco advertisements in the country. The amendment to the Cable Television Networks (Regulation) Act, 1995, which took effect from September 8, 2000, also sought to prevent surrogate advertising.

### Cases Decided by Consumer Courts

In a consumer interest litigation, filed by Mumbai Grahak Panchayat (2007 CPJ 102 NC), Western Railways and United Breweries were not only forced to withdraw the surrogate liquor advertisements from Western Railway trains but were also forced to prominently display corrective advertisements to neutralize the effect of surrogate liquor ads.

### Cases Decided by Consumer Complaints Council of ASCI

The complaint cell of the ASCI, known as the Consumer Complaints Council (CCC), has also played a fair and supportive role in ensuring that the complaints received against surrogate advertisements are dealt with promptly. Some of the cases (2006-2009), where the complaints received against surrogate advertisements were upheld by CCC, are discussed below.

#### *1. The Johnnie Walker Blue Label Whisky Case*

This ad, published in *Business India* (November 2008), showed a whisky glass inscribed with the words "Johnnie Walker Blue Label Blended Scotch Whisky". The ad read: "Whiskies so rare that some of the distilleries no longer exist. The master blender at Johnnie Walker & Sons can detect a single part of flavour in a billion, a skill and craft that is exceptionally rare", "Only about one in ten thousand are considered to possess the exceptional flavours and properties sought for Johnnie Walker Blue Label", "These last precious drops can truly never be replaced". The complaint was received in January 2009, the ad appeared to be a surrogate for the liquor brand. 'Johnnie Walker Blue Label Whisky'. The CCC decided in February 2009, that the ad amounted to a promotion of liquor product. *Business India* gave an undertaking not to publish the promotion again.

### 2. *The Seagram's Blenders' Pride Case*

*Business India* (November 2008) carried an ad which read: "Taste blend", "Taste that speaks for itself". The visual depiction of brand name, logo, brand symbol, suggested a well-known brand of liquor. A complaint against the ad was filed in January 2009. The ad appeared to be a surrogate for a liquor brand, 'Seagram's Blenders' Pride'. The CCC decided, in February 2009, that the ad was a surrogate ad for a liquor product, 'Seagram's Blenders' Pride'. The advertiser undertook to make appropriate modification to the ad.

### 3. *The Smirnoff Case*

This ad, published in *India Today* (November 2008), read: "What is celebration without a little flavour in it?" The complaint against the ad (March 2009) argued that the ad compelled the consumer to consume alcohol at home on festive occasions (the ad was published in November which is Diwali time in India). Moreover, the ad did not mention that 'Smirnoff' was an alcohol drink, and that alcohol was injurious to health. The ad also did not carry the warning "Not for minors". The CCC, in March 2009, held that the ad was a surrogate ad for a liquor product, 'Smirnoff'. The media, *India Today*, undertook not to publish the ad in future.

### 4. *The Kingfisher Premium Packaged Drinking Water Case*

The headline of an ad, published in *The Week* on 31st Dec, 2006, read: "Where the Night Rocks". "Packaged Drinking Water" was written in fine print. The visual depicted "a dancing couple". The ad also had visual depiction of the brand name of a liquor, 'Kingfisher Premium'. According to the complaint, in the absence of specific information, the advertisement appeared to be a surrogate advertisement for a liquor brand, 'Kingfisher Premium'. The CCC observed, in April 2007, that the visual and the headline of the ad did not bear any relevance to the product advertised, Kingfisher Premium, the packaged drinking water and it appeared to be a surrogate advertisement for 'Kingfisher Premium'. The ad was withdrawn.

### 5. *The McDowell & Company's RomanoV Case*

The add published in *Bombay Times* (March, 2006) read: VonamoR sparking new RomanoV".

The visual of the depicted 'admiration for a young man'. The ad stated, in fine print, 'CD Rack'. There was also the visual of a tall tumbler, bearing the brand name, 'RomanoV'. The complaint, filed in March 2006, stated that 'RomanoV' was a liquor brand name. 'VonamoR' spelt in reverse, was apparently suggestive of the same brand name. The ad was misleading by ambiguity (when showing admiration for a young man, CD rack, and tumbler) and was suggestive of a liquor brand. The CCC found no supporting data to establish the sustainability of the promotion. It held that the ad was misleading by ambiguity and was a surrogate ad for a liquor product, which was considered to be in breach of the law. Consequently, the ad campaign was discontinued.

### 6. *The White Mischief Holidays Case*

The ad, published in *Bombay Times* (May 2006), read: "I'm in the mood for mischief". The visuals showed X-Ray Vision Sunglasses, a man wearing sunglasses and admiring two scantily-clad women on a beach. According to the complaint, the ad copy, read in conjunction with the visual depicted, appeared to be indecent. The ad was misleading and suggestive of a liquor brand, 'White Mischief'. It was not apparent as to what product or service was being promoted- 'X-Ray Vision sunglasses' or 'White Mischief Holidays'. The CCC found no supporting data to establish the sustainability of the promotion provided by the advertiser and observed that it appeared to be a surrogate ad for a liquor brand, 'White Mischief'. The ad was withdrawn.

### 7. *The Royal Mist Case*

The ad, published in *The Times of India* (Feb 2007), read: "Royal Mist- 100% Premium Grain", "Enchantingly Smooth", "Misty Nights" (in fine print). It was complained that the ad could mislead consumers regarding the product advertised for sale. Visual depiction of brand name was suggestive of a well-known brand of liquor product, 'Royal Mist'. In the absence of specific information, the ad appeared to be a surrogate ad for the liquor brand. The CCC observed that the visuals depicted and the copy mentioned, did not refer specifically to a product or service being promoted. The slogan "Cast a Spell", and the by-lines, "100% premium grain", and "Enchantingly Smooth", referred to features generally associated with a liquor brand. The ad appeared to be a surrogate ad for a liquor brand, 'Royal Mist'. The ad was withdrawn. The advertisers modified the ad and the modified version of Royal Mist ad was published again in *The Times of India*, in June 2007, against which a complaint was received again.

The ad headline stated "100% premium grain means 100% smoothness". The copy mentioned "World over, premium, wholesome grains stand for quality of the highest order. In the same tradition, Royal Mist has been uniquely crafted and made from 100% pure, premium grains- Perfected for you to derive maximum satisfaction out of every moment". The visual had shown grains in a tumbler. In the second complaint, visual depiction of the brand name was suggestive of a well-known brand of liquor product, 'Royal Mist'. The advertisement was claimed to be a surrogate advertisement for the liquor. The CCC found the advertisement to be a surrogate advertisement for the liquor.

The advertiser assured the CCC to make appropriate modification in the ad before any future release. The case, however, points out how the advertisers are able to remind the customers about their liquor brands time and again, by simply withdrawing one ad and coming up with another, defeating the whole purpose of the ban on liquor and tobacco products.

It appeared that the ASCI very promptly solved the cases of surrogate advertising. However, by the time the unethical or improper advertisement appeared and a complaint was filed against it, there was a lapse of time. By the time the CCC received the complaint, processed it, and wrote to the advertiser, the advertising agency, and the media, further time was lost. Moreover, by the time the advertiser agreed to withdraw or modify the ad, the damage was already done. The advertiser was already able to remind the customers about his liquor and tobacco brands.

Thus, there is a need to frame stricter laws and impose heavy penalty on the companies and advertising agencies involved in the practice of surrogate advertising.

## Self-Regulation by ITC

In March 2001, ITC announced a self-imposed ban on tobacco promotion. It withdrew from sponsorship of sports events. This included withdrawing its support to the Indian cricket team, which was sponsored by Wills. ITC realised that continued sponsorship of sports events in India had begun to yield limited mileage. It was time for them to switch to other forms of advertising, especially brand stretching. Apart from freeing resources by discontinuing sports sponsorship, they wanted to project that they were practising responsible corporate behaviour. Furthermore, sports sponsorship had no appeal for women, an increasingly attractive target for the tobacco trade. Therefore, alternate products of interest to both women and men were linked to the Wills logo: Wills Sports Wear and Wills Club Life, a range of evening wear, were introduced and are available at Wills Lifestyle outlets, all over the country and also accessible via internet. ITC also launched the John Players range of men's wear, in 2003. This transition from sports to fashion wear, thus, extended the constituency to both men and women. ITC recently announced its decision to dissociate the Wills brand name from its cigarette business, so that the Wills apparel outlets do not face the charges of surrogate advertisement, under the Indian Tobacco Control Act.

## MEASURES FOR CURBING SURROGATE ADVERTISING

1. All direct and indirect forms of tobacco advertising, promotion, and sponsorship should be expressly prohibited.
2. The law should clearly define the terms 'advertising', 'sponsorship', and 'promotion'.
3. Strict laws should be enacted to penalise the companies making use of surrogate advertisements for promotion of banned products. Substantial penalties should be imposed on those who circumvent the ban.
4. Action should be provided against the advertising agencies concerned with surrogate advertisements.
5. Consumer awareness should be created to help people understand the negative impact of surrogate advertisements. They should be encouraged to file complaints with the ASCI against surrogate advertisements of liquor and tobacco products.
6. Commercial display of tobacco products should be banned to discourage and prevent point-of-sale advertising.
7. Brand name and logos of liquor and tobacco products should not be visible to people when such brands support sports and other popular events.
8. The prohibition of surrogate advertisement should also include the print and outdoor media, and the new electronic media, such as the Internet.

## CONCLUSION

In India, the Cable Television Networks Rules, the Cigarettes and Other Tobacco Products Act, and the ASCI's Code of Advertising prohibit surrogate advertising by manufacturers and dealers of liquor and tobacco products. The decisions given by the ASCI and the directions issued by the Union Ministry of Information and Broadcasting, and the Indian Broadcasting Foundation have also aimed to put a check on the practice of surrogate advertising. However, advertising laws and regulations have been violated, time and again, by liquor and tobacco manufacturers, to advertise their brand names to consumers. The relevant law needs to be made more stringent to provide heavy penalty on the manufacturers of liquor and tobacco products who use surrogate advertisements for promoting their liquor and tobacco brands. Moreover, the advertising agencies designing surrogate ads should be dealt with strictly. Without a stricter law and imposition of penalty, the very purpose of regulatory measures for liquor and tobacco advertising would not achieve the desired objectives.

## REFERENCES

Advertising Standards Council of India (ASCI), Decisions Compilation: (April 2008 to March 2009, April 2007 to March 2008, and April 2006 to March 2007), Advertising Standards Council of India, *http://www.ascionline.org* (accessed in March, 2011)

"Framework Convention on Tobacco Control", *http://www.fctc.org* (accessed in March, 2011)

*Hindu Business Line*, "ITC Plays Good Sport, Exits Sponsorship", February 9, 2001

Mumbai Grahak Panchayat, *http://mgpanchayat.co.in* (accessed in March, 2011)

'Royal Challengers is Obvious Surrogate Advertising for Alcohol', *http://www.harshadoak.com* (accessed in March, 2011)

*The Cable Television Networks (Regulation) Act, 1995*

*The Cable Television Networks Regulation Rules, 1994* (as

# SURVEY OF BEST TEXTBOOKS ON MARKETING

We are conducting a survey of best text books on marketing (for students of MBA, PGDM, M Com., and other post-graduate programmes in management). The readers are requested to send a list of minimum 5 text books (upto a maximum 10), in the descending order of their quality, suitability, and overall merit, in the following subjects:

1. Marketing Management
2. Marketing Research
3. Consumer Behaviour
4. Advertising
5. Sales Management
6. Services Marketing
7. International Marketing

The list may include even Indian authors, if considered necessary. The response should contain full details of the book: author(s) name(s), precise title of the book, edition, year of publication, publisher's name, and place of publication.

The participants' name will be acknowledged. The entries, which shall be chosen by a jury of eminent professors of marketing, will be communicated to all the participants. The winning entry/entries will be given an attractive prize.

The results will also be published in the next issue of our journal. Readers are requested to participate in this academic endeavour, which will benefit the students as well as the teachers of marketing.

The response may please be sent by post to the Editor, or by *e*-mail to: *editornjb@gmail.com, or dps.verma@yahoo.com.*

**- Editor**

# BOOK REVIEWS

**Jack Trout, *In Search of the Obvious: The Antidote for Today's Marketing Mess* (Hoboken, N J: John Wiley & Sons), Pages 208, Hardbound, Price: Not mentioned**

Co-author of the best sellers of their times, like *Positioning: The Battle for Your Mind, The Marketing Warfare,* and *Differentiate or Die*, Jack Trout, in this book, addresses the challenges faced by marketing in these times of fierce competition. In his opinion, while marketing is slowly but surely becoming a complex science of data-mining, number-slicing, and niche segmenting, the solutions to the problems faced by it lie in something which is *obvious*. The book also explains at length the hurdles in this search for *the obvious*. To begin with, – the obvious is so simple and common place that it has no appeal for someone who looking for a 'real' solution to his 'big' problem – some clever ideas and ingenious plans, as per the author. Starting from the famous quote of Professor Henry Mintzberg, " Management is a curious phenomenon, it is generously paid, enormously influential and significantly devoid of common sense." Jack goes on to effectively drive home the point that 'the obvious' is 'simple common sense' through one after another example from the corporate world in the first chapter. In fact, for a while, one starts wondering whether Jack is advocating or rejecting that which is simple – the obvious.

In Chapter 2, the author seeks to convince the readers that the 'desire' to grow is at the heart of what goes wrong in many companies, that growth is only a by-product of doing things right. He effectively uses the often-repeated story of the Tico fisherman and the Wall Street analyst to demonstrate that 'growth', in itself, is not a worthy goal. Jack makes further use of the tool of story-telling to establish, what he feels, are the hurdles in the search for the obvious. One of these is the great lack of 'time to think'. With rapidly growing technology and all sorts of gadgetry resulting from it at our disposal, coupled with a flood of communication, we have become a world of 'reactors' rather than that of 'thinkers'. Research and the deluge of data that it produces also obscure the obvious.

Chapter 3 finds the author targeting the omnipresent 'computers' which, according to him, have done more harm than any good. A reader may find this difficult to digest. However, as per Jack, computers have been successful in creating what he calls *'data smog'*- a haze resulting from the ever increasing amount of data, which also obscures clear vision. Modern-day gadgetry aids information overload promoting 'info-mania' in the people. The author here highlights the dangers of info-mania in the search for the obvious.

In Chapter 4, Jack draws the readers' attention on the 'creativity trap'. Advertising, today, in his opinion, is more into creativity and less into selling-its core function. Ad agencies' clamour for awards results in misplaced priorities. The author very convincingly questions the worth of advertising which makes the viewer laugh but fails to give him a solid reason to buy the product. Creativity trap, thus, leads a company away from the obvious.

In Chapter 5, The author argues against brand proliferation. Brand proliferation, he feels, leads to a situation where in the company only succeeds to turn a brand that stands for 'something' into a brand that stands for 'nothing'.

Chapter 6 gives the reader a feeling of *déjà vu*. Much of what is put in the chapter seems to have been borrowed from some of the author's earlier books. What he simply wants to say in so many words giving example after example is that branding and advertising in particular, and marketing in general, involve 'standing for something and maintaining the stand' in the minds of the consumers.

In Chapter 7, the author seems to provide the readers some help in their search for the obvious. In doing so, he lays down some ground rules, eight to be specific, which seem good enough for a war and not just for marketing skirmishes. To quote a few- attack a competitors' weaknesses and not his strengths, attack smaller competitors as quickly as possible, i.e., before you take on the real tough ones. Each of these rules has been supported by a number of real-life examples. However, as one reads further through this chapter, one can feel that many concepts introduced here have already been propounded by the author earlier. He has criticised the tendency among well-known companies to grow big, which, he feels, leads to big trouble.

Chapter 8 starts by laying down 'some obvious ground rules', the first being the superiority of the ears over the eyes, or of words over pictures. According to Jack, what is said remains longer over what is shown in a picture or a visual, in an advertisement. People, he says, remember what is said than what is shown. The second obvious rule – the law of division – states that categories keep splitting or dividing makes sense, especially after one has read through all examples quoted by the author in support of the rule. For the marketers, it means they should be ready to offer a different brand for each emerging category instead of trying to sell one which succeeded in the earlier original category. The 'law of perception' is the third rule put forth in this chapter. It says that marketing is not a battle of products, as it is usually made out to be, it is actually a battle of perceptions, a battle of how people perceive a particular brand. A brand according to the author, should focus its marketing efforts on studying how peoples' perception is formed. The author supports his viewpoint with a number of relevant examples convincing to the reader. 'The law of singularity', 'the law of duality', and 'the law of resources' are some more insightful laws put forth in this chapter.

Chapter 9, by far the longest one, presents the obvious solutions to many highly publicised marketing problems. Though, at times, the author repeats some thoughts expressed in earlier chapters of the book.

Chapter 10 dwells upon just one issue – the search for the obvious should work on the current and not on the past. Although the single-issue focus succeeds in conveying the power underlying the issue, one gets a feeling that the issue required much more support through logic and examples for being really assimilated by the reader.

After going through the book, one does expect not being met completely by the author through this work of his, primarily because expectations are usually very high from an author of the repute like Jack Trout. The book on the whole, is a recommended reading for all those who have anything to do with the wonderful science of marketing, especially so for the marketing professionals.

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**Jaishri Jethwaney, *Corporate Communication: Principles and Practice* (New Delhi: Oxford University Press, 2010), Pages: 432, Paperback, Price: Rs. 265**

The Preface of the book under review declares the title of the book as the "new buzzword", and, yet, in the very next paragraph, the author acknowledges that it is already a discipline having been taught in academic institutes since the 1990's. At the current speed of accelerated change, twenty years can hardly be described as "new". However, brevity is the soul of the Preface and it is heartening to observe that the usual temptation of providing detailed chapter-by-chapter descriptions in this portion of the book has not been succumbed to. The author herself is associated with the academic environment of mass communication, which probably justifies her personal confidence in the creation of this piece. A liberal insert of illustrations adds life to the subject.

Considering that it is the students' audience to which this book is addressed, the concept review questions at the end of each chapter are mere mundane, unimaginative and almost verge on rendering ennui. Very many of the concluding 'Critical Thinking Exercises' are a sort of a wish list on time and resources, which most students would find difficult to undertake. While the six Annexures at the end of the book are useful as a ready – reckoner, all of them actually relate to the last chapter alone, which covers the legal framework and ethical base in which this discipline operates.

Most authors take particular care of the first chapter of their book. However, this one is altogether different and leaves the reader utterly disappointed. The author, however, has made a serious effort to give a feel of historicity to the evolution of corporate communication, but how the iron pillars of Ashoka the Great created to spread Buddhism, can be cited as an early step in this direction which only succeeds in befuddling the mind, to say the least. Perhaps one needs to re-visit the very definition and scope of the term which is used as the title of the book? Exhibit 1.3, for another example, on the Ambani siblings' rivalry reads like the typical juicy, spicy write-up that a tabloid would carry!

The second chapter has some very useful statistics on the scenario of the Indian media. In contrast, the case study, given at the end of the chapter, appears to carry a mandate for the Bennett Coleman group of newspaper companies and the questions at the finish help to conclude that this is not a case study at all. The third chapter on 'Corporate Reputation Management' presents some interesting and well-known instances of multi-national companies goofing up. Yet not a single example is taken to its logical conclusion to show how corporate communications could have helped in salvaging a crisis situation. Once again, the case study at the end makes an analysis of various advertisements in detail; useful, provided this book was on advertisement management. India is one of the few countries in the world which has a collection of eight separate legislations on intellectual property rights; in her own wisdom, the author appears to suggest that IPRs cover only trade marks, copyrights, and patents. This misstatement is accentuated on Page 77, where the author attempts to distinguish between a trade mark and a patent. The fourth chapter on the function of internal communication is incomplete. While it deals with the impact of employee communication, it could have included the present phenomena of treating the employee as a customer.

An exercise in Chapter 7, recommended by the author to the reader, is to speak to ten teenage girls and ask them what a diamond means to them, and if and when they acquired their first diamond; the instructions for the exercise conclude by seeking their perception on advertisements of diamonds. Unfortunately, the exercise fails to establish how it will aid in comprehension of Corporate Communications.

One could go on and on, chapter by chapter, which would not only be a pointless exercise but also be accused of the same complaint: generating boredom!

The book is definitely not a must-read. It is certainly not worthy of being passed on as a gift. On a scale of 0 to 10, in a mood that borders on being genteel, one could accord it a rating of 2.5.

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**Kay-Yut Chen and Marina Kravosky, *Secrets of the Money Lab: How Understanding People Will Increase Your Profits* (London: Penguin/ Portfolio Books, 2010), Pages: 246, Paperback, Price: £ 14.99**

What are the secrets of the money lab? How will understanding people increase a firm's profits? What must economics do to become an experimental science? And, what are the most effective ways of generating insights into behavioural economics? These are the four questions that Kay-Yut Chen and Marina Kravosky set out to address in this book. The experiments reported here were conducted at HP Labs. The book seeks to report not merely the theoretical findings from recent experiments in behavioural economics, but actually describe the experiments as well. The main presupposition in the book is that it does not make much sense to design forays in marketing, or venture forth on new business proposals without understanding how people actually think and behave. Given the high levels of competition in major sectors of the economy, it is not a good idea to work on the models that assume, without much evidence, that an economic agent will necessarily be rational, maximise his economic gains in a given situation, and know when to optimise, satisfy, and so on, in the formal sense of the term. It makes much more sense to actually conduct an experiment, or a series of experiments, and see what actually happens in practice.

What the book succeeds in doing admirably well is to situate the experiments under different theoretical categories so that the scope of generalisation is specific to the chapter, and the reader can work his way through the book in a modular form. There are also discussions on what pre-conditions must be met to conduct an experiment in economics so that the readers are able to distinguish between experiments in the natural sciences and the behavioural sciences. The academic sources for these experiments are based on the theoretical framework created in the leading departments of behavioural economics in the United States, but the significance of this book also lies in the fact that such approaches have percolated into the curricula of the American business schools, where the findings can actually be translated into higher profits for companies and better strategic recommendations by consultants. Or, to put it simply, experimental economists have become valuable for the companies as consultants. They set up experiments to answer specific queries from the companies either in their own premises or in the premises of the client. Companies, like HP, have their own money labs, where they continually experiment with a full-time staff of experimental economists.

In the Foreword to this book, Nobel Laureate George Akerloff argues that it is much more cost-effective to conduct than not to conduct such experiments. Each of these experiments, he argues, is like a story, and the book itself can be considered 'a sequence of beautiful stories'. The main theoretical categories reported in the book include uncertainty, fairness, reciprocity, rationality, reputation, trust, rules, and the unpredictable. Each of these categories makes it difficult to plan effectively since a company cannot be sure whether it is acting on the plane of understanding or just hazarding an educated guess at best.

The wager in this book is that developing a sophisticated understanding of the experimental method in behavioural economics will make it possible to try out different strategic options as experiments. The strategic choice between options then does not have function only on the basis of logic, but can be thought through on an empirical basis which is also cost-effective. As companies read up the results generated by books such as this, they might decide to set up their own money labs to see to what extent the results reported here are applicable to the specific contexts in which they apply. Likewise, academic economists who are anxious about the utility value of their theoretical work can get a concrete feedback on the relationship between theory and practice.

Some of the experiments reported here are in the form of interactive games, so theorists working in the area of behavioural economics might want to ponder on the implications of these games for game theory, interpersonal dynamics, and even the case method since these games can be introduced in the classroom within the context of the case method and/or as simulations. So the pedagogical and theoretical possibilities in such experimental endeavours can be quite exciting. If the return on investments in such experiments is high, the word will get around and such endeavours will begin to attract the interest of those who work in the history and philosophy of science given its preoccupation with the experiment as that which differentiates the speculative science of the Middle Ages from the experimental science that followed in the wake of the scientific revolution ushered in by Galileo during the Renaissance.

This book will also be of interest to those who believe that the two languages of business studies and the management curriculum (economics and psychology) should not be a source of theoretical divergence, but represent an important point of convergence to help us understand why people behave the way they do. There are also interesting psychoanalytic implications to the categories introduced here since the differences between neurotic and normative responses to trying situations in business can be understood in terms of how individuals respond precisely to the categories adduced here. What, for instance, is the range of affects generated by these categories and the experiments that seek to capture their nuances? What is the role of anxiety, if any, in working with categories such as uncertainty, fairness, reciprocity, and the unpredictable? What is the gap between the 'stimulus' and the 'response' in any of these experiments? Are we able to spot the actual moment of the emergence of the unconscious in these gaps? How do experimental subjects actually perform under pressure? Do they 'let go' in these experiments? And, if they do, how do they 'suture' their return to the normative locus at the end of the experiment. These, then, are some of the important theoretical implications in such experiments which should be of interest not only to those with a technical commitment to working in behavioural economics, but also to psychologists who are wondering what is left of the behaviourist legacy in psychology.

The takeaway from this book is not reducible to specific formulae that will be universally applicable, but more modestly put in the form of 'general principles and insights' in the hope that the readers will use them as an invitation to think through the challenges of behavioural economics, rather than make a fetish of them as forms of theoretical closure. While there are a number of intellectual sources for working on the behaviourist presuppositions of decision-making, the authors caution the readers not to be swept away by the excitement of working in a new area, since even academic economists routinely draw informed conclusions from field tests and careful analyses of historical data'.

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**Ravi M. Kishore, *Taxmann's Strategic Management: Text and Cases* (New Delhi: Taxmann Publications, 2010), Pages: 614, Paperback, Price: Rs. 425**

The book appears to be a detailed catalogue of strategic management, covering a wide range of topics, albeit in a brief and sketchy manner. One expects from the author, Ravi M. Kishore, a practising management consultant, that the real-world examples were added, making the book interesting and useful. The title page also suggests that live case studies are incorporated in the subject matter. However, that has not been done. The case studies are tucked at the end of the book, without demonstrating any connection with the concepts discussed in the text.

The book is divided into two parts. They consist of 16 chapters and 21 chapters, respectively. Chapter 1 discusses the conceptual underpinnings of strategic management, broadly covering the meaning, process, and the evolution of business strategy. The chapter also discusses strategic leadership and management styles, besides touching upon certain other relevant topics, such as operations management, business forecasting, demand forecasting, and technology forecasting. The rationale behind covering the topic is reasonable, in that these issues do have a bearing on the long-run management decisions.

Chapter 2 scans various facets of external business environment faced by a firm. In this chapter, the steps involved in assessing PEST (Political, Economic, Social, and Technological) analysis, government and business, Porter's competitive analysis framework, EIC model, globalisation, privatisation, WTO, and inflation are listed. In fact, an elaboration of the listed points would have helped a reader comprehend the true import of the topic, but the author has simply ignored the larger context. Further, if inflation is included, a brief description of the monetary policy and interest rates would have made the content really comprehensive.

In Chapter 3, different aspects of internal environment dealt with. These include functional analysis of internal organisation, SWOT analysis and SWOT matrix, gap analysis and performance gap, Porter's value chain analysis, product-life-cycle analysis, experience curve analysis, environmental threats and opportunities analysis, strategic advantage profiling, competitive position, strategic group analysis, fundamental analysis, identification of key factors for success, and core competency, in a concise manner but without any context.

Chapter 4 is devoted to wide-ranging enumeration of issues related to strategic planning. Topics such as strategic intent, vision, mission, objectives, goals, freewheeling opportunism, milking policy, position audit, Miles and Snow's organisational typology, situational audit, SPECE analysis, strategic factor, impact and issue priority analysis, models of superior return including industrial organisation and resources-based view of firm are also highlighted in crisp and to the point style.

In Chapter 5, a range of issues related to policy formulation are discussed. This chapter broadly covers phases in policy formulation, master strategy, corporate, business and functional level strategies, Porter's generic competitive strategies, cost leadership, differentiation strategies, grand strategies, and stability. Growth and retrenchment strategies are also discussed without suitable explaining the context, rationale, and conditions. These strategies can be used by a practising manager.

Organisational design is dealt with in Chapter 6. The treatment and coverage of topics are comprehensive and wide-ranging. Various essentials of an organisation, including the functional form, McKinsey's 7-S framework, MBO, MBE, delegation and decentralisation, responsibility accounting, responsibility, profit, cost and investment centres, and dimensions of MIS are described in detailed.

Chapter 7 covers the matter related to strategy implementation and control. The coverage is once again dry and a mere itemised listing of assorted topics on implementation and control such as decision-making and problem-solving process. Other issues include MIS, feedback control, measurement of divisional performance, zero-based budgeting, programme budgeting, and performance budgeting.

In Chapter 8, the author has dwelt upon the issues pertaining to the corporate social responsibility and corporate governance, and environmental accounting, audit and impact assessment. Values and ethics are taken as component of corporate responsibility. Interestingly, knowledge management is argued to be an extension of framed values and experience without elaborating the rationale.

Chapter 9 is devoted to business portfolio analysis. Various dimensions including strategic business unit, BCG matrix, GE Multifactor matrix, Hofer's product market evolution matrix, Arther D. Little portfolio matrix, Ansoff's product-market growth matrix, directional policy matrix, and profit impact on marketing strategies are explained in sufficient detail.. Once again, an explanation of the broader perspective, within which one can evaluate the suitability of a specific strategy, is lacking.

Chapter 10 elucidates the major management concepts, such as business process re-engineering, bench-marking, total quality management, Kaizen, world-class manufacturing, Six Sigma, balanced scorecard, business process outsourcing, and Pareto analysis. The coverage is adequate and the issues are discussed in a lucidly.

Chapter 11 is devoted to marketing strategies. This chapter also suffers from the weakness of rarely mentioning various topics but without any elaboration. For example, the author discusses 'Offensive Warfare' as one of the marketing strategies with the following points: *(1) the main consideration is the strength of the leader's position, (2) find the weakness in the leader and attack at the point, and (3) launch the attack on a front as narrow as possible.* How can a student appreciate the various underlying dimensions to employ and/or analyse the strategy, is a moot point. It would have been better if the author had covered fewer topics, but had elaborated them properly.

In Chapter 12, financial strategies are discussed. The treatment of the topics is again sketchy and their coverage is impressive. But elaboration and appropriate examples are lacking. Chapter 13 pertains to cost management strategies. The topics, like value engineering and value analysis, target costing, strategic cost analysis, manufacturing resources planning, enterprise resources planning, and strategic management accounting, are briefly covered. Operations strategies are dealt with in Chapter 14. Here, the coverage of the topics is comprehensive, style is direct and work man-like. It would have been better if behavioural aspects of implementation of the concepts, like JIT and Kanban, are also highlighted.

Chapter 15 dwells upon human resources management strategies. The discussion is crisp and to the point. However, the issue of agency theory needed further explanation to make sense. Proper application of the agency theory in designing the compensation and supervision would have made the chapter stronger. Chapter 16 deals with risk management strategies. The discussion is mainly conceptual and without the application of the concept. The risk management, without mathematical treatment and real-world applications, is difficult to grasp.

On the whole, it is a reasonably good text book, particularly for the teachers who need a ready reference of the topics without going into the specifics, and for the students who want to crack the examination. However, for the students deeply interested in understanding the strategic management, this is not a good option.

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**Kavita Singh, *Organisational Behaviour: Text and Cases* (New Delhi: Pearson, 2010), Pages: 478, Paperback, Price: Not mentioned**

We live in a world where a high degree of complexity and competitiveness can render even the best laid plans useless and in this continuous fight to emerge as successful business, organisations revolve around a common pivot, namely, 'people'. Organisational behaviour seeks to unfold and solve some of the 'mysteries' as to how to deal with people. And ultimately, those individuals and organisations succeed, which pivots around such human capital, and those who fail to appreciate the vital role played by people in managerial and organisational success are sure to lag behind.

*Organisational Behaviour: Text and Cases* is a comprehensive, up-to-date text book, which highlights the fundamental theories of behaviour in organisations and their implication on organisational work-life for the Indian students and professionals who need actual issues and examples from developing countries in general and from India in particular. The book is an example of a fine equilibrium between the theoretical exposition and supporting examples, with Indian case studies, along with international examples.

In this book, Kavita Singh has adopted a systematic approach to explain each topic from traditional outlook to the modern stage. Each chapter starts with an Indian case which is chosen carefully to elucidate the important issues of the concept under consideration. These cases provide insights into the real-life challenges faced by managers across the world.

The author also succeeds in creating a perfect harmony between the case and the concepts explained in between the chapters which give contemporary twist to the problem and help in understanding the implication part of each topic. The selection of Indian companies, which are the major players in the Indian economy, shows the thoughtfulness of the author, these include: Reliance, Wipro, Phoenix Electronics, HCL Technologies, Infosys, and Bharti Enterprises.

The book provides useful resource material for an intuitive learner, as not only 'how' is explained but 'why' is also well illustrated by the author. The success stories of powerful leaders of India, given in different chapters should prove useful in understanding the market forces and the importance of human element in dealing with those forces. The author has succeeded in providing a comprehensive roadmap for managers, students, and academicians to better understand the OB concepts and develop a skill to deal with the 'human component'. The contents and illustrations made by the author are rooted in actual practices of organisations.

The book provides ample learning opportunities for executives, HR practitioners and managers who have to grapple with OB issues in practice, on a day-to-day basis. It elucidates the behaviour at four levels, starting from the individual processes and moving on to interpersonal, organisational, and change processes.

Part I deals with the individual processes, including personality, perception, learning and re-inforcement, attitudes and values, work motivation, and work stress. Part II talks about interpersonal and team processes, viz., organisational communication, group dynamics, leadership, conflicts, and negotiation.

Part III and Part IV of the book deal with the organisational processes and change processes, respectively.

The author begins each chapter by outlining the emerging issues in organisational behaviour and clarifying how to develop skills by managers to face these changes successfully. The hallmark of the book is its successful linking of the concepts with the actual learning and skill-building. A humorous touch is also added by providing cartoons and pictorial presentations. The exercises and field projects given at the end are extensively planned.

One wishes that the author could have incorporated some case studies at the end of each chapter for the benefit of the instructors and the students.

At some places, the explanation has turned towards psychological understanding of the concept rather than the organisational perspective, e.g., managing conflicts and negotiation could have been explained with practical examples of organisational scenario. Similarly, some of the exercises given at the back are related to more of an individual's personal style of functioning, rather than to understand the implication in a business situation, such as, individual decision-making style.

The author has succeeded in realising her objective of writing a text book on a popular subject taught in the MBA programme of almost every business school and university in India.

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**Waman S. Jawadekar, *Knowledge Management: Text and Cases: Creating a Learning Organisation* (New Delhi: Tata McGraw-Hill, 2011), Pages: 336, Paperback, Price: Rs. 350**

Today, we are living in a knowledge-based economy, where knowledge plays an important role in shaping and managing our life. A book on knowledge management is, therefore, an important contribution in increasing our knowledge base and improving our life.

Jawadekar's *Knowledge Management: Text and Cases: Creating a Learning Organisation* is a welcome addition to the literature on knowledge management. The focus of the book is on the technical aspects of knowledge management. It describes several tools and technologies relevant to knowledge management, besides some important strategic issues which contribute to any knowledge-management system. The contents of the book are arranged systematically and are organised into nine chapters, which help the readers to understand the concepts and practices involved in knowledge management. Giving two subtitles to the book is unusual and unnecessary.

Chapter 1 introduces the basic concepts and explains the relevance of knowledge economy. The concepts and terms related to knowledge management are explained. The context and relevance of knowledge management in the changing landscape of business and the paradigm shift in the way business is done, are discussed in detail. Chapter 2 focuses on the conceptual part of knowledge management. Adequate attention has been paid to the concepts of data, information, and knowledge. The concept of knowledge and its types are explored along with the benefits of knowledge in business.

In Chapter 3, the author provides some insights into the management of knowledge, where knowledge development and management cycle, thematic analysis of knowledge management, and the SECI Model are discussed in detail. Chapter 4 deals with the knowledge management design and architecture, which play an important role in any knowledge management activity taking place in any types of organisation.

The focus of Chapter 5 is on the development aspects of knowledge management, where a detailed discussion is provided on knowledge-strategy framework, validation of knowledge, and alignment of knowledge strategy with business strategy, knowledge-based SWOT analysis, knowledge-creation models, and knowledge-acquisition techniques.

Chapter 6 is devoted to the application phase of knowledge management, where important topics of knowledge transfer and sharing of knowledge are discussed at length. In Chapter 7, the concept of learning organisation is explained. Adequate attention is paid to the concept of learning organisation. However, the author could have added value to the book by discussing the concept of Chief Knowledge Officer, in more details. .

Chapter 8 throws light on the various tools and techniques used in effective knowledge-management implementation which are considered the core of any knowledge-management activity. Chapter 9 is devoted to the case illustrations on knowledge management. It contains several mini illustrations and cases which help readers in understanding the knowledge management system and its practices. The case illustration in knowledge management is a very useful pedagogy which helps the readers to develop an understanding of the practical aspects and approaches appropriate to knowledge management. The author has discussed it very well.

The book gives due attention to the subject of knowledge management, with a comprehensive coverage of various topics. The one dimension where the author could have added value is, the arrangement of the text and an error-free printing of the material. A long vocabulary has been provided at the end of the book. The author could also have added managerial situations/ problems relating to knowledge management for the readers/ learners to apply the relevant concepts and learning to solve those application exercises and problems. Similarly, role-plays and exercises could also have been included for practise and learning. Some cases could also have been added at the end of the chapters.

In sum, it can be said that the book is written in a manner that creates enhanced interest of the readers. The book will surely be useful to readers interested in the subject of knowledge management.

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**Robert Skidelsky (2010), *Keynes: The Return of the Master* (London: Penguin Books), Pages 228, Price: U.K. $ 9.99**

The return of John Maynard Keynes to the mainstream of economic theory and practice is symbolic of the usefulness of his work during the economic downturns. Not only is Keynes, the economist, who is most likely to give us the language to think through the policy challenges of our times, but also the person who is credited with the invention of macroeconomics for all practical purposes. So, even if we disagree with Keynes, we will have to – for better or worse – use the language that he invented during the early twentieth century, and make the alterations or corrections that we may wish to do only within the ambit of the Bretton Woods institutions that he helped to design. There is probably no writer more qualified than Robert Skidelsky to help us make sense of who Keynes was, is, and will be in the years to come. There is a good reason for this. Not only is Skidelsky a prolific writer on Keynesian themes, he has, in fact, written a well-received three-volume biography of the Bloomsbury economist. He has also tried repeatedly to situate the significance of Keynes within the discourse of macroeconomics on a number of occasions; the relationship between any thinker and the discourse that they are associated with is a matter of enormous concern not only for those who specialise in the area, but also for those businessmen and lay people who would like to keep themselves informed of the developments of ideas and how they impact on the 'broader economy'.

Keynes had a strong commitment to the generation of ideas since he felt that most businessmen – whether they knew it or not – were 'slaves of some defunct economist'. It is, therefore, important in the interest of the intellectual honesty to accept that this may well be the case and formalise whenever possible what the intellectual trajectory at play in any given situation may be.

The life of Keynes is an interesting theme for biographers because of the way his work is enmeshed within the Bloomsbury milieu, which comprised luminaries, like Clive Bell, E.M. Forster, Lytton Strachey, and Virginia Woolf. Not only did this increase the intellectual impact of Keynes, it also made him a much more enchanting figure given the cultural over-determinations of the time. This is probably why a number of biographers have turned to Keynes as not only a representative figure of his time, but as somebody who took the task of writing so seriously. It may be possible to argue that the idea of social sciences culminating as forms of writing practices that we associate in recent times with Clifford Geertz (when he argued that cultural anthropology must be understood as a form of discursive writing) began with Keynes, who practised this approach throughout his career as an economist. This also explains his popularity since even those who might disagree with him felt that there was something aesthetically compelling about his ability to delineate problems in economics and public policy.

Skidelsky's transference as a biographer to the *persona* of Keynes, then, is as much aesthetic as intellectual; hence the ethical compulsion with which he returns to both Keynes and the Keynesian themes. The ability to generate such a 'trans-discursive' space (as Michel Foucault might put it) or intellectual transference is a part of the Keynesian magic that Skidelsky would like to share with his readers *ad nauseam*. This element of 'eternal return', then, is true of both the master and the themes that are associated with his theories. This was the case during the World Wars, the New Deal under Franklin D. Roosevelt in the United States, and under a number of economic downturns that he not only anticipated, but prescribed solutions for, long before they became necessary. Skidelsky's justification for this slender volume is the need to situate Keynes' relevance in the context of the financial crisis of 2008, and the sense of both theoretical and practical bewilderment that assailed the financial community in the severity of its aftermath.

Skidelsky's intention is spelt out at the beginning of the book, where he writes that his purpose is to throw light on the fact that 'attention has now shifted from how to avert a collapse to how to sustain a fragile recovery'. It may, therefore, be a good idea to learn or relearn the basic postulates of macroeconomics in order to situate the challenges of contemporary economic policy given that many policy responses underway have been tried in the past. The interesting thing about the theoretical approaches associated with the Keynesian macroeconomics is not that it is a theory that is absolutely sound (and, therefore, a certain platform for policy intervention), but because 'in the current situation no theory is better than a bad theory, but good theory is better than no theory'. Keynes' own intention was only to provide a 'general theory' rather than a particular policy prescription; interventional strategies have to be worked out by individual governments albeit with the presuppositions built into the general framework in mind. The Keynesian approach in terms of methodology assumes that nothing in economics will elude a description in simple language. This is all the more important in these difficult times since governments must take seriously the task of both analysing and explaining their policy options to the people in a language that is comprehensible.

This book is structured in three parts. The first part begins with a description of the crisis. The second part explains the knowledge of macroeconomics necessary to develop a more nuanced understanding of the crisis. The third part is an attempt to situate the return of the Keynesian thought as a response to the policy demands of the times. Skidelsky also seeks to situate Keynes within the zeitgeist of his times, given that any framework which provides the intellectual sources necessary for policy-making will have to be examined in terms of its ethical implications for contemporary politics. There is also a short bibliography for readers who would like to follow up on the themes taken up in this book.

Skidelsky begins to reconstruct the different intellectual genealogies (in terms of the perceived conflict between monetary and fiscal approaches), by arguing that the notion of cause and effect in economics itself is at stake here. So, whether the 'quantity theory of money' or the problem of 'aggregate spending' is at stake is crucial in coming to terms with what may have gone wrong during the recent crisis. The monetary approach is coming to terms with whether easy money policies lead to asset bubbles and the collapse of the real-estate market as a result of excessive speculation. The fiscal approach is pre-occupied with the ratio of savings to investment, and whether excessive savings in some parts of the world might have fuelled asset bubbles elsewhere. Similarly, the policy approaches to what would constitute the optimal path to economic recovery also differs according to whether 'quantitative easing' (i.e., the expansion of money supply) by the central bank or the expansion of 'aggregate spending' (in response to a slowdown in 'aggregate demand') through fiscal interventions is the need of the hour.

It is also important to ask why a combination of these approaches should not be tried by generating new interventional ratios of what the monetary policy can do, as opposed to the fiscal policy, and study how the socio-economic consequences of monetary approaches affect the fiscal policy and *vice versa*. It must be remembered that a part of the confusion is that the direction of the causal arrow is not clear since it is difficult to determine whether the increase in the quantum of money circulating in the economy is a cause or an effect of the policy action and 'the recovery of business activity'. Skidelsky argues that most of the approaches underway at this point of time around the world are monetary-based approaches, and not sufficient initiatives are forthcoming from the point of view of fiscal policy. That is why one should explore the Keynesian framework to see what else can be tried in addition to the monetary policy approaches which are nearing their limit. In order to do so, however, it is important to identify the main notions that Keynes reconsidered under the aegis of macroeconomics. These include: 'scarcity', 'the neutrality of money', 'equilibrium thinking', 'Platonicity', and 'uncertainty'. The significance of scarcity comes from the fact that economists used to work on the assumption that Say's Law was valid (i.e., 'supply creates its own demand'). It was difficult to envision a reduction in the aggregate demand; the attempt was to understand supply and not demand, which can fluctuate. This is because 'classical economics could deal with shifts in demand between different industries, but an overall deficiency of demand was ruled out by the assumption that scarcity was an endemic feature of the economy.

In the pre-Keynesian perspective, money was seen merely as a 'medium of exchange', which went along well with the idea of scarcity. The idea that money could also be an object of hoarding was not well-understood. Keynes emphasised that money was also a 'store of value', in addition to being a 'medium of exchange' that could help us to overcome the inconvenience caused to economic agents in a barter economy. The challenges of equilibrium thinking pertain to the Newtonian assumptions in economic theory. These assumptions support that the behaviour of economic systems is analogous to physical systems. While it is true to some extent that economic agents (like physical particles in space) can negate each other's errors, the theoretical question at stake is whether this will lead to the generation of an 'optimum equilibrium like a disturbed pendulum returning to its stationary point'. For Keynes, there is no point in the economy that is the equivalent to the resting point in space; hence, the need for thinking of economics as a theory of morals.

Platonicity referred to Keynes' sense of disquiet about the fact that classical economics worked on assumptions that explained away the world. What he felt necessary was 'vigilant observation' of the world to see what recurring patterns made it difficult to come up with effective policy interventions. Uncertainty is important because it affects the levels of confidence in the economy; Keynes does not discuss the usual problems stemming from circumstances beyond human control, but about systemic instability given that 'under capitalism, uncertainty is generated by the system itself, because it is an engine for accumulating capital goods whose rewards come not now but later'. Keynes was keen to differentiate between risk and uncertainty: the former can be priced, but the latter is much more elusive. There are also interesting points that Skidelsky raises about the epistemology that is built into Keynes' work. He argues that 'probability is a function of propositions' and 'not frequencies'. An important application of this belief is that it avoids the problems of the efficient market hypothesis, where the fallacious assumption was 'that financial markets are like insurance markets', and that, as a consequence, it is possible to calculate risk with a high level of accuracy. But we know empirically that there was significant 'under-pricing' of risks in the financial markets in the range of products that were sold as forms of securitisation. Hence these are not mere epistemological quibbles of interest only to the philosophers of science with little or no implications for policy making.

Keynes' understanding of probability also attempts to account for unknown probabilities. So, there is also something known as ontological uncertainty in addition to the epistemological uncertainty discussed above. While we may have expectations about the future, Keynes argues, it is also important to determine 'the *confidence* with which we hold them'. It is, therefore, important for economists to make sustained efforts to explain what shapes confidence as a psychological construct and think through its socio-economic implications. Rosabeth Kanter of the Harvard Business School, had done precisely that, but Skidelsky does not refer to her work. It is within this continuum of concerns between confidence, expectations, and uncertainty that we pose the important question of why aggregate demand was not always equal to the 'productive capacity of the economy' as a whole (as is the case during recession). The policy implications of this must be made clear since Keynes attempted both to avoid economic slumps and to pull the economy out of slumps.

The government must reduce uncertainty and 'make the world more predictable'. However, the larger question here is whether the government experiencing a loss of socio-economic sovereignty (in the context of globalisation) will be able to provide such reassurance which, in any case, volatile capital and information have made impossible. This problem of endemic uncertainty, however, is afflicting both fiscal and monetary policies since the cause and effect determination inferred here cannot be validated from either an ontological or epistemological point of view (as classical economists would have liked to do). Keynes's preoccupation with the middle way in economic policy is not the result of an inability to make a choice, but an attempt to assume a modest stance in the context of the forms of endemic uncertainty that his work has wrestled with. Being, therefore, willing to change one's mind (without seeking a doctrinaire adherence to economic theories that are shot through with uncertainty), then, necessarily makes economics a moral discourse. It intersects with the problem of policy preferences, since the 'is-ought' distinction can then be considered with greater intellectual honesty, plurality, and harmony.

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There is a tide in the affairs of men which taken at the flood, leads on to fortune;
Omitted, all the voyage of their life is bound in shallows and in miseries.

**William Shakespeare,** Julius Caesar, Act IV, Scene 3

Marketing is merely a civilised form of warfare, in which most battles are
won with words, ideas, and disciplined thinking.

**Albert W. Emery**

When one door of happiness closes, another opens;
But often we look so long at the closed door,
That we do not see the one which has been opened for us.

**Helen Keller,** author and lecturer (1880-1968)

Woods are lovely, dark and deep,
But I have promises to keep;
And miles to go before I sleep,
And miles to go before I sleep.

**Robert Frost**

(Found lying beneath the table-glass of Pt. Jawaharlal Nehru, after his death)

In the factory, we make cosmetics;
In the store, we sell hope.

**Charles Revson** (of Revlon)

The aim of marketing is to make selling superfluous.

**Peter F. Drucker**

Managers tend to be promoted to the level of their incompetence.

**Laurence J. Peter and Raymond Hall**, 'The Peter Principle'

Never make the same mistake twice,
There are so many new ones;
Try a different mistake each day,
After all, variety is the spice of life.

The world laughs at you when you are unhappy,
It smiles at you when you are happy,
But it salutes you when you make others happy.

Life can be happier and stress-free, if we remember one simple thought:
"We can't have all that we desire, but we will get all that we deserve".

# SURVEY OF BEST BUSINESS JOURNALS

## (Published In India)

A large number of business journals are being published by business schools, universities, and certain other organisations in India. The quality of articles published and the overall standard of the journals differ significantly. In order to identify the top 50 journals, we conducted a survey of 160 journals available in different libraries. The major parameters for rating the journals were:

1. Quality of contents;
2. Quality of language and presentation;
3. Style and adequacy of references;
4. Regularity of publication and distribution; and
5. Whether included in Cabell's Directory (USA), the *EBSCO* data base, or other international publications/ directories.

Based on the opinion of about 100 senior academicians from India and a few from abroad, we have prepared a list of top 50 journals published in India. The list which is tentative is given below.

**TOP 50 BUSINESS JOURNALS (INDIA)**

1. ***Vikalpa***, Quarterly, IIM-Ahmadabad
2. ***IIM-B Management Review*****,** Quarterly, IIM-Bangalore
3. ***Decision*****,** Half yearly, IIM-Calcutta
4. ***Global Business Review*****,** Quarterly, International Mgmt. Instt., New Delhi
5. ***Management & Labour Studies*****,** Half-yearly, XLRI Jamshedpur
6. ***Vision*****,** Quarterly, MDI, Gurgaon
7. ***Asia-Pacific Business Review*****,** Half-yearly, Asia-Pacific Instt. of Mgmt., New Delhi
8. ***Paradigm*****,** Half-yearly, IMT, Ghaziabad
9. ***Indian Journal of Industrial Relations*****,** Quarterly, Sri Ram Centre for Industrial Relations and Human Resources, New Delhi
10. ***NICE Journal of Business*****,** Half-yearly, Shobhit University, Meerut
11. ***The Journal of Institute of Public Enterprise*****,** Half-yearly, IPE, Hyderabad
12. ***Foreign Trade Review*****,** Quarterly, Indian Instt. of Foreign Trade, New Delhi
13. ***Journal of Advances in Management Research*****,** Half-yearly, DMS, IIT-D, Delhi
14. ***Metamorphosis*****,** Quarterly, IIM-Lucknow
15. ***Journal of Management Research*****,** Half-yearly, FMS, DU, Delhi
16. ***Management & Change*****,** Half-yearly, IILM, Lodhi Road, New Delhi
17. ***Abhigyaan*****,** Quarterly, FORE School of Mgmt., New Delhi
18. ***NIRMA University Journal of Business & Management Studies*****,** Half-yearly, Nirma University, Ahmadabad
19. ***Prajnan*****,** Half-yearly, National Institute of Bank Mgmt., Pune
20. ***Journal of Services Research*****,** Half-yearly, IIMT, Gurgaon
21. ***ASCI Journal of Management*****,** Quarterly, Administrative Staff College of India, Hyderabad
22. ***Indian Management Studies Journal*****,** Half-yearly, Punjab School of Mgmt. Studies, Patiala
23. ***Finance India*****,** Quarterly, Indian Instt. of Finance, Greater Noida
24. ***Indore Journal of Management*****,** Quarterly, IIM-Indore

25. ***APEEJAY Business Review*****,** Half-yearly, Apeejay School of Mgmt., New Delhi
26. ***APJ Journal of Management & Technology*****,** Half-yearly, APJ Instt. of Mgmt., Jalandhar
27. ***Delhi Business Review*****,** Half-yearly, Delhi School of Professional Studies & Research, Delhi
28. ***NMIMS Management Review*****,** Half-yearly, NMIMS University, Vile Parle (E), Mumbai
29. ***GITAM Journal of Management*****,** Quarterly, GITAM Instt. Of Mgmt., GITAM University, Vishakhapatnam
30. ***Journal of Marketing & Communication*****,** Thrice a year, NIILM Centre for Mgmt. Studies, KP V, Greater Noida
31. ***The Indian Journal of Commerce*****,** Quarterly, Indian Commerce Assosiation, SOM, IGNOU, New Delhi
32. ***Journal of IMS Group*****,** Half-yearly, Instt. of Mgmt. Studies, Lal Quan, Ghaziabad
33. ***The Vision*****,** Half-yearly, School of Management, Bengal Engineering and Science University, Calcutta
34. ***Journal of Cooperation among University Researchers & Industrial Enterprises (CURIE)*****,** Half-yearly, BITS, Pilani
35. ***SCMS Journal of Indian Management*****,** Half-yearly, SCMS, Cochin
36. ***Journal of Contemporary Research in Management*****,** Half-yearly, PSG Institute of Management, Coimbatore
37. ***Journal of Marketing Research*****,** Half-yearly, SONA School of Mgmt., Salem, Tamil Nadu
38. ***IME Journal*****,** Half-yearly, Institute of Mgmt. Education, Ghaziabad
39. ***Global Management Review*****,** Half-yearly, SONA School of Mgmt., Salem, Tamil Nadu
40. ***Global Journal of Flexible Systems Management*****,** Quarterly, Global Instt. of Flexible Systems Mgmt., New Delhi - 17
41. ***The Business Review*****,** Annual, Faculty of Commerce and Mgmt., University of Kashmir, Srinagar
42. ***Alliance Journal of Business Research*****,** Half-yearly, Alliance Business Academy and School, Bangalore (jointly with Oakland University, USA)
43. ***ASBM Journal of Management*****,** Half-yearly, Asian School of Mgmt., Bhubaneswar
44. ***ACRM Journal of Business and Management Research*****,** Half-yearly, Bangalore
45. ***IMS-Manthan*****,** Half-yearly, Instt. of Mgmt. Studies, Noida
46. ***KIIT Journal of Management*****,** Half-yearly, KIIT University, Bhubaneshwar
47. ***ANVESHA*****,** Half-yearly, IES Mgmt. College, Mumbai
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