Editorial

EDITORIAL

The present economic and regulatory environment in India is on the porch of a major revision aiming at amendment and adaptation of simplified legal system which suit the demands of modern times. India has passed through a long span since the first Companies Act 1956 was enacted. The increasing demand for high amount of investor protection and varied customer interests urges the Indian economy to be globally compliant. In this context, August 2013 marks a historic moment resulting in the beginning of new Indian corporate era, as it is expected that the new Companies Act 2013 will contribute to the growth and development of the corporate sector giving space for business friendly corporate regulation, good corporate governance, corporate social responsibility (CSR), enhanced disclosure norms, audit accountability, protection for minority shareholders, investor protection and activism, stricter enforcement and a better framework for insolvency regulation and institutional structure.

One of the highlighting features of the new Companies Act are that the corporate should spend 2% on Corporate Social Responsibility (CSR) and the Act empowers investors against any frauds committed by promoters to ensure   greater transparency in corporate governance matters.

In this connection, I take this opportunity to invite researchers, academicians, corporate managers from various disciplines to contribute high quality papers for better understanding and application of the rules under New Companies Act 2013.

Dr. Kamal Ghosh Ray
Editor

Environmental Reporting Practices : A Study of Select Indian Companies

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Abstract

Growing pressures on the environment and increasing environmental awareness have generated the need to account for the manifold interactions between all sectors of the economy and the environment. Conventional national accounts focus on the measurement of economic performance and growth as reflected in market activity. Environmental Accounting and Reporting is therefore, a thrust area for our country. India is considered to be the fastest developing country. But, we still need much work in the area of preserving our environment and most of all reporting the means and methods of preserving it. Now, gradually our country has moved a step ahead in this area, but a lot is to be done still. It's the responsibility of each and every head of our country and not just the few companies which have taken such initiative. This paper attempts to clarify what environmental accounting is all about focusing on the reporting practices and measurement of the selected Indian companies. The objective of this study is to understand the quantity and quality of voluntary environmental disclosures in the annual reports or sustainability reports through Global Reporting Initiatives (GRI) guidelines as a base for few selected Indian companies. The result may serve a base or the path towards better environmental disclosures in India.

Key Words: Environmental Accounting and Reporting (EAR), Environmental Management Accounting, Sustainability, Global Reporting Initiatives (GRI).

Introduction

Environmental accounting is an important tool for understanding the role played by the natural environment in the economy. Environmental accounts provide data which highlight both the contribution of natural resources to economic well-being and the costs imposed by pollution or resource degradation.

The incorporation of environmental benefits and costs into economic decision making often refers specifically to incorporating the depreciation of natural resources and the environment into estimates of net domestic product or net national product. Sometimes it is also referred to as Green-Accounting or Natural Resource Accounting. For this reason, IUCN (The International Union for Conservation of Nature) has launched a new programme, the Green Accounting Initiative, to help its members understand how this tool can help them improve environmental management.

Meaning

The term "Environment" includes everything in all its manifest forms; on the earth, beneath the earth and above the earth. All over the world, there has been much concern regarding management of environment for ensuring sustainable economic development.

A system in which economic measurements take into account the effects of production and consumption on the environment is called "Environment Accounting".

What Environmental Accounting is - and is not?

It is a set of aggregate national data linking the environment to the economy, which will have a long-run impact on both economic and environmental policy-making. It is not: valuation of environmental goods or services,

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social cost-benefit analysis of projects affecting the environment, or disaggregated regional or local data about the environment. There are, however, close links between environmental accounting and these three activities, which is why they are frequently discussed together and occasionally confused.

Valuation of environmental assets, goods, or services: "Valuation" refers to the process of deriving a monetary value for things which are not sold in a market; for example, fuel wood gathered in the forest, water filtration provided by a wetland, or biodiversity resources which could provide new medicines in the future. Valuation is an essential input into both social cost-benefit analysis and some approaches to environmental accounting. However valuation is only one element in the construction of environmental accounts; it is not the same as the construction of the accounts.

Disaggregated regional or local data about the environment sometimes is linked to a geographic information system. Questions often arise about the scale of environmental data; do they pertain to a village, a province, a watershed, or the whole country? Because the SNA is national, and most countries maintain their economic data at the national (rather than the regional or local) level, environmental accounts are primarily national accounts. For example, they might tell us how much energy was consumed nationwide, not how much was consumed in each village or province. Sometimes national figures are obtained by aggregating local data, though; for example, national data on timber harvests might originate with a survey of individual logging camps. Thus accounts sometimes can provide local as well as national data. Where local data are not available, however, it is often easier to estimate national data directly than it is to collect local data and sum them. For this reason the accounts will always provide national figures, but only sometimes will the data underlying them tell us about local areas as well.

What is Environmental Reporting?

- It's reporting your environmental performance back to the people you do business with.

- The way you present this information can take many different forms, including:

  - Pages on your website;

  - Information on product packaging, a simple statement (perhaps included with tender submissions, or forwarded to your local council to support your business's application for their preferred supplier list); or

  - A bound report.

- The three stage process of compiling your business's environmental history involves:

  - planning what the form and content of your document will be;

  - analyzing your environmental performance; and

  - distributing the information to the needed parties.

Reasons for Environment Reporting

- Reporting information about environmental performance benefits your business in a number of ways. It helps you:

  - lower your operating costs;

  - generate marketing opportunities;

  - widen your customer base and set market trends;

  - improve the competitiveness of your tender applications;

  - provide input into strategic positioning;

- increase your scope to assess and plan for business performance over time;

- facilitate the risk assessment work of your finance and insurance suppliers, and decrease your insurance premiums; and

- better manage your business. You can't manage what you don't measure.

Increasing in importance is reporting your environmental performance as a smart strategic move. Surveys consistently report growing awareness and concern about environmental issues by consumers. This is motivating both large and small organizations, to ensure they are following best environmental practice. They, in turn, are requesting their suppliers to do so too.

Supplying environmental information gives your business a competitive advantage in doing business with these organizations, and puts you ahead of the game with the regulators. It's an investment in your business's future with a guaranteed positive return!

Environmental Reporting Through Global Reporting Initiatives (GRI) Guidelines as a Base

The GRI was established in late 1997 with the mission of developing globally applicable guidelines for reporting on all these three areas, i.e., economic, social and environmental performance, initially for corporations and eventually for any business, governmental, or non-governmental organization (NGO). Convened by the Coalition for Environmentally Responsible Economies (CERES) in partnership with the United Nations Environment Programme (UNEP), the GRI incorporates the active participation of corporations, NGOs, accountancy organizations, business associations, and other stakeholders from around the world. The GRI's Sustainability Reporting Guidelines were released in exposure draft form in London in March 1999.

However, GRI guidelines are voluntary reporting initiatives; hence companies are not obliged to inform GRI of their reporting confirmation. It is, however, to be noted that the GRI guidelines are dynamic and the Exposure Draft issued in March 1999 represents only a primary step in the development of a framework for sustainable reporting. Companies may take it as a way towards better reporting practices.

Objectives of the Study

The prime objective of this study is to measure the Environmental Reporting Disclosures of the selected Indian companies. In order to evaluate the environmental reporting practices, the categorization contained in the Global Reporting Initiatives (GRI) guidelines has been used to some extent. However, it also mainly throws light upon the quantity and quality analysis of the environmental reporting practices of the selected companies whereby, better environmental reporting practices in India can be arrived at.

The objective of the study was to determine the following in the annual reports (sustainability reports or corporate social responsibility reports) and separate environmental reports (if prepared by the selected Indian companies):

- Quantity of disclosure, using a sentence based approach (Hackston and Milne, 1996; Buhr, 1998) which were then accumulated into page proportions; and

- Quality of disclosures (Gamble *et al.,* 1995; Wiseman, 1982; Guthrie and Parker, 1990; Walden and Schwartz, 1997; Kusumo *et al.,* n.d.).

Review of Literature

Environmental Reporting is the key ingredient of the TBL (Triple Bottom Line) concept. One need to study all the three areas of Triple Bottom Line Reporting, viz., Economic (Financial), Environmental and Social.

TBL may be an emerging concept for the Indian corporate, but it was coined way back. Discussion of the quantification of social and environmental performance is not entirely new and predates Elkington's (1997)

book. In 1972, David Rockfeller said that he 'can foresee the day when, in addition to the annual financial statements certified by independent accountants, corporations may be required to publish a social audit similarly certified' (cited in Gray, Owen, et al, 1987, pix).

In 1992, the European Union Fifth Action Programme called for a redefinition of accounting concepts and methods to account for inclusion into product market prices (EU, 1992). In 1977, the American Institute of Certified Public Accountants published a book entitled *The Measurement of Corporate and Social Performance* (AICPA, 1977).

Elkington's book reinforced the view that corporations were accountable for their impact on sustainability through TBL and that accountants had a substantial role in measuring, auditing, reporting, risk rating and benchmarking it (Elkington, 1997).

Under the leadership of Swiss business entrepreneur Stephan Schmidheiny, a coalition of around 50 international companies formed the Business Council for Sustainable Development (Timberlake, 2006). The BCSD prepared a "Declaration of the Business Council on Sustainable Development" and a book, Changing Course (Schmidheiny, 1992). "Gathering the expertise of more than 50 leaders of multinational corporations and backed by an array of case studies showing existing best practices", the book claimed to provide "an extensive analysis of how the business community can adapt and contribute to the crucial goal of sustainable development - which combines the objectives of environmental protection and economic growth." After UNCED, the ICC formed the World Industry Council on the Environment, which merged with BCSD on 1 January 1995 to form the World Business Council on Sustainable Development (WBCSD).

This triple bottom line conception of corporate sustainability is now widely used among business practitioners. For example, the WBCSD claims to bring together its 180 member international companies "in a shared commitment to sustainable development through economic growth, ecological balance and social progress." This is made more significant by the fact that, in 2006, the WBCSD was rated by sustainability experts worldwide as the business organisation most likely to play a "major role" in advancing sustainable development over the next five years (Globescan, 2006).

According to Holsti (1969), content analysis categorises narrative matter into themes, a method consistently used in Corporate Social Reporting research (Adams and Roberts, 1995), Zeghal and Ahmed (1990), Gamble *et. al.* (1995). Hackston and Milne (1996) and Krippendorff (1980. p. 21) define content analysis as "a research technique for making replicable and valid inferences from data according to their context".

Methodology

The nature of the said research work is analytical. This study is based on the Primary Data collected from annual reports/ sustainability/ corporate social responsibility reports downloaded from the websites of the selected companies. The study is based for the year 2011-12. Out of the 30 Sensex based companies, 5 companies are randomly selected for the purpose of this study viz., ITC Ltd., Hindalco Industries Ltd. (HI Ltd.), Hindustan Unilever Ltd. (HU Ltd.), Reliance Industries Ltd. (RI Ltd.) and Maruti Suzuki Ltd. (MS Ltd.).

In order to measure the environment reporting practices by the selected Sensex based Indian companies, GRI guidelines were taken as a base. Analysis of the data is based on a few selected categories comprised of in GRI guidelines to have a better measurement.

Quantitative Measurement of Environmental Reporting Practices

Freedman and Jaggi (1986), Kelly (1981) and Roberts (1992) are of the opinion that the use of annual reports as a primary communication vehicle for environmental performance serves a better measurement tool. For the purpose of this study also, annual reports or sustainability/ environmental reports are used as a data source.

The point of commencement was to determine if the annual reports included disclosure on environment issues.

The annual report information was initially analyzed using a dichotomous variable (Yes=1; No=0). Once it was ascertained that the environmental information was present in the reports, it was necessary to determine how it was to be coded.

Table 1: Environmental Information

Information	ITC Ltd.	HI Ltd.	HU Ltd.	RI Ltd.	MS Ltd.
Present	1	1	1	1	1

It is clear from Table 1 that all the selected companies included environment related information in their reports which is resembled by "1" as per dichotomous variable, i.e., Yes.

Table 2: Quality and Quantity definitions of the Content Analysis

Quantity of Disclosures "How Much"	Quality of Disclosure "How measured"	Quality definitions
1 = sentence	1 = Monetary	Disclosure in monetary/currency terms
2 = paragraph	2 = Non-monetary	Quantified in numeric terms of weight, volume, size, etc. but not financial/currency
3 = half A4 page	3 = Qualitative only	Descriptive prose only
4 = 1 A4 page	4 = Qualitative and Monetary	Descriptive prose and currency
5 = >1 A4 page	5 = Qualitative and Non- Monetary	Descriptive prose and numeric terms
	6 = Monetary and Non- monetary	A combination of currency and numeric terms
	7 = Qualitative, Monetary and Non-monetary	Descriptive prose, financial and numeric terms

Table 2 above has further been divided into two categories in order to have a clear insight into the content, viz.: Table 3 which shows the quantity of disclosures "How much" and a score to the content present. While Table 4 shows the quality of disclosures "How measured" and a score thereof of the selected companies.

Score Board

Each category of Table 3 (viz., sentence, paragraph, half A4 page, 1 A4 page and >1 A4 page) has been allotted 10 points each, which makes an overall score of 50 points.

However, the content (excluding the figures, pictures, charts, diagrams, etc.) was taken into consideration in the "Quantity" aspect of the study.

Table 3: Quantity of Disclosures "How much" of the selected companies (Score Board)

Quantity of Disclosures"How Much"	ITC Ltd.	HI Ltd.	HU Ltd.	RI Ltd.	MS Ltd.
1 = sentence	——	——	——	——	——
2 = paragraph	——	——	——	——	——
3 = half A4 page	——	——	——	——	——
4 = 1 A4 page	——	——	——	——	✓
5 = >1 A4 page	✓	✓	✓	✓	——
Total Points	50	50	50	50	40

We can observe from Table 3, that almost all the companies have reported >1 A4 page and scored full (maximum) points i.e., 50 points, except Maruti Suzuki Ltd. (which excluding its pictures, figures, etc.) which has reported nearly about 1 A4 page and scored 40 points on the score board. This in fact, is a positive sign towards a better environmental disclosure practices.

Qualitative Measurement of Environmental Reporting Practices

A firm providing a combination of discussion on environmental goals and objectives, and outcome in qualitative, non-monetary and monetary terms was considered to be more meaningful to aid stakeholder decisions by linking disclosure, environmental performance, and economic performance (Belkaoui and Karpik, 1989).

Each category of Table 4 (viz., monetary, non-monetary, qualitative only, qualitative and monetary, qualitative and non-monetary, monetary and non-monetary and qualitative, monetary and non-monetary) has been allotted 10 points each, which makes the highest score of 70 points and the lowest of 10 points.

Table 4: Quality of Disclosures "How measured" of the selected companies (Score Board)

Quality of Disclosure"How measured"	ITC Ltd.	HI Ltd.	HU Ltd.	RI Ltd.	MS Ltd.
1 = Monetary	——	——	——	——	——
2 = Non-monetary	——	——	——	——	——
3 = Qualitative only	——	——	——	——	——
4 = Qualitative and Monetary	——	——	——	——	——
5 = Qualitative and Non- Monetary	——	——	——	——	——
6 = Monetary and Non- monetary	——	——	——	——	——
7 = Qualitative, Monetary and Non-monetary	✓	✓	✓	✓	✓
Total Points	70	70	70	70	70

It is observed from Table IV that all the selected companies have presented their environmental information in qualitative, monetary and non-monetary terms to more or less extent and have scored full 70 points.

Environmental Indicators Measured

Once we have known about the status of the environmental information present in the annual/ sustainability/ corporate social responsibility reports, few selected environmental indicators which play a major role in environment preservation were selected for the measurement purpose.

Following environmental indicators were selected for this study purpose:

Table 5: Environmental Indicators Measured

Sr. No.	Environmental Indicators Measured
1.	Air/ Air Emissions
2.	Water Management/ Conservation
3.	Recycling and Waste Management
4.	Climate Change/ Ecological Balance
5.	Material Sustainability/ Clean and Eco-friendly Products
6.	Green House Gas
7.	Energy Conservation
8.	Land Resources (Maintenance)
9.	Bio Diversity
10.	Managing Mining Environment
11.	Sustainable Sourcing (Agriculture)
12.	Creating Wealth from Waste
13.	Efficient Plastic Recycling

The above are few indicators which contribute for a better environment balance and preservation. They would be analyzed on the basis of the information present in the reports in Table 6. Each such indicator has been allotted 10 points (individually) making the total score to be 130 points.

Table 6: Environmental Indicators Measured   (Score Board)

Environmental Indicators	ITC Ltd.	HI Ltd.	HU Ltd.	RI Ltd.	MS Ltd.
Air/ Air Emissions	10	10	00	10	00
Water Management/ Conservation	10	10	10	10	10
Recycling and Waste Management	10	10	10	10	10
Climate Change/ Ecological Balance	10	10	10	10	00
Material Sustainability/ Clean and Eco-friendly Products	10	00	00	10	00
Green House Gas	00	10	10	00	00
Energy Conservation	10	10	10	10	10
Land Resources (Maintenance)	00	10	00	00	00
Bio Diversity	00	10	00	10	00
Managing Mining Environment	00	10	00	00	00
Sustainable Sourcing (Agriculture)	00	00	10	00	00
Creating Wealth from Waste	10	00	00	10	00
Efficient Plastic Recycling	00	00	00	10	00
TOTAL	70	90	60	90	30

From Table 6, which exhibits the information on the environmental indicators, it is clear that both Hidalco Industries and Reliance Industries Ltd. have scored the highest 90 points. However, ITC Ltd. has scored the second highest points, i.e., 70 points followed by Hindustan Unilever Ltd. scoring 60 points and Maruti Suzuki Ltd. scoring the lowest 30 points.

Environmental Management Best Practices (Certification)

The introduction of the ISO 14000 series for Environmental Management Best Practice has introduced environmental issues as part of "Business as usual". So, it has now become an urge for the companies worldwide to report on the Environmental issues and their contribution in safeguarding the Environment.

Over and above the indicators studied, it was also checked whether the companies selected had been issued ISO 14000 series of certificate pertaining specially to the environment management which is shown through Table 7. The companies which had procured the said certificate were given 10 points and the ones which did not were not given any points.

Table 7: Environmental Management Best Practice   (Score Board)

	ITC Ltd.	HI Ltd.	HU Ltd.	RI Ltd.	MS Ltd.
ISO 14000 Series	10	10	10	10	——

Table 7 above shows that every company has obtained ISO 14000 Series meant for Environmental Management Best Practice and scored 10 points, but no such information of ISO 14000 series certification in case of Maruti Suzuki Ltd. was found in the annual reports during the year 2011.

Overall Performance in Disclosing Environmental Information in the Reports of the Selected Companies

Overall score is made up of the qualitative and quantitative information disclosed pertaining to environmental information content, indicators of environmental reporting and best environmental management practices (exhibited by Tables 3, 4, 6 and 7) of the selected companies.

Table 8: Overall Score

	ITC Ltd.	HI Ltd.	HU Ltd.	RI Ltd.	MS Ltd.
Total Score	200	220	190	220	140
Scores Out of	260	260	260	260	260

Combining the overall score of 260 points, both Hindalco Industries Ltd. and Reliance Industries Ltd. have scored equally, i.e., 220 points, while next scorer is ITC Ltd. with 200 points, followed by Hindustan Unilever Ltd. scoring 190 points and finally Maruti Suzuki Ltd. with the lowest score of 140 points.

Overall Findings

The said study gives a clear idea that all the selected Indian companies have to an extent disclosed environmental information and taken keen steps in the area to preserve the same, which is a positive and a progressive sign, indeed.

Further, there have been differences in the disclosures of the indicators exhibited by both HI Ltd. and RI Ltd. despite of their equal scores. While, the other companies are on their way towards better environmental disclosures.

No matter, no company scored full scores which show that each company needs to move ahead and compare with each other and disclose the fullest information which they still have not, so far.

Limitations of This Study

The study considers only few randomly selected index based companies which just gives a brief view of the environmental reporting practices carried out in India. It does not purport to demonstrate the exact results and reporting practices which can be considered as an ideal measure for such reporting.

Also, the study has been taken on for only one year (2011) which gives a very brief view of the environmental reporting practices of the selected companies.

Though efforts were undertaken to ensure coding reliability, there remains a degree of subjectivity in the determination and undertaking of coding practices in content analysis research.

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Positive and Critical Classification Stakeholders: The Case of Bayer AG Germany

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Abstract

The philosophy of corporate social responsibility (CSR) has accentuated a perceived rivalry between shareholder model versus stakeholder model of business. The shareholder model promotes shareholder value while stakeholder model serves a wide range of interests (Jensen, 2001). Traditionally, shareholders or stockholders were assumed to be the very important stakeholders but in the modern time's corporate philosophy, many more stakeholders have emerged who are success agents of the corporations (Scott and Lane, 2000). A stakeholder analysis helps identify a company's key or important stakeholder, their interests and how their interests affect the success of the company (Shankman, 1999). Such analysis also needs social analysis along with the company and industry appraisal in order to enhance stakeholder participation. This work is mainly a descriptive analysis of the stakeholders' importance to corporate. An effort has been made to identify the key stakeholders of the 147 year old company Bayer AG, Germany to understand the extent of partnership between the company and its key stakeholders.

Key Words: Success agent, CSR, Bayer AG.

Stakeholders and Management Principles

Traditionally the stakeholders of a firm used to be the customers, suppliers, employees and owners. But during the last two decades, due to the emergence of environmentalists, media, governments, consumers' advocates, etc., the concept of stakeholders has changed. Stakeholders are persons or groups (can be institutions) who have interests in the company and who can affect or be affected by the degree of achievements of the firm's purpose (Frooman, 1999). Therefore there is a need to develop a generic stakeholder map irrespective of the firm's nature of business, size and involvement in the society. Figure: 1 suggests a typical stakeholder map. There can be variations in stakeholders' maps amongst industries, companies at a specific stakeholder level like; high-end customers & low-end customers, national political group & regional political group, long-term owners & short-term owners, etc.(Donaldson, 1999). Construction of a rational stakeholder map is not an easy task even though it has been oversimplified in figure: 1, because a particular group may change over time depending upon various strategic issues. There are also conflicting roles of some of the members of each of the stakeholder groups (Freeman and Reed, 1983). For example; an employee may be the customer of a company and simultaneously be a member of the employee union of the same company as well as an active member of a powerful political party, while being a member of customers' advocate group. Therefore, a stakeholder can have conflicting expectations from corporate actions and as a result coalition of stakeholders' groups may emerge to contest a particular stakeholder action. Simultaneously, a firm may influence a particular group of stakeholder to ultimately influence other group or groups of stakeholders.

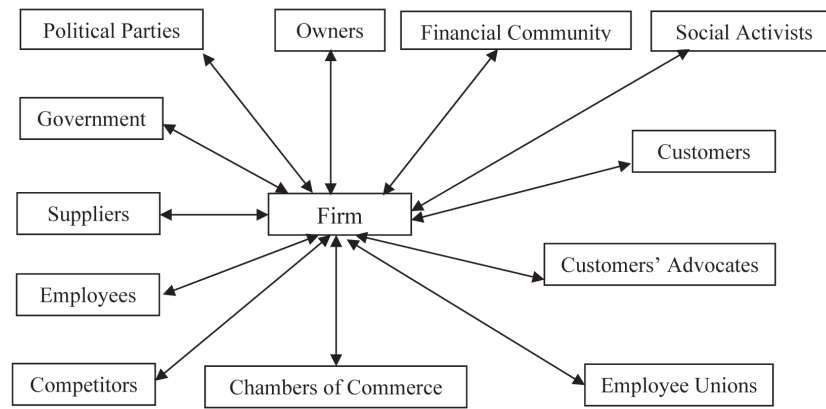* Fellow of the Institute of Cost Accountants of India and a Management Accounting Consultant.

Figure 1: Typical Stakeholder Map

The stakeholders can be classified into 'primary', 'secondary' and 'key' categories. The primary stakeholders are those who are ultimately affected positively or negatively by the corporate decisions and actions. Secondary stakeholders are generally the intermediaries who are the winners or losers and either involved or excluded in the decision making process. The key stakeholders are those who can belong to both the groups and are in a position to significantly 'influence' the company or are 'important' to the company for its success. Here, 'influence' refers to the 'power' of the stakeholders to influence corporate actions and 'importance' implies the needs, interests and priority of stakeholders to be delivered by the company. Mitchell, Agle and Wood (1997) observed three prime characteristics of the stakeholders like 'power', 'legitimacy' and 'urgency'. Generally speaking, stakeholders' powers remain 'dormant', their legitimacy is 'discretionary' and urgency connotes 'demanding'. Different combinations of characteristics of stakeholders create different groups of stakeholders, who can create huge counter impacts on the performance of the companies (Gartner Group, 1996). These combinations are depicted in table 1.

Table 1: Classification of Stakeholders

Combinations of characteristics	Types of stakeholders
Power + Legitimacy	Dominant Stakeholders
Legitimacy + Urgency	Dependent Stakeholders
Urgency + Power	Dangerous Stakeholders
Power + Legitimacy + Urgency	Definitive Stakeholders

Therefore, stakeholders need to be managed and tackled strategically. Stakeholder management has become an important corporate management action in the complex business setting. Clarckson (1999) suggests that as a matter of stakeholder management principles, the management should:

1. Acknowledge and actively monitor the concerns of all legitimate stakeholders and consider their interests in decision-making.

2. Communicate with stakeholders about the risks that they assume because of their involvement with the corporation.

3. Become sensitive to the concerns of stakeholder constituency.

4. Work in cooperation with other public & private entities to minimise the risks and harms arising from the corporate activities and any harms caused are either avoided or adequately compensated.

5. Attempt to make a fair distribution of the benefits and burdens of corporate activities amongst the stakeholders.

6.   Resolve and communicate the conflicts between their own role as stakeholders, and their legal and moral responsibilities to the other stakeholders, which should be subject to third party review.

Stakeholder Analysis

A firm has to serve as a vehicle for coordinating stakeholders' multiple interests, may be far away from mere financial and economic criteria (Carroll, 1989). But the problem is that it is very difficult to assure multiple stakeholders that their interests are being coordinated by the firm to achieve most favorable results. As stated earlier, stakeholder analysis refers identifying key stakeholders, assessing their interests, and evaluating how their interests can affect the riskiness and performances of the firm and vice versa (Chandler, 1962). It is necessary to brainstorm who are the key stakeholders of the firm and accordingly prioritize and understand the key stakeholders from the long list of people and organizations that are affected corporate actions and decisions (Chandler, 1962). Some of them may have the power either to block or advance corporate decisions, while others may be interested in what the firm is doing and at the same time there may be others who may not care. Figure 2 shows the power and interest of stakeholders as was mapped by Clarckson(1999).
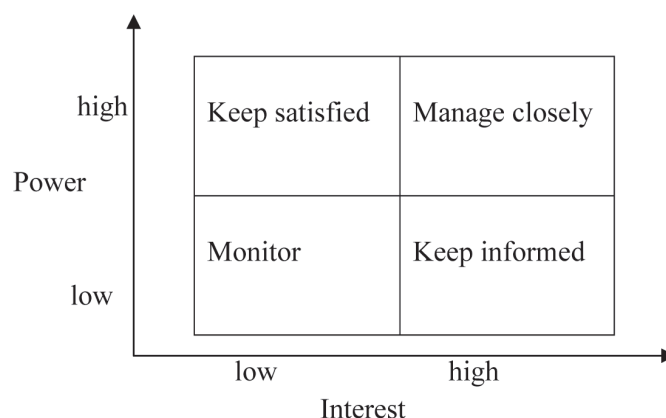
Figure 2: Power-Interest Grid of Stakeholders

The matrix suggests that 'high power-high interest' stakeholders must be fully engaged with, and the company should make greatest efforts to satisfy them.

Bayer Aggermany[1]

The Bayer AG (Bayer) was founded in 1863 in Barmen, Germany. Its head quarters are currently situated in Leverkusen, Germany. After being in business for nearly 150 years, Bayer is today operating in 150 countries. The simple corporate structure of Bayer is shown in figure 3.
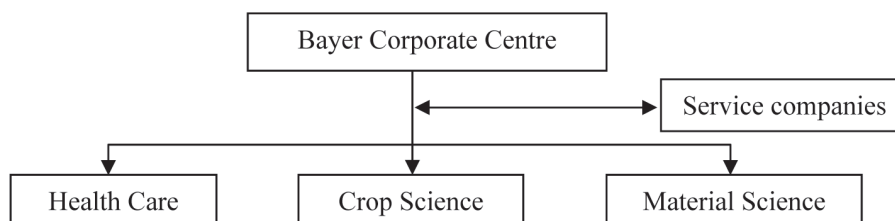
Figure 3: Bayer AG's Corporate Structure

The health care segment consists of the following:

Pharmaceuticals: general medicine, speciality medicine, women's healthcare, diagnostic imaging. Consumer health: consumer care, medical care and animal health.

The crop science segment has crop protection (herbicides fungicides, insecticides, seed treatment), environmental science and bio science.

Material science segment comprises polyurethanes, polycarbonates, coatings, adhesives specialities and industrial operations. Bayer group has three service companies, *viz*; 'Bayer business services', which is the group's international competence centre for IT – based services. 'Bayer technology services' is the global technological backbone and major innovation driver of the Bayer Group and 'Currenta' offers services to the chemical industry in terms of utility supply, waste management infrastructure, safety, security, analytics and vocational training.

Stakeholders of Bayer

Bayer claims in its Sustainable Development Report, 2009 that it is an essential part of their policy to closely interact with the various stakeholders by engaging in active dialogue with them and that it takes the feedback of these stakeholders very seriously. The company's stakeholder map is depicted in figure 4.
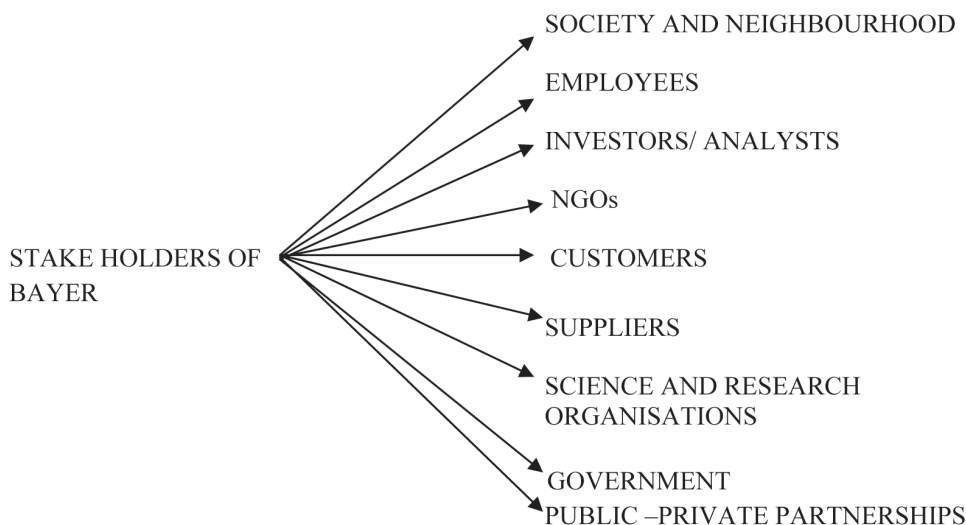
SOCIETY AND NEIGHBOURHOOD

EMPLOYEES

INVESTORS/ ANALYSTS

NGOs

STAKE HOLDERS OF BAYER

CUSTOMERS

SUPPLIERS

SCIENCE AND RESEARCH ORGANISATIONS

GOVERNMENT
PUBLIC –PRIVATE PARTNERSHIPS

Figure 4: Bayer's Stakeholder Map

Bayer's policy[1] towards the various stakeholders and some ways in which it interacts with these stakeholders is briefly discussed below:

Society and Neighbourhood: The company has made its commitment towards the well being of mankind and climate change amply clear. In 2009 the company invested • 2.75 billion for research and development. It is commendable that research is directed towards devising innovative methods of growing crops on arable land and thereby working towards ensuring food security. For example Bayer is trying to come up with seeds and cultivation methods whereby crops can be grown in varying and extreme weather conditions. Arize Dhani®[2], a hybrid variety of rice, launched in India in 2008 is resistant to bacterial leaf blight. Their research in the field of pharmaceuticals is directed towards development of effective drugs for the prevention and cure of thrombosis, heart diseases and hypertension. The materials science segment is engaged in harnessing wave energy into electricity besides building 'Eco Commercial Building' in a bid to reduce greenhouse gas emissions. Bayer has launched eight lighthouse programs towards its efforts to promote sustainability. It engages in discussions with neighbours, public authorities and elected officials on different topics, neighbourhood dialogues with local representatives as a part of its stakeholder engagement.

Employees: Bayer had a workforce of 108,400 employees in 2009. Its personnel expenses amounted to • 7,776 million in 2009. The company believes in respecting employee rights world-wide by contributing to social welfare and engaging in an open and efficient employee communication. It has an excellent policy of flexible working hours in order to help employees to take care of their personal commitment they can even take a break up to seven years to bring up their children.

Investors/Analysts: The Bayer stock appreciated by nearly 40% in 2009 in comparison to DAX which went up by 24%. The company engages in a direct dialogue with investors and analysts, podium discussions/events on the subject of sustainable investment.

NGOs: It supports various programmes like 'HOPE' in India in the area of diabetes, project with German foundation for World Population(DSW), Germany, cooperation with Vignana Jyothi (an Indian educational trust) on the 'learning for life initiative' in its rural development institute.

Customers: Engagement with customers take the form of participation in the Global Automotive Stakeholder Group, Customer satisfaction survey for farmers in Poland, Austria and the Netherlands, etc.

Government: Participation in 'Nano Dialog' between German Government and Industry, Anti-cancer workshop featuring the E.U.Health Commissioner and E.U parliamentarians.

Suppliers: Procurement for different segments is done from different sources. The company follows a very stringent procurement policy to avoid bottlenecks and maintains a high standard of quality, safety and environmental protection across the globe. Suppliers Days 2009 e.g. Bayer HealthCare in China and Germany, Logistics suppliers workshop on transport safety in China, etc. ensure engagement with suppliers.

Science and Research Organisations: Cooperation with the Commonwealth Scientific and Industrial Research Organisation on wheat research, Cooperation with the China National Rice Research Institute, participation in various forums ,etc.

International Initiatives and Public Private Partnerships: Cooperation with the UN, collaboration with WHO in the area of neglected tropical disease 'chagas', cooperation on malaria issues, etc.

Apart from this Bayer is also actively involved with Schools with a view to promote science and with Industry Associations.

Critical Stakeholder Analysis of Bayer AG.

The foregoing discussions about the company's operations would lead one to believe that all the stakeholders are equally important for the company. For any business the most important stakeholder is undoubtedly the customer. A company would cease to exist as a going concern without a strong customer base and everything else, employees, research, suppliers, etc. would become meaningless, if the company did not have a market for its products. It is commendable that Bayer is directing its research towards discovering innovative ways to fight climate change, to ensure better health and to contribute towards food security. But undeniable is the fact that, it is through these activities that Bayer is capturing new markets for its products and that sustainability is a happy by product of its main business. The company's strategy of capturing the Asian market by promoting innovative methods in the rapidly growing economies like India and China has given it an edge over its competitors. It is a wisely thought out strategy of killing two birds with one stone i.e to find market for its products and to promote sustainability.

Although the Government is considered to be a secondary stakeholder by most authors of stakeholder theory, for companies operating in certain industries like the pharmaceutical and chemical industries, government becomes a very important stakeholder, because once again the company would have to operate within stringent regulations. Moreover for a company like Bayer which has operations in 150 countries, apart from confirming to the rules of their own country they would also have to abide by the laws and regulations of the other country in which they operate. In such a scenario the role of Government/Governments become very crucial for the company's well being.

Next and equally important to the company are its suppliers. Although suppliers like customers form the backbone of any company, the role of suppliers becomes overtly important for companies like Bayer, because of

the very nature of their business. A defective raw material in their healthcare segment dealing with medicines for humans and animals could have serious repercussions. For example a spurious anticoagulant medicine could cause irreparable damage and could even lead to death, which in some cases could lead to litigations and even banning the product. This scenario could be contrasted with an automobile manufacturing company where the automobile company could easily replace a defective automobile or undertake free repairs in a bid to keep the customers happy. But for a pharmaceutical and chemical company it could cause severe damage to its goodwill. Bayer has therefore made it very clear that they follow a very stringent procurement policy considering the fact that the Health Care segment contributes 51.3% to its total revenue and offers more than 20,000 products to consumers.

A successful business enterprise seldom encounters problems from investors. Bayer would be seen by the investors as a company operating in the right direction in terms of business, profits and corporate social responsibility activities which does not leave much scope for the investors to complain. The Bayer stock appreciated by nearly 40% in 2009 in comparison to DAX which went up by 24%. Engagement with the investors and analysts form time to time should be enough to keep them happy.

The business of Bayer makes it very much employee dependent. To remain above its competitors Bayer would have to invest in continuous research which would invariably make its researchers very much indispensable. •460 million were earmarked for bonuses and short term incentives alone during 2009. Even during the economic downturn the company introduced a 'solidarity pact', which involved a reduction in pay and working hours to compensate for the effects of reduction in orders. The existing policy of the company not to dismiss employees for operational reasons , was extended till 2012. Employee expenses as a % of sales was 24.95% and Research and Development expenses as a % of sales was 8.81% for 2009. Its acquisition of research facilities in other countries also enhances its research opportunities.

Bayer is a global enterprise and Corporate Social Responsibility (CSR) is an integral part of its corporate philosophy. Its mission statement states 'Bayer: Science for a Better Life'. It can be reiterated that the company is pursuing a very healthy policy for promotion of its CRS activities. The company was successful in reducing Greenhouse gas emissions by 6.5% from the previous year. Although it actively promoted CSR activities like promoting education and research, sports and culture , minimising waste generation , developing solutions to optimize resource utilisation and energy consumption, protecting biodiversity and recycling to name a few, its expenditure on these activities was only 0.14% of net sales for 2009. Its commitment to sustainability can be gauged from its participation in a number of initiatives and projects world over. Apart from being a founding member of the UN Global Compact initiative of the United Nations, Bayer featured as the world's best company in the Carbon Disclosure Leadership Index. Since 1994 the company has followed the practice of voluntary responsible care initiative of the chemical and pharmaceutical industry. It has set new standards in public-private partnerships with its partnership with the United Nations Environment Programme (UNEP). Bayer's sustainability reporting is based on the guidelines of the Global Reporting initiative. Based on the discussions above, the author imagines that the Bayer's stakeholder map can be redrawn as depicted in figure 5 in order of importance.

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┌─────────────────────┐
│ Stakeholders of Bayer│
└─────────────────────┘
         │
┌─────────────────────┐        ┌──────────────────────────────────────────┐
│ Customers           │────────│ Employees/ Research and Development Partners│
└─────────────────────┘        └──────────────────────────────────────────┘
         │
┌─────────────────────┐        ┌──────────────────────┐
│ Suppliers           │────────│ Governments          │
└─────────────────────┘        └──────────────────────┘
         │
┌─────────────────────┐        ┌──────────────────────┐
│ Investors           │────────│ Sustainability and CSR│
└─────────────────────┘        └──────────────────────┘
         │
┌─────────────────────┐
│ Others              │
└─────────────────────┘
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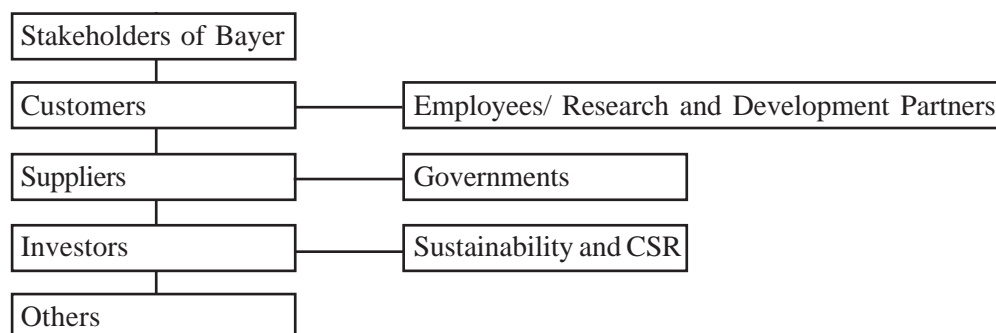
Figure 5: Redrawn Stakeholder Map of Bayer AG.

To sum up, for Bayer, customers and employees along with their research partners across the globe play a pivotal role in ensuring the success of the company and as such are the most important stakeholders. Low employee morale in the case of Bayer may prove detrimental for the health of the company. Second in line are the suppliers and the respective Governments where Bayer operates including the government of their own country. Third in importance are the investors and the company's engagement with society and its development. All others fall in the fourth category.

Conclusion

Stakeholder theory is basically an extension of the CSR theory, which suggests that if a company affects individuals or groups to achieve its goals, then these individuals and groups have legitimate interests in that company (McGuire, Sundgren and Schneeweis, 1988). Depending upon the degree of how they are affected, the various stakeholders have varying 'stakes' in the company and thereby they can demand appropriate corporate action for their happiness, wellbeing, interests, safety and comfort. Therefore, who is a Key stakeholder is dependent upon what is the extent of effects of the corporate actions. For example, a product may occasionally lead to injury or death of a small fraction of the customers and the company may find it cheaper to pay damages than to redesign the product. In such a case, as per traditional managerial model, shareholder interest comes first and customer interest comes second. But the stakeholder model would insist that customer health represents more legitimate stake than financial stake of shareholders (Gioia, 1999). If the customers are not satisfied with respect to quality, price, utility, availability and so on, there is no point of being in business (Rumelt, 1984). It may be concluded that there may not be a set rule to identify which stakeholder is most important to the firm. It will depend on the degree of positive or negative effects of corporate behavior on individuals or groups. Therefore, mission, goal, nature of the product, manufacturing process, education & awareness, moral sensitivity of firm to society, etc. have bigger roles to play to identify the most important group or groups of stakeholders.

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End Notes

[1] Information, facts and a nalysis have been sourced from Bayer Annual Report 2009 and Bayer Sustainable Development Report 2009.

[2] Sourced from Bayer AG.'s annual report, 2009 and sustainable development report, 2009.

[3] Registered trade mark

India's Competitiveness in a Globalised Economy: Issues and Challenges for Pharmaceutical Sector

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Abstract

What are the issues and challenges in the global competitiveness of the Indian pharmaceutical industry? Where does this industry stand when compared to global peers on pharmaceutical value-added, productivity, research and development and trade performance? What are the new strategies that Indian pharmaceutical companies are adopting to become global players? These questions are addressed in this paper based on secondary data and the author's experience in pharma sector. It is found that strategic government policies were the main factors that transformed the status of the Indian pharmaceutical industry from a mere importer and distributor of drugs and pharmaceuticals to an innovation-driven cost-effective producer of quality drugs. India emerged as one of the fast growing pharmaceutical industry in the world with growing trade surpluses and exports. However, there are certain limitations that the government policies need to address, like low productivity and R&D intensity. A host of competitive strategies, like Greenfield direct investment, overseas acquisitions, strategic alliances and contract manufacturing have emerged as favorites to Indian pharmaceutical firms recently.

Key Words: Competitiveness, Competitive strategies, Productivity, Contract manufacturing.

Background

The global pharmaceutical industry can be divided into innovators, generic companies and independent Supply organizations. Innovator companies focus on developing innovative drugs and formulations that enjoy patent protection for a defined period of time, usually 20 years. Generic players focus on manufacturing versions of off-patent drugs, which are similar in dosage, safety, strength, method of consumption, performance and intended use. After patent expiry Emerging Opportunities in Pharmaceutical Contract Manufacturing of a drug, several generic versions are launched, which are available for a fraction of the price of the original patented drug. The global pharmaceutical industry is projected to grow at 6% annually from US$700-bn in 2007 to about US$940-bn by 2012. The generics segment is expected to grow faster at 11% CAGR, compared to the innovator segment at 5% CAGR during this period. This is mainly driven by governments of various developed and developing countries increasingly promoting the shift to generics in an effort to control their rising healthcare budgets. Globally US$ 80-bn worth of drugs is expected to go off-patent by 2010.

Indian Pharmaceutical Industry

Pharmaceutical Industry in India has history for more than 60 years. Govt. of India has promoted Indian Drugs and pharmaceuticals Ltd. (IDPL) for bulk drugs, injectables and medical devices. IDPL has shown declining in the manufacturing activities from 1985. Today, in India, in general, the pharmaceutical industry is controlled by the private sector. The growth of pharmaceutical industry in Govt. of A.P has really taken momentum from 1980 onwards.

In the state of A.P, the pharmaceutical industry has really grown and seen the heights of achievement. Today, A.P. state is the bulk drug capital of India. In the State of A.P. there are about 5,000 manufacturing units,

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out of which about 4,500 Active Pharmaceutical Ingredients (API) Manufacturing, about 300 drug formulation units and about 200 other products.

Changing industry dynamics

Many stereotypes are being broken in the pharmaceutical industry today due to changing realities of the marketplace. Innovator companies are increasingly acquiring generics companies (e.g., Daiichi-Ranbaxy deal) or striking strategic alliances (e.g., GSKAspen deal) in order to participate in the fast growing generics market. Innovators and generics companies are both increasingly facing pressure on their bottom line. EBIT (earnings before interest and taxes) margins for most global pharmaceutical companies have been stagnating or declining over the past few years. This has forced companies to relook at optimizing their cost structure and increased focus on outsourcing less critical activities to more cost competitive locations/ options. Manufacturing, which represents about 30% of the annual cost base for a typical global pharmaceutical company, offers good opportunity for significant cost savings, while simultaneously enabling the company to focus all efforts on research and marketing. Innovator companies like Pfizer, Merck and Astra Zeneca have already announced intentions to contain production costs by increasing outsourcing of manufacturing activities to emerging economies. This is expected to lead to an increase in pharmaceutical contract manufacturing globally from US$20-bn in 2006 to US$40-bn by 2012.

Implications for Indian CMOs

The changes in the global pharmaceutical industry have far-reaching implications for their outsourcing partners. The generic companies spawned the first wave of contract manufacturing in India, led primarily by the need to be globally cost competitive and to protect their margins. At last count, there were over 1,500 pharmaceutical contract manufacturing firms in India, most of them focusing on basic APIs and intermediates. However, with the generics segment across the world increasingly under pressure due to increased competition, their outsourcing partners are now feeling the heat. Mushrooming of a large number of CMOs in emerging economies has also decreased their bargaining power to an extent.

Objectives

- To address the issues and challenges in the global competitiveness of the Indian pharmaceutical industry.

- To comment on the position of this industry when compared to global peers on pharmaceutical value-added, productivity, research and development and trade performance.

- To address the new strategies that Indian pharmaceutical companies are adopting to become global players.

- Strategic government policies were the main factors that transformed the status of the Indian pharmaceutical industry from a mere importer and distributor of drugs and pharmaceuticals to an innovation-driven cost-effective producer of quality drugs.

Research Methodology

The whole study can be termed as a desk research. Hence there is no field work and collection of primary data for this research.

Secondary data collection: Information pertaining to India's Competitiveness in a Globalised Economy-Issues and Challenges for Pharmaceutical Sector was obtained by referring to journals, books; internet and other published materials for collection of necessary data.

Limitations of Study

The study is purely based on the secondary data. All the limitations suffered by the secondary data are applicable to this paper.

Literature Review

The literature review is done in four main categories dealing with different topics, such as How Indian CMOS can stay competitive? Budding biotechnology, India: The big shot in vaccines, Mitigation Strategies to Implement by Pharma Companies.

Literature on How Indian CMOS can stay competitive: The opportunity to service generics companies continues to offer significant potential, whereas increasing interest in contract manufacturing by innovator companies opens up another rapidly growing segment. India, with the largest number of US-FDA certified plants outside the US, maximum number of DMF filings (more than twice its closest competitor) and huge pool of highly trained technical manpower is uniquely positioned to take advantage of this opportunity. This section addresses sub topics on shift in business model, developing additional capabilities, offering end-to-end services, and increasing risk profile.

Literature on Budding Biotechnology: There are 380 Biotech organizations in India; Bangalore alone has over 190 establishments which roughly contribute to 30% of the Indian revenue sector by means of exports. Therefore this section concludes Southern India as a budding biotechnology hub.

Literature on India: The big shot in vaccines: Current statistics reveal that over 60% of the world's vaccine requirement is fulfilled by India, which in turn accounts for an almost $60 million market. Therefore apart from being a major production unit of bulk drugs, India is fast emerging as a leading manufacturer of vaccines too.

Literature on Mitigation Strategies to Implement by Pharma Companies: Western pharmaceutical companies can apply several mitigation strategies to avoid a significant profit and loss impact from these trends. A robust risk analysis and quantification of exposure will be critical before developing a mitigation strategy. It takes 18 to 36 months to move drug manufacturing sources, creating barriers to both entry and exit. Hence, acting before a cost advantage erodes will differentiate market leaders from the rest.

How Indian CMOs can stay competitive?

While the opportunity to service generics companies continues to offer significant potential, increasing interest in contract manufacturing by innovator companies opens up another rapidly growing segment. India, with the largest number of US-FDA certified plants outside the US, maximum number of DMF filings (more than twice its closest competitor) and huge pool of highly trained technical manpower is uniquely positioned to take advantage of this opportunity (Pradhan, 2006)

Both innovators and generics offer different opportunities and the age of one-size-fits-all strategy is no longer valid. While the generics segment will continue to bring in the volumes, the innovator segment is likely to be more profitable. Focusing on innovators will enable current Indian CMOs to move from plain toll manufacturing to value-added offerings with higher margins. Focusing on innovators would, however, require basic changes in the DNA of an existing CMO. Adherence to regulations, FDA certifications and GMP will no longer suffice as a differentiating edge. Focusing on innovators would require different capabilities to be built and a different mindset, business model and risk appetite, as enumerated hereunder:

Change in critical success factors: Scale and size are no longer competitive weapons. Adherence to IP, world class quality standards and managing client relationships are the new determinants of success.

Shift in business model: Innovators prefer a company with a non conflicting business model

— A partner who would always assist in its operations, rather than launch a competing product.

— A number of domestic firms offering contract manufacturing services today reinvest the revenues in developing their own compounds.

This model is no longer preferred due to increased sensitivities around IP. As the market matures further, these two business models will separate out completely. For e.g., Indian companies like Divi's Laboratories and Jubilant Organosys with non conflicting business models have been able to successfully attract global innovator companies.

Developing additional capabilities: The CMO should support the client in his future growth areas, e.g., high potency drugs, which may require additional investment or dedicated facilities. Business development and managing client relationships is critical. Acquisitions or strategic alliances may need to be actively considered to gain access to technology or increasing global market reach (Fagerberg, 1987). For example, Dishman Pharmaceuticals acquired Carbogen AMCIS, a Swiss company, in 2006 for its high potency manufacturing capability. This acquisition enabled the company to broaden its technological base and also gave it an European interface with the global pharmaceutical community.

Offering end-to-end services: Innovators prefer partners who can assist them across the entire value chain. This could mean extending services from drug discovery and development, at one end, to manufacturing of formulations and injectables, at the other. This could lead to eventually transforming itself into an end-to-end CRAMS (contract research and manufacturing) player. For e.g., Divi's Laboratories offers services in custom chemical synthesis to several global pharmaceutical companies and enjoys one of the highest EBITDA margins in the industry.

Increasing risk profile: Risk sharing agreements with innovator companies for custom synthesis and milestone based royalty payments exposes it to the risk of non-commercialization of a potential new drug. For example, Indian companies such as Nicholas Piramal, Jubilant Organosys and Suven Life Sciences have entered into risk-and-reward-sharing agreements with Eli Lilly. The compounds, initially made available by Lilly, have to be brought forward by the Indian companies by investing their own financial and human resources. Eventually, if the drug gets commercialized, Eli Lilly would pay the companies royalty on its global sales. Similarly, Advinus Therapeutics, a Tata Group company, has entered into a deal with Ortho-McNeil-Janssen Pharmaceuticals Inc, a subsidiary of Johnson & Johnson, to develop two drug candidates for various disease targets. Advinus will receive an upfront payment, as well as milestone payment of up to US$247-mn, upon successful development of the two targets. Advinus is also eligible for royalties on the sales of any drug products resulting from the collaboration.Succeeding profitably in the new environment The Indian contract manufacturing market is expected to grow at 38% annually from less than US$1-bn currently to reach US$4.2-bn by FY 2012. Both the innovators and generics segments offer huge potential for Indian CMOs going forward. Critical success factors for participating in the opportunity offered by each segment are different and accordingly merit serious consideration by senior management. Indian CMOs will do well if they identify their target segments, develop necessary capabilities and redefine their value proposition accordingly, failing which they may risk falling by the wayside as the industry consolidates and new entrants jump into the fray.

Budding biotechnology

In 1986, the government of India set up the Department of Biotechnology, after which public funding in this sector has steadily been on the rise. Of the 380 Biotech organizations in India, Bengaluru alone has a major chunk of over 190 establishments, which roughly contributes to 30% of the Indian revenue sector by means of exports. Biocon, the giant of Indian biotech is based in Bengaluru, along with other major players Aurigene, Astra-Zeneca, Advinus and MetaHelix. GBI statistics show that of the Rs.1000 crore investment in this sector, approximately Rs.140 crores has been from venture capitalists alone.

The current day and age looks at Bengaluru (India) as the emerging Biotechnology headquarter for both Indian, as well as global pharmaceutical firms. Alexandria Real Estate Equities Inc. in July 2011, laid the foundation stone for a Rs. 5500 crore Biotech Knowledge park 'Bengaluru Helix', spread over 106 acres of land, which is

expected to be complete in phases, and operational by the end of 2014. This impressive set up of science-research parks all over India will undoubtedly play a major role in enhancing global biotechnology research and development, facilitate technology transfer and improve the country's in-licensing potential.

India: The big shot in vaccines

Apart from being a major production unit of bulk drugs, India is fast emerging as a leading manufacturer of vaccines too. Current statistics reveal that over 60% of the world's vaccine requirement is fulfilled by India, which in turn accounts for an almost $60 million market. Currently, there are 60 vaccines being produced in India, spanning 10 disease conditions. Clinical trial centers for evaluation of the efficacy of vaccines are thus constantly on the rise. With current development, production and export of vaccines, the biological sector is expected to grow rapidly and bring in revenues of $2 billion by the end of this year. Thus, this diverse and versatile portfolio of biological by manufacturers in India has kept competition at bay, with just a handful of global pharmaceutical organizations showing presence, including Sanofi-Aventis, Wyeth and Merck. Approximately 70% of the vaccines produced in India are exported and UNICEF is one of India's largest clients, which supplies vaccines to over 140 countries and accounts for 40% of the global requirement.

The position of this industry when compared to global peers on pharmaceutical productivity, Research and Development and Trade performance.

Financial performance of the Drugs and Pharmaceutical Industry: The financial performance of the Drugs and Pharmaceutical industry for the year 2009-10, 2010-11 and the forecast for the year 2011-12 are given in Table 1 below:-

Table 1 : Drugs and Pharmaceuticals: Growth and Profitability in the year 2010-11

(%age Change over year ago)

S.No.	Particulars	Quarterly				Annual		
		June'11	Sept'11	Dec'11	March'12	2009-10	2010-11	2011-12
			Estimates	Forecast	Forecast			Forecast
1	Income	10.9	10.0	17.0	17.4	15.0	10.9	14.1
2	Net sales	9.2	11.0	17.1	16.3	11.9	12.4	13.6
3	Total expenses	11.6	-1.8	18.8	14.8	3.1	19.2	10.3
4	Raw materials	13.6	14.0	19.0	16.8	8.0	14.8	15.9
5	Salaries & wages	15.5	13.0	13.3	13.6	19.2	21.1	13.8
6	Power & fuel	10.2	24.0	24.0	10.0	2.5	20.1	17.1
7	Selling & marketing	9.0	15.1	10.0	9.0	0.1	11.9	10.7
8	Other expenses	2.8	28.0	11.1	12.1	-19.3	15.9	13.7
9	Depreciation	9.1	13.0	1.5	12.0	14.3	12.4	11.4
10	Interest expenses	15.8	20.0	25.0	18.0	-0.3	6.6	19.4
11	Tax provision	37.5	-78.5	90.6	75.9	108.8	73.6	-37.2
12	PBDIT	17.3	-4.3	19.9	18.9	105.7	-1.1	12.6
13	PAT	15.7	-	7.1	25.8	210.8	-31.6	55.6
14	PBDIT/Net Sales (%)	18.8	17.2	21.5	17.1	21.4	19.0	18.7
15	PBDIT/Income (%)	22.8	20.8	24.9	20.9	25.4	22.7	22.4
16	PAT/Income (%)	13.7	11.4	14.5	10.9	15.0	9.2	12.6

Source: Center for Monitoring Indian Economy (CMIE) Report November 2011.

Net sales of the Drugs & Pharmaceuticals sector are expected to grow by 17.1 percent y-o-y in the December 2011 quarter as against an estimated 11 per cent growth in the September 2011 quarter. The

improvement in sales growth will be largely driven by higher realization of export oriented Pharma companies. The sector generates around 40 percent of its sales from exports. A sharp depreciation in the rupees is expected to result in higher export realizations, which will enhance the overall growth of the sector.(From Table 2 to 6)

I.   Growth in Indian Pharmaceutical Industry

Table-2: Export and Domestic Growth (Rs. in crore)

Year	Exports	Growth%	Domestic	Growth%	Total	Growth%%
Mar 2006	21230	23.23	39989	17.17	61219	19.21
Mar 2007	25666	20.89	45367	13.45	71033	16.03
Mar 2008	29354	14.37	50946	12.30	80300	13.04
Mar 2009	39821	35.66	55454	8.85	95275	18.65
Mar 2010	42154*	5.86	62055	11.90	104209	9.38

Source: Indian Pharma Industry's annual report

Table – 3: International sales on consolidated basis

	Consolidated net sales	International sales	Exports as % of net sales 2010-11
Ranbaxy Labs	8960.77	6771.74	75.6
Dr. Reddy's Labs	7236.80	5940.70	82.1
Lupin	5706.82	3983.08	69.8
Cipla	6130.31	3361.49	54.8
Sun Pharma	5721.43	2898.20	50.7
Wockhardt	3751.24	2709.91	72.2
Jubilant Lifescience	3433.40	2369.11	69.0
Cadila Healthcare	4464.70	2288.70	51.3
Biocon	2300.52	1956.79	85.1
Glenmark Pharma	3089.59	1955.83	63.3
Sinde Arcolab	1695.84	1637.67	96.6
Plethico Pharma	1535.20	1367.22	89.1
Piramal Healthcare	2509.86	1280.58	51.0
Divi's Labs	1307.11	1204.95	92.2
Aurobindo Pahrma	4381.48	1112.06	25.4
Torrent Pharma	2121.97	1101.57	51.9
Dishman Pharma	990.84	911.56	92.0
Orchid Chemicals	1781.79	725.85	40.7
Shasun Chemicals	799.42	676.78	84.7
Panacea Biotec	1143.78	610.44	53.4

Source: Indian Pharma Industry's annual report

Table-4: Projected Growth (Value in Rs crs / Growth in %)

Year	Domestic		Exports		Total	
	Value	Growth	Value	Growth	Value	Growth
2016-17	130.000	21%	158.000	16%	288.000	18%
2019-20	233.000	22%	248.000	17%	481.000	19%

Table-5: Export Growth

Year	Exports (Rs. crores)	Growth %
Mar 2007	25666	20.89
Mar 2008	29354	14.37
Mar 2009	39821	35.66
Mar 2010	42154	6.6
Mar 2011	45746	7.7

Table-6: Top Global Generic Players

Rank	Company
1	Teva
2	Sandaz
3	Mylan/Merck Gx
4	Watson Andrx
5	Barr
6	Actavis
7	Ratiopharm
8	Stada
9	Ranbaxy
10	Perrigo

Source: Indian Pharma Industry's annual report

II. Trade performance

Table-7: Share in National Trade

Item/Years	2006/07	2007/08	2008-09	2009-10	2010-11
A: Total National Exports	571779	655864	840755	845534	1142649
(a) Drugs Pharmaceuticals and Fine chemicals					
Share in Total Export %	4.5	4.5	4.7	5.0	4.2
B: Total National Imports	840506	1012312	1374436	1363736	1683467
(b) Medicinal and Pharmaceutical Products	5866	6734	8649	9959	10937
Share in Total Import %	0.7	0.7	0.6	0.7	0.6
(c) Trade Balance (a)-(b)	19800	22620	31172	32497	36614

The share of Exports of the "Drugs Pharmaceuticals and Fine Chemicals" in the total National Exports declined from 4.50% to 4.20% during the period 2006- 07 to 2010-11, However in the absolute terms there is growth in Exports. The share of imports is declined 0.7% to 0.6% in the corresponding period. (Table 7). The Table 8 reflect the expenditures on Research and Development.

III. Research and Development

Table 8: Research and Development Expenditure

Year	Growth in R&D Expenditure - Rs Cr		R&D Expenditure As % of Sales	
	Domestic Companies	Foreign Companies	Domestic Companies	Foreign Companies
Mar 1995	80.61	64.13	1.34	0.77
Mar 1996	142.00	83.37	1.71	0.91
Mar 1997	148.12	89.41	1.55	0.95
Mar 1998	154.15	90.65	1.43	0.88
Mar 1999	218.66	70.78	1.56	0.70
Mar 2000	256.80	90.17	1.56	0.66
Mar 2001	435.07	109.81	2.30	0.72
Mar 2002	597.91	110.04	2.64	0.65
Mar 2003	686.74	232.73	2.93	0.71
Mar 2004	1084.26	346.69	3.81	1.10
Mar 2005	1527.24	510.50	4.98	1.63
Mar 2006	1850.97	816.02	5.35	2.39
Mar 2007	2371.79	695.62	5.01	2.67
Mar 2008	2772.63	700.18	4.78	2.86
Mar 2009	3316.14	846.05	4.89	3.84
Mar 2010	3342.32	934.40	4.50	4.01

Source: Indian Pharma Industry's annual report

III. New strategies that Indian pharmaceutical companies are adopting to become global players.

The annual turnover of the Indian Pharmaceutical Industry is estimated to be about Rs.1, 04,944.351 Crores during the year 2010-11. The share of export of Drugs, Pharmaceuticals and Fine Chemicals is more than Rs. 47551.26 crore. This segment of Industry has shown tremendous progress in terms of infrastructure development, technology base and wide range of products. The industry has developed excellent GMP (Good Manufacturing Practices) compliant facilities for the production of different dosage forms. The strength of the industry is in developing cost effective technologies in the shortest possible time for drug intermediates and bulk activities without compromising on quality. This is realized through the country's strengths in organic chemicals' synthesis and process engineering. The domestic Pharma Industry has recently achieved some historic milestones through a leadership position and global presence as a world class cost effective generic drugs' manufacturer of AIDS medicines. Many Indian companies are part of an agreement where major AIDS drugs based on Lamivudine, Stavudine, Zidovudine, Nevirapine are supplied to Mozambique, Rwanda, South Africa and Tanzania which have about 33% of all people living with AIDS in Africa. Many US Schemes are sourcing Anti Retrovirals from Indian companies whose products are already US FDA approved. Many Indian companies maintain highest standards in Purity, Stability and International Safety, Health and Environmental (SHE) protection in production and supply of bulk drugs even to some innovator companies. This speaks of the high quality standards maintained by a large number of Indian Pharma companies as these bulk actives are used by the buyer companies in manufacture of dosage forms which are again subjected to stringent assessment by various regulatory authorities in the importing countries. More of Indian companies are now seeking regulatory approvals in USA in specialized segments like Antiinfectives, Cardiovasculars, CNS group. Along with Brazil & PR China, India has carved a niche for itself by being a top generic Pharma player.

Many Indian companies have got various international regulatory approvals for their plants, from agencies like USFDA, MHRA-UK, TGA-Australia, MCC-South Africa etc. Outside USA India is the only country

having the highest number of USFDA approved plants for generic drugs' manufacture outside USA. Major share of Indian Pharma exports is going to developed western countries and it speaks not only about excellent quality of Indian pharmaceuticals but also about the reasonableness of the prices. Some of the leading Indian Pharma companies derive 50% of their turnover from International business.

Government Initiative

100 per cent foreign direct investment (FDI) is allowed under the automatic route in the drugs and pharmaceuticals sector including those involving use of recombinant technology. (DIPP) The Government plans to set up a US$ 639.56 million venture capital (VC) fund to give a boost to drug discovery and strengthen the pharma infrastructure in the country. The Government had issued an expression of interest (EoI) for technical and financial bids for the selection of a global level consultant (GLC) for the preparation of a detailed project report (DPR) in order to develop India as a drug discovery and pharma innovation hub by 2020. The Drugs and Pharmaceuticals Manufacturers Association has received an in-principle approval for its proposed special economic zone (SEZ) for pharmaceuticals, bulk drugs, active pharmaceutical ingredients (APIs) and formulations to be located at Nakkapalli mandal in Visakhapatnam district. The Department of Pharmaceuticals has prepared a "Pharma Vision 2020" for making India one of the leading destinations for end-to-end drug discovery and innovation and for that purpose provides requisite support by way of world class infrastructure, internationally competitive scientific manpower for pharma research and development (R&D), venture fund for research in the public and private domain and such other measures.

The government plans to open 3,000 Jan Aushadhi stores, which sell unbranded generic drugs at heavy discounts to branded drugs, in the next two years.

Issues and Challenges

Noncompliance of regulatory norms: Most of the health care units in different municipal areas do not have a proper Bio Medical Waste Management system. BMW Management is done mostly through agreement with competent practices and state PCB is very rigid and strict about the enforcement of BMW. All the hospitals are aware about BMW management and handling rules. The professionals formulate regulations to operate private nursing homes and hospitals. Otherwise, the government will have to participate in laying down guidelines, directives or regulations to ensure quality care. There is lack of continuous medical education programmes for healthcare providers. A continuous education programme for physicians may be introduced to improve quality care. CSR is a good concept. But the organizations or business enterprises is not ready to implement because it involves direct and indirect cost. It needs a dedicative approach to perform CSR not only one angle that is business and profit.

Survey covered in Pharma. The large except few small scale industries do comply with current. Good manufacturing practices (GMP) requirements to the required level meeting with the stringent requirements from domestic and international customers for the supply of quality product on continuous basis. Pharmaceutical industry representing Govt of AP have really taken the challenges as opportunities to contribute significant growth in the overall GDP. Government and Industry come together to stop $75 billion drug counterfeit ring. Typically, compliance requires major modifications to hardware such as packaging lines and labeling or printing equipment as well as IT-based planning systems extending from internal Enterprise Resource Planning (ERP) systems through the company's distribution and logistics processes. In essence, each individual unit of sale must now become a 'batch of one' with additional data tracking requirements in order to create chain of custody or 'pedigree' from point of production through to the point of dispensing or administration. All stakeholders in the supply chain are investing significant time and money to comply with the various anti-counterfeiting regulations around the world and are collaborating with each other to realign their business process accordingly.

While both globally and in India we are still far from a meaningful recovery in economic growth, there are indicators suggesting that some recovery is on the horizon. Macro indicators like purchasing managers' index (PMI) and gross domestic product (GDP) growth, which point to some recovery. Even on the commodity front, there are indications that things are looking up. Overall Good Manufacturing Practices (GMP) understanding level and implementation to the required regulatory requirements in Zone-I & Zone-III sectors is almost about 80 to 85% satisfactory level. About 15 to 20 %, though understanding is fairly satisfactory found gap in the implementation. This observation is mostly applicable in the small to medium scale industries.

The information reveals that, the practices that : being currently followed is about 50% satisfactory level only, the practices that are being currently followed is about 30% satisfactory level only. The poor environmental management practices implementation from small to medium scale industries is mainly due to financial constraints. The pharmaceutical industry of Govt.of A.P is struggling hard with commitment to fulfill the stringent environmental regulations framed by Ministry of Environment and forest (MOEF), monitoring of the implementation is being carried out by APPCB in association with the central pollution control board (CPCB) guidance and directions. The common disposal of waste from small to medium organizations through these common treatment plants is not only a great relief but also justified for huge capital investment otherwise required. The manufacturing of drug products and distribution to ultimate customers (human beings) as required is generally being carried out through marketing net work and medical representatives in the front line. The every organization's target to maximize sales and increase customer base with an ultimate aim to achieve maximum profit while gaining the product reputation in the market and establish the product brand.

Take, for instance, the recent rise in metal prices on the London Metal Exchange (LME). Tin, aluminum and zinc have gained between 11%-13% since the start of November 2012, while nickel, lead and copper are up between 3%-8% during the same period. Gains across a section of commodities have led to the US-based CRB All Commodities Index rising 1.5 per cent in the last one and a half months.

"The present challenge calls for bold and innovative measures".

While in 2008-09 imports had reduced considerably due to fall in international crude oil prices, the situation at present is different as, while exports are declining, imports continue to remain high mainly on account of crude and gold. With rapid globalization of economy, external sector is becoming more vulnerable. World Bank may peg India's GDP at 5.5% in 2012, 6% in 2013. The Bank may also peg India's GDP to grow by little less than 6% next year 7% in 2014 and 2015. The next year would also be very hard for India's growth trajectory primarily because of global slowdown. Very few countries such as Indonesia and Thailand are growing at 6-7% rate.

The European situation will remain very difficult up to the end of 2014 and may be in the beginning of 2015. That is going to rub-off on India but if it can begin to move up to 6-7% in this difficult situation that would be good. The global climate is tough so its not going to happen that we will bounce back to the 9% growth that we had before 2008. But we should be able to buck the global trend and have India move up with the reforms and few more. Give India 2-3 years. India has enough fundamental strength that if you work towards these, then really there is no reason why India can't get back to 8-9% growth, Stressing that the present challenge is different from the one faced in 2008, Mr. Chidambaram said: "The present challenge calls for bold and innovative measures".

The new National Pharmaceutical Pricing policy (NPPP), which is proposed to be implemented in the near future, could change the structure and dynamics of the Indian pharmaceutical industry. The new policy proposes to move to a mechanism wherein the ceiling price for the 348 drugs covered under the National List of Essential Medicines (NLEM) 2011 will be based on the simple average price (SAP) vis-à-vis the weighted average price (WAP) proposed earlier. This would be applicable for all brands with a market share of more than 1%. At present, 74 drugs and formulations are under price control, and their price fixation is on a cost-plus formula."Today,

the span of price difference for the same product sold by different companies is 20 times in some cases. With the ceiling price, the differential could come down to 5-7 times,''.

The profitability of pharmaceutical companies could be impacted "at an average of around 27% or more than one-fourth. Analysts felt that the impact could conservatively range from 10% to 20% on profitability depending on the product portfolio. In 2011, the Indian government passed a $5.4 billion dollar (US) policy, which would provide free medicines to the citizens and residents of India, and called for its mandatory implementation. This was undoubtedly a major source of relief for the impoverished and underprivileged who were unable to bear the expense of some drugs, quoted by some of the major branded players in our country. On the flip side, this could potentially lead to a loss of Indo- foreign pharmaceutical collaborations, especially since this bill is rigorously being pushed since July 2012.

It is widely expected that when it comes into effect, the policy could effect a change in the industry structure. The mid-size and smaller companies could find the going tough, and, as a result, Mr. Shah said, "in the longer term, there could be increased M&A's and market exits but patients will be the beneficiaries as cheaper, good quality products will be available." For clinical trials-In recent years, India is being globally recognized as the ideal hub for conducting clinical trials. Today, the global clinical research outsourcing figures are at an estimated whopping $50 billion and major players in the field of healthcare- Sanofi-Aventis, Novo Nordisk, Nicholas Piramal and

Dr. Reddy's choose to conduct their clinical research in India. Over the past decade there are more than 2000 studies which have either been completed, or are still underway in the country, as reported on clinicaltrials.gov.

Some of the noteworthy trials currently being pursued across India by multinationals are:

- The Dengue seroprevalence study by Sanofi-Aventis,

- Immunogenicity and safety study of GSK' s Infanrix Hexa vaccine,

- 2 dose HPV Gardasil vaccination trial by Merck

With such lucrative benefits, and the encouraging Indian government, it's given, that India would bag a substantial 15% chunk in the global clinical trials pie by the end of 2014! Government approves FDI in Pharma for over 1,400 crores. The government has cleared more than 20 Foreign Direct Investment proposals including eight from the Pharama sector which alone totals to Rs. 1842.55 Crores. Though, a senior Health Ministry has told the press on Monday that foreign pharma companies looking for acquisition of Indian pharma companies will face stiffer rules to ensure availability of affordable medicines for the general public in the Indian market. This is an extremely noble gesture by the government, who postulate that by the year 2017, almost 0.6 million people would benefit by the newly conceptualized scheme.

IMS health, a healthcare information specialist predicts that emerging global pharmaceutical firms would account for almost 28% of drug sales in India by 2015, which is more than a 200% growth from the statistics of the year 2005, but with this unexpected turn in introduction of generic drugs, the figures could now be in peril. IMS adds that of the 600 Billion rupees of drugs are sold annually in India and almost 60% of drugs would be covered under the new doctrine.

Although this well laid out plan has been on the horizons for more than a year, it will be very stringently implemented and in place by December 2012. Despite being a major blow to the biggies such as Pfizer, Glaxo Smithkline and Merck, it's a boom for the generic wizards Dr. Reddy's, Cipla and the likes. Brand protection is a relatively new business discipline that is here to stay in the life sciences industry. If your products are good, they will be subjected to the threats of counterfeiting and diversion to the gray market. Instead of ignoring these brand attacks we must build organizational capabilities, competencies, and operational processes that mitigate

the risks of counterfeits entering the supply chain. Most importantly, though, we must share best practices among all stakeholders. Our patients and customers rightfully expect our best efforts in this endeavor.

The industry and trade associations have been highly proactive in their efforts to help safeguard the supply chain, primarily in coalescing members' perspectives around public-private sector initiatives and proposed legislation. The challenges of detecting and preventing counterfeit healthcare products demand alignment among all stakeholders. Due to the serious consequences that counterfeits have on our patients and consumers, industry and trade associations such as PhRMA, EFPIA, Advamed, Euromed, NACDS, HMDA, and CHPA have been instrumental in raising awareness to the issue and organizing actions within their memberships. Furthermore, the spread of counterfeiting around the world combined with the globalization of healthcare product production and commerce has resulted in increased cross-border alliances among regulators and other government agencies. Such international cooperation is vital to sustainable global success against counterfeiters rather than taking a local or regional approach. Simply stated, our best defense against the counterfeiters of healthcare products is to mobilize the respective talents, expertise, and best practices of all stakeholders across industry segments worldwide.

China is currently actively promoting its pharmaceutical export industry by providing significant VAT (value added tax) rebates (averaging 13%) to pharmaceutical exporters. Even though these export tax rebates are a direct way for the Chinese government to support pharmaceutical companies through short-term downturns, it does not help the industry to stay competitive in the long term. It is likely that these rebates will start going down as China's domestic market matures and growth picks up. Currently most pharmaceutical companies are moving generic and low-cost APIs to China where the VAT rebates are more likely to be slashed first. For example, in July 2007, the rebate on low value-added APIs was reduced from 9% to 5% as part of the Chinese government's attempt to cut down on these API exports (though the rebates went back up to 13% to fuel growth during recession).

With these changes China's current gross cost advantage of 30% to 50% could easily go down to 13% to 25%. Factor in supply chain complexity (lead times and inventory implications), rising costs of quality assurance, and upcoming stringent environmental regulations, and Western pharmaceutical companies will start to rethink their China outsourcing strategies. Accommodating for these factors, the net cost advantage for some pharmaceutical firms could easily vanish. The supply chain strategy, manufacturing and distribution network, and supply chain policies of individual companies will determine the net-cost advantage and the business case for sourcing/manufacturing in China.

Mitigation Strategies To Implement by Pharma Companies

Western pharmaceutical companies can apply several mitigation strategies to avoid a significant profit and loss impact from these trends. First, the companies need to acknowledge these trends as they develop their long-term sourcing strategies. Outsourcing business cases need to be updated by building scenarios for different cost drivers to allow sound decision making. Western pharmaceutical companies will need to understand the risk profile in the context of their own supply chains. A robust risk analysis and quantification of exposure will be critical before developing a mitigation strategy. This will involve developing scenarios which reflect a company's currency exposure, breakdown of cost structure of outsourced supplies, and supply chain specifics (e.g. inventory policies, lead times etc.).

A shift in mindset is necessary to be able to ensure sustainable low-cost sources. The key will be to consider these strategic manufacturers/suppliers from China as an extension of a company's network rather than low-cost country sources. Western pharmaceutical companies have a range of options which can be applied to counter these macro trends and stay cost-competitive. The solution they choose will need to be aligned with their strategy, supply chain capabilities, and the product / supplier portfolio. The options will have

varying degrees of reward and implementation complexity. Favorable Terms and Conditions – Companies can reduce their immediate exposure by establishing terms and conditions which protect the firm against any movements in currency/inflation. Working collaboratively with strategic suppliers, companies should establish clear guidelines on how these risks will be shared. As a first step, companies can start by reviewing current contracts with the large Chinese suppliers and engage them in negotiations to establish clarity on sharing currency exchange risks.

Using financial hedging strategies – In the short term, companies also can use financial instruments to hedge currency risk exposure. While this may be relatively quick to implement, there is a definite cost involved in establishing these hedges. External manufacturing and procurement groups should work closely with the finance department at these companies to better understand these instruments and mitigate financial risks.

Collaboration beyond qualification - It is often observed that pharmaceutical firms engage heavily with the suppliers in the qualification phase, but the collaboration diminishes once the supply chain is established. Collaborating closely with suppliers to ensure productivity improvements can counter the increasing costs. Pharmaceutical companies can work closely with strategic suppliers to share technical know-how, capital excellence methodologies and best practices for production processes/quality assurance to help them with productivity improvements.

Diversifying supply sources – Western pharmaceutical companies can reduce their exposure to China, for example, by sourcing new API/Intermediates/formulations from other countries or validating alternative country sources for current Chinese supplies. Currently China has a relative cost advantage over other low-cost countries in low-value API/generic production. Based on how some of the above discussed macro trends play out, the balance may tilt in favor of other countries. Diversifying the portfolio of suppliers across multiple low-cost countries can also be helpful in minimizing overall risks. India and several countries in South-east Asia (e.g. Singapore, Thailand, Philippines) and Eastern Europe can be promising candidates for broadening the supply base for western pharmaceutical companies that are currently heavily weighted on China. Companies need to start developing facts based on suppliers specific to their needs in these alternative low-cost countries. They can start developing relationships with these suppliers by involving them on smaller projects and including them in the sourcing exercises.

Making sourcing decisions based on product category and future outlook of cost advantages – Companies need to conduct a robust analysis to identify which products can be outsourced. When doing this analysis, the companies need to forecast the price advantages that will exist long term as compared to the present since source changes are time consuming (can take years) and difficult in this industry. For example, final product formulations where labor is an important driver for price competitiveness may enjoy this advantage for a longer duration as compared to APIs where the labor component is relatively small.

Aligning sourcing decisions with Revenue Streams - Companies can mitigate currency and inflation risks by aligning low-cost country sourcing decisions with the revenue stream in those emerging markets. For example, companies with substantial revenues in India could look at developing supply sources in India to counter any such risks. To pursue this path, companies need to start by developing a future revenue outlook by country based on their market participation strategy. Next, they need to review the supply base capabilities available in different countries aligned with their external manufacturing needs. Having a good fact base around these two topics will allow companies to take steps toward aligning sourcing decisions with revenue streams.

While the reward potential and the implementation ease will be different for different options, all of these will require significant cross-functional collaboration. For example, aligning sourcing decisions with revenue streams will require significant collaboration between strategy, marketing, sales, supply chain and procurement functions. Also, there is a need to actively monitor the supply chain strategy in light of an actively changing

market landscape. Firms need to understand the risk exposure and be well prepared to utilize different levers to maintain cost competitiveness. It takes 18 to 36 months to move drug manufacturing sources, creating barriers to both entry and exit. Hence, acting before a cost advantage erodes will differentiate market leaders from the rest.

Recommendations

To improve upon the GMP practices and environmental management practices in the pharma sector (Which is mandatory), has to be promoted by frequent free training programmes from state and central drug department personnel to enlighten the need and depth of these requirements.

Environmental pollution caused by the pharma industry and the associated negative impacts on the society in general, the surrounding localities in particular is an un-ending and un-resolved issue. May be Govt. of India, with revised industrial policies may insist and implement strictly by not promoting the creation of housing colonies with in the vicinity of the industries at any cost. Govt. of India may control and provide the critical resources such as, coal, water, power and land at affordable prices to make small to medium scale industries viable and healthy. Upon creation of such a healthy environment, Govt. as well as local NGO's and voluntary organisations can insist to contribute their mite for social cause to up lift the society for better living and social status.

The current un-quantified and un-specified un-ethical practices in the marketing distribution chain, if identified and eliminated in a positive perspective can result in affordability for a common man for better health.

The associations and NGO's do feel that Govt. should recognize such bodies as arbitrators to create a conducive environment between industry, regulator and Govt. authority.

The associations should voice out on critical issues facing by the industry such as power, VAT increase, coal etc., to reduce the in put cost with an expectation to arrive a possible solution to the problem.

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Co-Movements of the Indian Stock Market With Select Emerging Markets

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Abstract

The study is carried out to test the co-movements of Indian stock market with select major emerging markets over the globe. Various techniques like the Unit Root test, Co-integration test, Causality test, Vector Auto Regression, Impulse Responses, Variance Decomposition and Vector Error Correction are conducted on the sample. India has been influenced by and is influencing most of the countries selected for the study. This proves the impact of co-integration among the global markets.

Key Words : Unit Root, Co-integration, Granger Causality, Vector Auto Regression, Impulse Response, Variance Decomposition, VECM

Introduction

It is well known from the standard portfolio diversification theory, if the returns on assets in a portfolio have a correlation of less than unity, then diversification can reduce risk. In the extreme case, where the returns are perfectly negatively correlated, then diversification can, in theory, eliminate risk entirely. Grubel (1968) gave one of the earliest expositions of how these benefits could be extended by diversifying a portfolio internationally. Investment in foreign equity markets became a popular practice in the 1980s as investors became aware that international portfolio diversification helps in reducing their portfolio risk since securities happen to be less correlated across the countries than within a country. The economic, political and institutional factors affecting securities returns tend to vary a great deal across countries resulting in a relatively low correlation among international securities.

Economists are now seeking further guidance on policy-making that looks beyond the standard argument that stock market liberalization leads to better risk-sharing and hence improves welfare. There is more interest in the effects of stock market liberalization on stock market volatility, correlation among markets, and the prospect of international portfolio diversification (Bailey and Stulz, 1990). Hence the suitability of hedging one's portfolio by international diversification has been investigated as to: Do the markets move together over time so that benefits from cross border diversification get exhausted? How much of the movement in one market can be attributed to innovations in another?

The cross border movement of funds has posed an opportunity for the investors to maximize their returns by international diversification. But, if stock markets move together, then investing in various markets would not generate any long-term gains from the diversification. Therefore, it is essential for both active investors and academicians to probe into the fact whether stock markets are inter-linked. The issue is also important to the policy makers because of the reason that if stock markets are found to be closely linked, then there is a danger that shocks in one market will spill over to the other markets.

The stock market crash in October 1987 has lead to several changes in the capital markets over the globe. Both the developed as well as the emerging markets initiated the introduction of innovative financial products like American Depository Receipt, Global Depository Receipt, Foreign Currency Convertible Bonds, Options, Futures, Participatory Notes, etc. These innovations have opened up various opportunities for investors in accessing investments across global markets. The fund managers from across the globe found emerging markets

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as an opportunity for their portfolio diversifications. The homogeneous financial innovations in capital markets across the globe coupled with gradual dismantling of regulatory barriers created interest among researchers to test for the integration of capital markets.

Review of Literature

Ross Levine (1997) observed in his study that countries with relatively liquid stock markets in 1976 grew much faster over the next 18 years than countries with illiquid markets, even after adjusting for differences in other factors that influence growth, like education levels, inflation rates and openness to trade. He also indicated that in promoting economic growth, a liquid stock market complements a strong banking system, and that lowering of international investment barriers significantly enhances the liquidity of stock markets, with positive effects on economic growth.

YagneshThakkar (1998) in his article on the Indian stock exchanges notified that the people in the market are as keen to know about what happens in New York or what is happening in Hong Kong or Tokyo, as they are about BSE or NSE. He concluded that there is no one-to-one cause and effect relationship between the Indian and any other market.

PratipKar et al (2000) studied the price return volatility in its technical and statistical sense and identified and compared trends and patterns of volatility, asymmetries in volatility, in a sample of 13 developed and emerging markets over a 15 year period. They applied various statistical tools under both homoskedasticity and heteroskedasticity to measure volatility and tested for auto correlation under variant conditions in the sample.

Eizaguirre et al (2002) tested whether volatility in six emerging markets has changed significantly over the period January 1976 to March 2002, by using alternative methodologies of endogenous breakpoints detection that estimate the dates at which the behaviour of the stock market volatility changed. The authors observed that volatility has behaved in a different manner over the period.

Nadal Rashid Sabri (2002) indicated in his study that there were significant positive increases in the degree of correlation between the majorities of selected stock markets. Increasing linkages suppose to increase data dissemination, thus increase stock market efficiency, but with the existing cross markets volatility transmission phenomenon, increasing linkages should be scrutinized carefully.

Narayan et al (2004) examined the dynamic linkages between the stock markets of India, Bangladesh, Pakistan and Sri Lanka using a temporal Granger Causality approach by binding the relationship among the stock price indices within a multivariate cointegration framework. They concluded that stock prices in Bangladesh, India and Sri Lanka Granger-cause stock prices in Pakistan.

VenkataSeshaiah S (2006) empirically investigated into the long run equilibrium relationship and short run dynamic linkage between the Indian stock market indices and stock markets of 7 developed and 7 emerging markets. He used Cointegration Approach, Granger Causality, Variance Decomposition Analysis and VECM models on daily data of indices for an 8 year period. He found that the Asian stock markets have a long term relationship with Indian stock market. He also found that the Indian stock market exhibited certain short term unidirectional as well as bidirectional causal relationship with the different capital markets chosen. According to the variance decomposition analysis, he observed that most of the markets are more endogenous in nature, except Japan, UK, Germany and Switzerland, for a more lucrative destination for international investors to invest and diversify their portfolio risks.

Meric et al (2011) studied the effects of the 2008 global financial / economic crisis on the co-movement patterns of the Indian stock market with those of US, UK, Germany, Japan, Australia, Hong Kong, Indonesia, Malaysia, New Zealand, China, Singapore, South Korea and Taiwan and identified a time-varying volatility in the correlation among all the markets selected.

Gagandeep et al (2013) studied the inter linkages between stock markets of Brazil, Russia, India, China and South Africa (BRICS) with the help of benchmark indices of these stock exchanges. Daily closing levels of the benchmark indices in the five countries were taken for a period from April 1, 2005 to March 31, 2010. Line charts and unit-root tests were applied to check the stationary nature of the series; Regression Analysis, Granger's Causality Model, Vector Auto Regression (VAR) Model, and Variance Decomposition Analysis were performed to find out the linkages between the markets under study. The analysis revealed that the stock markets under study were influenced by each other, but not to a great extent. It implies that there exists opportunities for diversification of the investors among the stock exchanges of BRICS. The paper also observed that there are domestic factors (macro-economic variables) that influence the stock markets.

Most of these studies relate to the investigation of integration of stock markets within India and their convergence with the world markets, specifically the emerging markets, pointing out the existence of cointegration among the countries studied. A need is felt to examine the long run equilibrium relationship and short run dynamic linkage between the Indian stock market and selectemerging markets, using daily data and recent time series techniques. The present study is an attempt in this direction.

Objectives ofthe Study

The overall objective of the present study is to analyze the impact of the co-movements of the Indian stock market with select major emerging markets over the globe. However, the following objectives are set in specific for the study:

- To investigate the short run dynamic linkage between the Indian stock market and the select emerging markets.

- To identify the long run equilibrium relationship between India and the select emerging markets.

Sample

In order to attain the objectives of the study, a sample of prominent indices of 9 countries have been selected along with India for comparison. These countries have been selected according to the IMF rankings of countries on the basis of GDP. All the emerging countries including Indiahave a GDP below 20000 International Dollars. The indices selected include (a) MERVAL Index (Argentina); (b) IBovespa Index (Brazil); (c) Jakarta Composite Index (Indonesia); (d) Shanghai Composite Index (China); (e) FTSE/JSE All Share Index (South Africa); (f) IPC Mexico Index (Mexico); (g) RTS Index (Russia); (h) FTSE Bursa Malaysia KLCI (Malaysia); (i) SET Index (Thailand) and (j) CNX Nifty (India).

Data

The study comprises daily stock market indices at closing times as collected from the home sites of different stock exchanges, where available, and partly from the websites of yahoo finance and wall street journal. When the stock markets were closed due to national holidays, bank holidays or for some other reasons (on other than Saturdays and Sundays), the index price was taken as the arithmetic mean of the previous business day and the next business day. Daily data for a period of 20 years from 4 January 1993 to 31 December 2012 are used. For the indices of countries Argentina, Brazil and Russia, data is available from later dates. Daily data started from 27 April 1993 for Brazil, from 6 June 1994 for Argentina and from 1 September 1995 for Russia. The data is considered to the extent available for comparisons of these countries.

Research Methodology

The empirical exercise of finding whether a long-run relationship exists among the stock markets under study comprises of two parts:

(a) Testing for a unit root I(1) in each series; and

(b) Testing for the cointegrationamong the markets provided the null hypothesis of unit root in each of the time series being studied cannot be rejected.

For the unit root testing, Augmented Dickey-Fuller (ADF) test, Phillips-Perron (PP) test and KPSS test are used.

For studying cointegration among markets, Johansen's Cointegration test is used on pair-wise and multivariate bases.

For finding whether a short-run dynamic linkage exists among the stock markets under study, Granger Causality test using lags of 2, 10 and 30 days is applied.

For studying the long run equilibrium across markets, Vector Error Correction Model (VECM) is applied.

To identify the short term and long term impact of each market on the other, Impulse Responses and Variance Decomposition Analysis is adopted.

All these tests are performed on the statistical package 'E Views 6'.

Unit Root Test

The presence of unit root in a time series is tested with the help of Augmented Dickey-Fuller (ADF) Test, which tests for a unit root in the univariate representation of time series. The Phillips–Perron (PP) Test (named after Peter C. B. Phillips and Pierre Perron) is a unit root test, which is used in time series analysis to test the null hypothesis that a time series is integrated of order 1. Kwiatkowski–Phillips–Schmidt–Shin (KPSS) Test is used for testing a null hypothesis that an observable time series is stationary around a deterministic trend. ADF, PP and KPSS tests are used to find the existence of a unit root in each of the time series with and without trend at both Level and First Difference forms.

The null hypothesis is set as "The variables are non-stationary" or "The variables have unit root".

Table 1: Unit Root Tests at Level

Country	ADF Test Results		PP Test Results		KPSS Test Results	
	without trend	with trend	without trend	with trend	without trend	with trend
Argentina	-0.42354	-2.35754	-0.32788	-2.22451	7.074087	1.032168
Brazil	-2.33196	-2.74937	-2.24898	-2.65203	3.851927	1.152740
China	-1.66093	-2.12413	-1.58884	-1.93087	5.121560	0.233494
India	-0.23448	-2.10905	-0.17322	-2.05252	7.769855	1.581977
Indonesia	1.29319	-0.73877	1.42650	-0.64426	7.024225	1.917976
Malaysia	-0.72444	-1.36658	-0.77929	-1.42197	4.048951	1.453735
Mexico	0.87063	-1.64162	1.11986	-1.44985	8.300538	1.737009
Russia	-1.12521	-1.98931	-1.14210	-2.02020	6.427362	0.501975
S Africa	0.64678	-1.58643	0.85645	-1.39478	8.276209	1.524870
Thailand	-0.65534	-0.51939	-0.54867	-0.51205	1.663742	1.622920

Due to the high p-values, at Level form, the null hypothesis could not be rejected. Hence data has been converted to First Difference form by calculating the logarithmic returns of all the variables (Table 1).

Table 2: Unit Root Tests at First Difference

Country	ADF Test Results		PP Test Results		KPSS Test Results	
	without trend	with trend	without trend	with trend	without trend	with trend
Argentina	-63.68356	-63.68391	-63.66724	-63.66709	0.111545	0.059920
Brazil	-70.00474	-70.06618	-70.03588	-70.07504	0.585113	0.305001
China	-29.29691	-29.29365	-73.42432	-73.41891	0.052277	0.040977
India	-64.81941	-64.81427	-64.74363	-64.73837	0.068670	0.050646
Indonesia	-61.18746	-61.18491	-61.12320	-61.17484	0.124030	0.075972
Malaysia	-31.80301	-31.80159	-69.58027	-69.57491	0.085819	0.063996
Mexico	-64.70187	-64.69579	-64.52896	-64.52261	0.031843	0.031224
Russia	-58.12000	-58.11711	-58.15146	-58.14729	0.087149	0.067289
S Africa	-70.93334	-70.92695	-70.93497	-70.92858	0.048046	0.048980
Thailand	-45.69155	-45.71518	-65.56243	-65.53407	0.309840	0.082532

The unit root tests have been performed again on the first difference form where the significance values (p-values) are observed to be below 0.05 for all these values, which implies that the null hypothesis is rejected. Hence it could be concluded that for all the countries under observation, stationarity has been obtained at the first difference form at 5% level of significance. Thus all the variables were found to be integrated of order 1, i.e. I(1) Table 2.

Cointegration Test

To investigate the existence of a long term relationship between the stock market returns of India and the select major markets, the significance of the relationship among the variables is explored. If the variables under study are found to be cointegrated, it will provide statistical evidence for the existence of a long run relationship. Though, a set of economic series are not stationary, there may exist some linear combination of the variables which exhibit a dynamic equilibrium in the long run (Engle and Granger, 1987). Hence, the maximum likelihood test procedure established by Johansen and Juselius (1990) and Johansen (1991) is used.

Hence, basing on the results of the unit root tests, the Johansen's Cointegration test was performed to see whether any combinations of the variables were cointegrated.

- Pair-wise evaluation of the existence of cointegration was examined for India with select emerging markets.

- The null hypothesis is framed as "There is no long run association between the two countries".

- It was found that Indian capital market shows a long run relationship only with Mexico as its null hypothesis alone was rejected.

Table 3: Pair-wise Johansen's Cointegration

Pair	Hypothesized No. of CE(s)	Eigen value	Trace Statistic	5% Critical Value	1% Critical Value
India - Argentina	None	0.002408	11.67032	15.49471	19.93711
	At most 1	1.91E-07	0.000923	3.841466	6.634897
India - Brazil	None	0.002125	10.97492	15.49471	19.93711
	At most 1	1.24E-05	0.063511	3.841466	6.634897
India - China	None	0.000924	4.965398	15.49471	19.93711
	At most 1	2.85E-05	0.148338	3.841466	6.634897
India - Indonesia	None	0.002029	10.82125	15.49471	19.93711
	At most 1	4.57E-05	0.238378	3.841466	6.634897
India - Malaysia	None	0.001045	5.46701	15.49471	19.93711
	At most 1	3.24E-06	0.016858	3.841466	6.634897
India - Mexico	None *	0.00337	18.62394	15.49471*	19.93711
	At most 1	0.000199	1.034956	3.841466	6.634897
India - Russia	None	0.001145	5.253444	15.49471	19.93711
	At most 1	1.76E-05	0.07968	3.841466	6.634897
India - South Africa	None	0.00255	13.84154	15.49471	19.93711
	At most 1	0.000103	0.534526	3.841466	6.634897
India - Thailand	None	0.000505	2.718315	15.49471	19.93711
	At most 1	1.62E-05	0.084198	3.841466	6.634897

* denotes rejection of the hypothesis at the 0.05 level

• Multivariate Cointegration test (Table 3) was performed for the group consisting of emerging markets and India. The null hypothesis is framed as "There is no long run association between India and the select emerging markets".

Table 4: Multivariate Cointegration between India, Argentina, Brazil, China, Indonesia, Malaysia, Mexico, Russia, South Africa and Thailand

Lags interval (in first differences): 1 to 4				
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	Eigen value	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.018274	292.4693	239.2354	0.0000
At most 1 *	0.012558	209.1625	197.3709	0.0113
At most 2	0.009345	152.0774	159.5297	0.1183
At most 3	0.007678	109.6688	125.6154	0.3078
At most 4	0.007024	74.85180	95.75366	0.5489
At most 5	0.003549	43.01423	69.81889	0.8875
At most 6	0.003233	26.95574	47.85613	0.8559
At most 7	0.001520	12.32730	29.79707	0.9199
At most 8	0.000977	5.454072	15.49471	0.7589
At most 9	0.000230	1.037761	3.841466	0.3083
Trace test indicates 2 cointegratingeqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

It was observed that the null hypothesis was rejected and there were two cointegrating equations at the 5% level of significance. Thus it could be concluded that India showed a long run association with the select emerging markets as a group (Table 4).

Granger Causality Test

If two or more variables are cointegrated, there is causality in at least one direction (Engle and Granger, 1987). This causality can be assessed in two ways: short run and long run.

- For the short run, lag of 2 days, 10 days and 30 days are used.

- The long run relationship of Indian market with the other markets under study is determined by using Vector Error Correction Model (VECM).

After confirming the long run cointegration among the markets selected for study, the short run causality was tested by using the Granger Causality Test. Experiments were performed with a lag of 2 days, 10 days and 30 days hoping that such lag periods would be adequate to get effects of one market to the other.

For Granger Causality Test when a lag of 2 days is taken, the null hypothesis is set as "Country 1 does not Granger Cause Country 2 within 2 days time".

Table 5: Granger Causality Test with Lag of 2 days

Null Hypothesis	Obs.	F-Statistic	Probability
INDIA does not Granger Cause ARGENTINA	4843	1.90575	0.1488
ARGENTINA does not Granger Cause INDIA		25.8296	7.00E-12*
INDIA does not Granger Cause BRAZIL	5132	2.20126	0.1108
BRAZIL does not Granger Cause INDIA		11.9521	7.00E-06*
INDIA does not Granger Cause CHINA	5214	4.45633	0.0116*
CHINA does not Granger Cause INDIA		2.96062	0.0519
INDONESIA does not Granger Cause INDIA	5214	0.11941	0.8874
INDIA does not Granger Cause INDONESIA		15.3864	2.00E-07*
MALAYSIA does not Granger Cause INDIA	5214	0.06566	0.9364
INDIA does not Granger Cause MALAYSIA		15.3525	2.00E-07*
MEXICO does not Granger Cause INDIA	5214	71.2283	3.00E-31*
INDIA does not Granger Cause MEXICO		1.0864	0.3375
RUSSIA does not Granger Cause INDIA	4519	8.23768	0.0003*
INDIA does not Granger Cause RUSSIA		2.75391	0.0638
SAFRICA does not Granger Cause INDIA	5214	18.3677	1.00E-08*
INDIA does not Granger Cause SAFRICA		4.66838	0.0094*
THAILAND does not Granger Cause INDIA	5214	0.18647	0.8299
INDIA does not Granger Cause THAILAND		6.91806	0.001*

* denotes rejection of the hypothesis at the 0.05 level

The following observations could be made (Table 5):

- A unidirectional causal influence on the Indian stock index from the stock indices of Argentina, Brazil, Mexico andRussia with a lag of 2 days. This indicates influence of operations of these indices on the Indian index within 2 days.

- A unidirectional causal influence of the Indian stock index on the stock indices of China, Indonesia, Malaysia andThailand with a lag of 2 days. This indicates influence of operations of the Indian index on these indices within 2 days.

- A bidirectional causal influence of the Indian stock index with the stock indices of South Africa with a lag of 2 days also exists. This indicates that India and South Africa exchange influence on each other within 2 days.

For Granger Causality Test when a lag of 10 days is taken, the null hypothesis is set as "Country 1 does not Granger Cause Country 2 within 10 days time".

Table 6: Granger Causality Test with Lag of 10 days

Null Hypothesis	Obs.	F-Statistic	Probability
INDIA does not Granger Cause ARGENTINA	4835	1.25415	0.2508
ARGENTINA does not Granger Cause INDIA		6.31834	1.00E-09*
INDIA does not Granger Cause BRAZIL	5124	1.68406	0.0783
BRAZIL does not Granger Cause INDIA		3.38113	0.0002*
INDIA does not Granger Cause CHINA	5206	1.0789	0.3744
CHINA does not Granger Cause INDIA		1.12358	0.3397
INDONESIA does not Granger Cause INDIA	5206	0.59959	0.8155
INDIA does not Granger Cause INDONESIA		3.99041	2.00E-05*
MALAYSIA does not Granger Cause INDIA	5206	1.43571	0.1577
INDIA does not Granger Cause MALAYSIA		4.38389	4.00E-06*
MEXICO does not Granger Cause INDIA	5206	16.5473	8.00E-30*
INDIA does not Granger Cause MEXICO		0.83695	0.5928
RUSSIA does not Granger Cause INDIA	4511	2.42009	0.0072*
INDIA does not Granger Cause RUSSIA		1.43643	0.1574
SAFRICA does not Granger Cause INDIA	5206	4.86678	5.00E-07*
INDIA does not Granger Cause SAFRICA		2.23451	0.0136*
THAILAND does not Granger Cause INDIA	5206	1.27404	0.2389
INDIA does not Granger Cause THAILAND		3.55328	0.0001*

* denotes rejection of the hypothesis at the 0.05 level

The following observations could be made (Table 6):

- A unidirectional causal influence on the Indian stock index from the stock indices of Argentina, Brazil, Mexico and Russia with a lag of 10 days. This indicates influence of operations of these indices on the Indian index within 10 days.

- A unidirectional causal influence of the Indian stock index on the stock indices of Indonesia, Malaysia, and Thailand with a lag of 10 days. This indicates influence of operations of the Indian index on these indices within 10 days.

- A bidirectional causal influence of the Indian stock index with the stock indices of South Africa with a lag of 10 days also exists. This indicates that India and South Africa exchange influence on each other within 10 days.

For Granger Causality Test when a lag of 30 days is taken, the null hypothesis is set as "Country 1 does not Granger Cause Country 2 within 30 days time".

Table 7: Granger Causality Test with Lag of 30 days

Null Hypothesis	Obs.	F-Statistic	Probability
INDIA does not Granger Cause ARGENTINA	4815	1.19537	0.2136
ARGENTINA does not Granger Cause INDIA		2.63526	3.00E-06*
INDIA does not Granger Cause BRAZIL	5104	1.23478	0.1768
BRAZIL does not Granger Cause INDIA		1.8543	0.0031*
INDIA does not Granger Cause CHINA	5186	1.31402	0.1175
CHINA does not Granger Cause INDIA		0.90775	0.6109
INDONESIA does not Granger Cause INDIA	5186	1.38616	0.0785
INDIA does not Granger Cause INDONESIA		1.71338	0.0091*
MALAYSIA does not Granger Cause INDIA	5186	1.51296	0.0361*
INDIA does not Granger Cause MALAYSIA		2.1589	0.0003*
MEXICO does not Granger Cause INDIA	5186	6.85864	2.00E-27*
INDIA does not Granger Cause MEXICO		0.87885	0.6561
RUSSIA does not Granger Cause INDIA	4491	2.03854	0.0007*
INDIA does not Granger Cause RUSSIA		1.68339	0.0113*
SAFRICA does not Granger Cause INDIA	5186	2.4843	1.00E-05*
INDIA does not Granger Cause SAFRICA		2.09689	0.0004*
THAILAND does not Granger Cause INDIA	5186	1.31463	0.1171
INDIA does not Granger Cause THAILAND		1.88237	0.0025*

* denotes rejection of the hypothesis at the 0.05 level

The following observations could be made (Table 7):

- A unidirectional causal influence on the Indian stock index from the stock indices of Argentina, Brazil and Mexico with a lag of 30 days. This indicates influence of operations of these indices on the Indian index within 30 days.

- A unidirectional causal influence of the Indian stock index on the stock indices of Indonesia and Thailand with a lag of 30 days. This indicates influence of operations of the Indian index on these indices within 30 days.

- A bidirectional causal influence of the Indian stock index with the stock indices of Malaysia, Russia, and South Africa with a lag of 30 days also exists. This indicates that India and these countries exchange influence on each other within 30 days.

From the observations of the Granger Causality test with lag of 2 days, 10 days and 30 days, it may be concluded that

- The Chinese stock market factors out the influence of Indian stock market within 2 days

- Malaysia and Russia take 30 days to share the bidirectional causal relationship with India

- Argentina, Brazil andMexico do not in any way get influenced by the Indian stock index operations

- Indian market does not in any way get influenced by the markets of Indonesia and Thailand

- South Africa shares a uniform bidirectional causal relationship with India during all the lag periods

Vector Auto-Regression (VAR) Model

In order to examine the dynamic interrelationships among world stock indices, the study estimates VAR coefficients using daily rate of return on the stock market indices selected for the study. The VAR model

contains simultaneous equations in which all the variables are considered to be endogenous. However, each endogenous variable is explained by its lagged or past values and the lagged values of the other endogenous variables included in the system.

By using simulated responses of the estimated VAR system, the following possibilities can be observed:

- Trace out the dynamic responses of one market to innovations in another, through the calculation of Impulse Responses

- Locate all the main channels of interactions among national stock markets through the calculation of Variance Decompositions

Impulse Responses

To obtain additional insight into the mechanism of transmission of stock price movements, the patterns of dynamic responses of each of the select stock markets to innovations in a particular market are examined using the stimulated responses of the estimated VAR system. A closer look at the magnitudes of the innovations among the stock markets led to the conclusion that the response of each stock market to its own shocks is higher on the first day and it gradually died out thereafter (Table 8).

A closer examination of the information furnished revealed the following points of consideration:

- The response of every country to its own shock is higher on the first day which gradually dies out thereafter

- Most of the emerging markets show a higher level of response to the shock from their own markets on first day

- The markets over the globe also respond to the shocks from each of the countries on first day

- The number of other markets responding for each country increased by the second day

- For all the countries the impulse responses from the other markets over the globe have gradually died down to zero by the fourth or fifth day

From these observations it can thus be concluded that the dynamic response patterns are found to be generally consistent with the notion of informationally efficient international stock markets.

Table 8: Impulse Responses of all Stock Markets

Country	Response to own shock on day 1	Markets responding to country's shock on day 1	Markets responding to country's shock on day 2
Brazil	3.86	Rus, Ind	Ind, Rus, Mex
Russia	2.35	Ind	Rus, Arg, Mex, Braz
Argentina	1.80	Braz, Rus	Arg, Mex, Rus
China	1.64	-	Rus, Arg, SA
India	1.39	Indo, Chi	Mex, Arg, Braz
Indonesia	1.34	-	Indo, Mex, Arg, Braz
Thailand	1.33	Indo	Mex, Rus, Arg, Braz
Malaysia	1.30	-	Indo, Mex, Arg, Rus, Braz
Mexico	1.07	Arg, Braz, Rus	Mex, Rus, Ind, Braz, Indo
SA	0.99	Rus	Mex, Arg, Braz

Variance Decomposition Test

Variance decomposition technique helps in identifying the percentage of fluctuation in a time series attributable to other variables at select time horizons (Table 9). It is used

- To identify the endogenous nature of the stock markets of the countries in the sample under consideration.

- To identify the percentage of influence of each market on every other market in the sample under consideration

The major findings observed are as follows:

- The percentage of fluctuation in the time series of one stock market that is attributable to the other variables in the select sample is observed to be stable since the 5th day onwards for all the countries.

- The variations in the stock markets of China and Brazil are explained by more than 90% from the behavior of their domestic markets. This indicates that these markets are highly endogenous in nature as they are the highest among the sample selected.

- The variations in the stock markets of the balance nations are explained moderately, i.e. about 50% to 90% from the behavior of their domestic markets. This indicates that these markets are moderately endogenous in nature as these markets fall within the two extremes for the sample selected.

- The variations in the indices of China, Brazil, Malaysia, Russia, India, Argentina and Indonesia, have been greatly explained by themselves. These markets are said to be moderately independent of each other as they are explained by more than 70% from their domestic markets.

- Due to this moderate endogenous nature, there exists a possibility of minimization of risk by diversification of investment in these countries.

- Whereas, the markets of South Africa, Mexico and Thailand, which are explained by less than 70% from their domestic markets, show more interdependence on global markets, making it difficult for risk minimization of investments in these countries.

- The variance in the Indian stock market is meagerly explained by the stock market of Indonesia.

Table 9: Endogenous nature of Stock Markets

Country	% at 10th day	Rank	Influenced by *
China	95.29	1	
Brazil	92.89	2	
Malaysia	82.89	3	
Russia	80.51	4	
India	78.00	5	INDO (1.10)
Argentina	76.71	6	BRAZ (4.28), RUS (2.93)
Indonesia	71.74	7	
Thailand	69.39	8	INDO (2.14)
S Africa	58.78	9	RUS (5.19), MEX (2.11)
Mexico	51.96	10	ARG (7.81), BRAZ (4.71), RUS (3.02)

* Markets other than those specified here, influence the country by less than 2.00, hence are ignored

Granger Causality using Vector Error Correction Model

Using the vector error correction model (VECM), the causality relationship of various countries with India is identified. India is taken as the Dependent Variable with each of the other countries as Independent Variables individually for this test. This test can be implemented in two forms (a) pairwise and (b) multivariate analysis.

- **Pair wise Granger Causality using VECM :**The null hypotheses are set as

  - Independent Variable does not have long run causality on the Dependent Variable

  - Independent Variable of lag 2 does not jointly influence Dependent Variable in short run

For the short run analysis, Wald test χ^2 values are observed in order to decide the acceptance or rejection of the null hypothesis.

Table 10: Granger Causality using VECM for India

Pair	Long run Causality		Short run Causality	
	Co eff.	Prob.	Wald Test χ^2	Prob.
India - Argentina	-0.002005	0.0974	128.638200	0.0000*
India - Brazil	-0.000122	0.7661	38.433520	0.0000*
India - China	-0.000155	0.5932	28.814190	0.0000*
India - Indonesia	-0.000916	0.3822	4.624737	0.0990
India - Malaysia	-0.000246	0.6666	0.347066	0.8407
India - Mexico	-0.007253	.0001*	361.180400	.0000*
India - Russia	-0.000276	0.7487	27.786600	.0000*
India - South Africa	-0.005187	.0017*	27.954620	.0000*
India - Thailand	-0.000040	0.9049	0.159794	0.9232

 * denotes rejection of the hypotheses at 0.05 level

It was observed that the null hypothesis 'a' is rejected for Mexico and South Africa, which can be concluded to have long run causality with India. It was also observed that the null hypothesis 'b' is rejected for Argentina, Brazil, China, Mexico, Russia and South Africa, through which it can be concluded that these are the independent variables each with lag 2 that are influencing India in the short run (Table 10).

The long run causality is tested for every country with each of the other select countries. The null hypothesis is stated as "Independent Variable does not have long run causality on the Dependent Variable".

Table 11: Granger Causality using VECM for all countries

Country	Long run equilibrium from (Independent Variables)
Argentina	India, Mexico
Brazil	All Countries
China	—
India	Mexico, South Africa
Indonesia	Argentina, India, Mexico, South Africa
Malaysia	Argentina, Brazil, India, Indonesia, Mexico, South Africa
Mexico	—
Russia	Argentina, South Africa
South Africa	Mexico
Thailand	Argentina, Russia

Accordingly, it could be observed that (Table 11)

1. India holds only unidirectional long run causality from Mexico and South Africa.

2. India shows unidirectional long run causality towards Argentina, Brazil, Indonesia and Malaysia.

3. No country shows long run causality towards Mexico and China.

4. Every country shows long run causality towards Brazil.

- **Multivariate Granger Causality using VECM:** As it was already found that India is cointegrated with Emerging Markets at lag 2 and Trace test identified 2 cointegrated vectors, Vector Error Correction Model was established on the same set of countries with 2 cointegrating vectors at lag 2. According to the established model, it is found that the adjustment towards long run equilibrium (C1) takes place at about 0.47% per day. As the probability of C(1) is less than 0.05, it can be stated that C(1) is significant in depicting the long run equilibrium between the countries selected in the group (Table 12).

Table 12: Vector Error Correction Estimates for India Vs. Emerging Markets

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-0.004681	0.000996	-4.700664	0.0000
C(2)	-0.000817	0.003118	-0.261868	0.7934
C(3)	0.029599	0.017105	1.730493	0.0836
C(4)	-0.021923	0.017102	-1.281865	0.2000
C(5)**	0.097798	0.033659	2.905539	0.0037*
C(6)**	0.032325	0.03414	0.946865	0.3438
C(7)	0.000488	0.000508	0.96089	0.3367
C(8)	7.98E-05	0.000508	0.157213	0.8751
C(9)**	-0.08683	0.018541	-4.683066	0.0000*
C(10)**	0.065749	0.018588	3.537162	0.0004*
C(11)	-0.050443	0.03607	-1.398467	0.1620
C(12)	0.020745	0.035267	0.588229	0.5564
C(13)	-0.057298	0.064166	-0.892969	0.3719
C(14)	-0.055394	0.063582	-0.87122	0.3837
C(15)**	0.047897	0.003642	13.15098	0.0000*
C(16)**	0.004977	0.003783	1.315541	0.1884
C(17)	0.008429	0.045443	0.185485	0.8529
C(18)	0.036864	0.045205	0.815477	0.4148
C(19)**	-0.010296	0.004038	-2.549723	0.0108*
C(20)**	0.00747	0.003972	1.880805	0.0601
C(21)	-0.13552	0.081406	-1.664748	0.0960
C(22)	-0.024686	0.081194	-0.304041	0.7611
C(23)	0.59263	0.683059	0.867611	0.3857

R-squared	0.089799	Mean dependent var	1.09414
Adjusted R-squared	0.085345	S.D. dependent var	47.88768
S.E. of regression	45.79863	Akaike info criterion	10.49146
Sum squared resid	9430425	Schwarz criterion	10.52412
Log likelihood	-23682.46	Hannan-Quinn criter.	10.50297
F-statistic	20.16211	Durbin-Watson stat	2.007209
Prob(F-statistic)	0.0000		

(*) represents individual significance of variable in explaining Dependent variable

(**) represents significance in jointly influencing the Dependent variable

The vectors C(3) to C(22) are the short run coefficients of the Vector Error Correction Model. The significance of influence of both lags of each country is checked on India by using Wald chi square values. It is found that the two lagged values of Argentina [C(5), C(6)], China [C(9), C(10)], Mexico[C(15), C(16)] and South Africa [C(19), C(20)] are found significant. Thus it can be concluded that these countries show a short run causality running into India.

The decision for this model is

1.   There is Long run causality running from all Emerging markets selected to India.

2.   There is Short run causality running from Argentina, China, Mexico and South Africa to India.

Conclusions

The study is carried out to test the co movements of India with select major emerging markets over the globe. Various techniques like the Unit Root test, Cointegration test, Causality test, Vector Auto Regression, Impulse Responses. Variance Decomposition and Vector Error Correction are conducted on the sample. The study leads to the following conclusions:

1.   In the Unit Root Test, stationarity among the observations of all the variables was obtained at first difference form at 5% level of significance. Thus all the variables were integrated of order 1.

2.   The Johansen's cointegration test proved a long run integration of India with Mexico.

3.   When the variables were taken as a group, India with the emerging markets, the Cointegration test proved that there existed long run association of India with the emerging markets.

4.   According to the Granger Causality Test the unidirectional causal relationship of countries with India gradually converted to bidirectional relation through the span of 2 days to 30 days.

5.   Bidirectional causal relationship for India existed with 1 country for lag of 2 days, which increased to 3 countries for lag of 30 days.

6.   Indian market shows a unidirectional causal relationship toward s China for a lag of 2 days after which there is no effect either ways. With this it can be concluded that the Chinese stock market factors out the influence of Indian stock market within 2 days and also isolates itself from further influence.

7.   The response of every country to its own shock is higher on the first day which gradually dies out thereafter

8.   Most of the emerging markets showed a higher level of response to the shock from their own markets on first day

9.   For all the countries the impulse responses from the other markets over the globe have gradually died down to zero by the fourth or fifth day

10.   The dynamic response patterns are found to be generally consistent with the notion of informationally efficient international stock markets.

11.   All the emerging markets selected were found to be endogenous in nature enabling the minimization of risk through diversification of investment, which is not possible for the exogenous markets.

12.   Variations in the indices of all the emerging markets are explained by themselves. All the countries selected are affected by each other in some way or the other depicting their efficiency to link up globally.

13.   According to VECM, only Mexico and South Africa show long run causality towards India, but most of the countries show short run causality.

14.   India shows unidirectional long run causality towards Argentina, Brazil, Indonesiaand Malaysia.

15.   India has been influenced by and is influencing most of the countries selected for the study. This proves the impact of cointegration among the global markets.

16.   Depicting its global interlink with these countries, India is strengthening its prominence in the universal scenario.

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Moral Appeals for Brand Positioning – Issues and Perspectives

A.Ramesh *

Abstract

Brands have upped their ante, as new breed of brands and advertisements are exhorting, educating and engaging the consumer though moral appeals and user imagery addressing various issues as part of corporate social responsibility. The consumer perspectives and the impact of the programme are important. The research paper attempts to explore underlying dimensions of communication of select brands using moral appeals by factor analysis and also develops a conceptual model for the same. There is a paradigm shift from what you are and what you buy, to what you do. Charity should begin at home, the fundamental question of being good corporate citizen arises, and consumer's perception of the social responsible advertisements and perception towards advertisements is to be examined. The social issues raised and solution shown, linkages with usage and usage imagery as part of the communication have to be examined we observe that fit between brand and social issue and feasible solution are important to influence the consumer.

Key Words: Moral appeal, Corporate Social responsibility, Social issues

Introduction

> **"It is not always the same thing to be a good man and a good citizen."**
>
> **-Aristotle**

Organizations spend enormously for brand differentiation and brand preference; it is imperative for them to spend on the social responsibility. Brands have enormous cultural and financial clout, and the growing importance of the triple bottom line, offer lot of opportunity for social responsibility at corporate and brand level**.** Corporate Social Responsibility (CSR) is discharged through exclusive responsibility programmes taken by the company and cause related marketing. CSR can discharge at brand and corporate level. Typically CSR programmes are from the organization using their own resources. The social responsibility may involve consumer's participation. However some brands are using advertisements using moral appeals and usage imagery to indicate social responsibility and also in subtle manner highlighting the key features of the brand. To talk about good things, or before preaching values, charity should begin at home. Therefore, the fundamental question of being good corporate or brand citizen arises, and whether consumers are aware of company CSR, given the premise that company has performed CSR activities. Consumers although may perceive it as a social responsible advertisements but has persuasive brand communication in it's there a degree of deceptively in advertisements. Hence, it is important to measurement consumer perception of CSR communication delivered using brands. Moral appeals influence brand personality, and are similar to citizenship branding.

Morsing and Schultz (2006) argued that managers need to move from 'informing' and 'responding' to 'involving' stakeholders in CSR communication itself. They conclude that managers need to expand the role of stakeholders in CSR communication processes if they want to improve their efforts to build legitimacy, a positive reputation and lasting stakeholder relationships. Levy (1959) captured the essence of symbolism when he suggested that "people buy things not only for what they can do, but also for what they mean" (p. 118). The concept of brands as social signals is now well accepted with congruity between brand and user self-image regarded as a key motivational factor in consumer choice (Belk, 1983; Sirgy, 1982). Lannon and Cooper (1983) suggested that: Brands are used as a sort of language. Brands tell you a great deal about who you are, where you are in life, what you are and where you are going. Brand choices are as much a part of ourselves as the way we speak, the

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words we use, our dialect, dress, gestures and language. Brands are part of ourselves and we are part of our brands. Durgee (1988) suggested somewhat simplistically, "advertising has two purposes: to excite and to inform" (p. 21). Johar and Sirgy (1991) distinguished between advertising based on value expressive (image) or symbolic appeals and utilitarian (functional) appeals. The image strategy involves building a "personality" for the product or creating an image of the product user. The utilitarian appeal involves informing consumers of the product benefits that are perceived to be highly functional and important to the consumer. Based on this classification they suggest that there are two different routes to persuasion: self-congruity and functional congruity. "The self-congruity route to persuasion can be viewed as a psychological process in which the audience focusses on source cues and matches these cues to their self-concept...The greater the match of the source cues, the greater the probability of persuasion, and vice versa. Functional congruity, on the other hand, is defined as a match between the beliefs of product utilitarian attributes (performance-related) and the audience's referent attributes" (p. 26). They further suggest that "a self-congruity route to persuasion can be viewed as a form of peripheral processing, whereas the functional congruity route is likely to be a form of central processing."

Raphael Bemporad opines (co-founder of Bemporad Baranowski Marketing Group (BBMG), a New York-based marketing agency dedicated to helping socially responsible businesses and organizations that harness the laws of branding to stand out, build relationships, and inspire action) that citizenship has manifold meanings. From a branding perspective, the only way to bring the unique promise of citizenship to life is by closing the authenticity gap between our aspirations and our actions. Beyond a series of attributes or actions, citizenship speaks to soul. It's a way of being in the world. Issac et.,al (2009) examined the theories of citizenship and role of leadership and possibility of ethical society. Theories of citizenship involved in two directions personal and social perspectives. Research into commercial organisations (Collins, 2001; Collins and Porras, 2005; Jensen, 2002; Kakabadse and Kakabadse, 2007) indicated that lack of ethics carries dire economic consequences and might eventually lead to the disintegration of the organisation. In addition, behaving unethically might seriously damage the psychological integrity of the practitioner ranging from moral deterioration, emotional paralysis and disengagement (Diamond and Allcorn, 1984) to other psychopathological phenomena such as neuroses, depression and schizophrenia (Frankl, 1986).

Ethical issue is not exclusively the problem of citizenship theories; we can find it elsewhere, such as leadership (Mostovicz et al., 2009b), organisation (Ashforth et al., 2008) and marketing (Gummesson, 1996). Copper and Gulick (1984) observed that the wide view moved beyond the legal definition and saw the citizen getting involved in building the social fabric and sustaining community through voluntary organizations and community involvement. The long-term view is theoretical only and is advocated by some scholars who define the ultimate goal of citizenship theory to be sustainability (Porter and Kramer, 2006; Schaefer, 2004) or meeting the current needs of the society without compromising the needs of generations to come. Based on ethical considerations, it holds that a citizen's responsibility should be past, present and future-oriented (Weiss, 2005). Jhon Potter (2002) summarizes the purpose and education of citizenship in schools and its implication for government, education sector and schools. Crick report (1998) reinterprets Marshall's definition and describes citizenship education comprising three things, related and mutually dependent i.e., social and moral responsibility, community involvement, and political literacy. Sana-ur-Rehman Sheikh and Rian Beise-Zee (2011) compared the effect of CSR And CRM on Consumer attitude. They also observed, however, that while CRM might be more cost efficient, its positive effect is limited to customers with high cause affinity. In contrast, CRM has a negative effect on customers with low cause affinity, or who oppose the cause. A major finding is that CRM can compensate for negative CSR to a high degree in the cause affinity segment of the market. Therefore, a high degree of cause specificity of CSR might only be preferable if the market is characterized by broad cause affinity, or if a firm is facing negative public sentiment caused, for instance, by a product harm crisis. Michael Jay Polonsky and Colin Jevons (2006) observed that it is essential to understand CSR issue complexity and to

consider carefully CSR-linked brand positioning. Basically, the implementation of CSR activities requires something substantial and communicable in the first place.

Deception in advertising has always sustained criticism. An ad or ad campaign is considered deceptive when it leaves consumers with other than reasonable knowledge (required to make an informed purchasing decision) about the product in question (Carson et al., 1985). It tends to mislead the viewer by providing incorrect or insufficient information, with the deliberate initiative to result in a sale. Advertisers increasingly try to immerse their commercial messages in other forms of communication, thus obfuscating the distinction between communication whose primary function is information, and communication whose primary objective is persuasion (Jeurissen and Veen, 2006). Immersive advertising is many a time deceptive as it misleads consumers into thinking that advertising material presented to them as content is indeed information, because the characteristics it displays correspond with what a reasonable person expects from content, but not necessarily from advertising (Spence and Heekeren, 2005).

Objectives

1. To study the use of moral appeals in advertisements of select brands and map brand appeals with respect to two dimensions of usage and involvement.

2. To develop a model for measuring impact of moral appeal based brand advertisement.

3. To empirically study the IDEA campaign and discuss managerial implications.

Brands and the moral appeals

The following brands used moral appeals in their advertisements

XXX Detergent brand

XXX Detergent popular detergent brand in Andhra Pradesh is manufactured by Bharati soaps. Brand communication conveys that "while you focus on humanity and our soap focuses on the stains". It shows in one of the advertisements, a person   lies on the road and is bleeding, nobody comes forward to help and take him to hospital and finally a young man arrives and takes him to hospital. The voice over says "you focus on humanity and we (our soap) focuses on stains, XXX detergent a soap with values". The brand and its communication exhort to discharge our duty.

Nokia C2-OO

Television commercial – one student gets a message in his mobile Nokia C2-00, that question paper is leaked. His friend is very happy and gives him the paper. However, he dislikes the idea of using leaked question a paper and admits we lose self respect and sends it to press. The exam is cancelled and both friends feel happy. The TVC depicts features of 3G application for the benefit of society.

Mahindra Duro Gearless power scooters

The friends driving on Mahindra Duro find somebody dropping the water bottle from the car and leaving. However the duro drivers chase them and drop the bottle in his car. The brand subtly depicts the power, grip and break functioning of the vehicle...

Saffola advertisement – The advertisement shows thief runs away from the couple, husband runs for a while and gives up. He could not run, later they decide to switch to saffola gold edible oil.

Tata Tea jaago re campaign

Tata Tea, India's largest tea company by volume, today has joined hands with Janaagraha, a Bangalore based not-for-profit organisation that has been doing pioneering work in the areas of urban advocacy and

governance. The Jaago Re! One billion votes campaign which was initiated (with Janaagraha Bangalore based NGO) to create a platform that will motivate the vast numbers of Indian youth to participate actively in the electoral process of the country. From challenging the qualifications of a politician to run the country, the campaign now seeks to empower the youth to influence polity by exercising their right to vote. For the first time in India, www.jaagore.com will host an online voter registration engine to allow citizens across the country to fill their voter registration forms in 5 minutes and also get driving directions to submit this form in their city. Hence, the Jaago Re One! Billion Votes campaign is not only a call to action but a platform which provides any potential voter all the information and facilitation he or she needs to become part of the electoral process. While this campaign caters to the entire nation, certain services of the website will initially be available for those residing in the top 35 Indian cities and towns (7 Metros and 28 Class 1 towns), which account for 30% of the urban population. Going forward these services will be made available across the country in a phased manner. The campaign seeks to partner with other corporates, media groups, academic institutions and civil society organizations to make this India's largest ever effort on voter registration. The initiative will be strongly supported by on ground activities in the form of institutional outreach, which will span more than 11 key cities and will serve to directly communicate with the target audience in college campuses as well as corporates. NGOs such as Lok Satta Aandolan and PRIA are partnering for outreach of this campaign.

IDEA Cellular

Idea Cellular initiated the following campaigns

1. Walk and talk campaign

2. Education for all

3. Governance

4. Save paper campaign

IDEA Cellular, the leading GSM service provider, has launched a new campaign Walk & Talk, to bring forward people across different walks of life, age-groups and societies and get them to walk for fitness. IDEA plans to initiate a countrywide movement on Walking & Talking, and expects that 'Ek Idea pe chal padega India'. In its new commercial Abhishek Bachchan is playing a Doctor this time, who quotes how people can get fit by simply Walking while Talking and provoke this idea to the general public. According to IDEA cellular, The Idea brand campaigns have always celebrated Champion Ideas which have the power to change the society and the way we live. This time, the Champion Idea is around 'Walking & Talking' for staying fit. The preceding campaigns around 'Participative Governance'; 'Education for All'; 'Championing a world in which no one suffers from the disability to communicate'; and 'Championing a world without Caste' have been huge hits amongst the audiences. One advertisement communicates "use of mobile to save paper, with the tagline 'What an Idea, Sirji!. The campaigns – 'Championing a world without caste'; 'Championing a world in which no one suffers from the disability to communicate'; **'Education for All'** , 'Participative Governance', **'Walk When You Talk'**, and the recent 'Use Mobile, **Save Paper' campaign** – all abide by the essential brand promise of providing a simple, fresh and imaginative solution to a complex problem of the society.

IDEA's ad campaigns based on the theme of 'Democracy'; 'Championing a world without caste'; 'Championing a world in which no one suffers from the disability to communicate'; and 'Education for All', have been a huge success amongst all categories of audience. In all these campaigns, the Brand Ambassador has played a protagonist who connects with both the masses, and the classes. Be it the 'close aide' of the political leader in our Democracy campaign; or the 'Sarpanch' trying to get rid of caste wars; or the 'Tourist Guide' with a foreigner at Taj; or even the 'Priest' who has the vision of Educating One and All—each time the character has sprung up with an innovative 'Idea' which provides a simple yet effective solution to a problem, by using the mobile phone. The testimony of the success of the campaign is reflected from the rapid growth of IDEA's

subscriber base in the country. The Aditya Birla Group Company has grown to become the 3rd largest private GSM operator with over 43 million subscribers across 16 service areas, nationally. See Table1 for brand advertisments and moral appeals.

Table 1: Brand Advertisements and moral appeals

Company/brand	Social issue	Company CSR	Advertisement/message content
Idea	Education for all, casteless society, governance, save paper, family planning	High	Usage imagery using moral appeal
XXX detergent	Human values	low	Usage imagery using moral appeal
Tata jagoore	Franchising education	high	User imagery and moral appeal
Mahindra Duro	Civic responsibility	high	Usage imagery and moral appeal
Nokia c2-00	Leakage of question papers	high	Usage and user imagery and moral appeal
Saffola	Health	high	Usage and user imagery and social issue

Mapping the brand responsibility : Mapping can be done by considering the three dimensions, brand purchase and usage and degree of consumer involvement. The brands (XXX detergent, IDEA service, Nokia C2-00, Mentos and Saffola) in their communication explicitly show, role of the brand in discharging social responsibility. Tata Jagore involves consumers but their message is not linked to purchase. See Figure 1
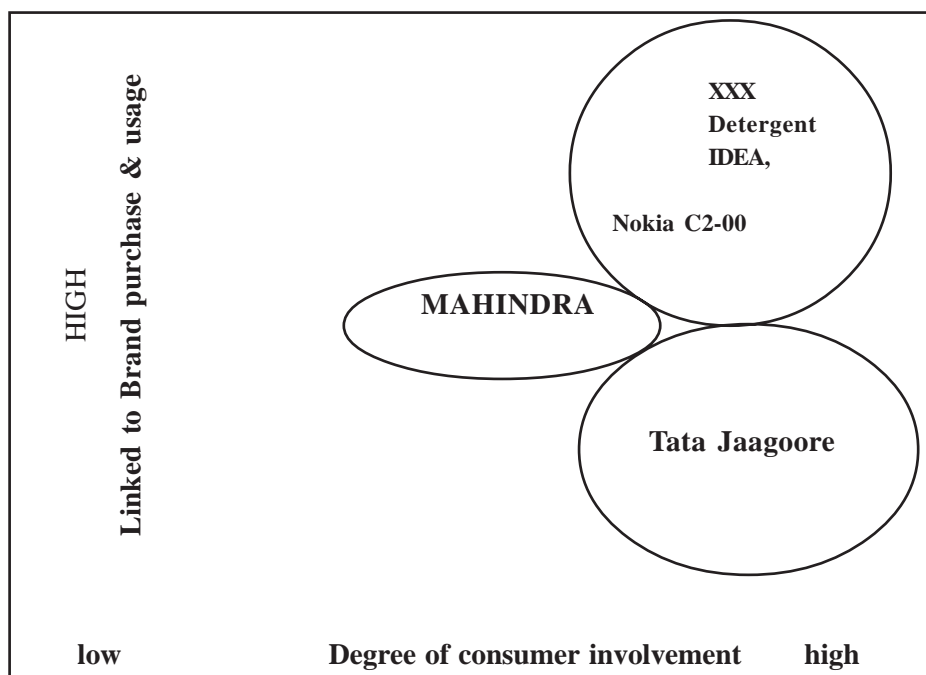

Figure 1: Brand purchase and consumer involvement for social change

Model development : Model is developed by considering dependent, independent, moderating and mediating variables. Variables considered are derived from literature review and discussion with consumers and experts. See Figure 2 for model development
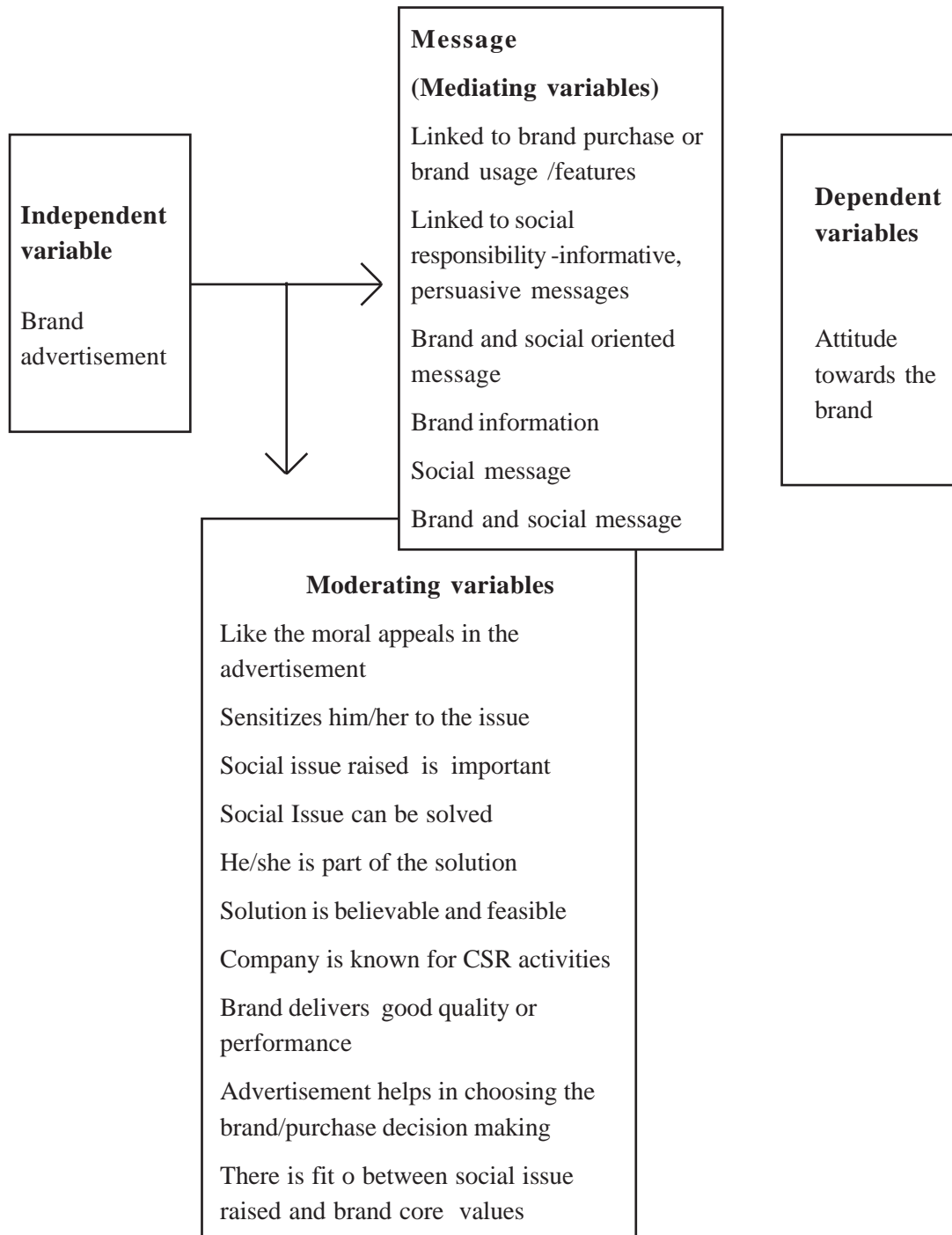
Message (Mediating variables)
Linked to brand purchase or brand usage /features
Linked to social responsibility -informative, persuasive messages
Brand and social oriented message
Brand information
Social message
Brand and social message

Independent variable

Brand advertisement

Dependent variables

Attitude towards the brand

Moderating variables

Like the moral appeals in the advertisement

Sensitizes him/her to the issue

Social issue raised is important

Social Issue can be solved

He/she is part of the solution

Solution is believable and feasible

Company is known for CSR activities

Brand delivers good quality or performance

Advertisement helps in choosing the brand/purchase decision making

There is fit o between social issue raised and brand core values

Figure 2: Model for brand Advertisement and social Responsibility. Model 1

Empirical study of Idea cellular

IDEA's ad campaigns based on the theme of 'Democracy'; 'Championing a world without caste'; 'Championing a world in which no one suffers from the disability to communicate'; and 'Education for All', have been a huge success amongst all categories of audience. In all these campaigns, the Brand Ambassador has played a protagonist who connects with both the masses, and the classes. Be it the 'close aide' of the political leader in our Democracy campaign; or the 'Sarpanch' trying to get rid of caste wars; or the 'Tourist Guide' with a foreigner at Taj; or even the 'Priest' who has the vision of Educating One and All—each time the character has sprung up with an innovative 'Idea' which provides a simple yet effective solution to a problem, by using the mobile phone. Idea cellular uniquely adopted CSR strategy for brand building, it uses usage imagery and moral

appeals consistently. It portrays simple solutions to complex problems. But the solutions are ideal and difficult to apply though not impossible. The messages use moral appeals but not directly convey the benefits of the brand. The recent advertisements of 3G go overboard as it links 3g services with family planning. All the campaigns are hugely successful in increasing the customer base of the brand. Some of the advertisements may look deceptive which need to be tested.

The campaigns launched by IDEA include:

1. Walk and talk campaign

2. Education for all

3. Governance

4. Save paper campaign delete the matter in brackets. This was already mentioned in the first paragraph of the section "IDEA Cellular" above.

After showing advertisements the questionnaire is administered to college students (120) who are pursuing PGDM programme in Hyderabad.

Variables and data analysis .

Eleven variables are selected which convey consumer perception on the advertisements of IDEA. After data collection, descriptive statistics and factor analysis are used for analysis.

The data analysis are given in Appendices 1 and 2.

(The matter below in red is shifted from Appendix 2 and redrafted.)

The KMO measure of sampling adequacy is 0.686 which is more than 0.5 indicating that factor analysis is appropriate. Four factors have been extracted from the data as mentioned below.

Factor 1 is a combination of four variables viz., (1) I am sensitized to social issue; (2) I think the issue can be solved; (3) I am motivated to contribute to the cause; and (4) advertisement gives direct opportunity for consumers to discharge social responsibility. This factor can be named as **Impact on the individual with respect to social issue.**

Factor 2 is combination of three variables viz., (1) I   think solution shown to the problem is feasible and believable; advertisement shown helps to take purchase decision; (2) I find the advertisement inform about brand features; and (3) I like the celebrity endorser shown in the advertisement. This factor can be named as **persuasive ability and social problem solving ability of advertisement.**

Factor 3 combines three variables viz., (1) Brand delivers quality; (2) there is a relationship between social issue raised and brand; and (3) I am aware of the company CSR. This factor can be named as **Brand quality and brand fit with social issue and company CSR.**

Factor 4 covers two variables viz., (1) I like the moral appeals used in advertisements; and (2) I find the social issue is relevant. This factor can be named as **relevance of social issue and moral appeal used in advertisement.** The **scree plot** shows the number of factors extracted. i.e. four after which the slope of the plot becomes flat.

Conclusion and Managerial Implications

Brands use moral appeal in advertiments as a means to sensitize the target audience to the relevant social issues accompanied with the brand and usage imagery. How ever, the degree of influence depends on several medating varibles such as social issue relelvance, brand fit etc. The empirical study of IDEA campaign is done to examine the perception. The four factors emerged from exploratory factor analysis 1. Impact of social

issue on the individual 2. Persuasive and social problem solving ability of the advertisement and celebrity endorser 3. Brand quality and brand fit with social issue and company CSR 4. Relevance of social issue & moral appeal used in advertisement. Descriptive statistics indicate that advertisements of (IDEA) scored low on brand features and practical solution to the problem. The positive aspect is advertisments are able to sensitize the target audience to the relevant social issue and exhort them to play their role in the society. Surprisingly, though the perception is that advertisement did not help them to take purchase decision but the sales impact was high after campaign. Organizations and brand managers should consider the fit between social issue and brand, and relevance of the social issue, and ensure that consumers are aware of the CSR. The communication should show the feasible solution to the problem; otherwise it may be perceived seen as puffery.

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Appendix 1

Descriptive Statistics for the variables (measured on likert scale among 120 respondents)

Vl	v2	v3	v4	v5	v6	v7	v8	
4.183333	3.591667	3.191667	3.608333	3.208333	2.975	3.933333	3.575	Mean
0.88	0.90	0.97	0.98	1.11	1.14	0.91	0.96	SD
4	4	3	4	3	3	4	4	Median
0.68169	0.876854	-0.36938	0.158742	-0.72887	-0.85643	0.496739	-0.00559	Kurtosis

V9	v10	v11	
3.55	3.3	2.866667	Mean
1.02	1.01	1.11	SD
4	3	3	Median
-0.23197	-0.55211	-0.95523	Kurtosis

Appendix 2: Factor Analysis -Kmo And Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.686
Bartlett's Test of Sphericity	Approx. Chi-Square	304.638
	df	78
	Sig.	.000

Appendix 3 : Communalities

|	Initial	Extraction
Moral appeal	1.000	.681
Aware of CSR	1.000	.496
Informs about brand features	1.000	.517
Sensitized to social issue	1.000	.537
Issue can be solved	1.000	.638
Problems feasible, believable	1.000	.649
Social issue is relevant	1.000	.625
Motivated to contribute to the cause	1.000	.591
Brand delivers quality	1.000	.562
Relationship between social issue and brand	1.000	.663
Advertisementshowntotakepurchasedecision	0	.565
Opportunity todischargesocialresponsibility	1.000	.420
Likethecelebrityendorsershowninadvertisement	1.000	.483

Extraction Method: Principal Component Analysis.

Appendix 4: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.358	25.827	25.827	3.358	25.827	25.827	2.208	16.986	16.986
2	1.613	12.409	38.236	1.613	12.409	38.236	2.042	15.705	32.691
3	1.426	10.970	49.206	1.426	10.970	49.206	1.603	12.328	45.019
4	1.030	7.924	57.131	1.030	7.924	57.131	1.575	12.112	57.131
5	.956	7.354	64.485						
6	.900	6.922	71.407						
7	.760	5.847	77.255						
8	.690	5.307	82.561						
9	.600	4.617	87.178						
10	.511	3.934	91.112						
11	.451	3.470	94.582						
12	.392	3.015	97.597						
13	.312	2.403	100.000						

Extraction Method: Principal Component Analysis.

Appendix 5:Scree Plot

Scree Plot
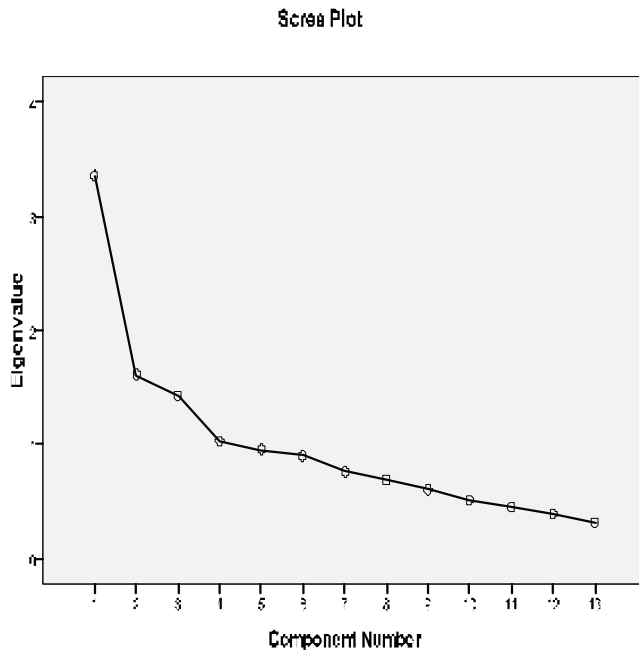
Appedix 6: Component Matrix

	Component			
	1	2	3	4
Moral appeal	.536	.000	.543	-.314
Aware of CSR	.349	.553	.255	-.064
Informs about brand features	.305	.590	-.259	-.091
Sensitized to social issue	.485	-.503	.143	.169
Issue can be solved	.572	-.490	-.168	.207
Problem is feasible and believable	.696	.134	-.315	-.219
Social issue is relevant	.300	-.234	.514	-.465
Motivated to contribute to the cause	.705	-.295	-.052	.071
Brand delivers quality	.306	.148	.213	.633
Relationship between social issue raised and brand	.452	.468	.328	.363
Advertisement shown to take purchase decision	.503	.214	-.470	-.212
Direct opportunity to discharge social responsibility	.633	.061	.127	.004
Like the celebrity endorser shown in advertisement	.521	-.129	-.441	.014

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

Appendix 7: Rotated Component Matrix[a]

	Component			
	1	2	3	4
Moral appeal	.153	.093	.226	.773
Aware of CSR	-.232	.320	.494	.309
Informs about brand features	-.223	.626	.272	-.045
Sensitized to social issue	.688	-.095	.077	.221
Issue can be solved	.788	.132	.015	.018
Problem is feasible and believable	.306	.719	.071	.182
Social issue is relelvant	.129	-.077	-.097	.770
Motivated to contribute to the cause	.672	.274	.132	.219
Brand delivers quality	.259	-.106	.682	-.134
Relationship between social issue raised and brand	.020	.148	.787	.144
Advertisement shown to take purchase decision	.155	.735	-.018	-.009
Direct opportunity to discharge social responsibility	.330	.311	.327	.327
Like the celebrity endorsers inadvertisement	.477	.494	-.042	-.096

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 8 iterations.

Income Status of Migrant Labours at Alang Ship Breaking Yard

Dr. Hrudanand Misra *

Abstract

The process of migration is as old as human history. In the process of migration economic factors dominate the decision to migrate. The decision to migrate is also influenced by the difference in income at the place of origin and place of destination. Individuals belonging to lower income have a greater propensity to migrate than others. Alang ship breaking yard employs 90 percent of migrant labours and they are largely from backward states of U.P, Bihar, Orissa and Jharkhand. Only a small fraction around 5-10 percent originates from Gujarat state. In the study of migration income plays important role, which decide the decision to migrate. The income of the labour determined by varies factors such as skill level, experience, age, education etc. The aim of the present paper is focus on the determinants of income of the migrants employed at Alang ship breaking yard. The results show that workers present income is three or four time higher than previous income shown by pair t-test. The regression result also shows that skill level and experience of the migrants are important determinants in present income.

Key Words: Income, Migrant Labour, Ship Breaking

Introduction

The process of breaking ships for the extraction of steel scrap for supply to the steel rolling mills has led to the beginning of an industrial activity. Ship breaking is the process of dismantling an obsolete vessel's structure for scrap. The process includes wide range of activities from removing all gear and equipment to cutting down as well as recycling the ship's structure.

On average a ship has an active life span of 25 to 30 years. After it fails to meet the safety requirement, it is sent for breaking. The ship is sold through international broker or via cash buyers. Until 1960's, ship breaking activities was highly mechanized and concentrated in industrialized countries like United States, the United Kingdom, Germany and Italy. The United Kingdom accounted for 45 percent of ship breaking industry. During 1960's and 1970's ship breaking activities shifted to semi-industrialized countries, such as Spain, Turkey and Taiwan mainly because of availability of cheaper labour and also the existence of re-rolling mills in these countries. About 79 countries were involved in ship breaking activity. Asian yards come into existence during 1980's. Despite their late establishment, at present this region account for over 95 percent of the industry. Alang ship breaking yard of India has become eminent industry holding first position in Asia and also in world market. Bangladesh holds second position after India.

At present, India has large share in ship breaking industry (OCED, 2001) and most of the activity is concentrated in Alang and Sosiya, the two villages situated in the coast of Arabian Sea in the district of Bhavnagar in Gujarat.

Alang is a small coastal village as the district of Bhavnagar in Gujarat, dominated by a small population of fishermen and farmers. Presently, it has turned out to be one of the largest ship breaking yard not only in India but in the world. The yard stretches over 15 Km and actually covers two yards (Alang and Sosiya). The Alang ship breaking yards have the capacity to break VLCCs[*] and ULCCs[**] vessels, a facility not available to any other ship breaking countries in the world. Furthermore, unlike other countries where the ship breaking activities is capital intensive in India it is labour intensive. Being a labour surplus country labour is available in plenty and that too at competitive rate. Alang ship breaking yard provides large number of employment opportunities to number of skilled and unskilled labours. Moreover, there are many other activities and industries which are directly and indirectly dependent on Alang ship breaking yard, and the number of such workers directly and indirectly employed is estimated to be in between 1.5 to 1.6 lakhs (International Federation of Human Rights,

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2000: 56). This also includes the downstream industries generated by the ship breaking industry such as re-rolling mills, foundries, oxygen plants, local scrap store, transportation companies and other small local businessmen and upstream activity such as brokers, service sectors etc. A survey conducted by the International Federation of Human Rights (FIDH) found that 100 re-rolling mills are functioning in the area and each generally employs between 80-120 and thus employing about 8,000-10,000 workers.

It is found that a large proportion of labours employed at Alang ship breaking yard are migrants from different states. They are largely from backward states of Uttar Pradesh, Bihar, Orissa and Jharkhand. Only a small proportion of workers are from Gujarat state i.e. 5-10 percent. Large proposition of the workers are originate from the backward or most backward districts of these states. Out of 18 districts from which respondents originate 4 are developed, 3 are industrially backward, 8 are backward and 3 are most backward as classified by planning commission. The next section focus on the various factors affects the income of the migrants employed at Alang.

Payments and Wages

Various occupations are covered by the Central Government and the State Government for the implementation of Minimum wages Act. For the payment of Minimum wages, labours are divided into three categories as per their skill however all labours are covered under skilled or unskilled category. The minimum wages paid to the labour constitutes the basic wage and special allowance. The special allowances is linked with the cost of living index and revised twice in a year. Hence, minimum wages of labours are revised at an interval of every six months. But the wages of the labours are fixed either on the basis of time or piece rate. According to contractors that piece rate is not revised with the revision of the special allowance of minimum wages at the interval of six months. It is found that in many industries that contractors do not pay wages according to the provision of Minimum Wages Act. Contractors seem to recognize only the basic wage component of minimum wages.

There are various studies conducted by researchers on the payments and wages to the labour in Indian industries. The researchers cover wide range of industries viz, Carpet weaving, Glassware, Beedi industry, Construction, Brassware wherein labour face exploitative conditions. These industries also cover length and breadth of India. Various studies on construction industry analysed the Minimum Wages legislation. The analysis of the Minimum Wages with respect to employment in the construction or building operation is on the basis of the recommendation of Labour Commissioner The average wage rate prevailing in construction industry in most cases far below the Minimum Wages fixed under the Act (Subrahmanian, Veena and Parikh 1982: 137-141). In Alang ship breaking yard wage rates especially for unskilled workers are found to be below the Minimum wages as mentioned in the Minimum Wages Act. According to data available on minimum wages by Gujarat Government, the minimum wage fixed in April 2002 for skilled workers at Rs.89 and for unskilled workers at Rs.79 per day. The results of the survey suggest that wages at Alang ship breaking yard are higher than those earned by workers at their native place, but labours are receiving wages less than the prescribed minimum wages. Infact, section 13 of the Inter-State Migrant Workmen Act, 1979 provides that the wage rates of the inter-state migrant workmen should be same as those applicable to such other workmen and also the inter-state migrant workmen should not be paid less than the wages fixed under the Minimum Wages Act.

At Alang ship breaking yard many workers do not know even their wage rate because they never asked the muqadams or labour contractors due to fear of being fired from the job. Some workers reported to the researcher that they would not know their exact wage rate until they get the money in their hand. This practice violates the article 7 of the Payment of Wages Act, 1936 which states that there are no deductions from the wage except in very precise circumstances. Thus, such practices are contrary to article 21 of the Contract Labour Act which states that in case the contractor fails to make payment of wages within the prescribed time

period or make short payment then the principal employer is responsible to make payment of wages in full or the unpaid balance.

In Alang ship breaking yard wages of the workers are paid on the basis of a daily rate but paid monthly. Each and every worker is handed with an attendance card at the start of the each month. Everyday Workers have to get the card filled with arrival and of departure details from the plot. The payment is either on the basis of task or piece rate. For instance, loaders whose work is to load and unload gas cylinders on the truck are paid between Rs.5 to 5.50 per cylinder. The wages ranges from Rs.60 to 70 a day for helpers and Rs.150 to 170 for experienced gas cutters. As compared to other labours, muqadams are paid approximately Rs 300 per day and pay slip is given to them but not to others.

Table 1 presents the average monthly incomes of the respondents in Alang ship breaking yard. Average present income of the respondents is Rs. 2888.88 which is three times higher than the average previous income of respondents (i.e. Rs 843.00). The previous income of the respondents in the present study refers to the income from the last occupation. In all the categories of workers wages earned are three times or higher than the previous income with the exception of skilled workers. Previous income of the workers is significantly lower than the workers present earning in Alang. To test this hypothesis the study uses paired t-test. The average present income is significantly higher than previous income of the workers and is significant at 1 percent critical level.

Table: 1 Nature of Work and Income of the Respondent per month

Nature of Work	Average Previous Income	Average Present income	Paired t-test
Manual	760.47	2866.51	24.487*
Semi-Skilled	730.41	2566.62	22.284*
Skilled	916.98	2853.11	23.105*
Highly Skilled	1066.18	3758.35	17.985*

t-test is significant at 1% level

Present Income: Determinants

There can be many factors determining the income of the respondents. To understand their significance an income function would be great help. To estimate the income function regression technique is made use of. Various alternative models are fitted using both qualitative and quantitative variables. The present income of the respondents is determined by diverse factors such as skill of the individual, previous experience, age, education of the respondents. The present exercise uses the relevant variables to estimate the income function. Though, many variables are included in the model but it is found that some variables do not explain variations in income function significantly. Therefore, for the analysis of the income of the respondents bivariate and multivariate regression functions have been fitted. The following income function was considered for explaining variation in income.

Present Income = f (Years of Experience, Previous Income, Skill, Work at Ship/Yard, Experience^2)

Out of the explanatory variables skill and work at ship/yard are qualitative dummy variables and other variables are quantitative in nature. To explain the relation three equations are fitted and the results are presented in table 2. The models are

Present Income = f (Years of Experience, Experience^2) ———————————————— (1)

Present Income = f (Years of Experience, Previous Income, Skill) ———————————— (2)

Present Income= f (Years of Experience, Previous Income, Skill, Work at Ship/Yard,

Experience^2) ———————————————————————————— (3)

It was found that for the sample data the income function is best explained through the variables such as years of experience and skill. In Model-1 years of experience and years of experience square are the explanatory variable. This model explains 9 percent of variations in the dependent variable. To test a model for its explanatory R^2 is not a confirmation test. To test whether the independent variables explain the variations in the dependent variables significantly, F-test is made use of. The coefficients of years of experience and years of experience square have expected sign in the model. In view of the fact that there exists a tendency that the income of respondent increases with the increase in years of experience at a diminishing rate which is explained through negative sign of the years of experience square but the coefficient is not statistically significant. A study conducted by Banerjee on Delhi city found that the years of experience have significant positive but diminishing effect on earning (Banerjee, 1986: 198-199).

In Model-2, previous income, experience and skill, a dummy variable are the explanatory variables. From model 1 to model 2 the result improves marginally. All the three independent variables including one dummy variable show positive sign but two variables are statistically significant as indicated by their t-values. Years of experience explain variations in present income significantly and the skill of the respondent's leads to higher income and has a positive coefficient and is statistically significant. The model is a good fit as the F-ratio is statistically significant at 5 level. A study done by Mehta found that earning function shows the importance of workers skill as income determinant (Mehta, 1990: 150-159). Therefore, it can be concluded that in the present study income is significantly higher for the respondents who have more years of experience and are skilled. In this model previous income of the respondents is not statistically significant, which show that the income of respondents are lower before opting present occupation at Alang ship breaking yard.

Model 3 includes five explanatory variables and it is found that four of them have positive coefficient and experience square has a negative coefficient but it is not statistically significant. Years of experience are the most significant explanatory variable as it is significant at 1 percent level. The skill of the respondent leads to higher income on an average and is statistically significant at 5 percent level. The respondent's work on ship leads to relatively higher income; however it is not significantly higher. The model explains the variation in present income significantly as the F-ratio is statistically significant at 5 percent level. Combining the three models it can be concluded that years of experience and skill level are the most important determinants of present income.

Table: 2 Regression Result of Respondents Income at Alang Ship Breaking Yard Dependent Variable: Present Income

Variable	Model 1	Model 2	Model 3
Constant	2528.544	2432.513	2444.099
Years of Experience	41.8897(5.461)**	35.0603(4.479)**	34.7619(4.398)***
Ship/Yard[a]			119.3687(0.986)
Previous Income		0.03218(0.405)	0.0357(0.447)
Skill[b]		242.8937(2.929)*	233.798(2.792)**
Experience^2	-0.2194(-0.466)		-0.2914(-0.623)
N	300	300	300
R^2	0.091	0.119	0.122
F-Ratio	(14.917)**	(13.294)**	(8.206)**

[*] Significant at 10%

[**] Significant at 5%

[***] Significant at 1%

Note: Figures in bracket are t-value

[a] Ship/Yard = 1 workers working inside ship otherwise 0 if workers working in yard.

[b]Skill = 1 for skilled workers otherwise 0

Conclusion

The study shows that the economic factors dominate the decision to migrate. The decision to migrate is also influenced by the difference in income at the place of origin and place of destination. Individuals belonging to lower income have a greater propensity to migrate than others. The present study shows that the previous income of the respondents is significantly much lower as compared to present earnings at Alang, which is shown by Pair t-test. The overall average present income of the respondents is higher (i.e. Rs. 2888.88) as compared to their previous income (Rs. 843.00). The regression analysis shows that the skill and years of experience are the important variables determining the income level of the migrants at Alang ship breaking yard.

The ship breaking industry after functioning for more than 20 years, workers are still getting wages less than prescribed minimum wages. Wage structure of the workers at Alang is very well known to employers as well as Government, but both the players are still silent and nobody is taking initiative to improve or revised wage system in ship breaking industry of Alang.

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Footnotes

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[*] Very Large Crude Carrier: Tanker of 160,000-320,000 Dead Weight Tonnage.

[**]Ultra Large Crude Carrier: Tanker of 320,000 Dead Weight Tonnage.

Finding Frequent Item Sets on Post Mining data using Normalized Mutual Information

Jayanti Mukhopadhyay* and Prof. Rohit Kamal Chatterjee**

Abstract

Buyers' Basket Analysis (BBA or Market Basket Analysis) is a typical example of frequent item set mining that leads to the discovery of association and correlations among items in large transactional or relational data sets to help retailers to develop marketing strategies by gaining insight into which items are frequently purchased together by customers. Association rules are considered interesting if they satisfy both a minimum support threshold and minimum confidence threshold, set by domain experts. Many efficient algorithms like Apriori, Partitioning, Sampling, Eclat etc. are available to generate large number of associated frequent item sets. Additional analysis can be performed to discover interesting statistical correlations between associated items. But the above mentioned correlation measures works in linear relationship between two variables with random distribution; this value alone may not be sufficient to evaluate a system where these assumptions are not valid. Finally we propose a new measure i.e. mutual information that will show dependency between frequent item sets of linear and parabolic datasets and generate stronger associated frequent item sets.

Key Words: Frequent Item sets, Association rules, mutual information.

Introduction

Buyers' Basket Analysis (BBA or Market Basket Analysis) is a well known technique of data mining to analyze customer behavior. It is based on association rule mining. The goal of BBA is to identify relationship (i.e. association rules) between groups of products, items or category taken from a large dataset (Silverstien, C., Brin, S. & Motwani, R., 1998). It helps in increasing sales and maintain inventory by focusing on the point of sale transaction data. Association rule mining is a two step approach i.e. first it finds all frequent item sets using minimum support threshold and then generate strong association rules that satisfy minimum support and minimum confidence. Frequent item set mining and association rule induction (Agrawal, R., Imielinski, T. & Swami, A., 1993) are powerful methods for Buyers' Basket Analysis. The main problem of association rule induction is that there are many possible rules (McNicholas Paul, D. & Yanchang, Z., 2009). It is obvious that such a vast amount of rules cannot be processed by inspecting each one in turn. Therefore efficient algorithms are needed which restrict the search space and check only a subset of all rules, but, if possible, without missing important rules. One such algorithm is the Apriori algorithm which was developed by R. Agrawal & R. Srikant (Agrawal, R. & Srikant, R., 1994) for mining frequent item sets for boolean association rules. But the problem of Apriori algorithm is that it requires many scans to generate a large number of frequent item sets. Many other algorithms (partitioning, sampling, Eclat etc.) are present which focus on improving the efficiency of the original Apriori algorithm. But the use of only support and confidence measures to mine associations may generate huge numbers of frequent item sets which can be uninteresting to users (Feelders, C. R. & Siebes, A., 2001). Overviews of measures (subjective and objective) of interestingness are also used to find frequent item sets (Boettcher, M., Ruß, G., Nauck, D. & Kruse, R., 2009). There are some additional analysis of post mining data that can be performed to discover interesting statistical correlation (lift, all_confidence, Cosine etc.) between frequently associated items. But all the above mentioned correlation measures works on linear data sets. In this paper we

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propose a new measure like mutual information to find frequently associated item sets not only from linear data sets but also from parabolic data sets.

Background

Buyers' Basket Analysis (BBA) is based upon a**ssociation rule mining**. Let I = {I_1, I_2, … ,I_m} be a set of Items. Let D, be a set of database transactions where each transaction T is a set of items such that T $\subseteq$ I. An association rule is an implication of the form A $\Rightarrow$ B, where A $\subset$ I, B$\subset$ I, and A $\cap$ B = Ø (Han, J., Kamber, M. and Pei, J., 2011). The two measures of association rule mining is Support and confidence.

$$support(A \Rightarrow B) \quad = \quad P(A \cup B) \qquad \qquad …(1)$$

$$confidence(A \Rightarrow B) \quad = \quad P(B|A). \qquad \qquad …(2)$$

The concept of binary association rules represent presence of item denoted by 1 and absence of item denoted by 0 (Savasere, A., Omiecinski, E. & Navathe, S. B., 1998). But association rule mining often generates a huge number of rules, and a majority of them either are redundant or do not reflect the true relationship among data objects (Silverstien, C., Brin, S. & Motwani, R., 1998). To overcome this difficulty, correlation has been adopted as interesting measures. This leads to correlation rules of the form

A $\Rightarrow$ B [support, confidence, correlation].

There are many different correlation measures for mining large data sets:-

Lift :-The lift between the occurrence of item sets *A* and *B* can be measured by computing

$$lift(A, B) = \frac{P(A \cup B)}{P(A)P(B)}. \qquad \qquad …(3)$$

Positively correlated : lift > 1.

Negatively correlated: lift < 1.

No Correlation : lift = 1.

Chi-Square(X^2):-

$$\chi^2 = \Sigma \frac{(observed - expected)^2}{expected} \qquad \qquad …(4)$$

All confidence:-

$$all\_conf(X) = \frac{sup(X)}{max\_item\_sup(X)} \qquad \qquad …(5)$$

1. **Cosine:-**

$$cosine(A, B) = \frac{P(A \cup B)}{\sqrt{P(A) \times P(B)}}$$

$$\qquad \qquad …(6)$$

$$= \frac{sup(A \cup B)}{\sqrt{sup(A) \times sup(B)}}$$

2. **Kulczynski:-**

$$Kulc(A,B) = \tfrac{1}{2}(P(A|B) + P(B|A)) \qquad \qquad …(7)$$

3. Max-confidence:-

$$\text{Maximum\_confi}(A,B) = \max\{P(A|B), P(B|A)\} \qquad ...(8)$$

(In the above formulae, A, B, X are the data item sets, P represent probability)

Each of the above six co-relation measure value range from 0 to 1 and higher the value, the closer the relationship between A and B (Han, J., Kamber, M. & Pei, J., 2011).

Problems with Subjective and Objective Measures

Objective measures rely on user's ability to choose the right measure for a given scenario out of a huge set of available measures. Some measures produce similar rankings while others almost reverse the order. This poses the problem of choosing the right measure for a given scenario (Agrawal, R. & Psaila, G., 1995). Moreover, due to their rather mathematical foundations most measures lack interpretability and meaningfulness because the rule properties they measure rarely reflect the practical considerations of a user. For a user it is often unclear which measure to choose and how to link its results to his application scenario. Objective measures do not memorize the past and they are unable to identify patterns which have already been discovered multiple times in the past, which are diminishing or emerging (Agarwal, C. C. & Yu, P. S., 1998).

Subjective measures, on the other hand, require user's domain knowledge. A lot of effort is necessary to collect, organize and finally incorporate domain knowledge into a knowledge base against which association rules will be compared. Moreover, domain experts often forget certain key aspects or may not remember others which come into play under rarer circumstances. This problem can be termed 'expert dilemma' (Linoff S. G. & Berry, M. J., 2011). Building a knowledge base can also become a task that can never be finished. Consequently, there is a risk that patterns are regarded as interesting based on outdated knowledge while a user is being left uninformed about the out datedness itself (Boettcher, M., et al, 2009) .

Here our propose measure i.e. using mutual information, we can get most frequent item set more accurately than using correlation measures.

The correlation co-efficient indicates the strength of a linear relationship between two variables with random distribution; this value alone may not be sufficient to evaluate a system where these assumptions are not valid. The mutual information measures the general dependency while the correlation function measures the linear dependency. Another major difference between mutual information and correlation function is that the former can be applied to symbolic sequences as well as numerical sequences, but the latter can only be used on numerical sequences. For example, we can have zero value of correlation function at some distance d, while the mutual information function at that distance can be any value.

Information Theory

Information theory is a branch of computer science involving quantification of information. Information theory was developed by Claude E Shannon (Shannon, C. E., 1948). Information theory is based on probability theory and statistics (Hartley, R. V. L., 1928). A key measure of information is entropy which is usually expressed by the average number of bits needed to store or communicate one symbol in a message. The entropy quantifies uncertainty involved in predicting the value of a random variable (Kolmogorov, A., 1968). Since its inception it has broadened to find applications in many other areas, including statistical inference (Cover, T. M. & Thomas, J. A., 2009). The entropy H, of a discrete random variable X is a measure of the amount of uncertainty associated with the value of X. If X is the set of all messages $\{x_1, ….., x_n\}$ that X could be, and p(X) is the probability of some x belongs to X, then the entropy, H, of X is defined as

$$H(X) = \mathbb{E}_X[I(x)] = -\sum_{x \in \mathbb{X}} p(x) \log p(x). \qquad ...(9)$$

Here I(x) is the self information, which is the entropy contribution of an invalid message, and E_x is the expected value. An important property of entropy is that it is maximized when all the messages in the message space are equiporable p(x) = 1/n, i.e. most unpredictable in which case H(X) = log n.

MUTUAL INFORMATION: Mutual information (also referred to as trans-information) is a quantitative measurement of how much one random variable (Y) tells us about another random variable (X). In this case, information is thought of as a reduction in the uncertainty of a variable (Latham P. E. & Roudi, Y., 2009). Thus, the more mutual information between X and Y, the less uncertainty there is in X knowing Y or Y knowing X (Fraser A. & Swinney, H., 1986).

Mutual information is most commonly measured in logarithms of base 2 (bits) but it is also found in base e (nats) and base 10 (bans).

The mathematical representation for mutual information of the random variables X and Y are as follows:

$$I(X;Y) = \sum_{y \in Y} \sum_{x \in X} p(x,y) \log \left(\frac{p(x,y)}{p(x)\,p(y)} \right), \qquad ...(10)$$

where, p(x,y) = joint probability distribution function of X and Y.

p(x) = marginal probability distribution function of X. p(y) = marginal probability distribution function of Y.

KULLBACK-LEIBLER DIVERGENCE THEORY: Mutual information can also be expressed as a Kullback-Leibler distance. The mutual information between a random variable X and Y is the Kullback-Leibler distance between the joint distribution P(X,Y) and the product of the marginal P(X) and P(Y):

$$I(X;Y) = D_{\mathrm{KL}}(p(x,y) \| p(x)p(y)). \qquad ...(11)$$

If X and Y are independent, so that P(X,Y) = P X) P(Y), then

$$\log \left(\frac{p(x,y)}{p(x)\,p(y)} \right) = \log 1 = 0. \qquad ...(12)$$

I(X;Y) = 0. That is Y tells no information at all about X (Cover, T.M. & Thomas, J. A., 2009).

Properties of Mutual Information

1. A basic property of the mutual information is that I(X;Y) = H(X) – H(X | Y). That is, knowing *Y*, we can save an average of bits in encoding *X* compared to not knowing *Y*.

2. Mutual information is symmetric (i.e. *I(X;Y) = I(Y;X)*).

3. Mutual information I (X;Y) can never be negative(i.e. *I(X;Y) ≥ 0;*). [D(P || Q) >=0]

From the above discussion it is clear that though Mutual information is a measure of the dependency between two variables, if the two variables are independent, the mutual information between them is zero. If the two are strongly dependent, e.g., one is a function of another; the mutual information between them is large.

Normalized variants of the mutual information are provided by the coefficients of constraint or uncertainty coefficient. The two coefficients are not necessarily equal. In some cases a symmetric measure may be desired, such as the following redundancy measure:

$$R = \frac{I(X;Y)}{H(X) + H(Y)} \qquad ...(13)$$

Experiment and Result

We collect a transactional data (File Test data) and using Matlab version 9.0, we generate frequent item sets using association rule mining algorithm. .Calculation of correlation was done over frequent item sets generated from Test data using (1),(2),..(6) equations. The correlation data analysis has already been done on test data and P(A) and P(B) [Probability of item A and Probability of item B] are calculated. From the above example, all the possible combination of two items such as ITEM A 23232 and ITEM B 12221 are taken to make a contingency Table 1 as below:

Table 1. Contingency table of Item A 23232 and Item B 12221

	12221	12221	▯row
23232	97	68	165
23232	18	20	38
▯col	115	88	203

Table 2. Calculation of Mutual Information

	12221	12221	▯row
23232	97/203 =0.47783	68/203 =0.33497	165/203 =0.81280
23232	18/203 =0.88669	20/203 =0.98522	38/203 =0.18719
▯col	115/203 =0.56650	88/203 =0.43349	203/203 =1

I(23232, 12221) 0.47783

$$= 0.47783 \log \frac{0.47783}{0.81280 * 0.56650}$$

$$+0.33497 \log \frac{0.33497}{0.81280 * 0.433497}$$

$$+0.88669 \log \frac{0.88669}{0.18719 * 0.56650}$$

$$+0.98522 \log \frac{0.98522}{0.18719 * 0.433497}$$

$= 0.025539618+(-0.024432419) +2.716621827+3.548636264 =6.266365289$ ... (14)

From the above calculation we see that the value of mutual information is large i.e. the above two items are strongly related. We can calculate the mutual information values taking other items of Test data such as (10001 12221; 23232) or (10001 12221 12345; 23232) or (10001 10005 12221 12345 ; 23232) in the same way to find the dependency between two variables. From (9), we get the value of H(X)=0.695567444 and H(Y)= 0.987204565. So, H(X) + H(Y)=1.682772009. Using (13) and from (14), we get R=6.266365289/1.682772009=3.72385 which is normalized mutual information value of the above calculation.

Conclusion

So from this above discussion we can say**,** Correlation measures which is used in the linear relationship (Pearson's correlation) or monotonic relationship between two variables, X and Y, where as mutual information is more general and measures the reduction of uncertainty in Y after observing X. Mutual information is based on information theory and it works not only in linear data but also in parabolic datasets. Mutual information helps reduce the range of the probability density function (reduction in the uncertainty) for a random variable X if the variable Y is known. The value of I(X; Y) is relative, and the larger its value, the more information that is known of X. It is generally beneficial to try to maximize the value of I(X; Y), thus minimizing uncertainty. So, if we imply mutual information as a measure to get stronger associated frequent item sets in linear and parabolic item sets, it will work more accurately than other measures which we discussed earlier.

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Integrating Soft Skills with Business English: Value Creation for Management Students

I.Padmini *

Abstract

For years, research studies and articles have emphasized the importanceof communicationskills. Today these communication skills have become more essential in obtaining employment andfor advancing in a management career. A large part of being an effective manager involves being an effective communicator. Many top managers concede that, as one climbs the organizational ladder, the relative importance of technical skills declines while that of communication skills increases. Therefore, business schools all over the world have altered their course curricula to add a focus on acquiring communication skills along with the regular quantitative and technical skills. However, despite these changes, communication courses in India are often perceived by students as being 'soft' or 'easy' courses, and are in general yet to receive their attention. The perception of business communication as a subject is still low in terms of academic importance. Management students do not take it as important as their core subjects. The B-school curriculum in India does not emphasize on developing the English language skills of the students.

The objective of a Business English course at tertiary level is to enable students to communicate efficiently in international business and to be able to work in different cultures. Designing a Business English course keeping in view the business situations, corporate expectations and students' mindset is a challenging task. As the industry expectations from the 'B-School products' are increasingly about 'soft skills' there is a need to integrate soft skills with Business English course and make the course an important component of the B School curriculumthrough improved pedagogy and evaluation system.

Key Words: Business English, Soft Skills, career, management students, integration, pedagogy, evaluation.

Introduction

"People skills" or "Soft Skills" make someone a good employee and a compatible coworker. Soft skills can be said to incorporate all aspects of generic skills that include the cognitive elements associated with non-academic skills. Soft skills are identified to be the most critical skills in the current global job market especially in a fast moved era of technology. The reorientation of education for sustainability also relates to the importance of these so-called soft skills.

Soft skills are at the very heart of creating capability in employees and leaders. We certainly expect individuals in all job families to have (and continue to develop) the *technical skills* required for their unique jobs—whether they are crafts workers in a maintenance department or payroll specialists in accounting. However, even at the individual employee level it soon becomes apparent that little work gets done in isolation. Allemployees must be skilled at participating in team projects and affirming others. They must be adept at managing conflict and creating inclusive relationships that improve team performance and launch ideas. Indeed, the soft skills of negotiating solutions or taking a systems view in revamping work processes are the essential tools of effective contributors everywhere. Moreover, for those in formal leadership roles, being proficient in "soft skills" is even more critical. Thinking systemically and acting strategically is the linchpin of effective leaders, but superb soft skills are necessary to actually implement—to articulate a vision; to enroll others in possibilities; and to communicate values, standards, and expectations. People support what they help create, and "soft skills" are the essential tools for helping them contribute to their full potential.

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The online encyclopedia "Wikipedia" gives a very broad definition of soft skills, "Soft skills refer to the cluster of personality traits, social graces, facility with language, personal habits, friendliness, and optimism that mark people to varying degrees. Soft skills complement hard skills, which are the technical requirements of a job." (Wikipedia, 2007)"Soft skills" can be said to incorporate all aspects of generic skills that include the cognitive elements associated with non-academic skills. They are personal qualities and attributes of a person that set him or her apart from other individuals who may have similar skills and experience. Soft skills characterize certain career attributes that individuals may possess like the ability to work on a team, communication skills, leadership skills, customer service, and problem solving skills.

While there are many soft skills listed in different studies the present study focuses on communication skills in different forms, as it is rated as the most important soft skill for management graduates.

Need and Importance of Research Problem

The twenty-first century workforce has experienced tremendous changes due to advances in technology; consequently, the "old way" of doing things may be effective but not efficient. The National Business Education Association (NBEA) indicated that the shortage of skills confronting today's dynamic workforce goes beyond academic and hands-on occupational skills. Therefore, the best way to prepare potential employees for tomorrow's workforce is to develop not only technical but also human-relation abilities.

Current thinking has broadened the definition of employability skills to include not only many foundational academic skills, but also a variety of attitudes and habits. In fact, in recent usage, the term "employability skills" is often used to describe the preparation or foundational skills upon which a person must build job-specific skills (i.e., those that are unique to specific jobs). Among these foundational skills are those which relate to communication, personal and interpersonal relationships, problem solving, and management of organizational processes.Soft skills are identified to be the most critical skills in the current global job market especially in a fast moved era of technology. The reorientation of education which is one trust of education for sustainability also relates the importance of these so-called soft skills.

Literature Review

Over the past 40 years, many surveys and articles have confirmed the idea that effective communication is essential for success and promotion in business. Evidence of the importance of communication in business is found in numerous surveys of executives, recruiters, and academicians. Without exception, these surveys have found that communication ranks at or near the top of the business skills needed for success.

According to the Job Outlook 2012 survey of National Association of Colleges and Employers "When it comes to the importance of candidate skills/qualities, employers are looking for team players and candidates who have strong verbal communication skills. Employers are also looking for graduates with adept technical and analytical skills supported by strong writing abilities. One employer from a large products and services company stated they need business hires to have the *"ability to sort through the data, find story in the data, and propose [well-written] solutions supported by data."* Employers also need applicants with strong communication skills—both written and verbal.

The Skills Gap Survey (2011:1) presents employers' views on MBA graduates recruited mainly in the banking and insurance sector in India. "They expect new MBAs to come to the corporate world with the proper attitude…they must possess strong analytic, listening and communication skills…"Surveys have shown that a large number of MBAs remain unemployed as they lack the requisite communication skills.

The National Business Education Association (NBEA) believes that "Business educators have traditionally been successful in teaching the technical skills. While technical skills are effective tools to accomplish a task, they must be complemented by the soft skills to enhance productivity. In the high performance work place it is

the human factors that impact the ability of organizations to succeed"(Policies Commission for Business and Economic Education Statement No.67,n.d., p.1). To ensure success, students entering the twenty-first century workforce must possess non- technical soft skills along with technical competence (PCBEE Statement No.67).

In academia, research has shown faculty and administrators perceive that communication skills are very important to students' eventual career success (National Association of Colleges and Employers, 2001; Gray, 2010)

Graddol (2009: 106) observes that: "a part of the unemployment problem emanates from the mismatch between the skill requirements of the market and the skill base of the job seekers. English is a vocational skill which substantially improves labour mobility and improves employment outcomes." He goes to state that the Confederation of Indian Industries (CII) have demanded that accelerated English learning classes must be included.

A recent survey conducted by FICCI and the World Bank (November 2009) revealed that 64 per cent of the surveyed employers felt that recruits lack basic communication skills like reading, listening and writing, and higher order communication skills which would include influencing, negotiation, etc both written and non-written. According to the FICCI survey, the three most important general skills are integrity, reliability and teamwork, and English communication.

According to NASSCOM-McKinsey report (April 2009) approximately 75 per cent of fresh graduates from India are not directly employable as they lack communication skills.

Jaderstrom and Schoenrock (2008) noted that clear, concise communication is vital for success in the global business environment. The ability to effectively communicate permeates every aspect of life and applies to all disciplines.They agreed that essential basic communication skills include the ability to speak, signal, listen, write, and read. Further, Lehman and DuFrene stated that attending meetings, writing reports, presenting information, explaining and clarifying management procedures, coordinating the work of various employees, and promoting the company's image are all described as ways to communicate.

Sutton (2002) found that soft skills are so important that employers identify them as "the number one differentiator" for job applicants in all types of industries.

Objectives

The study aims at examining how education and training can create assets and increase the productive capacity of management graduates. While there are nearly 64 soft skills listed in different studies, the present study focuses on communication skills in different forms as it tops the list of soft skills which are essential for managers.

The main objectives of the study are:

•	 To evaluate the role of Business English in enhancing the soft skills of the management graduates.

•	 To explore different methods of integrating soft skills with Business English course and grooming the future managers for corporate environment.

Methodology

The study is analytical and comprises both primary and secondary data. For collecting primary data a field study is undertaken by conducting a sample survey using questionnaires and a series of interviews. The survey instrument was developed in phases. In the first phase, a few faculty members were informally interviewed to assess their perceptions about communication skills. From the interview notes, a survey questionnaire was designed. The questionnaire is administered online to employees and to VJIM alumni working in different

organizations..Secondary data has been collected from books and periodicals, journals, surveys conducted by various management consultancies, reports by Nasscom, FICCI,Skill Gap Survey report etc.

Data Analysis and Results:

1. The participants were asked to rank the subjects in order of importance (1-themost important) and (10- the least important)

Table 1: Analysis of importance of Subjects

	N	Minimum	Maximum	Mean	Std. Deviation
Business Strategy	128	1	5	3.94	.970
Human Resource Management	127	1	5	3.80	.952
General Management	128	1	5	3.89	1.021
Business/English communication	129	1	5	4.16	.900
Marketing/Sales	129	1	5	4.09	.893
Finance/Accounting	126	1	5	3.69	1.016
Technical Skills	127	1	5	3.49	1.053
Business Ethics	128	1	5	3.91	1.143
Operations Management	126	1	5	3.70	.932
Organization Behaviour	125	1	5	3.80	1.063
Valid N (listwise)	120				

Based on the mean values the most important subject that should be taught to management graduates is Business communication with a mean value of 4.16 and Marketing /Sales was found to be the subject with second preference with a mean value of 4.09. The next preference was given to Business strategy, ethics, general management with mean values of 3.94, 3.91 , 3.89.Subjects such as organization behavior, HRM, operations management were considered subjects with least importance with mean values of 3.80, 3.70, 3.69. (Table 1)

2. **Skills:** Participants are to rate the following from 1 (least important) to 5 (most important) as per their level of importance for Management Graduate

Table 2: Analysis of importance of Skills

Skills	No.	Minimum	Maximum	Mean	Std.Deviation
Conceptual Knowledge	126	1	5	3.94	.941
Logical Ability	127	1	5	4.23	.821
Analytical Ability	126	1	5	3.98	.959
Communication Skills	126	1	5	4.40	.821
Presentation Skills	127	1	5	4.25	.826
Spontaneity	127	1	5	4.07	.875
General Awareness	126	1	5	4.01	.821
Creative Thinking	126	1	5	4.02	.894
Confidence	125	1	5	4.61	.759
Valid N (Listwise)					

Confidence, communication skills, presentation skills and logical ability are considered to be essential in the order of importance with mean values of 4.61, 4.40, 4.25, and 4.23. Skills that were considered to be of moderate value are spontaneity, general awareness creative thinking are 4.07, 4.02, 4.01.(Table 2)

3. **Facts:** The following facts were considered to be very important based on the basis of mean values.

Table 3: Facts of importance

Communication increases chances of employability among management graduates	4.22
Effective communication enhances job performance and faster career success	4.12
Soft skills are essential for employment	4.11
Candidates with good communication make more effective presentations	3.98

Role of Business English

Business English has attracted increasing interest and awareness in the last two or three decades with course books and other teaching and learning materials proliferating. Almost all the students who study business, trade, or commerce have to take some courses in Business English Communication. Communicative activities like role-play, simulation, projects and case study have become the most important Business English task-based learning techniques nowadays as they develop communicative competence by putting students in real-life situations, where they can use language actively and practice and develop communication skills. The facilitator role of a teacher helps create a partnership in learning between the teacher and students, thus greatly enhancing the learning experience.

The academic needs of business students include understanding complex texts (reading comprehension), note-taking, academic writing, conference presentations, while professional needs require writing reports, commercial presentations, meetings, negotiations. The most highly rated course topics in the Business English course are making presentations, writing memos and letters, listening and interpersonal communication, impromptu speaking, and business report formats. The most frequently suggested additional topics are job interviews, team building, and writing manuals/policies/procedures.

Case Study

Case study is a powerful learning tool for Business English students as it simulates an authentic work experience requiring them to get involved in work-or business-related communications. It provides a high motivation for English learners as they are put into real-life situations and find themselves in the position of authority to decide how to solve business problems. . Case study provides the framework for a task-based learning with the focus on the solution of the problem as the outcome of the task. Case study method allows the students to practice and develop their communication and management skills, such as presentation, meeting, negotiation skills, as well as problem-solving, decision-making, teamwork, critical thinking, all of which are required in a modern business context. Case-based learning is a core feature of business education since it enables students to discover and develop their unique framework for dealing with business problems. In tune with the theme of formal functions in any organization, students work through cases chosen and taught by faculty members from such functional areas as marketing, finance, and HR. Then the English faculty members can help students enhance their skills in writing the various business genres, like reports, letters, e-mail, and proposals. The situations for communication are derived from functional areas of the firm, drawn from cases and articles, especially those studied in other subject areas. In this way, communication is seen as an integral part of the core management studies rather than a subject to be pursued independently in a theoretical manner. For instance, a case studied by a student group in accountancy can be used in the communication module to develop a broader perspective on other concepts in the case that would interest a decision maker rather than just the "cost" aspect. This is how Communication Skills can be integrated with Business English course.

Presentations

Delivering presentations is an inherent part of work environment. It is imperative that students understand the benefits and disadvantages of giving presentations. They are aware of their own individual strengths and

weaknesses the presenting, and of how they can use their own style to best advantage. There should be a focus on the preparation and delivery of a good presentation based on current news stories about firms and their markets. Students choose their own topics in support of other modules that provide, for example, a social or behavioral or legal or financial or microeconomic perspective on the theme. Student groups give their presentations which are videotaped, and are reviewed during the feedback session.

Discussions

Students can participate in a dialogue on a socially relevant issue and hold a meeting where they have to confront a troublemaker who is purposely planted to disrupt the discussion. Through such exercises, students learn about passive, assertive, and aggressive behavior. They also discuss cases that center on difficult decision-making situations and engage in role-plays based on the case. As an assignment students can interview entrepreneurs, and this makes them realize how significant communication skills are in the workplace.

Internships

We need to prepare business students to become more attuned to the importance of soft skills in the "real world" that they will soon enter. They should be encouraged to grab every chance to work in organizations, particularly in roles that require interdependence with others. They can work in market research, assist in community events, and work on publications. Internships remain a traditional and wise way for students to bring their initiative, insight, and energy to companies. Additionally, the need for collaborative student work is reinforced here. Teamwork and interpersonal activities are fundamentally inherent in promoting soft skill development. Language and expression have to be significant components of every assignment.

Activities

Methods of small group activities, case studies and cooperative student projects give the opportunity to actively participate in the learning process by talking, reading, writing and reflecting. Business English Communication should be presented not as a subject to be learned in isolation from real use, nor as a mechanical skill or habit to be developed. On the contrary, Business English Communication should be presented in authentic contexts acquaint the learners with the particular ways in which the language is used in function. This means that they will need to perform in their fields of specialty or jobs. Within Business English Communication, the lecturers have greater freedom to create different "scenarios" or ideas for role-playing, using a text as a point of departure. Much of the language is functional, which means it is applicable to many situations. Depending on the proficiency of students, the lecturers can expand or limit the scope or complexity of any lesson, by picking and choosing what is appropriate for the class.

Conclusion

Numerous studies suggest that business schools are failing to help students develop communicative competencies and skills essential to the new workplace and yet the efforts to overcome this failure have proved fruitful only to a limited extent. The content of a business communication programme, the nature of its curriculum and how it meets the needs of business life distinguishes a B-school from its competitors. This curriculum is crucial to all the stakeholders- the employers, the business school, the faculty and the students. Given the importance of curriculum content to all the stakeholders and given the dramatic changes in the workplace environment, it is essential for language teachers to incorporate changes in their curriculum in order to meet the changing workplace demands.

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Leadership Styles and Emotional Intelligence among Hospital Managers

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Abstract

Hospital environment is most complex unlike other workplaces owing to the critical care, wide spread of specialists – medical and non-medical, intensively working for saving the patients battling between life and death. Such environment demands emotionally intelligent workface and also leadership on the part of them. Despite such prominence of the theme, studies are sparse on addressing leadership and emotional intelligence among hospital managers in the literature, leaving a serious gap in understanding the nature of such managers' work lives. Encouraged by such thought, this study is initiated in two large public and private hospitals in the twin cities of Hyderabad and Secunderabad in which 200 hospital managers participated. When analysed, the data suggest that people centered styles of leadership among managers, predominated both public and private hospitals, besides managers from private hospitals were more emotionally intelligent than their counterparts. Implications are drawn for practice and future research directions.

Key Words: Leadership Styles, emotional intelligence, Hospitals, Hospital Managers

Introduction

Health care institutions are known for their complexity since quite a large number of professionals including medical, clinical, paramedical,and administrative and the supportive specialists, all working for the preventive, palliative and promotive health services to a wide constituent of people from the general community. All of them are either performing lead roles or roles led by seniors.These roles are integrated in order to provide better quality of services to the patient community, often challenging the hospital managers for designing and redesigning an effective leadership function (Riggio & Reichard, 2008).

Besides, leadership in hospitals is a shared phenomenon since a group of diverse professionals cater to the healthcare needs of the patient community geared towards becoming patient-centered, patient-focused, and patient-driven, rather than doctor-driven. Such leaders are emotionally intelligent for hospital jobs. Such leadership is of cardinal concern to the effectiveness of hospitals in general and effective treatment outcomes in specific (Bass, 1985). This calls for understanding the prevalence of leadership.

On the other hand, working in a hospital not only calls for designing and implementing leadership roles but it is also essential for such leadership to possess emotional intelligence. Such leadership operates with a well understood emotional state of self and also that of the people around it. Besides, managing emotions of self and regulating social relationships which influence treatment outcomes. Thus, emotional intelligence can differentiate between good and poor leaders (Carmeli, 2003). But, despite the high interest regarding the influence of emotional intelligence in effective leadership, there is still paucity of research works which examined such relationship (Palmer, Walls, Burgess, &Stough, 2001).To that effect, the present study addresses two of these serious issues namely leadership, emotional intelligence and their relationships.

Emotional Intelligence and Leadership

The research is compelling that emotional intelligence is a powerful enabler for enhanced leadership effectiveness.

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Salovey and Mayer (1990) had generated sufficient ground for accepting the term "emotional intelligence"(EI). They defined it as a set of skills: relevant to the accurate appraisal and expression of emotion in oneself and in others, theeffective regulation of emotion in self and others, and the use of feeling to motivate, plan, and achieve in one's life (Salovey and Mayer, 1990, p. 185.

Leadership is a process of social interaction where the leader's ability to influence the behaviour of their followers can strongly influence performance outcomes (Humphrey,2002; Pirola-Merlo et al., 2002).Humphrey (2002) also suggests that leadership process is essentially an emotional process and process of recognizing and evoking emotional states in the followers and their consequent management for realization of business purpose.

Despite the popularity of the concept, most of the research works published investigated EI and performance outcomes in laboratory settings, using student sample populations (Lopeset al., 2004)

Shankman and Allen (2008) suggest that leaders must be conscious of three fundamental facets of leadership: context, self, and others. Further they state that leaders should develop competencies in all these areas while paying attention, including group savvy, optimism, initiative, and teamwork. Being one of the most important leadership abilities or traits, emotional intelligence appears to be an important construct. The underlying theme suggests that people who are more sensitive to their emotions and the impact of their emotions on others will be most effective leaders distinguished from the less effective ones.

Weinberger's (2002) found that the relationship between EI andtransformational leadership, using found no significant correlations within asample group of 138 managers. Rosete and Ciarrochi (2005) studied public service managers to explore the relationship between ability based EI, personality, cognitive intelligence and leadershipeffectiveness. He found that higher EI scores were associated with higher leadershipeffectiveness. However, such results, being scanty, are not sufficient to warrant the relationshipsparticular the dichotomy of emotional intelligence and the leadership effectiveness which is a combination of task centered style and the people centered style.

Present Study

Hospital jobs require performing leadership roles in various services offered to the patient community. Besides, in every healthcare situation in hospitals, employee in such roles deals with wide ranges of emotions in handling various patients and their attendants. When all efforts result in positive outcomes, there is always stability in relationships. However, there will be instability of the treatment outcomes are adverse. Many People will employ wide range of emotions. Therefore, leadership not only calls for addressing the situations where there is stability, but much more in situations where there is instability.

Thus, all of these situations are characteristicsby people who bring in various kinds of healthy and unhealthy emotions. Research themes on leadership suggest that leaders and the followers operate in situations. Therefore, these three elements of leadership namely leaders, followed and the situation are wrapped up in a frame called emotional intelligence. Emotionally intelligent managers in hospitals are equipped to understand the needs of their subordinates in general and patients in specific and the opposite is probable in case they are not emotionally intelligent which is acquired through consciously designed training (Bass, & Avolio, 2000).

This study has three fold purposes. Firstly, the leadership styles among hospital managers are studied to know the particular emerging style among them. Secondly, their emotional intelligence isassessed to know how intelligent they are in understanding and managing emotions at work place. Lastly, relationships among emotional intelligence and leadership are examined.

Objectives

1. To assessleadership styles among hospital managers from select hospitals and analyse it according to type of hospital, age, and experience of the hospital managers.

2. To assess emotional intelligence among hospital managers from select hospitals.

3. To assess the relationships between leadership styles and emotional intelligence.

Hypotheses

It is hypothesized that,

i) Hospital managers do not vary intheir leadership styles according totype of hospitals.

ii) Hospital managers do not vary in their leadership styles according to their personal background variables

iii) There is no relationship between hospital manager'semotional intelligence and their leadership styles.

The Method

200 hospital mangers from largest public and large private hospitals from the twin cities of Hyderabad and Secunderabad have participated in this study. They were administered with a structured questionnaire which included three sections namely profile, standardized scale for assessment of leadership styles and another standardized scale to measure emotional intelligence. For assessing leadership styles, a standardized 20-item scale developed by Northouse (2012) was adopted. For measuring emotional intelligence, a 20-tem scale developed by Northouse (2012) was adopted. Coefficients of alpha of the scales is 0.92 and 0.87 respectively, indicating that both the scales internally consistent.

Results and Discussion

The results are presented according to the testing of the hypotheses. To begin with, firstly, the results pertaining to the leadership are presented, followed by results pertaining to emotional intelligence. Lastly, the relationships between leadership styles and emotional intelligence are presented.

Leadership Styles and Type of Hospital

It was hypothesized that "the leadership styles do not vary among hospital mangers according to the type of hospitals in which they are employed". In order to test this hypothesis, means, SDs and f-values are computed. Results in this regard are presented in table 1.

Table 1: Leadership Styles and Type of Hospital

Leadership Styles	Type of Hospital	N	Mean	Std. Dev	F value	Df	Sig.
Task Centered Style	Public Hospital	100	33.02	2.75	6.616	1,199	0.011
	Private Hospital	100	33.91	2.10			
People Centered	Public Hospital	100	39.76	4.07	7.492	1,199	.007
	Private Hospital	100	41.46	4.69			

Table 1 presents that the managers from private hospital scored more (33.91) than the mangers of public hospital (33.02). Interestingly, the mean variation is statistically significant as evident from the F value (6.61), d.f (1; 199), p (0.011).

Similarly, with regard to the people-centered style of leadership, the managers of private hospital scored more (41.46) than the mangers of public hospital (39.76). Interestingly, the mean variation is statistically significant as evident from the F value (7.492), d.f (1; 199), p (0.007). This indicates that on both task and people centered

style of leadership, hospital managers from private hospitals are very high on the styles than the managers of public hospitals.

Thus, the null hypothesis"the leadership styles do not vary among hospital mangers according to the type of hospitals in which they are employed" stands rejected and the alternative hypothesis stands accepted. In other words, hospital managers from private hospitals are expected to be high on both task centeredness and people centeredness in their hospitals as opposed to their counterparts in public hospitals.

Leadership Styles by Personal Characteristics

It was hypothesized that "hospital managers do not vary in their leadership styles according to their personal background variables. Results relating tothe testing of the hypothesis arepresented in the following sections.

Table 2: Leadership Style by Age Group

Leadership styles	Age group (in years)	N	Mean	Std. Dev.	F-value	d.f.	Sig.
Task Centered Style	29-44	48	33.58	2.39			
	45-49	100	32.97	2.76	4.329	2,199	0.014
	50+	52	34.31	2.78			
People Centered	29-44	48	41.00	2.06			
	45-49	100	40.15	2.05	5.085	2,199	0.007
	50+	52	41.13	2.02			

Table 2 presents the data pertaining to leadership style of Hospital managers by age whose mean scores for task center type and people centered type have been obtained and further presented to analyse the styles. It can be observed from the means scores that older hospital managers (mean=34.31), have obtained higher mean scores than the others. Interestingly, the mean variation is statistically significant as evident from the table (F value=4.32, d.f.2,199, p=0.014).

With regard to people-centered leadership style,it can be observed from the means scores that older and the younger hospital managers have equal mean scores of 41.13 and 41.00 respectively which is higher mean scores than the middle age managers. Interestingly, such mean variation is statistically significant as evident from the F value (5.085), d.f (2; 199), p (0.007). This means that on both the Task centered style and the people-centered style of leadership of hospital managers differ according to the age groups. More specifically, the older the managers, they are balancing both task-centered and people centered styles of leadership.

Table 3: Leadership Style by Experience

Leadership styles	Experience (in years)	N	Mean	Std. Dev	F-value	d.f	Sig.
Task Centered Style	1-9	50	33.66	2.81			
	9-17	96	32.97	2.03	4.258	2,199	0.015
	18-59	54	34.17	2.85			
People Centered	1-9	50	41.52	4.22			
	9-17	96	39.67	3.98	4.263	2,199	0.015
	18-59	54	41.44	5.17			

Table 3presents the data pertaining to leadership style of Hospital managersaccording to their experience. It is clear from the table that those managers who worked for more than 18 years are known for using task center style than the less experienced (33.66) and moderately experienced managers (32.96).Further, the mean variation is also statistically significant as evident from the F value (4.25), d.f (2,199), p (0.015).

As regards people-centered style of leadership a similar trend is observed. That is, Hospital managerswho have worked for more than 18 years, scored higher mean scores on people centered type (41.44) than others.

Further, the mean variation is statistically significant as evident from the F value (4.26), d.f (2, 199), p (0.015). This means more experienced manages are known for balancing both task centered and people-centered leadership styles.

Table 4: Leadership Styles and Type of Function

Leadership Styles	Type of Function	N	Mean	Std. Dev	F value	Df	Sig.
Task Centered Style	Medical	100	34.11	4.28			
	Non-Medical	100	32.82	3.48	5.476	1,199	0.020
	Total	200	33.47	3.94			
People Centered	Medical	100	41.15	2.78			
	Non-Medical	100	40.07	2.08	9.676	1,199	0.002
	Total	200	40.61	4.46			

Table 4shows the data pertaining to leadership style of Hospital managersaccording to the type of hospital to which they belong. It can be observed from the table that the hospital managers in Medical function have obtained higher mean score (34.11), than the Non-Medical managers (32.82). Interestingly, mean variation is statistically significant as evident from the F value (5.47), d.f (1; 199), p (0.020).

Further, with regard to people centered it is found that Medical managers (41.15) scored more than the Non-Medical managers (40.07).Interestingly, such mean variation is statistically significant as evident from the F value (9.676), d.f (1; 199), p (0.002). This indicates that on both task centered and people centered styles of leadership medical managers are doing better than the non-medical managers.

From the preceding sections, it is noticed that thenull hypothesis"the leadership styles do not vary among hospital mangers according to their personal background variables" stands rejected and the alternative hypothesis stands accepted.

Emotional Intelligence and Leadership Effectiveness

It was hypothesized that "there is no relationship between emotional intelligence and leadership effectiveness". In order to test this null hypothesis, Pearson's' correlation coefficients were computed, followed by regression analysis. Results in this regard are presented in table 5.

Table 5:Regression Analysis

Model		Unstandardized Coefficients			Standardized Coefficients		
		R	B	Std. Error	Beta	t	Sig.
1	(Constant)		33.117	3.989		8.302	.000
	Personal Competence	.491**	.327	.154	.180	2.126	.035
	Social Competence	.560**	.688	.136	.430	5.072	.000
Model	R	R Square	Adjusted R Square		F-value	d.f	P=
1	.574ᵃ	.329	.322		48.332	2,99	.000

It is quite clear from the table that both the styles of leadership namely task centers and people centered are positively and significantly correlated with emotional intelligence of the hospital managers which are evident from the R values presented. Since, both the variables are significantly correlated, regression analysis has been carried. Results reveal that social competence emerged as a strongest correlate of emotional intelligence among hospital mangers (beta = .43, t-value=5.07, p=.000).In other words, social competence will improve .43 units of

change in emotional intelligence; similarly, personal competence will only improve around .18 units which are quite meager. The coefficient of determination yielded a value of 0.32 which is statistically significant. This indicates that around 32 percent of variance in leadership effectiveness is explained by both the personal and social competence. The remaining 68 percent of emotional intelligence might be accounted for by many other extraneous variables like socialization, personality traits, and organizational processes like, communication, influence, decision making and the like.

Thus, the null hypothesis "there is no relationship between leadership styles and emotional intelligence", stands rejected and the alternative hypothesis is accepted.

Discussions

This study brought to light an important finding pertaining to the leadership styles in hospitals today. Most interesting issue is that the hospital managers from private hospitals are more tasks-centered and more people-centered in their leadership styles. Blake and Mouton (1985) in their managerial grid theory suggested that such combination of both leadership styles on a higher plane is characterized by team leadership. Managers in private hospitals in general operate in a highly interdependent fashion since accountability is more owing to the patients who normally pay for their treatment more than their counterparts in public hospitals. Besides, the managers are more conscious of protecting the image of the private hospitals as a matter of their future survival. Therefore, they are increasingly focused on their team members who cater to the needs of the patient community.

Another interesting finding is that the older and more experienced hospital mangers also were found higher on task-centered and people-centered styles of leadership. In other words, such combination is called team-leadership. By and large, the older people are known for providing direction to the younger ones. Similarly, the employees in hospitals are supervised by the managers who are older and more experienced. This may be also due to the fact that as managers grow older and more experienced, they might have realized that they as individuals alone cannot influence treatment outcomes. Therefore, they need to build the teams which provide constant support to the patients. As such they are more task-centered and people-centered as well (Bureau of Health Professions, 2000).

Another interesting outcome of this study is that the medical hospital managers were found more on task and people-centered styles than the non-medical managers. This may be due to the fact that managers who are responsible for medical management involving direct dealing with the patients on one hand and mobilizing the energies of their team of subordinates, who support all the treatment outcomes, need to be more on task-centered and people-centered styles.On the other hand, non-medical managers are more administrative in nature, involving more in day-to-day activities like planning, billing, purchasing, financing, HR and other supportive activities which are not life-threatening to the patients as such services are only supportive in nature, to the medical managers.

Lastly, this study highlighted the fact that emotional intelligence contributes to the emotional intelligence of hospital managers. More so, social competence was more impacting for leadership effectiveness of the managers. But, both styles put together contributed one-third of improvement in the leadership effectiveness. Thus, such finding is also in harmony with the theories of emotional intelligence. Golman suggests that leaders who are more people focused are also known for managing social relationships more effectively. In other words, leaders who are aware of emotions played by the people around are also more effective in understanding people and also managing relationships convenient to both people themselves and also to the effectiveness of the organizations in which they work (Bozell, 2001). Thus, hospital managers exactly resemble such leaders who are known for understanding employees and patients more empathetically.

Implications

The results are quite encouraging from the context of development of leadership and emotional intelligence in hospitals. Firstly, there is a need for improving upon emotional intelligence of the managers, followed by improving leadership effectiveness among them. Hospitals need to have learning and development division which takes care of continuous training of their employees throughout the year. These programmes could cover leadership development, emotional intelligence and quite other programmes which improve the competencies of the managers. Such competences will help in delivering effective services to the patient community.Therefore, to improve such competences of managing self and relationships in their work places, hospital managers need emotional intelligence workshops wherein they will have hands-on experiential learning about their leadership styles and also their emotional competences.

Further, their leadership styles need to be improved more towards team-based leadership orientation as hospital jobs involve more team-based work systems wherein people from diverse specializationscome together and work towards patients' recovery in a more tight and interdependent fashion. In sum, understanding emotions and managing emotions may well be that, as Matthewset al. (2002) propose, the ability to understand emotions and the ability to act effectually on this understanding may only be marginally related. Future research should attempt to understand more in-depth issues of leadership effectiveness in relations to the dimensions of emotional intelligence particularly making comparisons across specializations in hospitals since such understanding will pave a great path towards excellence in healthcare services.

Conclusion

This study addressed three important aspects of hospital managers' work lives. Firstly, the emotional intelligence among hospital managers has been addressed particularly in relating to the managers personal background variables and type of hospitals under study. Secondly, leadership effectiveness among hospitals manages has been assessed. Thirdly, the relationships between emotional intelligence and leadership effectivenesshave been analyzed and reported in this study. Thus, all the null hypotheses have been rejected and alternative hypotheses have been accepted. Further, implications were drawn for improving upon leadershipstyles and emotional intelligence among hospital managers for effective services to the patient community.

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Abstract of Ph.D Thesis

Workplace Stress Among Women in IT Sector

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Abstract

Today's work environment and the culture have seen a sea change. The nature of work is changing at a whirl wind speed. The introduction of MNC Culture and women entering the workforce and competing with men has not only increased the pressure and need for performance in the workplace but has also resulted in increased stress among the women employees of IT Sector. My study focuses on the growth and working of IT Industry with particular reference to women, to identify the reasons for the workplace stress among women in the selected companies in IT Industry in Hyderabad.

Key Words: Workplace stress, Women, IT Industry, Worklife balance.

Review of Litreature

Akinboye et al., (2002)[1] identified causes of stress in workplace: New management technique, office policies, long work hours, redundancies, Bullying, Harassment, etc. he argued that though stress plays important role on both women's physical and mental health yet it is an unhealthy and ineffective response pattern to change.

Workplace stress is a major problem, and it has been suggested that gender may be an important demographic characteristic to consider in the experience of stress. Jick TD, Mitz LF (1985)

With respect to the IT field specifically, women tend to enter the professional workforce with less training Francis, (2000)[37], but tend to demonstrate no significant differences in productivity among high-performing men and women.

In 2008, Yu [79] found that work life balance policies are positively associated with the job tenure of the female employees, and moreover the practices of such policies have a great effect on the turnover rate of employees.

Sikthingnanavel (2006) [88] explored the effect of select yogic practices on stress of working women of 15 normal female volunteers. The suitable parameters were used before and after 10 days training programme. The results show that there is a greater improvement in the reduction of stress in the experimental group than the control group.

Objectives of the Study

1. To identify the factors causing work place stress and examine the consequences among women employees in IT Industry

2. To study various training programs adopted by the IT companies for women employees.

3. To examine the significance of work-life balance and job stress among women in IT Industry

4. To study the workplace stress in relation to career progress.

5. To study the various organizational policies for privileged women employees

6. To study various stress management strategies adopted by IT Industry

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Hypotheses of the Study:

➢ **H1**: Work place stress has greater influence on the marital status of women in IT   Industry.

➢ **H2**: Training program has significant influence on reducing stress

➢ **H3**: Job stress has Significant influence on work-life balance in relation to type of the

  family.

➢ **H4**:Organizational policies will increase the stress levels of employees

➢ **H5**: Workplace stress has negative impact on career progress

Methodology of the Study:

Sample: The present study is exploratory in nature. Four IT companies have been selected from Hyderabad consisting of 400 respondents from TCS, Infosys, COGNIZANT and Wipro. (TCS – 90, Infosys – 90, Wipro – 100 and Cognizant – 120), covering Category level employees of select IT sector using a Stratified Random Sampling method.

Sources of Data Collection

Primary Data: Through questionnaire method and unstructured interview method.400 women employees of the select IT companies were selected and questionnaire was circulated among the employees at the participant's work place

Secondary Data: HR Policies, Procedures for women employees, Organization's Stress Management Systems(SMS) ,Employee Satisfaction Surveys conducted by the Organization and survey consultants, Innovative HR Practice , White Papers of the companies, National and International Journals. Women forum details and process

Statistical Tools and Techniques used in the Study

For analyzing the primary data, statistical tools have been used in the Research Study, which included the following: 1. Chi-square test; 2. Factor analysis The SPSS software package 17 version has been used for the purpose of analysis.

Major Findings

1.   Through Chi square analysis working time feasibility, Role Ambiguity, Women Development and networking forum,Relationship with superiors, peers, Biased, Discrimination are identified as contributing to the major extent and have a significant impact on the workplace stress are contributing to the major extent as a source of workplace stress.

2.   Through Chi square analysis it is proved that Training program has significant influence on reducing stress with respect to Age and Experience among the women Employees in the select companies.

3.   Among all other factors influencing work-life balance among women employees, Work Schedule, job sharing, family are contributing to the major extent and have a significant impact on the workplace stress.

4.   Effect of work place stress on career development is the highest in the group with the more than six years experience indicating that the respondents agree to the effect of stress on career progress.

5.   Women reveal that the Organizational policies (women specific). seem to favor all the women employees with various experiences uniformly.

6.   (97.9%) Observed, that organization should adopt some more stress management strategies

Suggestions

1.   These sectors can come up with effective stress management strategies for organizational effectiveness by designing programs that provide social support such as mentoring and building networking programs.

2.   IT and BPO sectors must reinforce policies on Training, further education by conducting Reintegration, Internship program, Workshops on self-defense and financial planning to effective parenting which rejuvenates the leadership opportunities for women in the workforce and encourage them in Participation, discussions in the networking forum, allow them to voice their feedback and complaints by installing booths for anonymous complaint.

3.   The provision of Affordable and accessible hygiene and comfortable childcare support, and Family get together in the organization can be conducted periodically. Social support will be extended by the family members and organization understanding individual's responsibility.