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From the Desk of the Chief Editor

It gives me great pleasure to welcome you to the latest issue of the JIM QUEST; a bi-annual referred research journal for disseminating the knowledge between academics and management practitioners regarding theories, methods and applications related with new perspectives in the field of management and technology.

This special issue addresses the key issues related to **Envisioning India 2.0: Prospects & Challenges** that confront economic stability to create a framework for constructing resilience and competency. This issue is an attempt to discuss and draw various perspectives of economic policies and challenges for implementation highlighting their relevance in the field of business management.

I take this opportunity to thank the people who made the publication of JIM QUEST possible especially the authors of papers without whose contribution the journal would not be a reality.

I hope that readers will find the content of JIM QUEST informative and valuable.

Prof. (Dr) Daviender Narang
Chief Editor
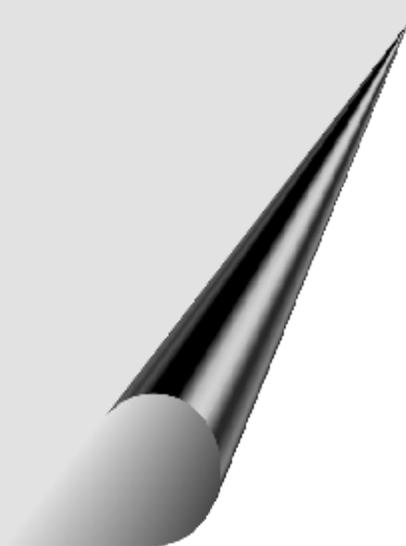
Contents

Dynamics of Relationship between HRM and CSR:
A study in the context of Indian Organization

Aditya Singhal*
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Abstract

Despite increasing focus on research and practice and linking Human Resource Management (HRM) and Corporate Social Responsibility (CSR), a comprehensive examination of the relationship between these two constructs yet to be undertaken. The combined impact of HRM and CSR activities can make a major contribution in creating long-term success in the organization. Human resource professionals play a key role in assisting an organization to achieve their CSR objectives. Employee involvement is a critical success factor for CSR performance. High performing CSR organizations foster a culture of CSR and fully integrate CSR throughout their operations, rewarding and incentivizing CSR decisions and initiatives. CSR can be applied to the HR toolkit, resulting in a roadmap or pathway for human resource practitioners to follow who wish to contribute to the achievement of their organization's sustainability and business aspirations, thereby improving social and environmental conditions locally and globally.

***Keywords:** Human Resource Management (HRM), Corporate Social Responsibility (CSR)*

Introduction

Over the years the role of HRM becomes more important as before because nowadays happy and motivated employee contributes more effectively and efficiently towards the growth and success of the organization. HRM is a process of managing the employees of the organization which involves employing, training, motivating, performance assessing, recognize, giving awards and developing them. It plays a vital role in Corporate Social Responsibility (CSR). CSR is the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large.

HRM can provide a promising managerial framework which can support organization effort in translating CSR strategies into practical managerial actions and outcome especially within the internal organization environment and viable support to CSR. Implementation of CSR policies is highly dependent upon on employees in terms of cooperation which also emphasize the critical role of HRM (Orlitzky& Swanson, 2006).

The Indian Companies Act, 2013 has the provision on CSR which are mandatory for certain category of companies. By mandating CSR India has become the first country in the world to legislate it. Section 135 of the Companies Act, 2013 provides that every company having a net worth of Rs. 500 crore or more, or turnover of Rs. 1000 crore or more or a net profit of Rs. 5 crores or more during any financial year shall constitute a CSR committee.

The aim of this paper is to examine the relationship between HRM and CSR. The subject of the research is a concept and the ideas of HRM and CSR. Following are the stated objectives of the study.

- To study the role of HRM in developing and implementing CSR.
- To study the relationship between HRM and CSR.
- To study CSR activities in context of Indian Companies.

Literature Review

Role of HRM in developing CSR

Developing a CSR strategy mainly consists of defining CSR values and objectives, preparing broader strategies and designing various CSR projects and initiatives that are in line with these values, objectives, and strategies (Sarvaiya et al., 2016). Strandberg (2009) indicates that HR is a strategic partner in the organization and plays an important role in the development of a CSR strategy.

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According to Armstrong (2014), there are some notable matters needed to be taken into account when developing a CSR strategy. These ideas are presented in Figure 1.
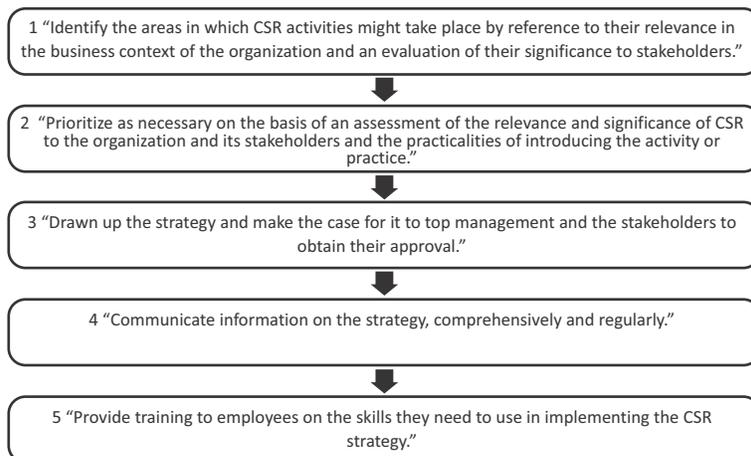
Figure 1: Flow Chart of the ideas while developing CSR strategies (Source: Self-Created)

From Armstrong's (2014) ideas it can be seen that for example prioritizing and evaluating the most important CSR objectives pose high importance when developing a CSR strategy. It can be observed that the HR function cannot work alone. Therefore, after planning a strategy, it has to be approved by top management and stakeholders. The most important observation after planning and deciding the strategy is that the communication and training must be part of the daily life in an organization in order to ensure the proper implementation of the strategy.

The integration of HR into the strategic planning process increases significantly the chances of a successful implementation of CSR strategies, because HR is a key function in an organization when it comes to ensuring cohesion of policies, processes, and systems, as well as making the line managers understand the important role of employee development and reflecting it in the employees' behaviour (Rimanoczy& Pearson, 2010).

Role of HRM in Implementing CSR strategies

The philosophy of CSR flows down from the top management's vision about the socially responsible behaviour of the corporation. Thus, to begin with, an organization must have a clearly stated vision, mission and value statement to propel and nurture the organizational culture, conducive towards CSR. In developing such a mission and vision HR department may act as the most remarkable instrument. Additionally, the HR department may also utilize various opportunities to create awareness about the 'people perspective' among the Board members and the top management about the requirement of CSR.

There are several ways through which an HR Department may integrate CSR philosophy and values into the HRM practices of an organization. In this regard, a general view has been given below (Strandberg, 2009):

a)   Human Resource Planning and Recruitment
HR planning refers to the process of analyzing the existing manpower and forecasting manpower needs so as to achieve organizational goals. HR department needs to consider skills and competencies which are relevant to the organization`s mission, vision towards CSR.

b)   Change in attitude and organizational culture
In order to incorporate the CSR philosophy into the cultural DNA of an organization, it is imperative to make an effort to bring change in the attitude of the organizational members which is possible through role modeling, developing consciousness, and reinforcement through various HR functions, such as, incentive programs, and so on.

c)   Employee involvement and participation
HR department needs to create a platform of opportunity where employees can suggest various ways of incorporating CSR initiatives at work.

d)   Employee Communications
CSR values need to be reinforced by various communication programs to the employees and other stakeholders through various social media platforms like intranets, websites, blogs,

wikis, podcasting, videos, webcasts, voicemails, print and electronic newsletters which may be used to communicate the CSR strategy to the employees.

The relationship between HRM and CSR

HR plays a dynamic role in the evolution of CSR. It has a phenomenal presence in promoting CSR at the organizational and societal level. CSR strategies can help in creating a risk-free environment where employees can feel secure about their jobs and responsibilities and they feel happy to be attached to the brand for which they work.

HRM should play a prominent role in promoting CSR activities at all levels. Implementation of CSR policies is highly dependent upon on employees in terms of cooperation, which also emphasizes the critical role of HRM. The involvement of the organization's valuable resources, the employees indicates the strategic importance of HRM in the CSR initiatives of an organization. Employers must select and employ workers with certain moral principles and develop a reward system that will improve the social performance of the employees and provide appropriate training and development for them in order to harmonize the values of the organization (Orlitzky& Swanson, 2006).

In terms of CSR and HRM, it is important to explore the internal dimension of CSR. The internal dimension is primarily dependent on the workforce of the organization, the organizational changes, and environmental matters. Recruitment; flexible management of working time and job rotation; communication and information flow; training and career development; better-defined training needs; profit-sharing and share ownership schemes; empowerment of employees; looking after the health and well-being of employees and their family; the balance of working and family life and concern for the safety of the workplace are the HRM activities that are socially responsible (Commission of the European Communities, 2001).

Authors all over the world have examined the relationship between HRM and CSR (Preuss et al., 2009; Kim & Scullion, 2011; Buciuniene&Kazlauskaite, 2012; Berber, 2013). Itis found that the belief of people who have applied for the job and employees in the organization about current CSR practices determine the attractiveness of the organization (Greening & Turban, 2000; Lis, 2012). Improved public image, increased employee's morale and support from the community can be achieved by maintaining good relations with the employees (Zappala& Cronin, 2002).

Aguilera et al. (2007) analyzed the relationship between communication, HRM practices and CSR since CSR requires the employees' ability to judge the social concerns of their managers and the quality of their relationship with them.

According to Buciuniene and Kazlauskaite (2012) companies having more developed HRM and better position of HRM managers in the organization have a more developed and more successfully implemented CSR.

Human Resource department should effectively measure, evaluate and review the CSR activities since the value added by CSR form direct results relating to economic savings and indirect results relating employee satisfaction with less employee turnover. These factors contribute to improved business performance.

The combined effects of HRM-CSR activities that reinforce desirable behaviour can make a major contribution to the creation of long-term organizational success (Sharma et al., 2009).

Study of CSR activities in context of Indian Companies

The 'India CSR Outlook Report (ICOR)' is an annual research publication of NGOBOX, which presents an in-depth analysis of CSR spend of big companies in FY 2017-18. The 2018 report is the 4th such annual publication which provides an in-depth analysis of CSR spend of big 359 companies in FY 2017-18. The report visualizes a few important curves of CSR landscapes in India, entirely based on the actual CSR spending data of these companies, as reported by them in mandatory disclosures. While at the time of the Report's release on 24th Sept. 2018, it is the first such analysis of CSR spends of this large number of companies in FY 2017-18. These 359 companies account for almost 3/4th of the total CSR spend in India, making it a big sample size for any such studies and analysis. These 359 Companies, selected in this report, were short-listed on the basis of the following criteria:

• INR 1 Cr. Or above prescribed CSR in FY 2017-18
• Listed on BSE or subsidiary of a BSE-listed organization
• Availability of data by 31st Aug. 2018 and CSR disclosures as per the Companies Act,2013

Key Insights
• Number of Companies: 359
• Number of public sector companies: 35
• Number of projects implemented: 5233

A Few Interesting Facts
• Public sector enterprises account for over 1/4th of India's total CSR spend

- Over 1/3rd of the CSR spend is on education and skill development projects while over 1/4th of the CSR spend is on WASH and healthcare projects
- 6% increase in the prescribed CSR and 8% increase in the actual CSR spend from FY 16-17
- The number of projects has increased by 25% from the previous year
- Oil, refinery and petrochemicals sector companies command almost 1/4th of the CSR fund of India
- CSR Funding on education and skill development areas have increased by 50% from FY 15-16 to FY 17-18
- CSR fund deposit in PM Relief Fund has gone substantially down by 80% from FY 15-16 to FY 17-18
- Maharashtra, Karnataka, and Gujarat together received over 25% of India's total CSR fund.

Prescribed and Actual CSR Spend(INR Cr.)

Prescribed CSR BUdget	9543.51
Actual CSR Spend	8875.93
Acual CSR to Prescribed CSR	93%
Changed from the previous financial year	+2%

Figure: 2 (Source: WWW.NGOBOX.ORG)

Actual CSR Spend in FY 2017-18 (INR Cr.)

■ Actual CSR Spend   ■ Unspend in FY 17-18

CSR Compliance
93%

668

8876

Figure: 3 (Source: WWW.NGOBOX.ORG)

Effective Actual CSR Spend (INR Cr.)

■ Unspend in FY 17-18   ■ Unspend carry forward of FY 16-17   ■ Net Actual CSR Spend

Effective CSR
Compliance
89%

668   383

8493
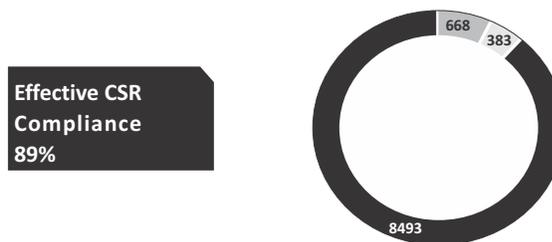
Figure: 4 (Source: WWW.NGOBOX.ORG)

Only 27% companies, having unspent CSR fund in FY 2016-17,
have mentioned categorically about spending the fund in FY 2017-18.

Prescribed and Actual CSR Spend (INR Cr.)
359 big companies

■ Prescribed CSR ■ Actual CSR
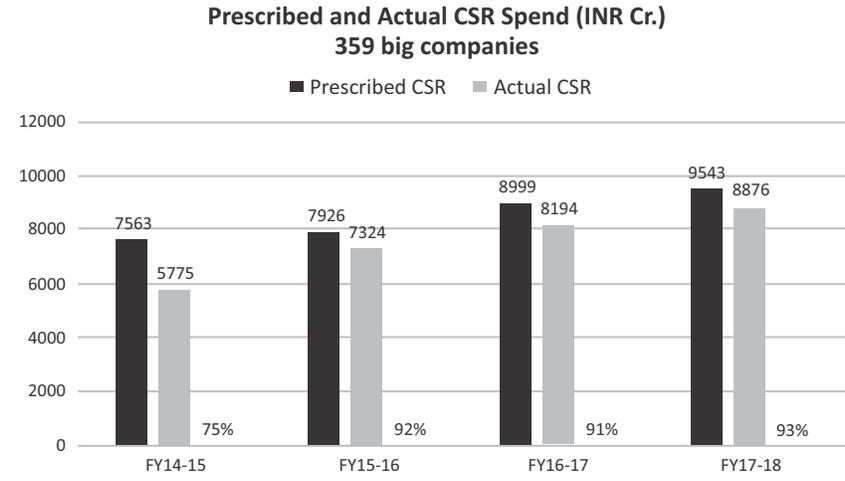
Figure: 5 (Source: WWW.NGOBOX.ORG)

The above figure shows that actual and prescribed expenditure has increased over the years.

Top 10 Companies by Actual CSR Spend (INR Cr.)

■ Actual CSR Spend ■ Prescribed CSR
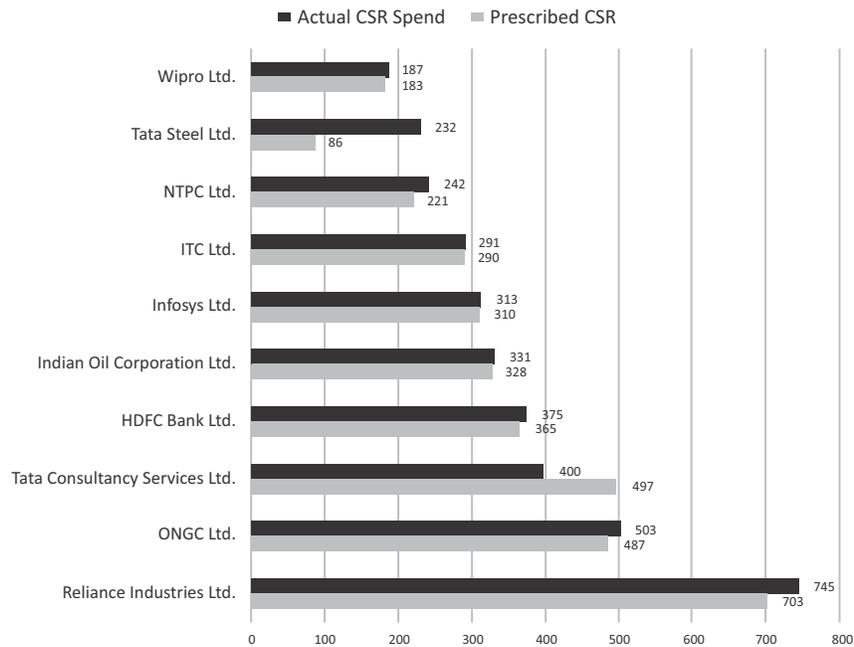
Figure: 6 (Source: WWW.NGOBOX.ORG)

The above figure shows that companies' actual CSR expenditure is greater than the prescribed CSR except for one company which is Tata Consultancy services ltd.

Thematic Distribution of CSR Fund

Thematic Distribution of CSR Fund

- Education and Skill Development
- Poverty Alleviation, Wash and Healthcare
- Rural Development
- Environment Sustainability
- Others
- National Heritage, Art and Culture
- Sports and Rural Sports
- Women Empowerment
- Admin Expense
- Corpus Fund

2% 2% 2% 1%
3%
6%
11%
11%
35%
27%
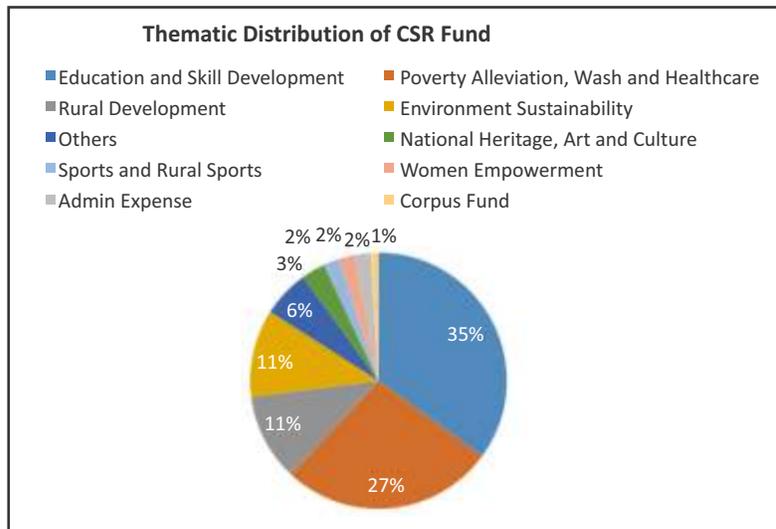
Figure: 7 (Source: WWW.NGOBOX.ORG)

The above figure indicates that the contribution of CSR is higher in Education and Skill development and Poverty Alleviation, Wash and Healthcare.

India Sector-wise Share in India's Total CSR Spend

Business Sector Wise Share in India CSR

- Banking & Finance
- Auto & Auto Ancillairies
- IT
- Construction, Contracting & Infra.
- Healthcare & pharma
- Power And Heavy Engg.
- Metals, Minnings & Mineral
- Textiles
- Consumer Goods
- Cables & Telecommunicatoins
- Cement
- Chemicals, Pesticides & Fertilizers
- Oil, Drilling, Lubricants & Petroleum
- Miscellaneaous

9.67%
19%
6.31%
23.5%
13.67%
1.44%
1.28%
2.60%
0.69%
2.73%
3.31%
0.55% 8.42% 6.76%

Figure: 8 (Source: WWW.NGOBOX.ORG)

Figure 8 clearly indicates that cement and banking & finance contribute more to CSR.

Research Contribution

There is less number of studies to define the role of HRM activities on CSR activities in the context of the Indian Market. Therefore, this study contributes specifically in Indian context towards the research gap.

Limitation

The number of units of analysis in our study is small which is not followed by empirical studies and restricted to two variables i.e. Human Resource Management (HRM) and Corporate Social Responsibility (CSR).

Conclusion

Corporate Social Responsibility (CSR) is a management concept that provides a balance between economic, social and environmental goals of the organization, is a relatively new business philosophy that companies worldwide accept to a greater or lesser extent over the past twenty years.CSR objectives have been fulfilled by performing by various HRM functions like HR planning and recruitment, change in attitude and organizational culture, employee participation, etc. It is observed that implementation of CSR policies is highly dependent upon the combined efforts of the employer and employee. CSR activities provide the organization to gain additional benefit such as improved public image, increasing employee's moral and support from the community. The result comes from the research is that better the HRM, better the CSR.

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An analytical Study on Volatility in BRICs Nations

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Abstract

BRIC as an acronym stands for Brazil, Russia, India and China. The acronym was first coined in 2001 by Jim O'Neil to refer to rapidly developing economies which were at par in terms of growth rate. Later on South Africa was added to the acronym making it BRICs. A country's population and demographics act as an engine for its development. BRICs nation in such a context has an abundance of population and from well diversified demographics.. India remains a fairly youthful nation with 33 percent of its populace beneath age 15. Brazil is not far way behind at 25 percent, while China and Russia, because of their low birth rates, have just 17 and 15 percent, individually. This study is focused upon the finding out he relationship among BRIC nations and evaluating each countries volatility, risk, closing prices and their interrelationship with each other. The outcome of the study proves that there is no dependability among stock exchange of each country. China is showing an upward trend, but there is an upward shift shown graduallyinIndia too.

Key words: - Volatility, Closing prices, BRICs Nations, Stock Exchange , Interrelationship .

Introduction

The populace pyramids (age and sex structure) of every one of the four BRIC nations are very extraordinary, essentially an aftereffect of their distinctive birth histories. Brazil and China are to some degree comparative, mirroring their move to low birth rates. Brazil's aggregate fruitfulness rate (the normal number of youngsters per lady) is currently at a low, industrialized-nation level of 1.9 kids for each woman. India has additionally gained significant ground in its fertility transition.

The fast monetary development and socioeconomic of China and India are required to offer ascent to an extensive working class whose utilization would drive the BRICs' financial improvement and development of the worldwide economy. The diagrams beneath delineate how the expansion in the white collar class populace of the BRIC nations is estimated to dramatically increase that of the created G7 economies. The BRICS club, which used to be known for its enormous development potential, is today amidst serious financial and political misfortunes. Aside from the Federal rate increment ,which has added to the mounting obligation load for these economies; falling worldwide commodity costs have influenced these developing markets which depend intensely on export led development.In addition, the auxiliary change of China, which has been the fundamental driver of this gathering, from an export driven economy to a one depending on local utilization, has added to the ebb and flow burdens of BRICS. Among these

economies, India is the main nation which has hinted at solid potential for development. It has generally profit by being a net shipper of unrefined and different products whose costs have fallen furthermore has the upside of being less powerless to the market instability as it is less subject to sends out for its development.

India has the most minimal per capita GDP of $5,238 among alternate individuals from the alliance and is additionally lingering behind alternate BRICS economies as far as personal satisfaction. In any case, financial changes started by the Indian Prime Minister Narendra Modi, have prompted to more noteworthy remote speculations and enhanced monetary intensity as of late. India's positioning in the World Economic Forum's, Global Competitiveness Report enhanced from 71 in 2014 to 55 in 2015. By and by, barring Brazil, the various BRICS nations are still positioned higher than India in the report.

The ascent in FDI outpourings began marginally later than that of inflows, bouncing from US$31 billion in 2005 to US$93 billion in 2006. BRICS financial specialists likewise stayed versatile to the financial crisis, with outpourings dropping by just 26% in 2009, contrasted with 41% for the world in general. Subsequently, the part of BRICS as financial specialists expanded fundamentally, now representing 9% of world surges in 2012 - ten years before that share was just 1% .China and the Russian Federation represent the lion's share of streams from the gathering, with 54% also, 40% individually.

Major BRIC's indices.

Country	Exchange	Index
Brazil	Ibovespa Brazil Sao Paulo Stock Exchange	Ibovespa
Russia	Moscow Exchange	MICEX index and RTS index
India	National Stock Exchange and Bombay stock Exchange	NIFTY and SENSEX
China	Shanghai Stock Exchange and Shenzhen Stock Exchange	SSE Composite index, SSE 50 index and SZSE component
South Africa	Johannesburg Stock Exchange	FTSE/JSE

Ibovespa- The index is composed by a theoretical portfolio with the stocks that accounted for 80% of the volume traded in the last 12 months and that were traded at least on 80% of the trading days. It's revised quarterly, in order to keep its representativeness of the volume traded and in average the components of Ibovespa represent 70% of the all the stock value traded.

MICEX Index- The MICEX 10 Index is a weighted price index that tracks the ten most liquid Russian stocks listed on MICEX-RTS in Moscow, Russia. Composition of the index is assessed quarterly following the liquidity criterion. Components are assigned equal weight.

RTS index-The RTS Index "Russia Trading System" is a free-float capitalization-weighted index of 50 Russian stocks traded on the Moscow Exchange in Moscow, Russia calculated in the US dollars. The list of stocks is reviewed every three months by the RTS Information Committee. The RTS Index value is calculated in a real-time mode. The index was introduced on September 1, 1995 with a base value of 100.

NIFTY- The NIFTY 50 index is National Stock Exchange of India's benchmark stock market index for Indian equity market. The NIFTY 50 index is a free float market capitalisation weighted index. The index was initially calculated on full market capitalisation methodology. From June 26, 2009, the computation was changed to free float methodology. The base period for the CNX Nifty index is November 3, 1995, which marked the completion of one year of operations of National Stock Exchange Equity Market Segment. The base value of the index has been set at 1000, and a base capital of Rs 2.06 trillion.

SENSEX-The S&P BSE SENSEX (S&P Bombay Stock Exchange Sensitive Index), also-called the BSE 30 or simply the SENSEX, is a free-float market-weighted stock market index of 30 well-established and financially sound companies listed on Bombay Stock Exchange. The 30 component companies which are some of the largest and most actively traded stocks, are representative of various industrial sectors of the Indian economy.

SSE Composite Index- The SSE Composite Index is a stock market index of all stocks (A shares and B shares) that are traded at the Shanghai Stock Exchange.SSE Indices are all calculated using a Paasche weighted composite price index formula. This means that the index is based on a base period on a specific base day for its calculation. The base day for SSE Composite Index is December 19, 1990, and the base period is the total market capitalization of all stocks of that day. The Base Value is 100. The index was launched on July 15, 1991.

SZSE Component Index- The SZSE Component Index is an index of 500 stocks that are traded at the Shenzhen Stock Exchange (SZSE). It is the main stock market index of SZSE.

FTSE/JSE- The FTSE/JSE Africa Index Series is designed to represent the performance of South African companies, providing market participants with a comprehensive and complementary set of indices, which measure the performance of the major capital and industry segments of the South African market. The series allows market participants to track by market capitalisation, sector and alternative weighting methodologies such as Equal Weighting.

Volatility

Volatility is a statistical measure of the tendency of a security's price to change over time. Volatility has become an important issue for many reasons. First, investors may find it difficult to agree that the explanation for these changes lies in information about fundamental economic factors when asset prices fluctuate sharply over a time differential as short as one, or less. This might lead to an erosion of confidence in the capital market and a reduced flow of capital into equity markets. Second, for individual companies, the volatility of the company is a significant factor in determining the probability of bankruptcy. The higher the volatility for a given capital structure, the higher the probability of default. Third, volatility is a significant factor in determining the bid-ask spreadThe nation group of BRICS (Brazil, Russia, India, China and South Africa) are considered the most emerging economies of the world. Due to this status, there is high returns coupled with high risks in these nations.

Literature Review

According P. Hemavathy , S. Gurusamy, (2015),investors in the BRIC nations have discovered the hard-hitting line of attack that financial advancement may not change over into securities exchange profits, and various experts censure issues with corporate administration in Russian and Chinese markets. Instability in the equity market has happened to be an issue of reciprocated concern for financial specialist, regulators and brokers. It is essentially comprehended that the stock value unpredictability has begun only by the random infusion of new data associating with the normal returns from the stock. The unpredictable securities exchange is an extreme concern towards policy makers since the share trading system fluxes makes the impossibility and in this manner negatively affects financial development. The review meant to create and look at the contingent instability models trying to restrict the noticeable elements of unpredictability in securities exchanges in BRIC nations. The paper Walid Mensia, ShawkatHammoudehb, Juan Carlos Reboredoc and Duc KhuongNguyend(2014) inspects the dependence structure between the developing securities exchanges of the BRICS countries (Brazil, Russia, India, China and South Africa) and global worldwide variables (the S&P 500 index, the commodity markets, the global stock market uncertainty and the US economic policy uncertainty). Utilizing the quartile regression approach, their outcomes for the period from September 1997 to September 2013 demonstrate that the BRICS securities exchanges show uneven reliance with the worldwide securities exchange and this reliance has not changed since the onset of the worldwide financial crisis.

As stated by Dejan Eric, Goran Andjelic, Srd jan Redzepagic (2009), the assurance of trends and movement of stock prices is one of the fundamental assignments of the MACD (Moving Average Convergence Divergence) and the RVI (Relative Volatility Index) indicators of the technical analysis. The fundamental objective of the indicators is to distinguish the most profitable parameters of the MACD and RVI pointers as elements of speculation technique advancement on the financial markets. The primary theory of the examination is that the utilization of the MACD and RVI pointers of specialized investigation ,fundamentally adds to speculation technique advancement on the financial market. The connected strategy amid the examination incorporates investigations, combination and measurable/numerical techniques with unique concentrate on the strategy for moving averages. According to M. T. Raju and Anirban Ghosh(2016) , volatility calculation is crucial for several reasons and for different parties in the market. Pricing of securities is supposed to be dependent on volatility of each asset. In this paper they not only extend the study period of the earlier papers, but also expand coverage in term horizon of number of countries and mathematical techniques. Developed markets continue to provide over a long period of time, a high rate of return, that too with low volatility. Amongst emerging markets except India and China, all other countries exhibited low returns (sometimes negative returns with high volatility). India with long history and China with short history, both provide as high a return as the US and the UK market could provide but the volatility in both countries is higher.

Banamber Mishra and Matiur Rahman(1992),studies the diversities of stock market volatility of India and Japan. The TGARCH-M model is implemented. These markets are impacted asymmetrically by bad news and good news. The return volatility exists in both countries. The correlation between the market rate of returns and their volatilities is usually nonlinear and dynamic. This is a subject of considerable research interest. Conjecturally, a positive relationship exists between stock returns and volatilities, but the strength of such a relationship varies across countries. The daily information shocks, as well as the differences in investor opinions and expectations, are the source of stock market volatility. The investment by Foreign Institutional Investors (FIIs) has become a driving force in the development of Indian stock market and is increasingly seen as an important cause of stock market volatility. In order to ascertain the link between the two, present study makes a attempt to develop an understanding of the FIIs investment and its impact on stock market volatility. Zahoor Ahmad Mir(2014) has conducted using monthly time series on NIFTY, SENSEX and FIIs activity for a period of fifteen years spanning from January, 1999 to December, 2013. To check the non-stationary of the time series the Augmented Dickey-Fuller (ADF) unit root test is applied. In the present study, statistical tools like mean, variance, standard deviation, skewness and correlation analysis are used to examine the impact of FIIs impact on Indian stock market volatility.

S. Bordoloi and Shiv Shankar (2010) explored ways to develop alternative models from the Autoregressive Conditional Heteroskedasticity (ARCH) or its generalisation, Generalised ARCH (GARCH) family, to estimate volatility in the Indian equity market return. For this purpose, they selected two indices each from the two widely traded stock exchanges in India – the Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE). For empirical analysis, the 30 script and 100-script Stock Indices from the BSE, and the S&P CNX- 500 and S&P CNX-Nifty from NSE, had been selected. The sample covers daily observations from the beginning of January 2000 till the end of October 2007. The stock returns are found to possess the asymmetrical property. Apart from using own past information, they have explored two additional indicators - total Foreign Institutional Investors (FII) transactions and overnight changes in prices to explain the return prices. Technical analysis has been widely applied in financial markets for decades. Stating this.

Terence Tai-Leung Chong, Wing-Kam Ng and Venus Khim-Sen Liew (2014) examines how an investor may profit from the behaviour observed in financial markets. Technical analysts believe that the historical performance of stock markets is an indication of future performance, and it is possible for one to develop profitable trading rules using historical prices, charts and related statistics

This paper by Leoni Eleni OIKONOMIKOU (2016) presents evidence of equity market linkages in the following transition economies: Russia, Ukraine, Poland and Czech Republic from beginning of January 2005 till the end of December 2014. Previous results indicated significant return and volatility spill over effects during the full course of study, the Russian Great Recession and Ukrainian crisis episodes. Over the full study period, there is evidence of return co-movements, and strong volatility persistence. During the Russian Great Recession subsample, the own return effects of the markets are stronger than the cross-market effects and their correlations have increased. Finally, the Ukrainian political crisis displayed no transparent information, whereas, evidence of returns co-movement still exists. The markets in question are mainly partially integrated and the volatility transmission linkages across them are not that strong in crises periods, thus confirming previous literature on the particularities of emerging and frontier marketsThe study of the relationship between trading volume, stock return and volatility has been the focus of much research in the financial literature since the 1950s. But the recent study byDr. WOROUCOUBOU ALI Habibou(2016) throws light on price being a fundamental determinant of return, it reflects the average change in investor's beliefs depending on the arrival of new information into the market. Return can therefore be interpreted as the assessment of new information by investors. On the other hand, volume highlights investors' feedback following new information flow into the market. It can thus be taken as an indicator of investors' reaction on new information. As far as volatility goes, it is a parameter that helps to quantify the risk level of returns and prices.

Nawal Kishor and Raman Preet Singh (2014) , Examines the stock return volatility relationship of emerging economies from 2007 to 2013 which also includes the financial crisis of 2008 and its impact on emerging economies of the world. In methodology, GARCH model is used to examine the impact of news coming from US which is affecting the returns of global index S&P 500 as well as the returns generated by the indices of the BRICS countries. The study found that BRICS stock market except Brazil and Chinese stock market has been significantly affected by the news of in US stock market. There exists a significant difference in the stock return volatility in all the countries stock markets.The study by Iryna Kharchenko ,PlamenTzvetkov(2013)focuses on establishing the existence of volatility spill over effects between stock indices that represent developed and emerging markets.Their data sample covers a period from January 1995 to April 2013 and is further broken down into two subsamples from January 1995 to January 2008 and from January 2008 to April 2013, which respectively represent periods before and after the global financial crisis. They find some evidence that volatility spill over moves in a uni-directional way from the developed to the emerging markets when examining the whole period.Our subsample after the crisis determines volatility spill over from all developed markets to India.

Dr. Ravi Kumar Gupta (2014) , in his paper examines the dependence structure between the emerging stock markets of the BRICS countries. The study used the closing price of respective indexes of last year 2013 to check the normality and relationship that exist in BRICS Countries. This paper analyses the dynamic interrelationship among the emerging countries specially BRICS countries in condition of financial turmoil. Popular Indices of BRICS countries have taken as the proxy of their Stock market. Several statistical tests have been applied in order to study the behaviour and dynamics of time series of BRICS countries indices. The period for the study was taken from January to December 2013 using the daily closing points. These results have implications for international investors in terms of risk management which should vary according to changes in the economic and financial global factors. The investment by Foreign Institutional Investors (FIIs) has become a dynamic force in the development of Indian stock market and is increasingly seen as an important cause of stock market volatility. This state of affairs has propelled researchers to study the nexus between FIIs capital flows and stock market volatility. In order to ascertain the link between the two, present study makes a modest attempt to develop an understanding of the FIIs investment and its impact on stock market volatility. The study by Bashir Ahmad Joo, Zahoor Ahmad Mir (2014)has conducted using monthly time series on NIFTY, SENSEX and FIIs activity for a period of fifteen years spanning from January, 1999 to December, 2013. To check the non-stationarity of the time series the Augmented Dickey-Fuller (ADF) unit root test is applied. In present study, statistical tools like mean, variance, standard deviation, and skewness and correlation analysis are used to examine the impact of FIIs impact on Indian stock market volatility.

Objectives of the Study

The following are the objectives of this study:-
• To analyze the volatility trend in BRICS nations
• To analyze the interdependence of BRICS markets on each other by taking Chinese markets as the independent variable
• To analyze the effect of volume of trade due to volatility in BRICS nations

- To analyze the effect of exchange rate fluctuations on the market movements of BRICs nations.

Research Methodology

Following is the research design for the report:-
- The time frame of the data is 5 years. I.e. the data has been collected for the period beginning on 1st April 2011 to 1st April 2016 for the following indices.
1. SENSEX
2. SSE Composite Index
3. MICEX
4. FTSE/JSE
5. IBOVESPA

- The research design which has been followed is the descriptive research design.
- the statistical tests used differ according to the objectives :-
(1) Trend-line analysis/Time series stationary test for the objective "To analyse the volatility trend in BRICS nations"
(2) Regression Analysis for the objective "To analyse the interdependence of BRICS markets on each other by taking Chinese markets as the independent variable". The following hypothesis will be formed in order to determine the dependency –
(a) H0: there is dependency between SSE composite index and Sensex.
H1: There is no dependency between SSE composite index and Sensex.
(b) H0: There is dependency between SSE Composite Index and MICEX.
H1: There is no Dependency between SSE Composite Index and MICEX.
(c) H0:There is dependency between SSE composite index and IBOVESPA
H1: there is no dependency between SSE composite index and IBOVESPA

(d) H0: There is dependency between SSE composite index and FTSE/JSE.
H1: There is no dependency between SSE composite index FTSE/JSE.
(3) Regression Analysis for the objective "To analyse the effect of volume of trade due to volatility in BRICS nations". The following hypothesis will be made:-
(a) H0: There is significant change in the volume of trade due to change in intraday volatility in BRICs nation's indices.
(b) H1: There is no significant change in the volume of change due to change in intraday volatility in the BRICs nation's indices.
(4) Regression Analysis for the objective "To analyse the effect of exchange rate fluctuations on the market movements of BRICs nations". The following will be the hypothesis.
i. H0: There is no significant effect of exchange rate fluctuation on intraday volatility in BRICs nations Indices.
ii. H1: There is significant effect of exchange rate fluctuation on intraday volatility in BRICs nations Indices

Limitation of the Study.

While collecting the data of the 5 indices, there seems to be a discrepancy amongst the trading days of different indices. Due to this, there are dates on which one index has been actively trading, while the other index might not be trading. This has created a time lag while running regression tests and in some years, the data hav not tested as a good fit.The currency market, as compared to the stock market, is almost a 24x7 market. The stock markets have a limited time frame and dates to trade, whereas the currency market doesn't. Therefore the discrepancy in data is more prominent in this objective. There are more years ,which show an unfit data in the tests regarding volatility and change in exchange rates.There is a significant impact of movement of FPI capital in indices of emerging markets. This impact has not been studied individually, which could have had some effect on the volatility.

Data Analysis
Data Analysis 1: Trend of Closing Prices in BRICs nations.
CHINA.

	Dickey-Fuller test	Phillips-Perron test	KPSS test
Tau (Observed value)	-1.551	-1.469	
Tau (Critical value)	-0.907	-2.864	
p-value (one-tailed)	0.808	0.549	< 0.0001
Eta (Observed value)			5.187
Eta (Critical value)			0.455
Alpha	0.05	0.050	0.05

H0: There is a unit root for the series.

Ha: There is no unit root for the series. The series is stationary.

As the computed p-value is greater than the significance level alpha=0.05 in ADF test, one cannot reject the null hypothesis H0. The risk to reject the null hypothesis H0 while it is true is 80.80%. Hence we can interpret that the time series or the closing prices of the last five years follow a random walk.As the computed p-value is greater than the significance level alpha=0.05 in Philip-Perron test one cannot reject the null hypothesis H0. The risk to reject the null hypothesis H0 while it is true is 54.94%. The result is in accordance with the ADF test,

the time is not stationary and hence changes in respect to time and follows a random walk. As the computed p-value is lower than the significance level alpha=0.05 in KPSS test, one should reject the null hypothesis H0, and accept the alternative hypothesis Ha. The risk to reject the null hypothesis H0 while it is true is lower than 0.01%.All the three unit root tests are in sync and hence prove that the closing prices of the last 5 years of SSE Composite index follow no trend and are hence not stationary and follow a random walk.

South Africa

H0: There is a unit root for the series.

Ha: There is no unit root for the series. The series is stationary.

	Dickey-Fuller test	Phillips-Perron test	KPSS test
Tau (Observed value)	-2.644	-0.766	
Tau (Critical value)	-0.907	-2.864	
p-value (one-tailed)	0.261	0.828	< 0.0001
Eta (Observed value)			13.410
Eta (Critical value)			0.453
Alpha	0.050	0.050	0.05

As the computed p-value is greater than the significance level alpha=0.05 in ADF test, one cannot reject the null hypothesis H0.The risk to reject the null hypothesis H0 while it is true is 26.12%. Even though the risk of rejecting the null hypothesis is minimal, the test shows that the time series does have a unit root and hence is not stationary and follows a random walk. As the computed p-value is greater than the significance level alpha=0.05 in Philip-Perron test, one cannot reject the null hypothesis H0. The risk to reject the null hypothesis H0 while it is true is 82.76%. This is in accordance with the ADF test and shows the existence of a unit root in the time series, hence the

time series is not stationary. As the computed p-value is lower than the significance level alpha=0.05 in KPSS test, one should reject the null hypothesis H0, and accept the alternative hypothesis Ha. The risk to reject the null hypothesis H0 while it is true is lower than 0.01%. All the three unit root tests are in sync and hence prove that the closing prices of the last 5 years of FTSE/JSE index follow no trend and are hence not stationary and follow a random walk.

INDIA.

	Dickey-Fuller test	Phillips-Perron test	KPSS test
Tau (Observed value)	-1.893	-1.080	
Tau (Critical value)	-0.908	-2.864	
p-value (one-tailed)	0.661	0.726	< 0.0001
Eta (Observed value)			11.976
Eta (Critical value)			0.467
Alpha	0.050	0.050	0.05

H0: There is a unit root for the series.

Ha: There is no unit root for the series. The series is stationary.

As the computed p-value is greater than the significance level alpha=0.05 in ADF test, one cannot reject the null hypothesis H0. The risk to reject the null hypothesis H0 while it is true is 66.05%. Hence we can interpret that the time series or the closing prices of the last five years follow a random walk and there exists a unit root. As the computed p-value is greater than the significance level alpha=0.05 in Philip-Perron test, one cannot reject the null hypothesis H0. The risk to reject the null

hypothesis H0 while it is true is 72.55%. As the risk of rejecting the null hypothesis is high, we can interpret that the time series is not stationary. As the computed p-value is lower than the significance level alpha=0.05 in KPSS test, one should reject the null hypothesis H0, and accept the alternative hypothesis Ha. The risk to reject the null hypothesis H0 while it is true is lower than 0.01%.All the three unit root tests are in sync and hence prove that the closing prices of the last 5 years of SENSEX index follow no trend and are hence not stationary and follow a random walk.

	Dickey-Fuller test	Phillips-Perron test	KPSS test
Tau (Observed value)	-3.037	-1.740	
Tau (Critical value)	-0.907	-2.864	
p-value (one-tailed)	0.120	0.411	< 0.0001
Eta (Observed value)			7.317
Eta (Critical value)			0.455
Alpha	0.050	0.050	0.05

Brazil

H0: There is a unit root for the series.

Ha: There is no unit root for the series. The series is stationary.

As the computed p-value is greater than the significance level alpha=0.05 in ADF test, one cannot reject the null hypothesis H0. The risk to reject the null hypothesis H0 while it is true is 11.99%. Even though the risk of rejecting the null hypothesis is minimal, the test shows that the time series does have a unit root and hence is not stationary and follows a random walk. As the computed p-value is greater than the significance level alpha=0.05 in Philip-Perron test, one cannot reject the null hypothesis H0. The risk to reject the null hypothesis H0 while it is true is 41.10%. As the risk of rejecting the null hypothesis is high, we can interpret that the time series is not stationary. As the computed p-value is lower than the significance level alpha=0.05 in KPSS test, one should reject the null hypothesis H0, and accept the alternative hypothesis Ha. All the three unit root tests are in sync and hence prove that the closing prices of the last 5 years of IBOVESPA index follow no trend and are hence not stationary and follow a random walk.

	Dickey-Fuller test	Phillips-Perron test	KPSS test
Tau (Observed value)	-3.061	-0.973	
Tau (Critical value)	-0.907	-2.864	
p-value (one-tailed)	0.113	0.765	< 0.0001
Eta (Observed value)			11.568
Eta (Critical value)			0.471
Alpha	0.050	0.050	0.05

Russia

H0: There is a unit root for the series.
Ha: There is no unit root for the series. The series is stationary.
As the computed p-value is greater than the significance level alpha=0.05 in ADF test, one cannot reject the null hypothesis H0. The risk to reject the null hypothesis H0 while it is true is 11.25%. Even though the risk of rejecting the null hypothesis is minimal, the test shows that the time series does have a unit root and hence is not stationary and follows a random walk. As the computed p-value is greater than the significance level alpha=0.05 in Philip-Perron test, one cannot reject the null hypothesis H0. The risk to reject the null hypothesis H0 while it is true is 76.46%. As the risk of rejecting the null hypothesis is high, we can interpret that the time series is not stationary. As the computed p-value is lower than the significance level alpha=0.05 in KPSS test, one should reject the null hypothesis H0, and accept the alternative hypothesis Ha. The risk to reject the null hypothesis H0 while it is true is lower than 0.01%. %.All the three tests are in sync and hence prove that the closing prices of the last 5 years of MICEX index follow no trend and are hence not stationary and follow a random walk.

Data Analysis 2: "To analyze the interdependence of BRICS markets on each other by taking Chinese markets as the independent variable".

Year	Multiple R	R square	Adjusted R square	Significance F	P-value
2011-2012	0.815850873	0.665613	0.664225148	2.95177E-59	2.95177E-59
2012-2013	0.15671094	0.024558	0.020493978	0.014674077	0.014674077
2013-2014	0.137900763	0.019017	0.01487745	0.033096713	0.033096713
2014-2015	0.773648686	0.598532	0.596852508	2.87602E-49	2.87602E-49
2015-2016	0.700379528	0.490531	0.488443498	1.34576E-37	1.34576E-37

Dependency of Indian Markets on Chinese Markets

In this case only closing prices of SENSEX are compared with those of the SSE Composite Index. The table above shows no linear trend in the R squares or the adjusted R squares. Hence we can interpret that there does not exist too strong a relationship between the closing prices of both the indices. There are just two years (2014-2015, 2015-2016) which show a semi strong relationship in terms of variability but the factors of it cannot be interpreted from the data collected for this study.

As far as the hypothesis goes, in no year does the p-value cross the threshold of alpha=.05, hence we can comfortably reject H0 and accept the alternate hypothesis(Ha) which states that there is no dependency of the closing prices of Indian Index (SENSEX) on the closing prices of Chinese Index(SSE Composite Index).

Year	Multiple R	R square	Adjusted R square	Significance F	P-value
2011-2012	0.734873927	0.540039688	0.538131139	1.58695E-42	1.58695E-42
2012-2013	0.185507474	0.034413023	0.030389744	0.003778844	0.003778844
2013-2014	0.422508482	0.178513417	0.175047229	9.12919E-12	9.12919E-12
2014-2015	0.909393757	0.826997005	0.82627915	8.64604E-94	8.64604E-94
2015-2016	0.73328062	0.537700468	0.535805798	9.15559E-43	9.15559E-43

Dependency of Russian Markets on Chinese Markets

In this case only closing prices of MICEX are compared with those of the SSE Composite Index. The table above shows no linear trend in the R squares or the adjusted R squares. Hence we can interpret that there does not exist too strong a relationship between the closing prices of both the indices. But there are a few years (2011-2012, 2014-2015, and 2015-2016) which show a strong relatedness amongst closing prices but there can be various macro/micro economic factors fuelling this relationship and cannot be interpreted from the data collected for this study.

As far as the hypothesis goes, in no year does the p-value cross the threshold of alpha=.05, hence we can comfortably reject H0 and accept the alternate hypothesis(Ha) which states that there is no dependency of the closing prices of Russian Index (MICEX) on the closing prices of Chinese Index(SSE Composite Index).

Year	Multiple R	R square	Adjusted R square	Significance F	P-value
2011-2012	0.024355524	0.000593192	-0.003571004	0.70619051	0.70619051
2012-2013	0.024356	0.000593192	-0.003571004	0.70619051	0.70619051
2013-2014	0.284302962	0.080828174	0.076949812	8.02005E-06	8.0201E-06
2014-2015	0.259748	0.067469169	0.063599746	4.15355E-05	4.1535E-05
2015-2016	0.484934274	0.23516125	0.232026665	6.48751E-16	6.4875E-16

Dependency of South African Market on Chinese Markets
In this case only closing prices of JTSE/FSE are compared with those of the SSE Composite Index. The table above shows no linear trend in the R squares or the adjusted R squares. Hence we can interpret that there does not exist too strong a relationship between the closing prices of both the indices. There is just one year (2015-2016) which show a semi strong relationship in terms of variability but the factors of it cannot be interpreted from the data collected for this study.

As far as the hypothesis goes, in the time period from 2011 to 2013, there does exist a dependency of JTSE/FSE on the SSE composite index as p-value in both the years crosses the threshold of alpha=.05. Hence for those two years we cannot reject H0. For the following three years the p-value does not cross the threshold of alpha=.05 and hence H0 can be rejected and can be interpreted as there exists no dependency of the South African Market (JTSE/FSE) on the Chinese Markets(SSE Composite Index).

Year	Multiple R	R square	Adjusted R square	Significance F	P-value
2011-2012	0.252753725	0.063884446	0.0600162	6.5273E-05	6.5273E-05
2012-2013	0.138387714	0.019151159	0.015081247	0.031043516	0.031043516
2013-2014	0.704295	0.496031363	0.493913847	2.81604E-37	2.81604E-37
2014-2015	0.640431	0.410151298	0.407713907	1.44612E-29	1.44612E-29
2015-2016	0.761665972	0.580135052	0.578414294	6.98459E-48	6.98459E-48

Dependency of Brazilian Markets on Chinese Markets
In this case only closing prices of IBOVESPA are compared with those of the SSE Composite Index. The table above shows no linear trend in the R squares or the adjusted R squares. Hence we can interpret that there does not exist too strong a relationship between the closing prices of both the indices. There are just three years (2013-2014, 2014-2015, 2015-2016) which show a semi strong relationship in terms of variability but the factors of it cannot be interpreted from the data collected for this study.

As far as the hypothesis goes, in no year does the p-value cross the threshold of alpha=.05, hence we can comfortably reject H0 and accept the alternate hypothesis(Ha) which states that there is no dependency of the closing prices of Brazilian Index (IBOVESPA) on the closing prices of Chinese Index(SSE Composite Index).

Data Analysis 3: "To analyse the effect of volume of trade due to intraday annualized volatility in BRICS nations

Year	Multiple R	R square	Adjusted R square	Significance F	P-value
2011-2012	0.407484719	0.166043797	0.162639894	2.68179E-11	2.68179E-11
2012-2013	0.040096384	0.00160772	-0.002587206	0.53645924	0.53645924
2013-2014	0.137702604	0.018962007	0.014974048	0.030164382	0.030164382
2014-2015	0.371976542	0.138366548	0.134820731	1.85972E-09	1.85972E-09
2015-2016	0.259178906	0.067173705	0.063303057	4.32372E-05	4.32372E-05

Effect on Volume of Trade Due to Annualized Volatility in IBOVESPA
In this table, the volume of trade of trade of IBOVESPA has been compared with its annualised volatility which is calculated based on the index's closing price. The comparison has been done on a yearly basis. Intraday volatility has minimal changes and hence the effect of volume of trade is not significant. The p-value (except for the year 2012-2013) is much lower than the

significant alpha level of .05. Hence the H0 can comfortably be rejected and Ha can be accepted stating that there is no significant change in the volume of trade due to intraday annualized volatility in the market.

The level of variability between the volume of trade and annualized volatility is minimal throughout the time period of 5 years.

Year	Multiple R	R square	Adjusted R square	Significance F	P-value
2011-2012	0.121413777	0.014741305	0.01070336	0.057217894	0.057217894
2012-2013	0.039551792	0.001564344	-0.002544444	0.537789846	0.537789846
2013-2014	0.155391154	0.024146411	0.020179526	0.01430001	0.01430001
2014-2015	0.147262488	0.02168624	0.017693123	0.020596033	0.020596033
2015-2016	0.138897171	0.019292424	0.015289536	0.029075823	0.029075823

Effect on Volume of Trade Due to Annualized Volatility in JTSE/FSE

In this table, the volume of trade of trade of JTSE/FSE has been compared with its annualised volatility which is calculated based on the index's closing price. The comparison has been done on a yearly basis. Intraday volatility has minimal changes and hence the effect of volume of trade is not significant. The p-value (except for the year 2012-2013) is much lower than the significant alpha level of .05, hence the H0 can comfortably be rejected and Ha can be accepted stating that there is no significant change in the volume of trade due to intraday annualized volatility in the market. There may be some factors affecting the relationship in the aforesaid year of 2012-2013 which cannot be interpreted from the collected data for the study.

The level of variability between the volume of trade and annualized volatility is minimal throughout the time period of 5 years.

Year	Multiple R	R square	Adjusted R square	Significance F	P-value
2011-2012	0.269512505	0.07263699	0.068927538	1.44021E-05	1.44021E-05
2012-2013	0.005038071	2.53822E-05	-0.004039555	0.937080903	0.937080903
2013-2014	0.435996036	0.190092543	0.186800236	6.2652E-13	6.2652E-13
2014-2015	0.045957373	0.00211208	-0.001960932	0.472145218	0.472145218
2015-2016	0.11611436	0.013482545	0.009504652	0.066812522	0.066812522

Effect on Volume of Trade Due to Annualized Volatility in MICEX

In this table, the volume of trade of trade of JTSE/FSE has been compared with its annualised volatility which is calculated based on the index's closing price. The comparison has been done on a yearly basis. Intraday volatility has minimal changes and hence the effect of volume of trade is not significant. The p-value (except for the year 2012-2013, 2014-2015) is much lower than the significant alpha level of .05, hence the H0 can comfortably be rejected and Ha can be accepted stating that there is no significant change in the volume of trade due to intraday annualized volatility in the market. There may be some factors affecting the relationship in the aforesaid year of 2012-2013 and 2014-2015 which cannot be interpreted from the collected data for the study.

The level of variability between the volume of trade and annualized volatility is minimal throughout the time period of 5 years.

Year	Multiple R	R square	Adjusted R square	Significance F	P-value
2011-2012	0.122763596	0.015070901	0.011000946	0.055488512	0.055488512
2012-2013	0.054427594	0.002962363	-0.001174723	0.398281836	0.398281836
2013-2014	0.160923494	0.025896371	0.021887714	0.011654691	0.011654691
2014-2015	0.030555642	0.000933647	-0.003281823	0.638346466	0.638346466
2015-2016	0.106099311	0.011257064	0.007221378	0.096167922	0.096167922

Effect on Volume of Trade Due to Annualized Volatility in SENSEX

In this table, the volume of trade of trade of SENSEX has been compared with its annualised volatility which is calculated based on the index's closing price. The comparison has been done on a yearly basis. Intraday volatility has minimal changes but the effect of volume of trade is significant in this case. The p-value (except for the year 2013-2014) is much higher than the significant alpha level of .05, hence the H0 has to beaccepted and Ha can be rejected stating that there is significant change in the volume of trade due to intraday annualized volatility in the market. There may be some factors fuelling this trend but the collected data is not sufficient to justify that.

The level of variability between the volume of trade and annualized volatility is minimal throughout the time period of 5 years.

Year	Multiple R	R square	Adjusted R square	Significance F	P-value
2011-2012	0.042375408	0.001795675	-0.002363509	0.511767304	0.511767304
2012-2013	0.150171018	0.022551335	0.018461591	0.019679537	0.019679537
2013-2014	0.067830674	0.004601	0.000383208	0.29735045	0.29735045
2014-2015	0.427724751	0.182948463	0.179544081	3.48718E-12	3.48718E-12
2015-2016	0.195268687	0.03812986	0.03415519	0.002183394	0.002183394

Effect on Volume of Trade Due to Annualized Volatility in SSE COMPOSITE INDEX

In this table, the volume of trade of trade of JTSE/FSE has been compared with its annualised volatility which is calculated based on the index's closing price. The comparison has been done on a yearly basis. Intraday volatility has minimal changes and hence the effect of volume of trade is not significant. The p-value (except for the year 2011-2012 and 2013-2014) is much lower than the significant alpha level of .05, hence the H0 can comfortably be rejected and Ha can be accepted stating that there is no significant change in the volume of trade due to intraday annualized volatility in the market. There may be some factors affecting the relationship in the aforesaid year of 2011-2012 and 2013-2014 which cannot be interpreted from the collected data for the study.

The level of variability between the volume of trade and annualized volatility is minimal throughout the time period of 5 years.

Data Analysis 4: "To analyse the effect of exchange rate fluctuations on the market movements of BRICs nations".

Year	Multiple R	R square	Adjusted R square	Significance F	P-value
2011-2012	0.011885778	0.003888159	-9.62885E-05	0.324184611	0.324184611
2012-2013	0.077348034	0.010022593	0.006014587	0.115079443	0.115079443
2013-2014	0.097500198	0.053336356	0.04950371	0.000237148	0.000237148
2014-2015	0.099899118	0.003608102	-0.000442272	0.346184678	0.346184678
2015-2016	0.166691474	0.001139073	-0.002872416	0.594597332	0.594597332

Effect of USD/RUB fluctuations on Annualized Volatility in Russia

In this table, the Ruble is taken in terms of US dollars and compared to the annualized intraday volatility of the MICEX. The p-value in all the years, except that in 2013-2014, as compared to the alpha value of .05, is more than that of alpha value. This shows that the Null hypothesis (H0) cannot be rejected. It can be interpreted that there is no significant change in the annualized volatility of MICEX if taken in historical terms and on intraday basis and compared to the intraday price change in Rubble(in terms of dollars). The reason for deviation of P-value in the year 2013-2014 cannot be determined due to lack of supporting data collected for this study. In terms of variability, there is weak relationships between the two variables.

Year	Multiple R	R square	AdjustedR square	Significance F	P-value
2011-2012	0.074089651	0.005489276	0.00139664	0.24794944	0.24794944
2012-2013	0.030967078	0.00095896	-0.003169309	0.630265813	0.63026581
2013-2014	0.127084369	0.016150437	0.012118267	0.046462317	0.04646232
2014-2015	0.065095093	0.004237371	5.34945E-05	0.315258417	0.31525842
2015-2016	0.084658589	0.007167077	0.003131171	0.183895424	0.18389542

Effect of USD/INR fluctuations on Annualized Volatility in India

In this table, the Indian Rupee is taken in terms of US dollars and compared to the annualized intraday volatility of the SENSEX. The p-value in all the years, as compare to the alpha value of .05, is more than that of alpha value. This shows that the Null hypothesis (H0) cannot be rejected. It can be interpreted that there is no significant change in the annualized volatility of SENSEX if taken in historical terms and on intraday basis and compared to the intraday price change in Indian Rupee(in terms of dollars). In terms of variability, there is weak relationship between the two variables.

Year	Multiple R	R square	Adjusted R square	Significance F	P-value
2011-2012	0.011885778	0.000141272	-0.004024806	0.854053877	0.854053877
2012-2013	0.077348034	0.005982718	0.00182365	0.231573852	0.231573852
2013-2014	0.097500198	0.009506289	0.005309281	0.133662007	0.133662007
2014-2015	0.099899118	0.009979834	0.00585475	0.121165807	0.121165807
2015-2016	0.166691474	0.027786048	0.023785167	0.008946139	0.008946139

Effect of USD/CNY fluctuations on Annualized Volatility in China

In this table, the Chinese Yuan is taken in terms of US dollars and compared to the annualized intraday volatility of the SSE Composite Index. The p-value in all the years, except in 2016-2016, as compared to the alpha value of .05, is more than that of alpha value. This shows that the Null hypothesis (H0) cannot be rejected. It can be interpreted that there is no significant change in the annualized volatility of SSE Composite Index if taken in historical terms and on intraday basis and compared to the intraday price change in Chinese Yuan (in terms of dollars). In terms of variability, there is weak relationship between the two variables. The reason for deviation of P-value in the year 2015-2016 cannot be determined due to lack of supporting data collected for this study. In terms of variability, there is weak relationships between the two variables.

Year	Multiple R	R square	Adjusted R square	Significance F	P-value
2011-2012	0.016233327	0.000263521	-0.003800449	0.799211319	0.799211319
2012-2013	0.084957081	0.007217706	0.003063805	0.188708582	0.188708582
2013-2014	0.047169381	0.002224951	-0.001814625	0.458700935	0.458700935
2014-2015	0.034549745	0.001193685	-0.002899784	0.589684937	0.589684937
2015-2016	0.06401732	0.004098217	-1.70794E-05	0.319313596	0.319313596

Effect on USD/BRL fluctuations on Annualized Volatility in Brazil

In this table, the Brazilian Real is taken in terms of US dollars and compared to the annualized intraday volatility of the SSE Composite Index. The p-value in all the years, except in, as compare to the alpha value of .05, is more than that of alpha value. This shows that the Null hypothesis (H0) cannot be rejected. It can be interpreted that there is no significant change in the annualized volatility of IBOVESPA if taken in historical terms and on intraday basis and compared to the intraday price change in Brazilian Real (in terms of dollars). In terms of variability, there is weak relationship between the two variables.

Year	Multiple R	R square	Adjusted R square	Significance F	P-value
2011-2012	0.026562261	0.000705554	-0.003373199	0.677838549	0.677838549
2012-2013	0.03856	0.001486896	-0.00260537	0.547215296	0.547215296
2013-2014	0.079099	0.006256675	0.002233422	0.213561093	0.213561093
2014-2015	0.008507	7.23731E-05	-0.003992373	0.893957957	0.893957957
2015-2016	0.168484249	0.028386942	0.024437296	0.007839092	0.007839092

Effect of USD/ZAR fluctuations on Annualized Volatility in South Africa

In this table, the South African Rand is taken in terms of US dollars and compared to the annualized intraday volatility of the FTSE/JSE. The p-value in all the years, as compared to the alpha value of .05, is more than that of alpha value. This shows that the Null hypothesis (H0) cannot be rejected. It can be interpreted that there is no significant change in the annualized volatility of FTSE/JSE if taken in historical terms and on intraday basis and compared to the intraday price change in South African Rand (in terms of dollars). In terms of variability, there is weak relationship between the two variables.

Conclusion

As this study comes to an end, there are certain conclusions that can be drawn from the data that was collected for the study. BRICS nations are a set of emerging nations giving high returns coupled with high or moderate volatility. The trend of high returns, or as a matter of fact- a trend of high volatility, is not a stationary trend..China has emerged as a leader amongst the BRICS nations, but the trend is now slowly shifting towards

India. The intraday volatility of any of the indices of the above stated nations is low, therefore any mammoth change in intraday volatility might be due to some qualitative factor which cannot be determined with the given set of data... Theoretically speaking, the existence of a unit root can be negative for any test following it as it shows spurious regressions and errant behaviour due to various assumptions following the tests. But the presence of a unit root is essential while examining a time series related to stock indices because in an everyday condition, there is no certain trend that can be holistically predicted. Hence, the volatility has to be non-stationary.There isn't any dependability between any of the BRICs nation's index on each other. This can be stated as a good outcome of the regression as any dependability will lead to high volatility due to external factors.

Exchange rate fluctuation shows a minimal impact on the intraday volatility. The major role of exchange rate fluctuation is on the floating interest rates which is borrowed by HNIs to further invest in the stock market. That impact, if studied individually, might have indicated a more radical change in the volatility. But taking the index as a whole, and comparing it to exchange rate fluctuation does not show any drastic results.

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Annexure

Descriptive Analysis Of The BRICs Nations Indices

SENSEX	
Mean	21722.77168
Standard Error	119.1310147
Median	20194.40039
Mode	27011.31055
Standard Deviation	4183.178331
Sample Variance	17498980.95
Kurtosis	-1.364046081
Skewness	0.353216752

MICEX	
Mean	1215.197657
Standard Error	8.694754156
Median	1300.46
Mode	856.44
Standard Deviation	284.0138484
Sample Variance	80663.86607
Kurtosis	-1.149005489
Skewness	-0.31621278

SSE COMPOSITE INDEX	
Mean	2611.849713
Standard Error	18.86446598
Median	2344.78
Mode	2432.4
Standard Deviation	658.3671601
Sample Variance	433447.3175
Kurtosis	1.988940563
Skewness	1.543966927

IBOVESPA	
Mean	54203.75
Standard Error	169.1801
Median	54171.71
Mode	45075.5
Standard Deviation	5952.64
Sample Variance	35433926
Kurtosis	-0.08706
Skewness	-0.00878

FTSE/JSE	
Mean	42761.9553
Standard Error	221.728434
Median	43805.91
Mode	#N/A
Standard Deviation	7833.010027
Sample Variance	61356046.08
Kurtosis	-1.465933578
Skewness	-0.167259656

Dimensions of Organizational Health in Public and Private Sector Academic Institutions

Dr. Arunima Mishra*

Abstract

Organizational Health research identifies it as an important key to institutional growth and development and emphasizes its relevance in enhancing productivity and performance of an institution. This study measures the organizational health of an institution and also delineates significant contributing factors which are responsible for transforming into healthy organization. Research in the area of Task, Maintenance and Growth and Development need was used to develop a framework for integrating different elements of organizational health. Within this framework, the task need was assessed by goal focus, communication adequacy and optimal power equalization; maintenance need was assessed by resource utilization, cohesiveness and morale; and Growth and Development need was assessed by innovativeness, adaptation and problem solving adequacy. Organizational Health was investigated within the framework using structured schedule from a sample of total 500 respondents – 250 from public academic institutions and 250 from private academic institutions in National Capital Region. It was found that Organizational Health prevailing in public institution was perceived significantly higher than that prevailing in private institution and that is largely because of the perception of the teaching staff of the public institution. It was further researched that the institutional authority in public institution needs to embrace reasonable flexibility to maintain a good health of their organization. The private institution should work on its institutional cohesiveness and adaptation.

Key words: organizational health, goal focus, communication adequacy, optimal power equalization, institutional cohesiveness, adaptation.

Introduction

A healthy organization can be describe as one which succeeds in concentrating exterior disruptive influences and keeping the organization directed towards achieving its proposed objectives (Hoy & Miskel, 1996). Organizational Health refers to an organization's ability to achieve its goals based on an environment that seeks to improve organizational performance and support employee well-being. While these two perspectives are very different, a nexus between them means issues in one affect the other. Improving organizational performance involves applying a systems thinking approach at organization, process, and role levels, and supporting employee well-being involves addressing both employee satisfaction and employee health (physical, mental, and social). It is an organization's ability to function effectively, to cope adequately, to change appropriately, and to grow from within. Within the frame of academic institutions, one of the best perspectives for analyzing the nature of the workplace is organizational health.

Organizational Health (OH) is a concept that has been developed to reflect the effectiveness of an organization in various environments and how the organization reacts to "changes in circumstances (Janice, 2000).

A healthy organization is one that not only survives in its environment, but continues to grow and prosper over the long term. An organization on any given day may be effective or ineffective, but healthy organizations avoid persistent ineffectiveness.

Organizational health of an institute has three major components:
(a) Task Need such as goal focus, communication adequacy and optimal power equalization.
(b) Maintenance Need such as resource utilization, cohesiveness and morale.
(c) Growth and Development Need such as innovativeness, adaptation and problem solving adequacy.

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The concepts of these three components of organizational health are as under :

(A) Task Needs

Task may be defined as a piece of work requiring effort, resources and having a concrete outcome (a deliverable). Tasks are also called activity. They take place over a period of time and generally consume resources. Task may be more clearly conceived in terms of its three parameters such as:

(1) Goal Focus

Healthy organizations have a goal focus. Participants understand the goals of the organization and accept them as realistic ends. Moreover, the goals must also be appropriating, that is, consistent with the demands of the environment; in fact, appropriateness may be the most critical feature.

(2) Communication Adequacy

Since organizations are typically much more complex than small groups, the communication of information is essential to the well being of the system. Communication adequacy is critical in healthy organizations. Information needs to travel reasonably well. The system must be relatively distortion free with members easily receiving the information they need to function efficiently. Such an efficient communication system enables the organization to sense internal strain and conflict and then promptly deal with them.

(3) Optimal Power Equalization

In healthy organizations there is optimal power equalization. That is, the distribution of power and influence is equitable. Subordinates exert influence upward and they perceive that their superiors can do likewise. The exertion of influence, however, rests on competence and knowledge rather than position, charisma, or other factors not related to the problem at hand. Collaboration rather than coercion imbue the healthy organization.

(B) Maintenance Needs

The maintenance needs in the context of the education system would mean taking into consideration imparting of new knowledge and skills to employees, development of capabilities to manage both, the internal and external environment and helping employees acquire self-confidence and motivation for service to the society. Therefore the institutions should effectively address the challenges related to maintenance needs, which has three important parameters, such as:

(1) Resource utilization

Healthy organizations use their resources, especially their personnel, effectively (resource utilization). There is minimal internal strain; the people are neither overloaded nor idle. The fit between the personal needs of participants and the role demands of the organization is good. People in healthy organizations like their jobs and have a positive sense that they are learning and growing as they contribute to the organization.

(2) Cohesiveness

Cohesiveness refers to a clear sense of identity participants have with the organization. Healthy organizations have members who are attracted to the organization, take pride in their membership, and wish to remain. They are influenced by the organization and exert their influence in a collaborative fashion. In brief, they are proud of the organization and glad they are part of it.

(3) Morale

Morale is a group concept. It is the sum of individual sentiments, centered on feelings of well-being and satisfaction as contrasted with feelings of discomfort and dissatisfaction.

(C) Growth and Development Needs

It refers to the methods, programs, tools, techniques, and assessment systems that support human development at the individual level in organizations.

Personal growth and development is an individual responsibility. It is a continuous process that ends in death. It is an indisputable fact that maturity does not go along with age. There are three clear symptoms of growth and development-innovativeness, adaptation and problem solving adequacy.

(1) Innovativeness

Healthy organizations invent new procedures when confronted with problems, procedures that enable them to move toward new objectives, produce new products, and diversify themselves. Such systems grow, develop, and change rather than remain formalized and standardized. Innovativeness is the organization's ability to invent new procedures, move to new goals and objectives, and become more differentiated over time.

(2) Adaptation

Healthy organizations have effective contact with their surroundings. When environmental forces do not match organizational objectives, a problem solving and restructuring strategy emerges to cope with the issue. In short, the organization has the ability to bring about corrective changes in it.

(3) Problem Solving Adequacy:

All organizations, indeed all social systems, have problems and strains. Healthy organizations, just as healthy people, have

troubles. Problem-solving adequacy describes the way organizations handle their difficulties. It suggested that effective systems solve their problems with minimal difficulty, and once solved, they stay solved. In the process, problem-solving mechanisms are not weakened but rather strengthened With the above mentioned concepts of organizational health in mind, the present study was designed to investigate the relationship between organizational health and institutional performance as they exists in the public and private sector academic institutions of NCR region of Delhi.

The specific objectives of the study were:
1. To measure the organizational health of the institutions.
2. To delineate significant contributing factors responsible for organizational health.

Research Methodology:

Locale of the study:
The population for this research consists of teaching and non teaching members of some selected private and public academic institutions situated in National Capital Region. The National Capital Region of Delhi comprises of whole of Delhi state and part of Haryana and Uttar Pradesh states adjoining the Delhi state territory. This region has around 511 academic institutions. A great majority of these institutions are privately managed (termed as non-government institutions) and the remaining managed by government or government funded autonomous bodies (termed as public institutions). Out of these two broad categories of academic institutions- 10 private and 10 government institutions were randomly selected by draw of lots for the present study.

The Sample:
Sample of respondents for the study was drawn from the teaching and non-teaching staff of the above mentioned 20 academic institutions- 10 private and 10 public, selected for the study. Teaching staff in these institutions included Professors, Associate Professors, Assistant Professors, Lecturers and non-teaching staff included Office Assistants, Lab Assistants, Librarians, Technical hands, Accounts Assistants, Training and Placement staff.

From each of the selected institutions twelve or thirteen(12 or 13) from the teaching cadre and another twelve or thirteen(12 or 13) from non-teaching cadre staff were randomly selected out of the total staff strength of the two cadres in a way, that, twenty five(25) respondents in all were selected from each of the selected institutes. The total size of the sample five hundred (500) – two hundreds and fifty (250) from private and two hundreds and fifty (250) from public institutions. It may be further mentioned that the respondents were selected in a fashion that equal number of them fell in the four response categories i.e. (i) Public institute teaching staff, (ii) Public institute non-teaching staff, (iii) Private institute teaching staff, and (iv) private institute non-teaching staff. One hundred and twenty five (125) respondents in all were selected under each of the four respondent categories making the total size of sample to five hundreds (500). A well structured questionnaire was sent to the sample respondents and the selected respondents were personally interviewed with the help of a structured schedule prepared for data collection for the study.

Data Collection
For collection of data the interview schedule was prepared. The researcher visited each of the 20 selected institutions and contacted appropriate authority to build rapport and seek permission to collect data from their teaching and non-teaching staff. A list of their teaching and non-teaching staff was collected and from their list 25 respondents were randomly selected in a way that the number of respondents from the two categories- teaching and non-teaching remains equal in total sample. The data were then personally collected from the selected respondents with the help of the structured schedule. For this several visits were made to each of the selected institutions.

Measurement:
In order to measure the organizational health of an institution perceived by respondents of present investigation, an instrument is devised. A Likert-type rating scale was developed to measure organizational health. For this a large number of statements were framed which reflected various aspects of organizational health for employees of educational institutions. A pool of fifty(50) such statements were presented to a group of thirty(30) teaching and non-teaching staff working in some educational institutions other than those included in the present investigation. Based on the above analysis some statements were discarded and the best twenty seven (27) statements were selected to constitute the organizational health measurement scale. This scale was then administered to the four groups of respondents included in the study.

Results:
Organizational Health of the Institutions: Descriptive Analysis
The data of organizational health collected with the help of scale mentioned above were analyzed to portray the organizational health of the institutions under study. For this range, mean and standard deviation of the scores obtained by the respondents were worked out. The data are being presented in tabular form for public and private institutions separately in tables 1.1 and 1.2 respectively.

Table 1.1

Organizational Health Score obtained by teaching and non-teaching staff of Public Institutions (N=250)			
Respondents	**Range**	**Mean**	**Standard deviation**
Teaching	38- 111	71.25	16.446
Non-teaching	26- 99	58.90	16.184
Total	26- 111	65.06	17.454

Organizational Health Scores Distribution			
Teaching		**Non-teaching**	
Frequency	**%**	**Frequency**	**%**
M±1SD	81	64.8	84	67.2
<M-1SD	21	16.8	21	16.8
>M+1SD	23	18.4	20	16

On the organizational health scale the minimum obtainable score is twenty seven (27) and maximum obtainable score is one hundred thirty five (135). In both groups of respondents the obtained scores are much below the obtainable scores and in view of this the standard deviation appears to be quite high which indicate that the interpersonal variations in the scores obtained by the individuals are quite high.

The distribution clearly shows that the teaching and non-teaching staffs of public group of institutions are not exactly but closely identical with each other in their perception of organizational health prevailing in the institute. However the teaching staff perceived the organizational health of the institute little better than their non-teaching counter parts as indicated by higher mean scores obtained by them (71.25 as against 58.90).

Table 1.2

Organizational Health Score obtained by teaching and non-teaching staff of Private Institutions (N=250)			
Respondents	**Range**	**Mean**	**Standard Deviation**
Teaching	39- 90	64.60	11.122
Non-teaching	31- 82	57.00	9.534
Total	31-90	60.82	11.002

Organizational Health Scores Distribution

	Teaching		**Non-teaching**	
	Frequency	**%**	**Frequency**	**%**
M± 1SD	86	68.8	86	68.8
<M-1SD	20	16	20	16
>M+1SD	19	15.2	19	15.2

The perception of organizational health by the respondents of private group of institutions is towards lower side as evident from obtained mean scores which are much less than the obtainable mean score of 81.

The distribution of the scores as given at the bottom of the table is quite interesting. The distribution of the scores indicates that the teaching and non-teaching staffs of private group of institutions are similar to each other in their perception of organizational health in the institutions. The frequency of the distribution further indicates that they are evenly distributed between high and low perception of prevalence of organizational health in the institutions.

Organizational Health in the Institutions: Comparative Analysis
In order to make a comparative analysis of the organizational health scores obtained by the four groups of respondents, their obtained mean scores were subjected to t-test analysis to find out the significance of differences between them. The analyzed data are presented in table 1.3

Table 1.3
Mean Organizational Health score as perceived by the respondents

	Total staff N=250	Teaching staff N=125	Non-teaching staff N=125	P value significance level
Public Institutions	65.08	71.25	58.9	**
Private Institutions	60.8	64.6	57	**
P value significance level	**	**	NS	

*** significant at .01 level of Probability*
NS- Non significant

The data of organizational health as perceived by the respondents of academic institutions under study are reported in Table 1.3. The mean values and significance level of P values reported in the table makes the following revelations:

1. The mean scores obtained by the respondents of public institutions were found to be significantly greater than the mean score obtained by the respondents of private institutions.
2. This difference in perception can be attributed to the teaching staff of both the institutions since only in their case the mean score differences was found to be highly significant. On the other hand, in case of non-teaching staff of the two groups of institutions the obtained scores were not found to be significantly different.
3. In case of both the groups of institutions, teaching staff were found to have significantly higher mean score than those of the non-teaching staff.

The above discussions bring forth the clear conclusion that the organizational health of public institutions were perceived significantly better than the organizational health of private institutions and this was largely because of the teaching staff of public institutions. In other words, public institutions were found to have better organizational health and that is due to their teaching faculty.

Further, for the past decade, the various researches had been conducted and working with companies on the topic of organizational health indicates that the health of an organization is based on the ability to align around a clear vision, strategy, and culture; to execute with excellence; and to renew the organization's focus over time by responding to market trends. Health also has a hard edge: indeed, we've come to define it as the capacity to deliver— over the long term—superior financial and operating performance. It has been found that the linkage between health and performance, at both the corporate and subunit level, is much clearer and much larger than previously thought. In short, it is becoming more convincing that sustained organizational health is one of the most powerful assets institutions can build.

The organizational health data of the public and private group of institutions are graphically reported in Fig. 1.1
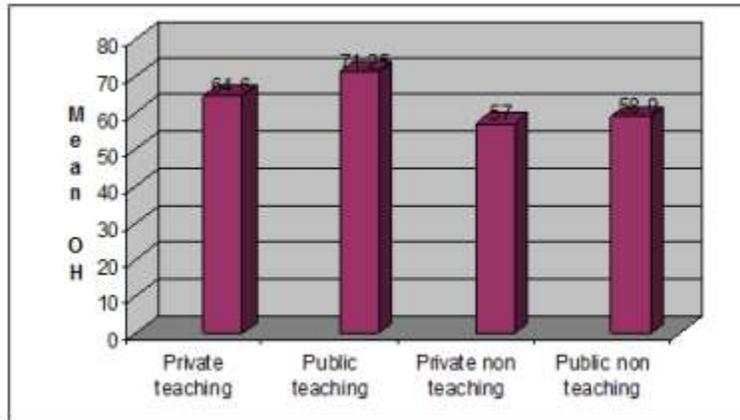
Fig. 1.1 Organizational health of the institutions

Summary of the findings

The findings reported in this study may be summarized as under:

1. The perceived organizational health of the institutions under study were found much lower than their expectations since the obtained mean score values in case of all four groups of respondents were below the theoretically obtainable mean score value (81).

2. The distribution of organizational health scores in case of all four groups of respondents were found closely following the normal distribution curve which indicates that the respondents are evenly distributed through out the range of scores obtained by them.

3. There was a significant inter-group difference in perception of the organizational health in the institutions. The teaching staff of public institutions perceived their organizational health to be much higher than the non-teaching staff of same institutions and teaching as well as non-teaching staff of private institutions. Thus, the organizational health prevailing in public institutions was perceived significantly higher than that prevailing in private institutions and that is largely because of the perception of the teaching staff of the public institutions.

One way of recognizing why attention should be given to addressing organizational health is to consider characteristics of unhealthy organizations. Unhealthy organizations can reflect, for example, lack of direction and accountability; misalignment of priorities; and poor coordination in and between systems and processes causing both costly inefficiencies and ineffectiveness. Unhealthy organizations can also demonstrate low employee commitment and disengagement as reflected in the costs of dissatisfaction, damaging conflicts, suppressed resentment, unnecessary absence, turnover, and absenteeism. In a healthy institute, the staff members are highly motivated, have high morale, high job satisfaction, high job commitment, low rate of employee turnover, low rate of absenteeism and gives high level of productivity. Thus it is mandatory to improve the organizational health to enhance the productivity and performance of any institutions.

The contribution of various ingredients to the obtained score of organizational health of both public and private groups of institutions requires to be critically looked into. The related data of organizational health are reported in table 1.4

Table 1.4
Percentage contribution of the constituent variables to the Organizational Health scores

Constituent Variables	Public teaching N=125 (Percentage)	Private teaching N=125 (Percentage)	Public Non teaching N=125 (Percentage)	Private Non teaching N=125 (Percentage)
A. TASK NEED				
Goal focus	10	40	8	20
Communication Adequacy	60	32	65	44
Optimal Power Equalization	10	28	27	36
B. MAINTENANCE NEED				
Resource Utilization	32	55	35	44
Cohesiveness	45	13	52	35
Morale	23	32	13	21
C. GROWTH AND DEVELOPMENT NEED				
Innovativeness	22	52	22	17
Adaptation	62	18	50	35
Problem Solving Adequacy	16	30	28	48

A perusal of the data reported in Table 1.4 makes the following startling revelations:

1. The goal focus was found to be extremely weak in case of public group of staff- both teaching as well as non-teaching but it was found reasonably good in case of private group of institutions. Hence special efforts need to be made particularly in public group of institutions to create awareness among them about the goal of the institution, to help them to integrate their personal goal with the institutional goals and create in them reasonable commitment for realization of these goals. This can be achieved through exposing the teaching as well as non-teaching staff of public institutions to training programs especially designed for the purpose.

2. Another weak spot for the public group of institutions is problem solving adequacy. The institute need to develop an effective problem solving mechanism by creating necessary infrastructure facilities providing resources necessary for efficient functioning and avoiding postponement of problems faced by the teaching as well as non-teaching functionaries.

3. Sense of innovativeness was also found quite inadequate in case of public group of institutions. The work procedure adopted by the institution become obsolete after some time with change in environment etc. but in case of public institutions there is a tendency to continue with the same procedure. This rigidity requires to be shed and necessary change with innovative ideas should be made and accepted

with open mind. This level of innovativeness must be allowed and practiced for continuous growth of the institutions.

4. The sense of flexibility is also important for morale of the staff which is another weak spot in the organizational health of public sector institutions. Necessary amount of flexibility in the rules and regulations of the institutions may provide satisfaction with the job and creates a sense of well-being in the functionaries.

Therefore the institutional authority in public institution needs to embrace reasonable flexibility to maintain a good health of their organization.

In case of private group of institutions cohesiveness and adaptation are seriously weak. The institute authority therefore should take care that

1. Staff members feel freedom to work for self as well as the institute so that they may enjoy working in the institute and feel reluctant to move out in search of better job opportunity.

2. The institute must make itself prone to change with changing environment. For example, they should readily accept the recommendations made by reform committees constituted by the government or other appropriate body and should try to accommodate the aspirations of its functionaries. They should also not hesitate to accept new technologies meant for enhancing work efficiency of its employees.

Since organizational health is the key to institutional growth and development, the institute authority and all the functionaries must do everything possible to keep the organization healthy.

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Impact of Introduction of Derivatives on Volatility of Spot Market

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Abstract

Efficiency in capital market will be one the driving factor of our economy in the next decade. The government through SEBI has made many policy changes in the past to improve on the efficiency of the market. One such policy change was to allow the trading of futures and options contracts from the year 2000. The impact of such changes is a point of study amongst the researchers and academician.

The options and futures contracts were introduced in the Indian capital market to reduce the volatility in the spot market. It has been almost eighteen years now since the introduction of derivatives trading. This research paper makes an attempt to study the change in volatility in the Nifty index after the introduction of derivatives. GARCH(1, 1) model is used to study the volatility by introducing a dummy variable in the variance equation of the model. The impact of domestic factors and world-wide factor were incorporated in the model by introducing the Niftynext50 index and S&P 500 index in the model equation. The result of the paper suggests that the volatility in the nifty index has significantly reduced after the introduction of options and futures in India.

Keywords: derivatives instrument, spot market, Volatility, GARCH, standard deviation, heteroscedasticity, market efficiency.

Introduction

Volatility in the capital market has been an interesting topic of research for academician and investors since the development of financial markets in India. The volatility in the spot market is definitely a critical variable for quantum of funds being invested or withdrawn from the market. A general trend observed amongst the investors is that they tend to stay away from the market with the increase in volatility and stay invested in low volatility period.

The futures and options were introduced in the market to transfer the volatility from the spot market to derivatives market and thereby maintain the confidence of investors in the spot market. The CNX Nifty index futures were introduced on 12th June 2000 and the Nifty options contracts started being traded from 4th June 2001. The Futures and Options segment of NSE is much bigger in terms of average daily turnover as compared to the cash segment. The cash segment and the F&O segment in the year 2018 had an average daily turnover of Rs 349.85 billion and Rs 5821.56 billion respectively (www.nseindia.com– 19th Nov, 2018).

The objective of this research paper is to study the impact of introduction of derivatives products on volatility of cash market. Though many numerous studies have been done in the past decade on this topic and the results concluded by the researchers have been mixed and contradictory. We make another attempt on the same topic by extending the period of study up till 31st December 2016. We would try to compare our results with the previous conclusion on the Indian market and the markets across the world. GARCH model has been used to study the conditional variance in the cash market. The selection of CNX Nifty index as a study variable is taken as it would capture the market wide fluctuations and which may be different for the sector specific index.

Review of Literature

The view point of researchers on the impact of introduction of derivatives on spot market can be classified in three different groups. The three groups holds the opinion that the volatility in the spot market has increased, the volatility has decreased and the last group of researchers says that there is no impact on the volatility of spot market with the introduction of derivatives products.

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The volatility in FTSE-100 stock index has increased after the introduction of futures but at the same time there is an improvement in the speed and quality of information flow in spot market as examined by Antoniou and Holmes (1995)

The volatility of the component stocks of DJIA index have not changed after the introduction of Dow Jones Industrial Average (DJIA) futures on analyzing the intra-day data as concluded by Rahman (2000).

The introduction of futures should improve the efficiency of corresponding spot market as per the finance theories. The volatility of Italian stock exchange was reduced after the introduction of stock index futures using GARCH model as analyzed by Bologna and Cavallo (2002). The introduction of CNX Nifty futures in India had a reduction in the volatility of spot market. The futures market leads the spot market in terms of processing information as examined by Thenmozhi (2002).

The introduction of futures had a reduction in the spot market volatility. The unexpected volatility in futures market have an impact in the spot market volatility but the expected volatility in the futures market does not have any impact on the volatility of spot market as examined for the Turkish stock exchange by Yilgor and Mebounou (2016).

Data and Methodology

The data required for analyses is (1) CNX NiftyIndex (2) Niftynext50 Index and (3) S&P 500. The data for all the three variables has been taken from October 5, 1995 to December 31, 2016. The data for CNX Nifty and Niftynext50 has been taken from NSE website and data for S&P 500 has been taken from Yahoo Finance website. October 5, 1995 has been taken as the starting point as the Niftynext50 was introduced from this date. For analysis purpose the daily closing price of each indexis converted to daily return data by taking the first log difference. The total number of valid observations in the mentioned period is 5144. Observations where the working days of Indian and US market were not synchronized have not been included in the analysis.

$$R_t = \ln(P_t/P_{t-1}) * 100$$

Where P_t is the closing price of the day "t"

The CNX Nifty Index comprises 50 stocks and Niftynext50 Index also comprises 50 stocks. The two index are calculated in a way that no single stock can appear in both the index.

The returns from the stock market assume conditional variance in short term and unconditional variance in long term. The conditional variance is assumed to exhibit heteroscedasticity and can be modeled in ARCH framework (Engle, 1982). Generalized ARCH, referred as GARCH (p,q) model were used to model the variance having heteroscedastic conditional variance and homoscedastic unconditional variance (Bollerslev, 1986). The GARCH (p, q) model is represented as follows:

$$Y_t = a_0 + a_1 X_t + \varepsilon_t, \qquad \varepsilon/\varphi_{t-1} \sim N[0, h_t] \qquad \ldots\ldots\ldots\ldots\ldots\ldots(3.1)$$

$$h_t = \alpha_0 + \sum_{i=1}^{q} \alpha_i \varepsilon_{t-i}^2 + \sum_{j=1}^{p} \beta_j h_{t-j} \qquad \ldots\ldots\ldots\ldots\ldots\ldots\ldots(3.2)$$

$$R_t = \alpha + \beta R_{t,Nn50} + \gamma R_{t-1,S\&P\,500} + \varepsilon_t \qquad \ldots\ldots\ldots\ldots\ldots\ldots(3.3)$$

The error term 'ε_t' follows N(0, h_t) where 'h_t' is the conditional variance.

The conditional variance equation of GARCH(1, 1) model is :

$$h_t = \alpha_0 + \alpha_1 \varepsilon_{t-1}^2 + \beta_1 h_{t-1} \qquad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(3.4)$$

The impact of introduction of derivatives on the volatility can be analyze by introducing a dummy variable in equation-(3.4). The futures were introduced on June 12, 2000 and the dummy variable will be assigned a '0' value before the introduction date and '1' after the date. The options were introduced on June 4, 2001 and similarly the dummy variable will take '0' and '1' value before and after the introduction date. The above equation is modified to incorporate the dummy variable.

$$h_t = \alpha_0 + \alpha_1 \varepsilon_{t-1}^2 + \beta_1 h_{t-1} + \lambda D \quad \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (3.5)$$

Test for ARCH effect

The mean return equation i.e. equation-(3.3) is tested for ARCH effect by applying the LM test on the residual term.

Test for stationarity

Augmented Dickey Fuller(ADF) is used to test the stationarity of each variable in equation-(3.3) to avoid the problem of spurious regression. The robustness of the GARCH model will be tested by applying serial correlation (Q-test), ARCH Test, normal distribution (JB statistics) on the error term.

Data Analysis

The Nifty Index, Niftynext50 Index and S&P 500 data series is subjected to ADF test for stationarity. Table -4.1 shows the result of ADF test and it is inferred that all the three series are non-stationary when daily closing price of each variable is considered. All the three series become stationary when log of daily returns is taken. The stationarity condition is to be met for the variables to be used in mean returns equation.

Table-4.1
Augmented Dickey Fuller test

		Nifty Index	P-value	Niftynext50 index	P-value	S&P 500	P-value
Closing Price Series	Model	-	0.2137	-	0.6335	-	0.7706
	A	-1.1124	0.4855	-4.0410	0.3112	1.2665	0.0990
	B	-0.0024	0.0059	-0.0014	0.0525	-0.0013	0.0979
Return series	Model	-	0.0000*	-	0.00008*	-	0.0000*
	A	0.0407	0.4171	0.0281	0.5220	0.0393	0.2508
	B	-0.8811	0.0000*	-0.9401	0.0000*	-1.1020	0.0000*

*Notes : *Significant at one percent level*

$$\Delta Y_t = a + b\Delta Y_{t-1}$$

Testing for ARCH effects

The mean returns equation is tested for the ARCH effects by applying Lagrange Multiplier (LM) test. The residual term 'ε_t' is tested for ARCH effect by taking 5 lags. Table -4.2 show the result of ARCH test. The coefficients of all the five lags are significant at 5 percent level and therefore we reject the null hypothesis that there is no ARCH effect in the residual equation. The mean equation shows evidence of ARCH effect, therefore GARCH (1, 1) model will be used for volatility analysis

Table -4.2
Heteroskedasticity Test: ARCH

F-statistic	70.33121	Prob. F(5,5126)	0.0000
Obs*R-squared	329.4655	Prob. Chi-Square(5)	0.0000
Variable	**Coefficient**	**Std. Error**	**P-value**
C	1.340513	0.114101	0.0000
RESID^2(-1)	0.133821	0.013924	0.0000
RESID^2(-2)	0.107750	0.014005	0.0000
RESID^2(-3)	0.033455	0.014077	0.0175

The descriptive analysis of the Nifty index and Niftynext50 is shown in Table -4.3. The Nifty Futures were introduced on June 12, 2000 and the options contracts on Nifty index on June 4, 2001. The cut-off date for analysis has been taken as June 4, 2001 as by this date both the options and futures contracts were available for trading to the investors. There are 1368 and 3776 observations before and after cut-off date.

Table – 4.3
Descriptive Analysis

	Before Introduction of futures and options (05/10/1995 – 04/06/2001)				After Introduction of futures and options (05/06/2001 -30/12/2016)			
	Mean return	Standard deviation	Skewness	Kurtosis	Mean return	Standard deviation	Skewness	Kurtosis
Nifty	0.0067	1.8192	0.0878	5.6636	0.0525	1.4824	-0.4197	13.9304
Niftynext50	0.0200	2.1273	-0.1367	5.3384	0.0678	1.6823	-1.2769	18.2643
Number of observations	1368				3776			

The GARCH(1, 1) Analysis is shown in Table-4.4. The present day returns on Nifty index is affected by returns in Niftynext50 and one day lag returns in S&P 500 as the coefficients of both the variables are significant. The coefficient of dummy variable is negative (-0.0808) and is significant at less than 1 percent level, which concludes that the volatility in Nifty Index has been reduced due to the introduction of futures and options.

Table -4.4: GARCH (1, 1) Analysis

$$R_t = \alpha + \beta R_{t,Nn50} + \gamma R_{t-1,S\&P\,500} + \varepsilon_t$$

$$h_t = \alpha_0 + \alpha_1 \varepsilon_{t-1}^2 + \beta_1 h_{t-1} + \lambda D$$

		Coefficient	P-value
A	Intercept	0.0624	0.0002
B	Returns Niftynext50	0.1081	0.0000
γ	Returns S&P 500	0.2883	0.0000
α_0	Intercept	0.1460	0.0000
α_1	RESID(-1)^2	0.1115	0.0000
β_1	GARCH(-1)	0.8535	0.0000
Λ	DUMMY (D)	-0.0808	0.0000

Residual diagnostics

Table-4.5 shows the value of Q-statistics and the p-value for each lag and it can be concluded that we accept the null hypothesis that there is no serial correlation as all the p-values are more than 0.05.

Table -4.5: Correlogram squared residuals test

	AC	PAC	Q-Stat	Prob*
1	0.009	0.009	0.4206	0.517
2	-0.006	-0.006	0.6228	0.732
3	0.003	0.003	0.6671	0.881
4	0.009	0.009	1.0766	0.898
5	-0.007	-0.007	1.2993	0.935
6	-0.002	-0.002	1.3279	0.970
7	-0.005	-0.005	1.4713	0.983
8	-0.016	-0.016	2.8239	0.945
9	-0.014	-0.014	3.8206	0.923
10	-0.010	-0.010	4.3693	0.929

The ARCH LM test was applied on the residuals of GARCH(1, 1) model. The Chi-square value as shown in Table -4.6 is more than 0.05 and therefore we accept the null hypothesis and can conclude that there is no ARCH effect in the model.

Table-4.6: ARCH LM test

		Prob.	
F-statistic	0.260720	F(5,5133)	0.9345
		Prob. Chi-	
Obs*R-squared	1.304793	Square(5)	0.9344
Variable	Coefficient	Prob.	
C	0.992336	0.0000	
WGT_RESID^2(-1)	0.009128	0.5131	
WGT_RESID^2(-2)	-0.006332	0.6501	
WGT_RESID^2(-3)	0.002927	0.8339	

The result of Jarque-Bera normality test as shown in Table-4.7 concludes that the distribution is not normal as the p-valueis less than 0.05 so we reject the null hypothesis. The null hypothesis for the test is that the distribution is normal.

Table-4.7: Jarque- Bera Normality test

Mean	-0.029244
Median	-0.035448
Maximum	8.036053
Minimum	-10.59752
Std. Dev.	0.999537
Skewness	-0.238032
Kurtosis	7.444012
Jarque-Bera	4281.497
Probability	0.000000

Conclusion

Analyzing the impact of introduction of derivatives on the CNX Nifty Index was the objective of this research paper. The GARCH model was used to study the volatility in the nifty index. A dummy variable indicating the introduction of derivatives was introduced in the volatility equation. The coefficient of dummy variable is found to be -0.0808 and significant. The negative value indicates that the introduction of derivatives contracts in the Indian capital market had a stabilizing effect on the volatility of the nifty index spot market. Therefore we can say that the prime purpose of SEBI to introduce the derivatives contract to reduce the volatility in the spot market has shown positive results. The government should make new policies to keep the capital market transparent and maintain the confidence of investors. Investors especially the retail ones have a tendency to stay away from the market at the times of high volatility.

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Drivers of Green Adoption: Synthesizing the Organisational and Consumer Perspective

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Abstract

Environmental degradation has become a global concern now. The industrial development of nineteenth century and factors such as increase in number of automobiles, diesel locomotives, factory waste, uncontrolled power consumption, emission of harmful gasses, contamination of soil and water, excessive use of plastics have resulted in the worsening of the environment in last decade or so. Despite government policies and initiatives aimed at reducing carbon footprints, organisations' green efforts and rising consumer demand for eco-friendly products, there still exists a huge gap in green adoption in respect of both production and consumption. It is in this context that the present paper provides an extensive review of the factors that facilitate or restrict the green adoption by firms as well as by consumers. The understanding provided through the paper would be helpful for policy makers, industry and consumers in taking appropriate measures to bridge the gap and channelize all concerned in the direction of sustainable development and consumption.

Key Words: *Environmental degradation, Global warming, Carbon footprint, Green Marketing*

Introduction

Energy consumption and technology choice behavior have undergone significant transformation with respect to climate change policy and environmental pollution mitigation in last few years. In various parts of the globe, government, decision makers and inter-governmental organisations have set goals to reduce carbon footprint and encourage users to shift towards environmental friendly technologies such as electric vehicles (EVs), solar water heaters, solar panels, green building norms and green information technology. However, despite the fact that numerous policies, programs and mechanisms in the form of market-based approaches, government norms and regulation and monetary incentives (such as tax and utility rebates) have been formulated to boost the adoption of power saving technologies, investment in energy efficient eco-friendly technologies still remains well below the optimal level of investment (Li & Just, 2018). Moreover, it is seen that consumers' risk perceptions, attitude, social and cultural beliefs as well as an organisation's goals and objectives, structure and capacity affecting the technology choice behaviour differs from place to place. An understanding of the factors that impact the green adoption behavior of consumers as well as organisations thus is useful in bridging the 'energy efficiency gap'. It is with this objective that the present review paper synthesizes past literature and current thinking in providing the organizational and consumers' perspective towards green adoption.

Methodology

The adoption of green products and services by the organisations and consumers has been studied using several theoretical frameworks. Following the State-of-the-Art method of literature review, the present article summarizes current and emerging trends, research priorities and standardizations in the domain of green adoption. On the basis of available published literature, the paper identified main drivers of adoption behaviour of consumers as well as business. Research papers with relevant keywords such as (green marketing, HEV (Hybrid Electric Vehicle), solar panel, adoption of eco-friendly products, etc) were downloaded from online databases like Proquest, Google Scholar etc. All papers during the period of 1981 to 2017 were included in the review. The papers were classified on the basis of chronology and themes on which they were based. Major findings, methodology and data set used in the papers were tabulated in a structural fomat for extracting their common and differentiating features. The classification and subsequent tabulation helped in identifying the major drivers which accelerate or inhibit the adoption of

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green technology by organisations and eco-friendly products and services by consumers. Some of the drivers were found to co-exist in many studies. In order to understand the constructs and the context of the theme, all the papers were studied and analyzed in-depth. A discussion of these drivers for organisations and consumers has been provided in the ensuing sections.

Drivers of Green Adoption: Organisation's Perspective

Technology and recent innovations have shown potential in firms' transition from traditional to eco-friendly and sustainable technology. These shifts are the results of various factors such as learning importance of healthy environment, cost dynamics of using eco-friendly technologies, expectations of various stake holders and risks involved thereof. However, given the importance of environment protection and sustainability amongst industrial policy makers, it becomes necessary for business to understand the importance of these factors and devise ways to overcome the ones that present a barrier in the adoption of 'green'. In the light of the framework presented in Figure 1, the ensuing section of the paper provides a detailed discussion of various drivers that influence green adoption from firms' perspective.

Figure 1: Drivers affecting Organisations' Green Adoption

Product Characteristics
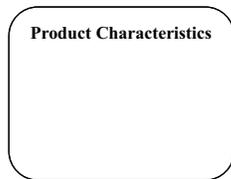
India. The price of it very much depends upon the efficiency of supply chain and logistics.

In Horizontal integration, the firm expands through acquisition of its competing businesses. On the other hand, the Vertical integration involves the acquisition of the services of suppliers or consumers. These strategies help the firms in gaining market share by eliminating competition and providing them the access to new markets and technology. According to Zhai & Williams (2012), organisations that are engaged in producing eco-friendly technologies need to have numerous strong alliances to scale up rapidly, which eventually pushes down the costs and result in faster adoption. However, it is an integration of existing and potential networks of suppliers, producers and users of green products and services that would ultimately impact the future of the industry.

- **Market Area Characteristics:** Market is defined as any place, real or virtual where buyers and sellers of goods and services meet. Any market area is characterized by its size and the purchasing power of the consumers (including wealth, household and location). Within this meta spatial system, the trend for eco-friendly products is a recent phenomenon in developing countries and as such, the market for eco-friendly products and services will take some time to mature. Many firms have recently started offering eco-friendly substitutes that are, of course, more expensive than traditional products. Income too plays an important role in the adoption of eco-friendly technologies. According to Mahapatra & Gustavsson (2008), households with higher income brackets are more likely to adopt eco-friendly products, influencing the demand for eco-friendly products in the market. In addition, it is found that not only consumers' adoption decision can be influenced by adoption decisions of geographic neighbours, people with similar socio-economics and demographics characteristics also tend to cluster (e.g. Liu et al., 2017).
- **Product Characteristics:** In the context of green product and technologies, product is something that is produced by an individual firm, an industry or the economy as a whole . For example, solar panel, solar water heaters and hybrid electric vehicles. Product characteristics are understood in terms of multiple parameters such as a product's relative advantage, compatibility or incompatibility, simplicity or complexity, testability, observability and perceived risk. While the aspect of perceived relative advantage also includes price, productivity, and performance of the product that positively influence the demand for environmental friendly products (Labay & Kinnear, 1981), trialability measures the testability of an innovation in

technology. According to Elmustapha et al. (2018), trialability affects the adoption of carbon neutral technologies such as solar powered vehicles and electric vehicles. Similarly, observability of a product i.e. the ease with which the benefits of the innovation can be perceived, too positively influence the adoption. However, familiarity with the innovation makes the product less observable. In so far as compatibility is concerned, more compatible products require very less change in the behavior and accelerate the adoption. So, the aspect of compatibility becomes an important aspect for eco-friendly products. On the other hand, the study by Mills & Schleich (2009) has argued that complexity act as a barrier in the adoption of eco-friendly technologies. In addition, perceived risk (including both operational and financial risk) of adopting new technology by the organization also hampers the transition towards eco-friendly technology.

- **Firm Characteristics:** Being a basic unit of the industry for productive activities, a firm seeks to maximize profit with long-run consistence performance. The size of the firm, organizational capacity and human resources, research and development investment, competitors green practices, and technology readiness affects the implementation of eco-friendly technology by the firms. R&D investment is a strong barrier to adopt green practices by the firm. The research and development of a new product or process takes place in various stages, from basic research to commercialization. Concerned with the discovery of new ideas, facts, solutions, concepts, and theories, introduction of innovative products and services in the market requires huge investment. Modern industries that purely survives on innovation requires to allocate much portion of their returns on R&D. When traditional cost-efficient technologies are available, firms also are less likely to bear additional cost of investment in environmental friendly technologies. Even if willing, the ability to finance the implementation of greener solution directly depends upon the size of the firm. Small scale manufacturing firms are less likely to introduce eco-friendly production technology as it requires investment. Along with the cost and investment issues, the competitors' strategies concerning latest technology may obsolete the existing production systems of the company and initiate an organization's adoption of the newer ones (Durodolu, 2016). The case in point is the introduction of electric vehicles after the concern over global warming by numbers of automobile companies.
- **Public Policy:** Public policy including government norms and regulations, government stimulus expenditure, green building certification, utility rebates for using green technologies, State and local grants and other public

incentives to adopt green building technologies directly impact the adoption of green technologies by the firms. Governmental grant schemes like financial rebates for organisations that implement environmental friendly technologies (e.g. carbon neutral technologies) and various policy incentives such as low interest loans, subsidies, reduced tariff rates and other similar benefits serve as an important factor for firms to shift from traditional to green technologies (Luthra et al., 2016).

- **Time:** Time factor explains how a new products/technologies passes through different phases during its life cycle. New technologies are introduced as innovative solution to existing need. Just like any other innovation, the price for eco-friendly technology are also high when it is introduced due to high investment cost. Launch and take off time, gap between early adopters and middle adopters, history of continuous improvement, saturation, challenge and replacement affects the acceleration of diffusion of eco-friendly technologies by the firms. According to Andrew (2017), some organisations are less likely to shift towards expensive eco-friendly technology until external pressure is exerted on them by the stake holders. The time gap between organisations willingness to pay higher price and mass market adoption of environmental friendly technologies in turn depends on various factors and thus influence the decision concerning shift towards new technologies.

- **Climate:** Climate and the geography of a place directly impacts the adoption of green technology. Climate change

is the result of both natural factors as well as man-made factors. The availability of renewable source of energy affects the usage of clean technologies. For example, Queensland, Australia which falls between equator and Tropic of Capricorn receives solar insolation throught out the year. As a result, Photo-Voltaic panel installations in households has increased from 1000 households in 2008 to 400,000 households in 2016, generating about 1.5 GW of electricity with no GHG emission (Agnew et al., 2018).

Consumers' Perspective of Green Adoption: Key Drivers

Household energy consumption and demand has been used to forecast energy demand for the purpose of energy planning. Due to innovative technological features and novelty, the eco-friendly products are not only significantly different from traditional products but also involve huge financial, psychological and other risks. At the same time, consumers' overall assessment of an eco-friendly product such as Electic Vehicle (EV) depends on the fulfilment of social (i.e., being proud of the EV), functional (i.e., getting a good mileage), economic (i.e., saving money in the long run), and other relevant factors. A better understanding of these factors (or drivers) and the barriers associated with the same thus, would play a pivotal role in increasing the consumers' adoption of green products. The ensuing section of the paper provides a detailed discussion of these factors (see Figure 2).

Figure 2. Drivers of Green: Consumers Perspective
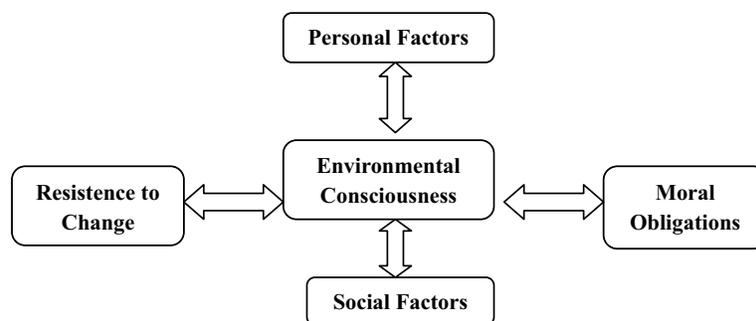
(Source: Literature Review)

- **Personal Factors:** In addition to the external influences (e.g. costs and functionality) that tend to influence a consumer's decision to adopt eco-friendly product/service, a host number of personal aspects such as education, income, age, values and norms also impact his/her purchase tendencies and spending patterns. It is in this regard that the study by Jager (2006) found the rent of residential space and low family income as the two key barriers to diffusion of solar water heaters among

households. Similarly, while education and energy related investment decisions have been found to be correlated with household energy investments (e.g. Ariff et al., 2012), it has been revealed that younger generation is more inclined towards adopting energy-efficient and innovative (e.g. Ozaki & Sevastyanova, 2011) in comparison to consumers from older age brackets.

- **Social Factors:** From the perspective of consumer decision-making behavior, the perceived risk associated with new

products is multi-faceted concept comprising of psychological, performance, financial, social, time and physical risks. Along with the individual differences, there exist social influences and interpersonal factors that promote the ability to accept or reject the intention to use green products and services. Assigning due consideration to interpersonal influences on purchase decision becomes all the more necessary as consumers show a stronger preference for products if they think that such a purchase is supported by the society in which he/she lives (Steg & Vlek, 2009).

- **Moral Obligation:** From consumers' viewpoint, it is their moral obligation to use eco-friendly products and services. Moral obligation means an obligation arising out of the consideration of right and wrong, that is purely ethical in nature. Zhai & Williams (2012) have posited that the adoption of an eco-friendly product is more likely in a situation where a consumer perceives himself/herself as an environmentally responsible individual. The same study also opined that an individual's self-image can further drive eco-friendly consumption.

- **Resistance to Change:** Resistance to change exhibits a reluctance to embrace an initiative, idea, perception and action or opposing circumstances. It is a feeling of anxiety connected with the introduction to new product and technology. Consumers similarly show a reluctance towards new technology. It is important for any organisation to understand the reason for resistance by consumers in order to understand the resistant behaviour and alternatives to overcome the same. A possible solution is to offer appropriate instruction and training on the use of innovative product to overcome the cause of resistance. According to Durodolu (2016), resistance to information systems is one of the major reasons for the failure of adoption of new technology.

- **Environmental Consciousness:** Environmental conscious-ness, also known as pro-environmental behavior, incorporates various psychological elements including attitudes, beliefs, and values. It is seen that the knowledge and experience of eco-friendly products positively influence the potential adoption but takes time to develop. However, many market segments are unlikely to adopt new eco-friendly technology until a certain mass is achieved in the market because of higher prices. Similar concerns have been raised in respect of consumers' environmental behavior and diffusion of sustainable energy technology. For instance, it is seen that consumers who claim to be pro-environmental and energy savers, are reluctant to change their habits and take little effort to use eco-friendly products and services. Only if the consumer confirms the willingness to continue using a certain good, the adoption process is completed.

Conclusion and Future Research Agenda

Climate change and environmental problems are of major concern to governments, organisations, and consumers. As the market for green products and services is developing, it becomes much more feasible and important to focus on the adoption behavior of both consumers and firms. The current review paper makes a contribution to existing literature in this regard by providing an overview of the drivers that influence the adoption of green marketing, from the organizational as well as consumers' perspective. Through an extensive discussion of the factors that facilitate or inhibit the green adoption on both sides, the paper presents some key observations.

First, the paper reiterates that the key responsibility of saving the environment has to be jointly shared by firms as well as consumers. This is all the more logical as the benefits and outcomes arising out of green and sustainable development is enjoyed by both the parties.

Second, the policy makers should use the understanding of the factors to come up with concrete measures for bridging the energy efficiency gap between the demand and supply side of green adoption. Thus, while the facilitating factors should be communicated explicity and taken care of so as to actively encourage implementation of new and green technologies, the problem areas (or inhibitors) should be addressed and solutions be devised to overcome them.

Third, policy makers and industry should make efforts to encourage the adoption of eco-friendly products through policy incentives, marketing communications, innovation and new product development. A related move in the direction of active green adoption requires the mapping of such adoption in terms of its benefits and outcomes for all concerned. So, while it is important that organisations are made aware of the impact of green practices on a firm's financial performance and sustainable development, it is equally necessary that consumers are communicated about the benefits of adopting green products/services so as to drive them more actively towards sustainable consumption. More so, there is a need to highlight the importance and urgency of adopting green practices due to the impact of such activities in arresting futher environment degradation. For instance, people should be made aware as to how the use of electric vehicles is a solution for the problem of huge dependency on fossil fuels, increasing carbon emissions and other environmental issues.

In sum, the present paper calls for future research and alternative methodological approaches to empirically assess the impact of various drivers on the green adoption of firms and

consumers the subsequent impact of such adoption on firms' performance and consumer well-being, thus paving way for smooth transition towards cleaner environment for present as well as future generations.

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Education as a key driver for Sustainable Development- with special reference to Indian Market

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Abstract

Sustainable development in the past few years is based on research and education which stands to be the back bone of the Indian Economy. However, sustainable development policies highlight the role of education which has become the need of the time to create the awareness among the learner, researchers and teachers as well as in local communities for protection of the environment. This paper gives an overview regarding the role of research and higher education in the development of India in sustainable manner. Various attempts have been made to give an overview of the status of higher education system in India and various national and state funding agencies which are working for the Research & Development programmes in the India. A country like India where higher education is playing a very important role in the overall development of the nation.

Key Words: - *Sustainable development, research, Higher education, India, role, state funding agencies*

Introduction

In 1972, the prime minister of India, Mrs. Indira Gandhi had emphasized, on few important topics at the UN Conference on human environment at Stockholm, that the removal of poverty is an integral part of the goal of an environmental strategy for the world including our country ie. India. The concepts of interrelatedness, of a shared planet, of global citizenship, and of 'spaceship earth' cannot be restricted to environmental issues alone but there are other factors also, which apply equally to the shared and inter linked responsibilities of environmental protection and human development.

History has led to vast inequalities, leaving almost three-fourths of the world's people living in under-developed nations and one-fifth below the poverty line. The long-term impact of past industrialization, exploitation and environmental damage cannot be washed away. It is only right that development in this new century be even more conscious of its long-term impact on various factors. The problems are complex and the choices difficult. Our common future can only be achieved with a better understanding of our common concerns and shared responsibilities of each Individual.

Sustainable development is a process which involves human's intelligence, decision making efficiency, planning and management skills, power of imagination, entrepreneurship, development and production with environmental safety etc. Usually, sustainable development is a human subject. The issue associated with sustainable development can be seen as one of the basics of needs of any society. Therefore, so far its major field of concern has been for the environmental factors, but its applicability has been extended to wrap almost each human attempt. The discussion is a principal element in education for sustainable development. Environmental education is the fundamental education to study the sustainable development. In other words environmental education will be able to make a path for education for sustainable development for the future needs of the society. Any researcher who is working for education for sustainable development can support the mode of life explained by value based interpretation of sustainable development. In the last decade, the education for sustainable development has been accepted as a main policy which is the utmost need of the day for each state or country. Moreover, the sustainable development has gained the due attention on international forum not only by researchers or environmentalists but also by the chiefs of several countries.

Initially sustainable development was discussed globally in UN Conference on Human Environment Stockholm in 1972. After that in 1987 UN World Commission on Environment and Development published a report on "Our Common Future" which was also popularized as Brundtland Report then concern

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for a sustainable development was came into consideration. In UN Earth Summit 1992, which was held in Rio de Janeiro, Brazil, a conscious thought was emerged for environmental problems along with solutions to resolve the problems and the requirement of a multidisciplinary approach was recognized. Again in 2000, the chief of various countries gathered to discuss the issue of environment conservation under the umbrella of UN. After Johannesburg conference in 2002 on sustainable development, 2005–2014 was declared as "Decade for Education for Sustainable Development (DESD)" by UN General Assembly accepting the significance of Education for Sustainable Development.

Sustainable development is a pattern of using natural resources in such a way which provides regular individual requirements considering the preservation of the environment for coming generations. After Brundtland Report sustainable development was defined as "Sustainable development is the development which meets the needs of the present without compromising the ability of future generations to meet their own needs". After Rio Earth Summit 1992, the role of education to avoid the ecological degradation was accepted as a result of Rio Declaration on Environment and development.

Education for Sustainable Development is an idea of education which aims to empower the individuals to assume liability to build a sustainable future. The thought of sustainable development touches aspects of the institutional and social framework. There has been increasing identification of the significant role of education in promoting sustainable development since 1992 Earth Summit in Rio de Janeiro. However, any individuals or organizations do not have all the knowledge to develop learning systems which are essential to maintain sustainable development in the specific surroundings.

CHALLENGES FOR SUSTAIABLE DEVELOPMENT

Now-a-days sustainable development has become a key issue at state, national and international level concerning education policy since last decade. Various stakeholders recognize the sustainable development in different ways and search for different outcomes. There are some specific challenges in the implementation of sustainable development in higher education and research can be understood as:

1. Lack or poor communication skills in higher educational institutes for the term sustainable development and also in its application.
2. Lack of trained professionals in higher educational institutes.
3. Requirement of inter-disciplinary research in sustainable development manner.
4. Collaboration, networking and coordination among different educational institutes.

Objective

1. To analyze the role of Institutions in Sustainable Development
2. To analyze the role of Ministries/Statutory bodies for Science and Technology promotion
3. To study the role of government in promotion of sustainable development of India.

Research Methodology

Research methodology employed is descriptive to some extent, exploratory to a certain degree and partially causal. Secondary sources of data are used. The data and all relevant information for this study has been collected with the valuable assistance of various Books, Magazines, Research Articles, Newspapers, Research Journals and online resources etc. Data published by various institutions such as Government of India, Ministry of Human Resource Development, statistical data form ministry of HRD, National University of Educational Planning & Administration etc are used for the objective of the present paper.

Analysis and Findings

Table-5: Number of Institutions by Type 2014-15

	Type		Number
School Education*	Primary		847118
	Upper Primary		425094
	Secondary		135335
	Senior Secondary		109318
	Total		**1516865**
Higher Education	**University**	Central University	43
		State Public University	316
		Deemed University	122
		State Private University	181
		Central Open University	1
		State Open University	13
		Institution of National Importance	75
		State Private Open University	1
		Institutions under State Legislature Act	5
		Others	3
		Total	**760**
	College		**38498**
	Stand Alone Institution	Diploma Level Technical	3845
		PGDM	431
		Diploma Level Nursing	3114
		Diploma Level Teacher Training	4730
		Institute under Ministries	156
		Total	**12276**

Data Source :

For School Education : National University of Educational Planning & Administration, New Delhi (website: http://dise.in/)

* Figures related to School Education are provisional.

For Higher Education : Ministry of Human Resource Development, Government of India (website: http://mhrd.gov.in/statist)

Interpretation

The above table states that primary schools which had come up in 2014-2015 84,7118 ;upper primary 425094; secondary 1,35,335; senior secondary 109318 and incase of colleges which had come up were 38498 and the number of standalone Institutions 12276. So this shows the overall development of the educational system for the sustainable Development.

**Table: 6B- Percentage Enrolment in various Disciplines at
Ph.D & Post Graduate level in Higher Education 2014-15**

Discipline	Ph.D.	Post Graduate
Agriculture & Allied	3.84	0.58
Commerce	3.09	9.61
Engineering & Technology	23.42	7.60
Foreign Language	2.58	4.86
Home Science	0.51	0.25
Indian Language	5.01	8.99
IT & Computer	1.69	7.48
Law	0.99	0.67
Management	5.31	15.70
Medical Science	3.99	3.06
Science	25.88	12.51
Social Science	12.13	17.35
Others	11.56	11.34

*Data Source: Ministry of Human Resource Development, Government of India
(website: http://mhrd.gov.in/statistics)*

Interpretation

The above table states that government has taken various initiatives for the sustainable development of the nation where the above statistics declare that the number of people enrolled for PhD and Post graduation programmes have increased in all the above mentioned fields if the comparison is drawn with the past records.

**Table: 6C- Percentage Enrolment in various Disciplines at
Under Graduate level in Higher Education 2014-15**

Discipline	Under Graduate
Arts/ Humanities/ Social Sciences	40.24
Engineering & Technology	15.89
Science	15.38
Commerce	13.98
Education	3.25
Medical Science	3.05
IT & Computer	2.57
Management	1.93
Law	1.13
Agriculture	0.61
Oriental Learning	0.39
Others	1.58

*Data Source: Ministry of Human Resource Development, Government of India
(website: http://mhrd.gov.in/statist*

Ministries/Statutory bodies for Science and Technology promotion

Sr. No.	Ministries/Statutory bodies	Web address
1.	Ministry of Environment and Forest	http://envfor.nic.in/
2.	Ministry of Water Resources	http://wrmin.nic.in/
3.	Ministry of New & Renewable Energy	http://www.mnre.gov.in/
4.	Department of Scientific and Industrial Research	http://dsirwebscirhq.csir.res.in/webdsir/
5.	Council of Scientific & Industrial Research	http://www.csir.res.in
6.	Department of Science & Technology	http://www.dst.gov.in
7.	Department of Biotechnology	http://dbtindia.nic.in/index.asp
8.	University Grants Commission	http://www.ugc.ac.in/
9.	Indian Council of Agricultural Research	http://www.icar.org.in/
10.	Indian Council of Social Science Research	http://www.icssr.org/
11.	Indian Council for Cultural Relations	http://www.iccrindia.new/

Interpretation

Indian higher education system possesses the 3rd rank in the world education system but the full economical benefits could not be achieved due to the mismatch between skill base and market needs. Establishment of National Assessment and Accreditation Council (NAAC) is providing correct symbols to generate and to promote awareness for the up gradation of quality of educational institutes, colleges and universities of India for the overall growth of the nation. Education is the backbone of any country. Higher education generally includes three stages or steps such as graduate, post graduate and doctoral programme. Besides this, higher education also includes technical, medical, engineering and other commercial degrees and diploma. Education at all levels plays an important role but Higher education plays a key role in preparing sustainable societies and holds the responsibilities to create the leadership in education system for sustainable development.

Research in higher education has an initial target to improve the quality as well as process of education. However, research is an essential and effective tool to lead a country towards the path of progress and prosperity. Therefore, the advanced research culture in higher education system is necessary to play an effective role in global competition.

The funding agencies of the country are recognizing and promoting the emerging fields of research. Moreover, these councils or agencies are also encouraging the research in academics through the networking with other institutions and departments to open new windows of ideas. Some Indian ministries and statutory bodies are regularly providing the financial assistance to research and higher education through their programmes, projects in institutes, colleges and universities considering the concept of development with sustainability in the country.

Conclusion

After this brief survey on education and research in the country, it can be concluded that a lot of scientific programmes are being implemented by Govt. of India as well as state governments to promote the research and higher education standard. Since, the environmental protection has become an essential part of the curriculum of a country therefore national policies on environmental education have been made. Although departments of education and universities are able to expand the education for sustainable development but the network of several non government organizations (NGO's) can also participate to serve the purpose. Besides, education and

research through distance learning can also be an option to strengthen ESD in higher education in country.

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The Retrieval Effectiveness of Search Engines for Modern Consumers

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Abstract

The World Wide Web (WWW) is the universe of network .The web search engine is used to instantly search the answer of a query. A lot of distinct search engines are available to the internet users. Each web search engine works, based on some specific algorithm for ranking the return web search pages corresponding to given query keywords. Ranking algorithm ranks the return web result for appearance of most relevant web page on top position. We are concerned about the analysis of popular famous distinct search engines as per interest of modern consumer

Index Terms- *Aol, Ask, Yahoo, Google, Bing WWW(world wide web).*

Introduction

In the past decades, the whole world has observed the blowup of World Wide Web (WWW) from an information repository of few millions of hyper linked documents into a massive worldwide (WW) "organism" that distributed informational, transactional and communicational needs of people all over the global. Though a late arrival in the Internet group, it has fastly acquired popularity and became the second most widely used application of the Internet [1]. Search Engines are specially designed for informational retrieval, which extracts the information from WWW (World Wide Web) as per users query. As argued by Marchionni, [2], [3] "end users want to achieve their goals with a minimum of cognitive (in the mind) load and a maximum of enjoyment", correspondingly, in the context of web searches, It is observed that a maximum of the search engine users tends to click on a result within the first page of the search results. In fact, a survey done by I Prospect and Jupiter research on the behavior of search engine, shows that 62% of the search engine users click on a search result within the first page of results [4]. Since, generally search engines returns a very large list of documents for the users query of keywords, the list is ranked as per   the importance and relevance to the users query. Thus, for the users query, the ranked list of results is displayed by search engine, with few results per page.

The general concept used by most of the search engines to find quality web pages and rank the list that is used by Page Rank algorithm [5], [6] which assumes that if web page A has a hyper link to web page B then the author of web page A thinks that web page B contains valuable information. This opinion of A becomes more important. This means that ranking of a web page is high if many highly ranked web pages points to it.

This paper gives the focus for comparative study (analysis) of these search engines (Google, Bing, Yahoo and Ask and Aol) in term of quality of first return web page result. ANOVA (analysis of variance)[7] and F test   is used for comparative statistical analysis of these search engines. On the basis of this analysis, research would show about equivalence of these search engines.

The remaining part of the paper is framed as follows: Section II describes quality parameter on which these search engines were evaluated to check their efficiency. Section III describes the methodology followed in carrying out the research. Section IV describes the key finding and result and Section V concludes the paper.

Quality Parameter

The quality parameters on which the search engines were evaluated as follows

A. **In Depth Coverage:** This quality parameter refers to level of in depth coverage which the representation of keywords is given. The representation of each topic is complete in form of its making blocks or sub topics. The description of

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subtopics are also done in the same manner and the process continues until the basic building blocks are reached. This is helpful and required if the end user is not aware with the technical methods and different building blocks used while describing a topic.

B. **Thought and clarity:** This quality parameter defines to the clarity with which the concept is easily understanding, methodical and presented. It covers the quality of words matched with the query ,completeness of sentences, proper use of word, choice of word, related diagram of topic for easily understandable , understand use of grammar, unambiguous sentences, the flow of idea, continuity and division of the text into proper paragraphs.

METHODOLOGY

To do the comparative study of search engines, 200 keywords are taken from different programming languages. The keywords were selected such that they represent quality concepts and have standard meaning. All these keywords do not represent a wide area and cannot be further separated into broad sub areas. These keywords are written in the coupons separately. After that, all coupons are placed in container. Out of 200 keyword from different programing languages, Only 32 keywords are picked randomly from container using lottery system. The various keywords are shown in Table I.

We have also selected five popular search engines on the basis of survey. Survey is done by taking opinion of 150 internet users from different places. We picked top five search engines as popular search engines on the basis of survey result. Hence, five popular search engines decided for analysis are Google, Bing, Yahoo, Ask and Aol.

Table I. The Various Keywords for their Grade of Five Search Engines

S.N.	Keywords	Google	Bing	Yahoo	Ask	Aol
1	Else	6.76	5	6.66	5.66	6.33
2	if	6.66	5	6.66	5.66	6.33
3	Break	6.99	7.33	7.33	6.66	7.33
4	Goto	6.66	6.66	2.66	2.66	6.66
5	For	6.83	4.66	6.83	5.83	6.83
6	While	6.83	6.83	6.83	7	6.83
7	Do	6.5	6.25	6.5	6.25	5.6
8	Int	6	6.41	6	6	5.66
9	Float	4	4.41	4.08	5	4.08
10	Char	4.33	4	4.33	4.33	4.33
11	Double	4.33	4.41	4.33	4.33	4.33
12	Long	4	3.66	4	3.66	4.66
13	Auto	3.5	3	3.5	3.66	3.5
14	Const	4.9	4.9	5.33	4.9	4.9
15	Struct	3.33	2.66	3.33	3.33	2.66
16	Short	5	4	5	5	4
17	Unsigned	3.25	3.25	3.25	3	3.25
18	Signed	3.41	3	3.41	2.66	3
19	Switch	4.33	2.33	4.33	5.16	2.33
20	Void	3.66	4	3.66	4	4
21	Case	4	4	4	3	4
22	Default	4.33	4.33	4.33	4.33	4
23	Return	4	4	4	4.66	2.33
24	Sizeof	3.93	2.66	3.83	3	2.66
25	Continue	3	3	3	2.66	3
26	Enum	3.66	3	3.66	4.33	3
27	Extern	5.33	5.33	5.33	5	5.33
28	Register	4	3.66	4	3.66	3.66
29	Static	4.33	4.33	4.33	4.16	4.33
30	Typedef	4.33	4	4.3	5.08	4
31	Union	4.16	4.16	4.16	4.25	4.33
32	Volatile	4.33	4.33	4.33	4.5	4.5
Total		150.81	138.56	147.29	143.38	141.75
Average		4.712813	4.33	4.602813	4.480625	4.429688

Searching process was started with the help of five considered search engines on each and every keyword. The first web document out of the ranked list of returned web documents through search engines was saved corresponding to every keyword. Expert of concerned area evaluated these documents on the scale of 0 to 10 on the basis of these three quality variable separately .Scale 0 was treated as lowest and scale 10 was treated as highest. For each search engine and every topic these three quality grades were averaged to find the average quality.

On these three quality variables (In Depth Coverage, Thought and clarity, Number of related web link corresponding to Query Keywords), we would like to do analysis weather these considered web search engines are different or not, significantly. For that, we apply Analysis of variance test (ANOVA) and F test. Table I shows mean of grade through technique1 (Google search engine), technique2 (Bing search engine), technique3 (yahoo search engine), technique4 (Ask search engine) and technique5 (Aol search engine). Table I also shows grand mean of grade by these five methods. By using appropriate formula we calculate population variance (between column variance) and population variance (within column variance) shown in Table II& Table III respectively.

Table II. Shows Population Variance - Between Column Variance for Search Engines

n(size o f each sample i.e. number of search keywords taken as query topic)	ā=Mean of grade of all topics through every search engine	Grand mean of mean grade through all these five search engines	y^2 =(ā –Grand mean)2	n*y^2
32(by Google)	4.69(by Google)	4.5084	(0.2016)^2=0.040642	32*0.040642==1.300544
32(by Bing)	4.29(by Bing)	4.5084	(0.1784)^=0.031826	32*0.031826=1.018449
32(by Yahoo)	4.6028(by Yahoo)	4.5084	(0.0944)^2=0.008911	32*0.008911=0.285163
32(by Ask)	4.51(by Ask)	4.5084	(-0.0284)^2=0.000806	32*0.000806=0.025809
32(by Aol)	4.429(by Aol)	4.5084	(-0.0794)^2=0.006304	32*0.006304=0.201739
				∑nj y^2 =∑nj(ā –Grand mean)=(32*(.088489))=2.831648
Between column variance=∑nj(ā – grand mean)^2/(k-1)=2.831648/(5-1)=0.707912				

We presume the null hypothesis as sample means with respect to considered five search engines are identical. Ω1= Ω2= Ω3=Ω4= Ω5 where,
Ω1=sample mean with respect to Google,
Ω2=sample mean with respect to Bing,
Ω3=sample mean with respect to Yahoo,
Ω4=sample mean with respect to Ask,
Ω5=sample mean with respect to Aol.
F-test: This statistical test shows that assumption of null hypothesis is true or false. As per this hypothesis, normally distributed populations having same standard deviation are equal. This is more popular hypothesis tested by analysis of variance and F test.

Analysis of variance (ANOVA) compares the two population variances by calculating there ratios with the name F, which is as follows:
F = population variance estimate based on variance among sample means / population variance estimate based on variance within the samples

Hence, F=Between column variance / Within column variance
Between column variance can be found with the help of Table II and within column variance can be found with the help of Table III ANOVA Table with the name of Table IV also shows these values.

Table III: Shows Population Variance – Within Column Variance Through Five Search Engines.

Grade for search result against Google search engine(model-1)(x1)	(x1-mean(x1))^2	grade for search against Bing search engine(model-2)(x2)	(x2-Mean(x2))^2	Grade for search result against Yahoo search engine(model-3)(x3)	(x3-Mean(x3))^2	Grade for search result against Ask search engine(model-4)(x4)	(x4-Mean(x4))^2	Grade for search result against Aol search engine(model-5)(x5)	(x5-Mean(x5))^2
6.66	(6.66-4.71)^2=3.8025	5	(5-4.33)^2=.4489	6.66	(6.66-4.602)^2=4.235	5.66	(5.66-4.48)^2=1.3924	6.33	(6.33-4.42)^2=3.6481
6.66	3.8025	5	0.4489	6.66	4.235	5.66	1.3924	6.33	3.6481
7.33	6.8644	7.33	9	7.33	7.4419	6.66	4.7524	7.33	8.4681
6.66	3.8025	6.66	5.4289	2.66	3.7713	2.66	3.3124	6.66	5.0176
6.83	4.4944	4.66	0.1089	6.83	4.9639	5.83	1.8225	6.83	5.8081
6.83	4.4944	6.83	6.25	6.83	4.9639	7	6.3504	6.83	5.8081
6.5	9.2041	6.25	3.6864	6.5	3.6024	6.25	3.1329	5.6	1.3924
6	1.6641	6.41	4.3264	6	1.9544	6	2.3104	5.66	1.5376
4	.5041	4.41	0.0064	4.08	0.2724	5	0.2704	4.08	0.1156
4.33	.1444	4	0.1089	4.33	0.0739	4.33	0.0025	4.33	0.0081
4.33	.1444	4.41	0.0064	4.33	0.0739	4.33	0.0025	4.33	0.0081
4	.5041	3.66	0.4489	4	0.3624	3.66	0.6724	4.66	0.0576
3.5	1.4641	3	1.7689	3.5	1.2144	3.66	0.6724	3.5	0.8464
4.2	.2605	4.9	0.3249	5.33	0.5299	4.9	0.1764	4.9	0.2304
3.33	1.9044	2.66	2.7889	3.33	1.6179	3.33	1	2.66	3.0976
5	.0841	4	0.1089	5	0.1584	5	0.2704	4	0.1764
3.25	2.1316	3.25	1.1664	3.25	1.8279	3	2.1904	3.25	1.3689
3.41	1.69	3	1.7689	3.41	1.4208	2.66	3.3124	3	2.0164
4.33	.1444	2.33	4	4.33	0.0739	5.16	0.4624	2.33	4.3681
3.66	1.1025	4	0.1089	3.66	0.8873	4	0.2304	4	0.1764
4	.5041	4	0.1089	4	0.3624	3	2.1904	4	0.1764
4.33	0.1444	4.33	0	4.33	0.0739	4.33	0.0225	4	0.1764
4	0.5041	4	0.1089	4	0.3624	4.66	0.0324	2.33	4.3681
3.83	0.7744	2.66	2.7889	3.83	0.5959	3	2.1904	2.66	3.0976
3	2.9241	3	1.7689	3	2.5664	2.66	3.3124	3	2.0164
3.66	1.1025	3	1.7689	3.66	0.8873	4.33	0.0225	3	2.0164
5.33	0.3844	5.33	1	5.33	0.5299	5	0.2704	5.33	0.8281
4	0.5041	3.66	0.4489	4	0.3624	3.66	0.6724	3.66	0.5776
4.33	0.1444	4.33	0	4.33	0.0739	4.16	0.1024	4.33	0.0001
4.33	0.1444	4	0.1089	4.3	0.0912	5.08	0.36	4	0.1764
4.16	0.3025	4.16	0.0289	4.16	0.1953	4.25	0.0529	4.33	0.0001
4.33	0.1444	4.33	0	4.33	0.0739	4.5	0.0004	4.5	0.0064
Mean(x1) =150.81/32=4.7128	∑(x1-mean(x1))^2=49.8043	Mean(x2)= 138.56/32= 4.33	∑(x2-Mean(x2))^2=50.463	Mean(x3)=147.29/32=4.6028	∑(x3-Mean(x3))^2=44.8933	Mean(x4)=143.38/32=4.480	∑(x4-Mean(x4))^2=42.9574	Mean(x5)= 141.75/32= 4.429	∑(x5-Mean(x5))^2=62.1084
	sample variance (s1)^2=∑(x1-mean(x1))^2/32-1=1.6065		sample variance (s2)^2=∑(x2-mean(x2))^2/32-1=1.6269		sample variance (s3)^2=∑(x3-mean(x3))^2/32-1=1.4481		sample variance (s4)^2=∑(x4-mean(x4))^2/32-1=1.3857		sample variance (s5)^2=∑(x5-mean(x5))^2/32-1=2.0034
Population variance (within column variance)σ^2=∑((nj-1)/(nj-k))sj^2=((32-1)/(160-5))*1.6065+(31/155)*1.6269+(31/155)*1.4481+(31/155)*1.3857+(31/155)*2.0034=1.6141									

Table IV : Anova Table Show – Variance Ratio.

Source of Variation	Sum of Square	Degree of Freedom	Mean Square	Variance Ratio(F)0.707912/1.6141 =0.4386
Between Samples	2.8317	5-1=4	(2.3831/4)=0.707912	
Within Samples	250.1994	160-5=155	(250.1994)/155=1.6141	

With the help of these values , we calculate

F= Between column variance / Within column variance. Hence, F=0.707912 / 1.6141=0.4386. Degree of freedom with respect to between sample is 4 and degree of freedom with respect to within sample is 155. It is shown in the Table IV

TABLE IV: ANOVA TABLE SHOW –VARIANCE RATIO.

The tabular value of F for (4,155) at 5 % level of significance is 2.43 since the computed value of F=0.4386 is less than the tabular value of F=2.43 [9] therefore we accept our null hypothesis i.e. our null hypothesis assumption ($\mu1=\mu2=\mu3=\mu4=\mu5$) is true. $\mu1$, $\mu2$, $\mu3$, $\mu4$ and $\mu5$ are sample means corresponding to these five search engines. So we can say search result through these search engines (Google, Bing, Yahoo, Ask and Aol) will not differ significantly.

Key Finding and Results

By Analysis of variance(ANOVA) and F test, it is concluded that these search engines can be examined equivalent in view of these three parameters (In Depth Coverage, thought and Clarity, Number of links of related articles to query topic) of first return result (document) for any query topic. Hence these five search engines do not vary significantly.

Conclusion

The web means software that is designed to search for variety of sources and information on World Wide Web. They are merged in form of web pages and every day, new data is produced. Therefore, search engines return the appropriate data on the basis of progressively developed brilliant ranking algorithms. Now A days, there are lots of different search engines available on internet and each with their own capability and quality. Since a priority of the person who actually uses a particular query see the first return result. Hence quality results can be found at highest rank of retuned web pages.

If we evaluate Google search engine, Bing, Yahoo, Ask and Aol search engine on the parameters "In Depth Coverage, Thought and Clarity, Number of Links of Related Articles to Query Keywords", we find these five search engines do not differ

significantly. The web search engines may be different in terms of different parameters. Therefore they require a different evaluation methodology, and we have made an attempt with five popular search engines and thirty-two different sample keywords. In this research, we have evaluated the five search engines on the basis of these parameters of search result corresponding to sample keywords.

In the future, we may plan to apply the proposed methodology to a wider scope with the hope that our research findings will truly enable web users to select a search engine on basis of "In Depth Coverage, Thought and Clarity, Number of Links of Related Articles to Query Keywords" parameters and help web search engine developers to design in better way.

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Talent Management and Its Impact on Employee Engagement With Special Reference to Private Sector Banks

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Abstract

Talent management obtained epochal research heedfulness in last one decade. In the vernal business world, "talent management" or human capital management is the methodical effort to recruit, deploy, develop and retain copiously productive and elevate people at higher job position. Talent management is a comparatively vernal betide that focuses on exploiting the top performance and utmost potential employee within the company. Talent management comprises aligning the right people with the right jobs. This ensures that the employees maximise their skills for the bonzer success of the organisation. Employee engagement is concretely the degree of zeal and development an employee feels towards his or her job. Employee engagement is the edge to which employees feel keen about their jobs, are committed to the organisation and arbitrary effort into their work. The private sector banks in India are growing at a hyperactive pace and the growth rate are expecting to double with every passing year. The reason behind choosing select private sector banks in India is that it is one of the most attractive areas for employment due to immense growth opportunities. Talent management and employee engagement practices play a crucial role in their success rate.

This article emphasised the meaning of talent management and employee engagement and positive walloping of talent management on employee engagement. This article articulate about optimum personnel engagement on the specific job by using talent management system. This study targets to review literature related to the role of talent management in employee engagement with the sight to establish gaps for further studies on the topic. The questionnaire was used as the survey method of collecting primary data for the study Sample size is taken for research is 50, but 40 completed questionnaires were obtained. Data were analysed using Microsoft Excel. The findings of the study exhibit a positive relationship between talent management and employee engagement. Research recommends the necessity of talent management to invigorate employee engagement.

Keywords: Talent Management, Employee Engagement, succession planning, Retention.

Introduction

Talent management originally founded by McKinsey & Company in 1997 and promulgated by the book War for Talent, unfolded by McKinsey, talent management is considered critical in a world where human capital is seen as a company's greatest asset. Talent management refers to the attraction, identification, development, engagement, retention, and development of those employees who are particularly precious to organisations by their potentials for the future or because they are rendering business/operation critical roles. Talent includes of those individuals who can make a difference to organisational performance, either through their immediate contribution & effort or in the longer-term by demonstrating the best level of potential. Talent management is critical for organisations to attain the long-term strategy so that individuals are placed in an environment where they can have the highest impact within the enterprise. Talent management requires strong support with the systems and processes for utilising the right talent for the right work at the right time. Talent management is the conscious and deliberate attempt to attract, engage, develop and retain people with the aptitude and ability to meet current and future organisational need. The term talent development is widely used to depict practices adopted by the organisation to enhance the quality of the available workforce by enhancing their abilities, skills and calibre. Every organisation requires an employee with high calibre and capacity for improving their performance, enhancing efficiency and productivity. Without developing talent, the organisation cannot utilise available workforce properly. Often there are many employees with forbidden talent and potentials. Unless and until the organisation makes efforts to develop and enrich its calibre, they cannot ameliorate their performance. Recognising talent and improving skills,

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capabilities became the principal task of every HR Management department. The focus of HRM has now shifted significantly. It is no longer limited to recruiting talented workforce bust retaining and enriching available talent. Employee engagement is a workplace perspective resulting in the right conditions for all members of an organisation to render of their best each day, committed to their organisation's goals and values, motivated to contribute to organisational success, with an enhanced sense of their well-being.

Employee engagement is rooted in trust, integrity, two-way commitment and communication between an organisation and its members. It is a perspective that increases the chances of business success, contributing to organisational and individual performance, productivity and well-being. It varies from poor to great. It can nurtured and dramatically increase; it can be lost and thrown away. Employee engagement is, in fact, the level of zeal and commitment an employee feels toward his or her job. To these engaged employees, it is far more than a pay cheque. The employee willingness for their task is responsible that makes them passionate to the work and this hunger is visible in their outcomes. An engaged employee cautions about their work and the performance of the company, and they want to feel that their hard work could make a difference. It is commonly seen as an internal state of mind; physically, mentally and emotionally that fixes together the work effort, commitment and satisfaction in an employee.

Literature Review

Salkey (2005) studied that today organisations have realised that the talented employees are the assets to the organisations, which need to be developed and retained for the long term. HR managers should, therefore, focus on benchmarking the best talent management practices in the industry to sustain the success for the long term.

Haghparast, Moharamzadeh and Mohamadzadeh (2012) studied the impact of talent management on organisational productivity and success. For any organisation, in order to grow, effective talent management is necessary. It is essential to hire talented resources because with their help only the organisations can gain a competitive edge in the market.

Kehinde (2012) researched the impact of talent management on the performance of the organisation. The research showed that it has a positive impact on the overall performance of the organisation. It also cited that the talent management practices benefit various multinational and national companies, but the small and medium-sized companies are not gaining any advantage because of these practices in the business environment of Nigeria.

Kaur (2013) stated that global organisations or multinationals find it challenging to manage their talent as compared to the local or national companies, but some of them have worked hard to overcome this challenge. Research showed how the organisations could effectively manage their talent by developing and retaining them effectively as they are the drivers of the success.

Khoram and Samadi (2013) studied the relationship between managing talent and organisational creativity and effectiveness in the banking industry. They took a sample of 202 respondents for conducting their research and their study revealed that there is a positive relationship between organisational creativity, effectiveness and talent management.

Sastry (2013) stated that the employees that possess the required skills, competencies and knowledge appropriate for doing a particular job are known as the talent of the organisation. If the talent management processes of the company are efficient and transparent, then, it creates a work culture where the employees can work on developing their competencies and skills, which as a result will help them to prepare themselves for the changing business environment and also the changing roles and responsibilities

Sireesha and Ganapavarapu (2014) indicated that talent management is all about getting the right person for the right job in the right place and at the right time. For this, the organisations need to understand how its employees will behave in future and getting them to behave differently from the past to get better results. The ultimate goal of talent management practices or programs implemented by the company must be to get the right people for the right jobs in order to make the company successful, but this goal is not that easy to achieve as it sounds.

Thiagarajan B & Renugadevi V (2011), researched "An empirical investigation on Employee Engagement Practices in Indian BPO Industries", and the purpose of this research article is to introduce employee engagement and key research on engagement-related factors in BPO Industries in India. The author s conducted a literature search on employee engagement and interviews with 126 executives. Career development, performance appraisal and motivation factors are connected to employee engagement. The implications are that leaders should be educated on engagement, career development opportunities are particularly important and that performance improvement should champion work-life balance, these practices are useful to increase engagement.

Objectives

1. To examine the talent management practices about acquisition and retention of talent in the organisation.
2. To identify the practices which are applied for enriching employee engagement towards a particular job.
3. To ascertain the impact of talent management on employee engagement in a long span of time
4. To study employee engagement, performance management and Succession planning practices implemented by private sector banks.

Research Methodology

To detect the effectiveness of Talent Management practices, a structured questionnaire was formulated, and responses were collected from three private sector banks at Prayagraj. The questionnaire consisted of different talent management practices, and it was personally administered to the employees & HR executives. The responses were rated on a five-point Likert scale. Three sets of questionnaires were prepared. First and second set of questionnaires consist of closed-ended questions. These questionnaires were constructed to take the responses from employees & HR executives. The third questionnaire was open-ended to elicit the information from HR executives. For all set questionnaire, the sample size was 50. A pilot test was conducted on 50 respondents. The suggestions given by the respondents were incorporated in the questionnaire. The feedback given by the respondents was first edited, tabulated & analysed using excel & descriptive statistics.

The methodology spotlighted on the tools or techniques for research design, data collection, the population and sampling techniques, and data sources, data collection instruments, and data analysis plan. Data collection in research is the phase where the essential data utilitarian for the purposes and objectives of the research are collected from the field. The means for collecting these data is what is termed data collection methods. Two chief sources of data were used for the research work; primary sources and secondary sources. The methods used in collecting primary data comprise interview, questionnaire, and observations. The study made a harness of primary data, which is the analysis phase. Secondary source consists data from published and unpublished books, magazines, journals, websites etc.

A sample size of fifty was opted applying the stratified sampling method. The selection of this sampling procedure was because it has no personal biases & it is scientific and objective. Under this method, the researcher categorised the staff of private sector banks (HDFC, Kotak Mahindra & ICICI) according to their already existing departments namely (general, loan, insurance, and security)

Data Analysis

The investigation of the data gathered was done at the final stage of the data collection. The responses were categorised and recapitulated by the information furnished by the respondents. The analysis was accomplished by applying both qualitative and quantitative tools. With the quantitative tools, Microsoft Excel, absolute figures, tables, percentages, and statistical tools such as histogram, polygon, graphs, pie-chart, were used, whereas qualitative made use of descriptions, analysis of feedback from the interview.

Finding

The researchers with the help of tables, bar chart and pie charts analyzed the respective respondents. In all, fifty questionnaires were issued to employees of HDFC, ICICI, AXIS Private Sector banks, unfortunately, forty responded and returned the answered questionnaire. The researchers rooted their presentation on the prime activities used in the questionnaires. The data generated in this study were analysed and the findings are discussed under this heading according to the various research questions that were formulated to guide the study.

Objective 1: To examine the talent management practices about acquisition and retention of talent in the organisation.

The following findings accomplished the above objective:-
- 90% of the respondents are of the thought that organisations have a stable pipeline of Diverse candidates, 91% of employees favoured that organisation having high quality applicants tend to accept its job offers,92% of the employees agree that organisation has the goodwill of a good employer, 81% of the employees believe that organisation provides competitive base pay and incentives for employees to refer candidates and 86% agree that the organisation consistently attract high-quality applicants. Thus, the organisations are effectively implementing talent acquisition practices.
- 83% of employees favour effective communication, 80% of employees agree that the organisation has a learning and working climate, 84% of the employees believe that the organisation provides compensation and additional bonuses/benefits, 90% of employees supported a flexible working arrangement, and 81% of employees are of The opinion that they get the support and recognition from the supervisors. From findings, it is lucid that talent retention practices are effectively implemented.

Figure 1: Staff category.

Figure 1 depicts the staff category of respondents. 16 depicting 40%, which forms the majority, were junior workers, 08 depicting 20% were senior workers, 12 depicting 30% were in a management position and 04 exhibiting 10% composing the minority were those in contract base employers as it has been elaborated in the figure below. This indicates that those in the contractual position did not get time to answer the researchers' questions and as such did not return the questionnaire. It may have a slight effect on the research work.

Figure 2: What is the first word that comes to mind when you think of talent management?

Figure 2 indicates when respondents were posed with open-ended questions as to what comes to mind when they think of talent management. 13 depicts 22% of the respondent's mention employee engagement & retention representing majority, 12 exhibiting 20% said performance management, 11 depicting 18% mention workforce planning, 9 exhibiting 15% said succession management, 8 representing 13% said talent acquisition and 7 representing 12% said learning & development terms as talent management. From these, it reflects that the majority of workers are thinking of employee engagement & retention and they believe that talent management brought employee engagement & retention in an organisation.

Table 1. The Talent Management Applied to An Organisation Exerts Impact on Employee Engagement & Retention Policies.

Statement	No of respondents	Percentage
Strongly agree	32	80
Agree	4	10
Undecided	01	2.5
Disagree	03	7.5
Strongly disagree	00	00
Total	40	100

Table 1 indicates respondents reacted to the above questions. 32 representing 80% of the majority strongly agreed to the statement. 4 representing 10% agreed to the statement, 01 representing 2.5% were undecided, and 03 representing 7.5% disagree to the statement.

The finding from this study as it relates to research question one showed that the talent management practices influence the employee engagement and retention strategy. The significant finding of this study was that 80% of the respondents indicated that talent management increases employee engagement & retention in an organisation.

Table 2. Talent management enable them to have a competent employee

Statement	No of respondents	percentage
Strongly agree	28	70
Agree	4	10
Undecided	03	7.5
Disagree	03	7.5
Strongly disagree	02	5.0
Total	40	100

In Table 2 indicates respondents' response to the above question. 28 representing 70% of the respondents strongly agree, 04 representing 10% agree, and 03 depicting 7.5% were undecided. It reveals that if a majority of the workers strongly agree with the notion, then it tells that talent management plays a crucial role in acquiring competent employees and it enables them to have a positive attitude towards work and intend to achieve higher goals.

Figure 3: Only talent management can bring out the best in workers.
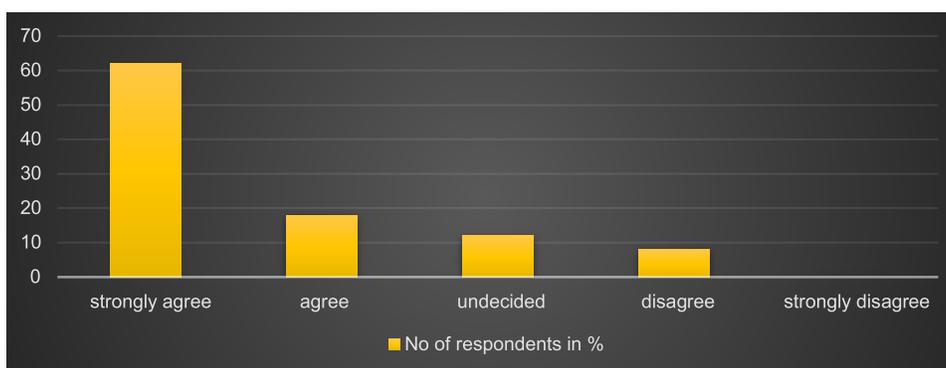
In Figure 3 respondents were asked if it is Only talent management can bring out the best in workers. Above histogram reveals that 62 % strongly agree, 18% agreed, 12% were undecided, 08% disagree and 62% representing the majority strongly agree to the question asked. Thus, talent management system is the only one way through which we could bring out best in workers.

Figure 4: The current confidence of workers to put more effort to perform better in any job is due to the talent management system.
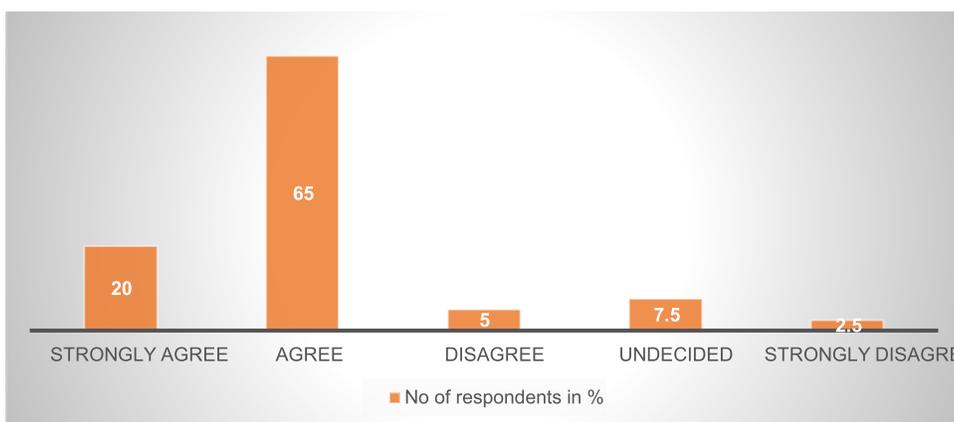
In Figure 4 respondents' response on the question above is that 26 representing 65% of the sampled population agrees, which also forms the majority, 08 representing 20% strongly agree, 03 representing 7.5% were undecided, 02 representing 5% disagree and 01 representing 2.5% of the minority strongly disagree to the notion. Its current confidence of workers is because of talent management & employee engagement practices gave because the majority of the respondents agrees with the notion, which makes the response rate to this 100 %.

Table 3. Talent management practices help in improving employee participation & growth rate of the private banking sector

percentage

■ strongly agree ■ agree ▪ undecided ▪ disagree ■ strongly disagree

Table 3 indicates the respondents' response to the question above. 32 indicating 80% of the sampled population agrees to constitute the majority, 06 representing 15% strongly agree, 02 representing 5% of the minority were undecided to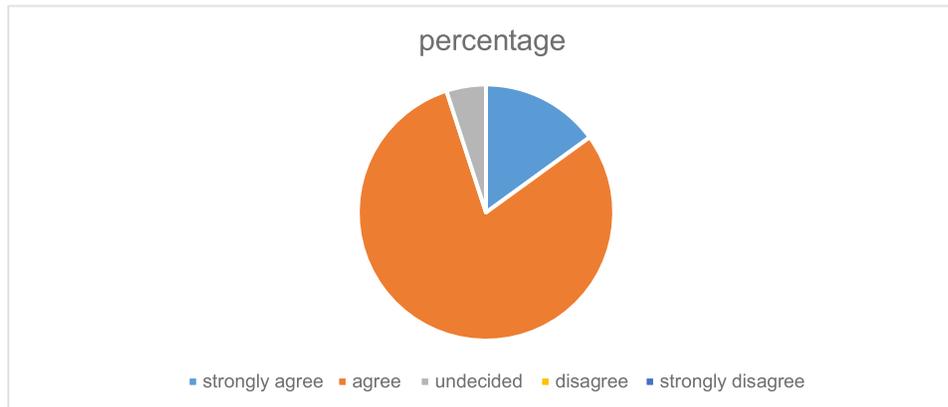 the notion. It depicts that talent management practices play a crucial role in improving maximum employee participation in a particular job position

Conclusion

Organisations in today's world have realised the importance and need to attract, develop and retain their talent for survival in the competitive market. War for talent within companies have to grab the attention and loyalty of a talented workforce. Talent management is one of the strategies that enable the organisation to improve its employee engagement, commitment towards organisation, retention, value addition to improving the performance of the organisation. Talent Management act as a rare capacity within an organization which helps to continuously generate talent and optimize the talent resources that are required to achieve strategic goals and improved performance. Thus, one of the main aims of organisations in the present era is talent management. An effective talent management practices could have more engaged employees, and it can lower turnover of employees and gives benefit to the productivity of employees and retention of talent that helps to increase employee engagement focusing on initiatives related to talent management. In order to reap benefits from employee engagement and talent management; the organisation should build an engagement culture, which contributes to the development of talent culture. It also helps to recognise and develop knowledgeable, skilled leaders and managers that can help to boost performance in both prospects of talent and engagement and also gives a voice to employees so they can articulate their aspirations for a career. If an organisation successfully delivers management of talent and employee engagement, then it can become mutually beneficial.

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A Study on the Mergers and Acquisitions in the Indian Banking Industry: An Event Study

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Abstract

Banking may be defined as being engaged in the business of accepting and safeguarding money, and lending money for business and other purposes. This research report is "A Study on the Mergers and Acquisitions in the Indian Banking Industry: An Event Study" is a quantitative research. The basis of event study is to examine the change in stock price of the relevant banks before and after the announcement of a merger and acquisition. The predicted return represents the return that would be expected if no event took place. The estimation period of the market model is 90 days and it includes the returns on each security in the sample for 90 days prior to the announcement date and 90 days after the announcement date. Firstly the average excess returns (AAR) for each relative day was calculated across the securities. Daily average cumulative excess returns (CAR) are sums of the average excess over event time. It also aims to study the impact on the shareholder's wealth by observation if the merger announcement generated any abnormal returns. Limitation of this study is that the return on securities is considered only on the basis of NSE not on the basis of other stock exchanges and practical implications are to analyze the shareholder wealth creation after M&A.

***Keywords:** Event Study, Merger & Acquisition, Banks, Returns*

Introduction

The origin of the banking industry in India can be traced to the last decades of the eighteenth century. Banking may be defined as being engaged in the business of keeping money for savings and checking accounts or for exchange or for issuing loans and credit etc.

Mergers and Acquisitions

Mergers and acquisitions (abbreviated M&A) refers to the aspect of corporate strategy, corporate finance and management dealing with the buying, selling, dividing and combining of different companies and similar entities that can help an enterprise grow rapidly in its sector or location of origin, or a new field or new location, without creating a subsidiary, other child entity or using a joint venture .

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Mergers and acquisitions in the banking sector is a common phenomenon across the world. The primary objective behind this move is to attain growth at the strategic level in terms of size and customer base. This, in turn, increases the credit-creation capacity of the merged bank tremendously.

Banks also prefer mergers and acquisitions to reap the benefits of economies of scale through reduction of costs and maximization of both economic and non-economic benefits. This is a vertical type of merger because all banks are in the same line of business of collecting and mobilizing funds. In some instances, other financial institutions prefer merging with a bank in case they provide a similar type of banking service.

Another important factor is the elimination of competition between the banks. This way considerable amount of funds earlier used for sustaining competition can be channelized to grow the banking business. Sometimes, a bank with a large bad debt portfolio and poor revenue will merge itself with another bank to seek support for survival.

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Consolidating the business also makes the bank robust enough to sustain in the every-changing business environment. They find it easier to adapt themselves quickly and grow in the domestic and international financial markets.

Literature Review

A number of studies have been carried all around the world on the various mergers and acquisitions in the banking industry in the respective countries but only a few could be traced to be evaluated on the basis of the event study. Also only a few studies on the mergers and acquisitions in the Indian banking industry have been carried out with the aid of the event study.

K. Subhashree and M. Kannappan (2018) studies about Impacts & process of MERGER & ACQUISITION in the banking sector. They have analyzed that mixing of two different companies enter through strategic, structural & environmental changes. Their deal of exchange works in a broad manner such as getting new brand name, new structures , product offerings, opportunities to cross sell & load of paper work like - types of merger, legal framework, approval of Reserve Bank of India and historical perspectives of banks M&A.

Dr.Smita Meena, &Dr.Pushpender Kumar(2014)founded the trend & Impact of M & A in three leading banks. They had taken period of 2000 to 2013 pre & post financial evaluation of M & A. They have used financial tools such as ratio analysis like - Net Profit margin, operating Profit margin, Return on Capital Employed, Return on Equity, earnings per share, capital adequacy ratio, dividend per share etc which shows the some positive impact of M & A in banking sector.

Gurbaksh Singh and Sunil Gupta(2015) founded the pre and post profitability and productivity on Indian banking system due to M&A. They had taken sample of two banks(one from public sector bank and one from private sector bank) from 2004-05to 2014-15 by using statistical methods like are arithmetic mean, standard deviation, t-test and p-value etc and various financial ratio analysis like that Net Profit Margin, Operating Profit Margin, Return on Capital Employed, Return on Net Worth, Interest Coverage, Deposit per Employee and Credit Deposit Ratio etc they concluded that bank have positive effect of Pre and post M&A

Rahul Kushwah, (2015) founded that success of merger depends upon the liquidity performance whether or not banks have sufficient assets to fulfill their obligation. This study is limited to sample of seven banks and other entities that participated in M & A which aim is to project the pre & post liquidity performance of all seven entities. They have founded that they had increased their performance on / after M & A.

Locke, Stuart & Dupatti (2011) found that the M&A announcement has a positive effect on the returns in the stock market. The stockholders of the acquiring firms experience abnormal returns on the event window (-1, 0, +1). The substantial increase in the abnormal returns prior to announcement and on the announcement day indicates the presence of an information effect.

Venkatesan & Govindarajan (2011) carried the event study on public sector mergers and acquisition by comparing it with the BSE and NSE as benchmark. According to the results, the maximum gain to the shareholders is found to be only in post-event periods and not in pre-event periods against leakage of information. The results of their analysis show that acquisition activities of Public sector banks have a significant positive impact on the shareholders' wealth.

Chen, Kao & Lin (2011) adopts the Data Envelopment Analysis (DEA) to investigate the influences of mergers and acquisitions on efficiency improvements for 49 domestic commercial banks in Taiwan during the period 1997-2006. Three main empirical results are obtained in this paper. First, bank mergers are more scale and efficiencies comparing with non-mergers, whereas there are no gains of the technical and cost efficiencies by mergers. Second, by the decomposition of cost efficiency, technical inefficiency is the principal cause of cost increases. Finally, no matter M&A or not, the majority of banks are operating at increasing returns to scale, indicating that scale economies can be obtained by increasing production scale.

Elumilade (2010) investigates the effects of mergers and acquisitions on the efficiency of financial intermediation in the Nigerian banking industry. This is carried out by estimating a modelthat incorporates some key financial variables in a model that regress interest rates on these financial variables. Two models are estimated: one for the lending activity and the other is for the deposit activities. The model for lending activity has interest rate on loan as the dependent variable and deposit rate represents the dependent variable in the deposit model. The study found evidence to support the thesis that the consolidation programmed-induced mergers and acquisitions in the banking industry had improved competitiveness and efficiency of the borrowing and lending operations of the Nigerian banking industry.

Sharma (2010) examines mergers and acquisitions in the United States banking industry involving the formation of mega banks. It uses event study methodology and accounting performance techniques to determine the valuation affects of structural changes that are the result of the merger. When a merger is announced, it often causes abnormal stock price jumps for both the acquirer and Target Company at or around the date of the

announcement. Acquisitions that concentrate on increasing the diversity of the business earned the highest abnormal returns. However, other types of mergers neither create nor destroy shareholder value. Stock return alone does not paint the entire picture of the value created by the merger. This research study will assess the mergers using accounting performance techniques as well as stock price analysis to understand the likelihood that the value creation is stable, and not simply reactionary on the part of the shareholders.

Rajesh & Suhas (2010) studies Indian banking mergers, examines the impact of mergers on both the stock market wealth creation and operating performance. They had taken consideration of average value of -3 to +3 years of mergers. They also analyze the performance of the merged banks in relation to a control group based on financial ratios. They found that cumulative abnormal returns analysis signifies that merger announcements are value-creating activities for the acquirer banks. They found that Compared to the pre-merger period the ROA decreased for the sample banks in the post-merger period. The ratios of loan to equity and deposit to equity increased from 37.91 and 66.59 for the sample banks in the pre-merger period to 59.04 and 92.23 in the post-merger period. Also they found that there is negative and positive impact of announcements on value creation of banks and this can also erode and create shareholders wealth.

Liargovas & Repousis (2010) examines the impact of Greek mergers and acquisitions on the performance of the Greek Banking Sector during the period 1996-2009. They find that ten days prior to the announcement of a merger and acquisition, shareholders receive considerable and significant positive cumulative average abnormal returns (CAARs). Also the results show that significant positive CAARs are gained upon the announcement of horizontal and diversifying bank deals. The overall results indicate that bank mergers and acquisitions have no impact and do not create wealth. They also examine operating performance of the Greek Banking Sector by estimating twenty financial ratios and findings show that operating performance does not improve, following mergers and acquisitions.

Research Methodology

The chapter of research methodology will indicate the objective of the study, its universe, sampling design used, collection of data, statistical tools employed for analysis of data and the limitation of the study.

Objectives of Research

The objectives of the study are:
1) To study the impact of mergers and acquisition on shareholder's wealth.
2) To study the impact of mergers and acquisition on stock price of the company that existed after the merger.
3) The study aims to evaluate the mergers and acquisitions considering if such events generated any abnormal returns.

Scope of Study

The study may prove useful to various stakeholders like shareholders, creditors, managers, customers, researchers, etc.
1) Study considers 5 mergers and acquisitions,
2) Banks are: State Bank of India and Bharatiya Mahila Bank (BMB)(2017), Punjab National Bank and Nedungadi Bank(2003), Sangli Bank and ICICI Bank(2007), , HDFC and Times Bank(2000), The Federal Bank and Ganesh Bank of Kurundwad(2006).

Method of Research

This research is a quantitative research. Quantitative research refers to the systematic empirical investigation of social phenomena via statistical, mathematical or computational techniques. The objective of quantitative research is to develop and employ mathematical models, theories and/or hypotheses pertaining to phenomena. The process of measurement is central to quantitative research because it provides the fundamental connection between empirical observation and mathematical expression of quantitative relationships.

Type of Research

This research involves the event study. An Event study uses transactions data from financial markets to predict the financial gains and losses associated with newly disseminated information. For example, the announcement of a merger between two firms can be analyzed to make predictions about the potential merger-related changes to the supply and the price of the product(s) subject to the merger.

Investors in financial markets bet their dollars on whether a merger will raise or lower prices. A merger that raises market prices will benefit both the merging parties and their rivals and thus raise the prices for all their shares. Conversely, the financial community may expect the efficiencies from the merger to be sufficiently large to drive down prices. In this case, the share values of the merging firms' rivals fall as the probability of the

merger goes up. Thus, evidence from financial markets can be used to predict market price effects when significant merger-related events have taken place.

Data Type

The research study makes use of the secondary data.

Data Collection Tools

Data collection is a term used to describe a process of preparing and collecting data. The purpose of data collection is to obtain information to keep on record, to make decisions about important issues, to pass information on to others. In short, data is primarily collected to provide information regarding a specific topic.

The secondary data has been collected with the help of books, journals, newspaper and online articles.

Data regarding the stock prices have been collected from the portal of the NSE.

The announcement dates are obtained from the daily newspapers and website .

The stock data used involves the company's stock returns and market returns of the National Stock Exchange.

Hypothesis Formulation

The study rests the stock market reactions to the M&A announcements with the following announcement.

H0: There are no abnormal returns on the announcement day following the announcement of the M&A.

H1: There are abnormal returns on the announcement day following the announcement of the M&A.

Data Analysis Techniques

The study uses an event method to analyze short run share price performance of Indian acquiring banks engaged in Mergers and Acquisitions. Concentration is only on the short run event restricting analysis to a short-run window.

The basis of event study is to examine the returns derived from stock prices of the relevant banks both before and after the announcement of a merger and acquisition. The event date for the study is set to be the first announcement date of the

respective merger and acquisition event and is designated as 0. Trading days prior to the merger are numbered -1, -2, -3, and so on and the trading days after the merger are numbered 1, 2, and so on.

The predicted return represents the return that would be expected if no event took place. The estimation period of the market model is 90 days and it includes the returns on each security in the sample for 90 days prior to the announcement date. Firstly the average excess returns (AAR) for each relative day t was calculated across the securities. Daily average cumulative excess returns (CAR) are sums of the average excess over event time. In other words, CAR is defined as the sum of previous daily average residuals for each trading date.

An abnormal return (residual) is defined as the actual return less the return predicted by the firm's beta, given the market return. The residual or abnormal return represents the part of the return that is not predicted and is, therefore, an estimate of the change in firm value on a day, which is caused by the event.
The study tests the value of the M&A's firm securities transacted on the Indian NSE. To capture the effect of trade following the announcement the study also extends the industry. The movements of the security prices are linked with market-wide information that differentially affects the value of securities.

Abnormal returns, that indicate the additional impact on stock returns due to an event over and above normal market movements, are computed as follows:

$$ARi = Ri - [\alpha i + \beta Rm] \text{--(1)}$$

Where, Rit is the daily return on firm i on day t, Rmt is the return on the benchmark market, β and α are OLS regression parameters that are estimated using the market model over the previous period of 90 days.

Event window represents possible leakages of information before merger is announced and possible stock price reactions after merger is announced and it finally compares all the effects of event on the stock prices. The event window is taken as 15 days.

It is important that the estimation window and the event window do not overlap. This design provides for the parameters of the normal return model which are not influenced by the returns around the event.

The abnormal returns are computed for the bidder banks and the significance of abnormal returns is tested by calculating the standard error (SE) as follows:

$$SE = \frac{\sum_{i=1}^{n}(R_i - \alpha - \beta R_m)^2}{n-2}$$

The t-statistics are then calculated.

$$t = \frac{AR_i}{\sqrt{SE}}$$

The t-statistics are then tested at 95% confidence level to verify if there is any significant change in the CAR calculated. It is this which will indicate the effect of merger.

Data Interpretation

The chapter of research methodology deals with the interpretation of data that was analyzed using Microsoft Excel tools. The results of the analysis of data of the five banks are summarized below along with the graphical representation. The graph shows the values of car plotted for the duration of event window of 15 days with an associated trend line.

State Bank of India

Table 1: Event window of SBI- BANK with Significance.

| DAYS	AAR	CAR	CAR%	T Values	SIGNIFICANCE
-15	0.00926	0.0093	0.9262	0.3700	NO
-14	0.00550	0.0148	1.4760	0.2196	NO
-13	0.01438	0.0291	2.9139	0.5744	NO
-12	0.01686	0.0460	4.5999	0.6735	NO
-11	-0.00213	0.0439	4.3869	-0.0851	NO
-10	-0.00696	0.0369	3.6905	-0.2782	NO
-9	0.05647	0.0934	9.3378	2.2559	YES
-8	0.05373	0.1471	14.7103	2.1461	YES
-7	0.01823	0.1653	16.5335	0.7283	NO
-6	-0.01196	0.1534	15.3377	-0.4777	NO
-5	-0.02430	0.1291	12.9076	-0.9707	NO
-4	0.00114	0.1302	13.0212	0.0454	NO
-3	0.03690	0.1671	16.7113	1.4741	NO
-2	0.03041	0.1975	19.7518	1.2146	YES
-1	0.03213	0.2297	22.9650	1.2836	YES
0	-0.04287	0.1868	18.6779	-1.7126	YES
1	0.00847	0.1952	19.5250	0.3384	NO
2	0.00310	0.1983	19.8349	0.1238	NO
3	0.00064	0.1990	19.8989	0.0256	NO
4	0.00979	0.2088	20.8779	0.3911	NO
5	-0.00164	0.2071	20.7143	-0.0654	NO
6	0.01389	0.2210	22.1030	0.5547	NO
7	-0.05750	0.1635	16.3528	-2.2970	YES
8	-0.02367	0.1399	13.9860	-0.9454	NO
9	-0.00766	0.1322	13.2200	-0.3060	NO
10	-0.02322	0.1090	10.8982	-0.9275	NO
11	0.00208	0.1111	11.1061	0.0830	NO
12	0.01325	0.1243	12.4307	0.5291	NO
13	0.01110	0.1354	13.5406	0.4434	NO
14	0.00471	0.1401	14.0113	0.1880	NO
15	-0.00718	0.1329	13.2932	-0.2869	NO
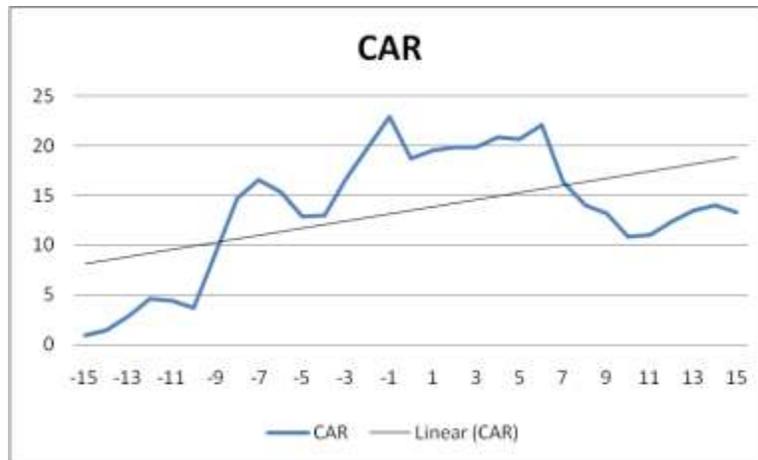
Figure :1 Event window of SBI 15 days with an associated trend line.

Figure :1 Event window of SBI 15 days with an associated trend line.

The above table summarizes the results for state bank of India From the graph, it is clear that CAR has a slight increasing trend. The same is confirmed from the table that CAR is positive. The results of CAR are quite largely positive and hence they hold much statistical significance.

The table clearly shows that t-values are only significant for the ninth, tenth, second and first day before the announcement of

merger and on the date of announcement of merger but not after the announcement of merger and hence we say that on the whole the t-values are not significant. This means that the changes in stock prices are not very significant.

Hence, this   State bank of   India stock does not exhibit any abnormal returns from the announcement of the merger.

Punjab National Bank

Table 2: Event window of PNB- BANK with Significance.

DAYS	AAR	CAR	CAR%	T Values	SIGNIFICANCE
-15	-0.000194	-0.00019	-0.0194	-0.0084	NO
-14	0.018381	0.018187	1.818697	0.796334	NO
-13	0.017055	0.035242	3.524223	0.7389	NO
-12	-0.007226	0.028017	2.801653	-0.31305	NO
-11	-0.013127	0.014889	1.488904	-0.56873	NO
-10	-0.025357	-0.01047	-1.04675	-1.09854	NO
-9	0.010979	0.000511	0.051146	0.475652	NO
-8	-0.014191	-0.01368	-1.36791	-0.61479	NO
-7	0.002194	-0.01148	-1.14848	0.095064	NO
-6	-0.004120	-0.0156	-1.56048	-0.17849	NO
-5	-0.007511	-0.02312	-2.31161	-0.32542	NO
-4	-0.014928	-0.03804	-3.80439	-0.64673	NO
-3	-0.034659	-0.0727	-7.27032	-1.50157	NO
-2	-0.006711	-0.07941	-7.94146	-0.29076	NO
-1	-0.010258	-0.08967	-8.96723	-0.44441	NO
0	-0.038398	-0.12807	-12.807	-1.66355	NO
1	-0.015006	-0.14308	-14.3076	-0.65012	NO
2	-0.026579	-0.16966	-16.9655	-1.15149	NO
3	-0.024435	-0.19409	-19.409	-1.05861	NO
4	-0.000824	-0.19491	-19.4914	-0.03568	NO
5	0.031494	-0.16342	-16.342	1.364438	NO
6	-0.032689	-0.19611	-19.6109	-1.41621	NO
7	0.014852	-0.18126	-18.1256	0.643455	NO
8	-0.020931	-0.20219	-20.2187	-0.90681	NO
9	0.010379	-0.19181	-19.1809	0.449638	NO
10	0.013717	-0.17809	-17.8092	0.594283	NO

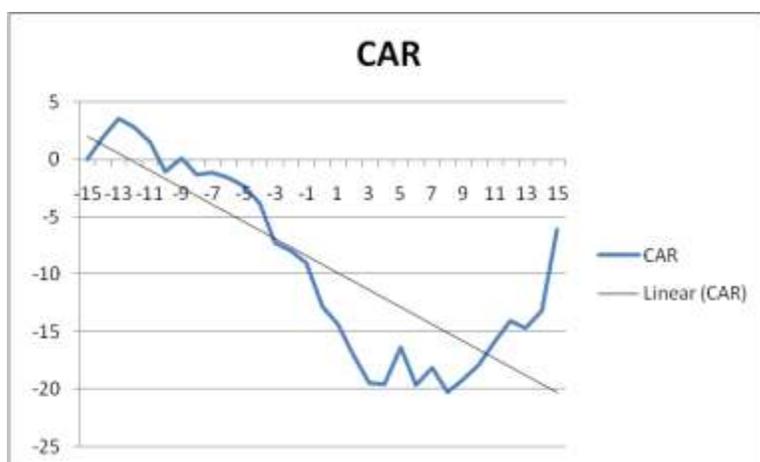|					
11	0.019238	-0.15885	-15.8854	0.833461	NO
12	0.018867	-0.13999	-13.9986	0.81741	NO
13	-0.006845	-0.14683	-14.6832	-0.29657	NO
14	0.015521	-0.13131	-13.1311	0.672419	NO
15	0.070336	-0.06097	-6.09745	3.04724	YES

Figure :2 Event window of PNB 15 days with an associated trend line.

The above table summarizes the results for Punjab National Bank.

From the graph, it is clear that CAR has a decreasing trend. The same is confirmed from the table that CAR becomes negative. Also, the results of CAR are nearly close to zero and hence they do not hold any statistical significance.

The table clearly shows that t-values are only significant for the fifteenth day and hence we say that on the whole the t-values are not significant. This means that the changes in stock prices are not very significant.

Hence, this Punjab National Bank's stock does not exhibit any abnormal returns from the announcement of the merger.

ICICI Bank

Table 3: Event window of ICICI- BANK with Significance.

DAYS	AAR	CAR	CAR%	T Values	SIGNIFICANCE
-15	-0.02270	-0.02270	-2.27043	-1.46042	NO
-14	-0.00369	-0.02640	-2.63975	1.109558	NO
-13	-0.00292	-0.02932	-2.93164	0.641965	NO
-12	-0.00387	-0.03319	-3.31909	-0.33695	NO
-11	-0.00685	-0.04004	-4.00393	-0.26315	NO
-10	0.00496	-0.03508	-3.50822	0.848704	NO
-9	-0.01393	-0.04901	-4.90111	-1.82179	YES
-8	-0.00662	-0.05563	-5.56336	-0.2251	NO
-7	0.00702	-0.04861	-4.86141	1.164709	NO
-6	-0.00687	-0.05549	-5.5487	0.475708	NO
-5	-0.01121	-0.06670	-6.66989	-0.62238	NO
-4	-0.01397	-0.08067	-8.06653	-0.60235	NO
-3	0.00382	-0.07684	-7.68424	0.413333	NO
-2	0.01062	-0.06622	-6.6219	0.894537	NO
-1	0.01390	-0.05232	-5.232	0.099642	NO
0	-0.04093	-0.09325	-9.32482	-5.11199	YES
1	0.01494	-0.07831	-7.83131	-1.51969	NO
2	0.01737	-0.06094	-6.09424	2.408637	YES
3	0.02270	-0.03824	-3.82442	3.388503	YES
4	-0.01389	-0.05214	-5.21352	0.03776	NO

| 5	0.00584	-0.04630	-4.62967	1.358861	NO
6	0.00332	-0.04298	-4.29814	-1.5773	NO
7	-0.01320	-0.05618	-5.61812	-1.17046	NO
8	-0.00698	-0.06316	-6.31625	-0.01283	NO
9	-0.00903	-0.07219	-7.21917	0.234785	NO
10	-0.00229	-0.07448	-7.44817	1.351255	NO
11	0.01314	-0.06134	-6.13426	1.756843	NO
12	0.00917	-0.05217	-5.2169	0.72748	NO
13	-0.01370	-0.06587	-6.58702	-0.95247	NO
14	-0.00614	-0.07201	-7.20078	0.485928	NO
15	-0.00946	-0.08146	-8.14644	-0.23643	NO
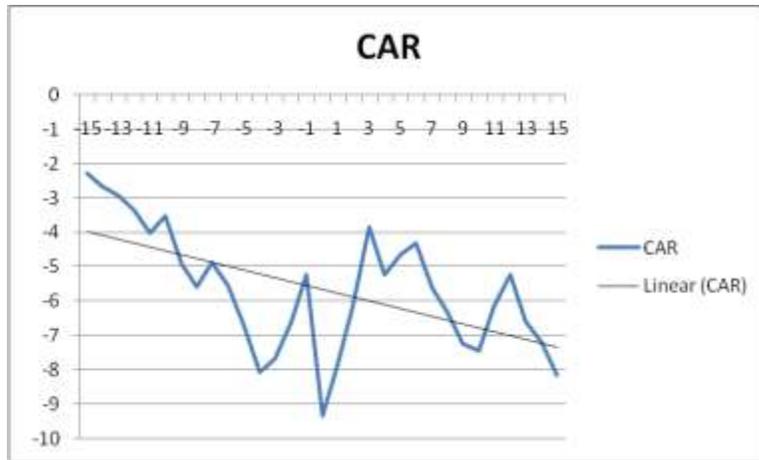
Figure :3 Event window of ICICI 15 days with an associated trend line.

The above table summarizes the results for ICICI

As can be seen from the trendline of the graph, the CAR is decreasing. The same results can be concluded from the table which shows the values of CAR and CAR values being close to zero do not exhibit any statistically significant results.

The table shows that the t-values are significant on the date of announcement of merger and 2nd and 3rd event dates after the merger announcement, thereafter; the t-values do not exhibit any significant results.

Hence, this ICICI stock does not exhibit any abnormal returns from the announcement of the merger.

HDFC Bank

Table 4: Event window of HDFC- BANK with Significance.

DAYS	AAR	CAR	CAR%	t Values	SIGNIFICANCE
-15	0.058259	0.058259	5.825915	1.152924	NO
-14	0.075797	0.134057	13.40566	1.499999	NO
-13	0.081661	0.215718	21.57177	1.616041	NO
-12	-0.039100	0.176617	17.66174	-0.77378	NO
-11	-0.038314	0.138303	13.83032	-0.75822	NO
-10	0.055855	0.194159	19.41589	1.105361	NO
-9	-0.00922	0.184939	18.49389	-0.18246	NO
-8	-0.053348	0.13159	13.15902	-1.05575	NO
-7	0.065901	0.197492	19.74915	1.30416	NO
-6	-0.023630	0.173861	17.38607	-0.46765	NO
-5	-0.039423	0.134437	13.44374	-0.78017	NO
-4	-0.001723	0.132714	13.27142	-0.0341	NO
-3	-0.008066	0.124648	12.46476	-0.15963	NO
-2	0.007320	0.131968	13.19679	0.144864	NO

|				
-1	0.075295	0.207264	20.72636	1.490071	NO
0	-0.034418	0.172845	17.28448	-0.68113	NO
1	-0.009569	0.163275	16.32748	-0.18939	NO
2	0.005984	0.169259	16.9259	0.118424	NO
3	-0.038269	0.130989	13.09894	-0.75734	NO
4	-0.013563	0.117425	11.74254	-0.26843	NO
5	-0.020145	0.097279	9.727946	-0.39868	NO
6	-0.046511	0.050768	5.076758	-0.92045	NO
7	-0.059576	-0.00881	-0.88089	-1.17899	NO
8	-0.090018	-0.09883	-9.88276	-1.78143	YES
9	-0.093241	-0.19207	-19.2069	-1.84521	YES
10	0.044308	-0.14776	-14.776	0.876849	NO
11	0.057957	-0.0898	-8.98026	1.146961	NO
12	-0.000784	-0.09059	-9.0587	-0.01552	NO
13	0.032526	-0.05806	-5.80606	0.643684	NO
14	0.007298	-0.05076	-5.07625	0.144425	NO
15	-0.068094	-0.11886	-11.8857	-1.34756	NO
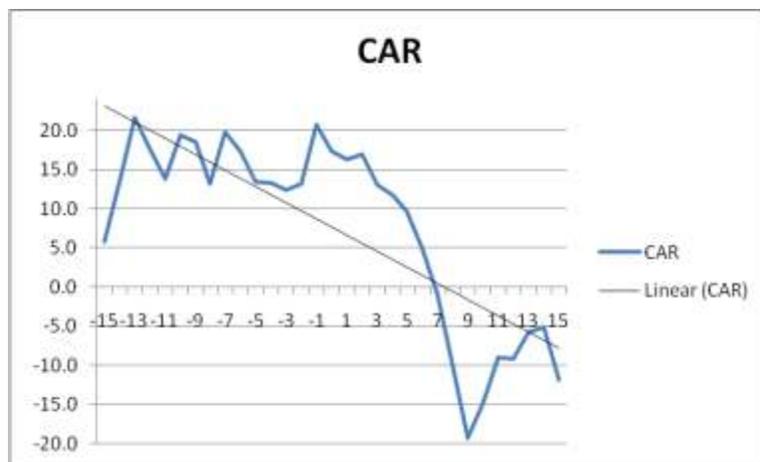
Figure :4 Event window of HDFC 15 days with an associated trend line.

The above table summarizes the results for HDFC Bank.

From the graph, it is clear that CAR has a decreasing trend. The same is confirmed from the table that CAR becomes negative. However, the results of CAR are quite largely positive before the announcement of merger and hence they hold much statistical significance. But after the announcement of merger, they do not hold much significance because the CAR is decreasing and also the t-values are not significant.

The table clearly shows that t-values are only significant for the eighth and ninth day after the merger and hence we say that on the whole the t-values are not significant. This means that the changes in stock prices are not very significant.

Hence, this HDFC Bank's stock does not exhibit any abnormal returns from the announcement of the merger.

FEDERAL BANK

Table 5: Event window of Federal BANK with Significance.

| DAYS	AAR	CAR	CAR%	T Values	SIGNIFICANCE
-15	0.0184900	0.018490	1.849000	0.973582	NO
-14	-0.014991	0.003498	0.349836	-0.78938	NO
-13	0.004820	0.008319	0.831852	0.253803	NO
-12	0.001433	0.009752	0.975165	0.075461	NO
-11	-0.028390	-0.018639	-1.863903	-1.4949	NO
-10	0.026703	0.008064	0.806415	1.406043	NO
-9	0.020713	0.028778	2.877764	1.090659	NO
-8	0.007127	0.035905	3.590503	0.375289	NO
-7	-0.009724	0.026180	2.618050	-0.51204	NO
-6	-0.005764	0.020416	2.041553	-0.3035	NO
-5	-0.000622	0.019793	1.979279	-0.0327	NO
-4	-0.005016	0.014777	1.477652	-0.2641	NO
-3	0.033343	0.048120	4.812035	1.7557	NO
-2	-0.019666	0.028454	2.845372	-1.0355	NO
-1	-0.002858	0.025595	2.559535	-0.1505	NO
0	-0.001284	0.024311	2.431129	-0.0676	NO
1	-0.008998	0.015313	1.531299	-0.4738	NO
2	-0.009778	0.005535	0.553459	-0.5148	NO
3	-0.003533	0.002001	0.200128	-0.1860	NO
4	0.028332	0.030333	3.033333	1.4918	NO
5	0.024060	0.054394	5.439414	1.2669	NO
6	0.003394	0.057788	5.778834	0.1787	NO
7	0.024121	0.081910	8.191008	1.2701	NO
8	-0.022835	0.059074	5.907424	-1.2024	NO
9	-0.017906	0.041168	4.116752	-0.9428	NO
10	-0.043089	-0.001922	-0.192233	-2.2688	YES
11	0.028431	0.026509	2.650896	1.4970	NO
12	-0.020930	0.005579	0.557870	-1.1020	NO
13	-0.004983	0.000595	0.059514	-0.2624	NO
14	-0.008473	-0.007879	-0.787880	-0.4461	NO
15	0.001123	-0.006755	-0.675523	0.0591	NO
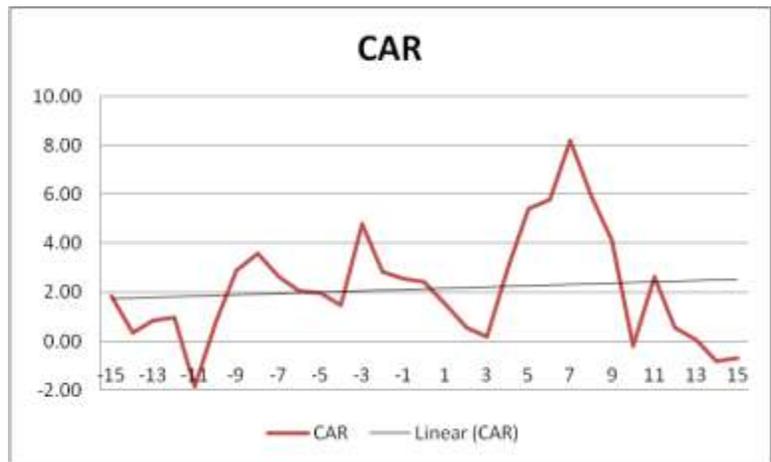
Figure :5 Event window of federal bank 15 days with an associated trend line.

The above table summarizes the results for Federal Bank.

From the graph, it is clear that CAR has a slight increasing trend. The same is confirmed from the table that CAR is positive. However, the results of CAR are not quite largely positive and hence they do not hold much statistical significance.

The table clearly shows that t-values are only significant for the tenth day after the merger and hence we say that on the whole the t-values are not significant. This means that the changes in stock prices are not very significant.

Hence, this Federal Bank's stock does not exhibit any abnormal returns from the announcement of the merger.

Conclusion

The conducts an event study to analyze the market price of the shares that existed after the merger of the banks. It also aims to study the impact on the shareholder's wealth by seeing if the merger announcement generated any abnormal returns.

For this reason, five banks are selected and their stocks returns are evaluated to study if they generated any abnormal returns. The results of the analysis of the various banks are as tabulated as follows:

Bank	Generated Abnormal Returns
SBI	NO
PNB	NO
ICICI	NO
HDFC	NO
Federal Bank	NO

Hence, the announcement of mergers and acquisitions do not generate any abnormal returns for any of the five considered banks.

Thus, the study concludes that no abnormal returns are generated by the announcement of the mergers and acquisitions of the banks and hence there is no impact on the shareholder's wealth.

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Role of Product Placement in Influencing Rural Customer's Buying Behaviour

Prof. Rakesh Kumar Yadav*

Marketing plays an important role in selling a product to the customers. Marketing is a managerial process of creating, communicating and delivering value to the customers. A marketer has to choose right marketing mix for its target. One of the elements of this marketing mix is promotion. A company has to choose effective elements from its promotion mix. Rural buyers are different from urban buyers. They differ in their characteristics and buying habits. Therefore the marketer uses the right combination of promotion mix to attract these rural buyers in their style and tradition. Advertising is one of the components of promotion mix used for the rural customers. Advertising is any paid but non personal form of communication. It is used to communicate about the products and services of the company. A good product may be failed if right communication strategy is not used. It is rightly said, what is seen is sold or what you see is what you get i.e." Jo dikhta hai wahi bikta hai". Here, it comes the crucial role of the advertising. Advertising makes the product visible. Companies use most appropriate communication mix for more effective results. Further, companies are using integrated communication mix. The different elements of mix are print media (newspaper, magazines, journals, yellow pages etc), electronic media (T.V., radio, internet, films, telephone and mobiles etc), celebrity endorsements and product placement in movies etc. Companies try to make their products available in every corner of the market segment and for this one of the means of communication is product placement.

Product placement is the technique used by a marketer to make its product visible to the potential customers and to promote the products through movies and television. It is a well known fact that people watch television and movies regularly and the marketer use product placement concept knowing this characteristic of people. But rural infrastructure and other means are different as in urban areas. Therefore it is matter of concern to know whether this strategy of product placement is also useful for the rural targets. This paper is based on a survey related to the role of product placement in influencing rural customer's buying behaviour.

Product Placement

As per Russell & Belch (2005), "Product placement is the purposeful incorporation of a brand into an entertainment vehicle". According to this definition the use of product placement is not strictly limited to medias such as film and TV but it can be done in other mediums such as music videos, novels and computer games etc. Gupta & Gould (1997) emphasized, "The practice of placing brand name and products in movies as props is called product placement". This definition considers product placement in movies, and only as props. it doesn't take into consideration the multiple mediums available for product placements, it doesn't acknowledge the different possible levels of integration and since the definition requires the product placement to be in the form of a physical "prop" it also leaves out the possibility of an audio product placements.

Balasubramanian (1994) defined, "Product Placement is a paid product message aimed at influencing movie (or television) audiences via the planned and unobtrusive entry of a branded product into a movie (or television program)". Balasubramanian incorporates the both motion pictures and TV appears as conceivable mediums for product placements. This may be explained by the fact that, these are by far the most popular mediums for product placement marketers. Balasubramanian doesn't include unpaid and unplanned product placements. We have also taken into our consideration, product placement as a technique used for product advertisements through movies. The relationship of Indian cinema and product placement is discussed in next part.

Indian Cinema and Product Placement

Indian film industry is hundred years old. Every year more than hundred films are released. Indian cinema is an effective medium of entertainment in India. It is the mirror or reflection of our society. The stars of films have iconic impact on the audience. They are the role models of many Indians. People

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imitate them. There is an emotional bonding between a movie and its viewers. This emotional value creates an opportunity for the marketer to associate its brands with the emotions shown. Thus the advertising agencies play a crucial role between the film producers and the corporate houses. They advertise the products of these corporate in the movies of different producers by paying its fees. Product Placement in Indian cinema is not new one but it has been noticed for long many years. The products which have been advertised in different movies range from garments to gift items, automobiles to mobiles, soft drinks to mineral water, sports shoes to sunglasses etc. In this context, we can find many movies in which number of products has been advertised as a technique of product placement. The early reference of an advertisement of product in a film can be traced in a movie came in 1967, "An Evening in Paris" where actress Sharmila tagore was seen sipping Coke. The Rajdoot motorbike was launched in Raj Kapoor's movie "Bobby" starring Rishi Kapoor and Dimple Kappadia which came in 1973. In recent times, we find the same approach in the movie, "Kaho Na Pyar Hai" when Hritik Roshan asks irritably, "McDonald's ka burger laaon kya?" The first recognized product placement in Hindi film is "Coke" in SubhashGhai's "Taal. BR Chopra's movie "Baghban" is an another piece where Amitabh Bachchan endorsed a multiplicity of brands namely Ford Ikon, ICICI Bank and Tata Tea. Maruti Suzuki launched its new model "Swift" in Abhishek Bachchan starrer, "Bunty AurBabli". Automobiles are among the more favourite products for placement in films as can be seen from the movie "Dhoom" starring actor John Abrahm who promoted Suzuki in a scene. "Kuch Naa Kaho ", starring Abhishek Bachchan and Aishwarya Rai endorsed Coca-Cola. The trend of multibrand advertising is fastly catching up which is evident in the film "Chalte-Chalte" starring Shahrukh Khan and Rani Mukherjee. The movie promotes Castrol engine oil, Santro and Versache. Coke and Pass Pass were endorsed through "Yaadein". Actor Tusshar Kapoor was shown using the Kinetic Honda's Laser model in the movie "Gayab". Famous actress Sharmila Tagore's daughter Soha Ali Khan joined the Frankfinn Institute of Air Hostess Training in the movie "DilMaange More" and is associated with the brand since. Domino's pizza in "Phir Hera Pheri" and Parle-G in "Aabra Ka Dabra." More recently, Zandu Balm pain reliever rub cream and Boro Plus anti-septic cream have been shown as a part of the superhit songs "Munni Badnaam Hui" of Dabbangg. Later in Dabbangg 2 the product name fevicol features in a song. The latest examples are Nokia Lumbia 920 in "Chennai Express", Videocon DTH in Salman starrer "Sultan", Indigo Airlines in "Neerja", Relience Jio and Goldie Masale in "Ki & Ka" movies. Thus we see that now-a-days it has become a trend to advertise the product through Indian cinema to create its acceptability on a large scale and ensure its reach to masses.

Rural Customer and their characteristics

Rural customers are those people who live in the villages. They are simple, ruf & tuf and emotional. Now –a-days they are becoming more literate too due to consumerism. They are using mobile phones, watching YouTube and Netflix. The youth are more aware about new technologies and innovations. The rural customers are economic in nature but demands quality product now. Although they do not spend much on regular basis but they purchase most at the time of festivals. They want those products which are easy to use and handle. They want those products which can provide more value to them.

Research Methodology

The research design of this study was descriptive as this study is based on hypothesis testing using different statistical techniques. In this study the primary and secondary data have been collected. Secondary data was collected from the different books, magazines and internets. Data was also collected from the different movies. Data was collected from the rural customers of Asmoli Village. Asmoli is a village in Sambhal District of Uttar Pradesh. It has a Legislative Assembly seat, a police station, a block and Community Health Centre, one sugar Factory of DSM group, five banks, four inter colleges and telephone exchange etc. It is almost developing town and has all amenities in the village. Numbers of shops are there and people from surrounding areas come for shopping. Thus Asmoli is a good choice from the point of view of education, economic and infrastructural development. A self designed structured questionnaire was used to collect the primary data. The sample size was 100. As the study is related to know the role of product placement, therefore judgmental or purposive sampling method was used.

Reliability Test of questionnaire:

Cronbach's Alpha reliability test was done to test the reliability of items and it came out to be 0.878.

Analysis and discussion

Objective: To know the role of product placement in influencing rural customer's buying behaviour.

Hypothesis

The following hypotheses were taken in the study to know the role of product placement in influencing rural customers in buying behaviour.

H01: Product placement does not lead rural people to purchase products.

H02: Product placement is irrelevant for brands to attract rural customers

H03: Product placement is ineffective and does not influence rural customers in arousing interest in product

Table: Mean and Standard Deviation

S No		N	Mean	Std. Deviation	Std. Error Mean
1	Product placement lead to purchase product	100	3.00	.454	.032
2	Product placement is relevant for brands to attract the rural customers	100	3.90	.702	.050
3	Product placement is effective and arouse interest in product	100	4.02	.634	.045

Table: One Sample Test

Particulars	Test Value = 0					
	T	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference Lower	Upper
Product placement lead to purchase product	93.315	99	.000	2.995	2.93	3.05
Product placement is relevant for brands to attract the rural customers	78.585	99	.000	3.900	3.80	4.00
Product placement is effective and arouse interest in product	89.710	99	.000	4.020	3.93	4.10

Hypothesis 1

The average score of 100 respondents comes to 3.00, SE = 0.032, t = 93.31, p < .05. Null Hypothesis is rejected and we can conclude that product placement leads to rural customers to purchase the products. Rural people are very sensitive and they feel that if a big actor or actress is endorsing this product in the movie so the quality may be good and that leads them to buy the product.

Hypothesis 2

The average score of 100 respondents comes to 3.90, SE = 0.050, t = 78.585, p < .05. Null Hypothesis is rejected and we can conclude that product placement is relevant for brands to attract the rural customers. This means rural people are attracted towards those brands which are shown in Indian cinema. They feel the brand to be more reliable as it is shown in the movie and some celebrity is using that brand. They also feel that it is appropriate to use the brand in the movies to promote it.

Hypothesis 3

The average score of 100 respondents comes to 4.02, SE = 0.045, t = 89.71, p < .05. Null Hypothesis is rejected and we can conclude that product placement is effective and it influences the rural customers in arousing their interest to buy the product. Rural people are directly influenced by this technique of promotion mix to respond.

Limitation

The study is limited to a particular village only. It can be carried out at a large geographical area. The sample unit is rural customers while this study can be conducted in metro cities as well as urban areas. Further this study was carried in keeping movies only while it can be based on television programmes too. The sample size is small which may affect the generalization of the conclusion.

Conclusion

The rural customers are less aware about the term product placement but well aware about the promotion of products in the movies. The brands and products shown in the movies lead to their buying behaviour. The rural customers match their lifestyle with these products. They also know about the celebrity endorsement. They buy the products locally but they demand the new products also after seeing in the movies. The rural customers feel that product placement is an effective technique and influence their buying behaviour. The brands attract them when shown in the movies because the rural customers have emotional attachments with their role models i.e. actors & actress, therefore they buy the product and feel that they are using the same which is being used by their role

models. Thus it can be said that product placement has a role in influencing rural customers in buying behaviour.

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Performance Appraisal – Techniques and Critical Evaluation

Mr. Sahil Ramchandani*
Ms. Reema Aggarwal**

"If you don't measure it, people will know you're not serious about delivering it."

- James Belasco, Teaching the Elephant to Dance.

Introduction

Performance Appraisal is a very crucial element of everyone's life and a widely used phenomenon in the society. We are so used to it since our very childhood, that sometimes we even unconsciously get indulged in it. Human beings thrive on competition and everyone in the present day scenario is constantly engrossed in the rat race, hoping to defeat anyone and everyone standing in their way, to emerge as the ultimate winner.A regular evaluation of one's performance in order to understand one's shortcomings and improving upon it is a healthy concept, but the problem lies when such performance is measured on relative basis rather than taking one's own previous performance as the base. For example, a child who scores 65% on regular basis shall be appreciated when he gets 70%, rather than being criticised for scoring less than Sharmaji's son who scored 90%. However, to survive in this cut throat competition it is also relevant for an individual to be aware of his competitors and know where does he stand in relation to them, in order to develop the right strategy to ensure his mere survival and analyse the growth prospects.

An individual's performance can be evaluated in any field, like sports, education, cooking etc., each field having its own parameters to evaluate the performance. However, this can be a very lengthy topic to discuss, thus in our chapter we shall focus on the evaluation of the performance of the employees working in an organisation, which is primarily focused on the assessment of their in-role performance. It is believed that the concept of 'Performance Appraisal' had been adopted during the First World War by Walter Dill Scott, under which the U.S. Army adopted the 'Man to Man' rating system for evaluating the military personnel. With further advancements the system of 'merit rating' emerged during the 1920s under which the hourly paid wage earners (workers) were evaluated. Since the early 1950s the performance appraisal techniques started becoming more technical and sophisticated which made it possible to evaluate the performance of professional and managerial personnel.
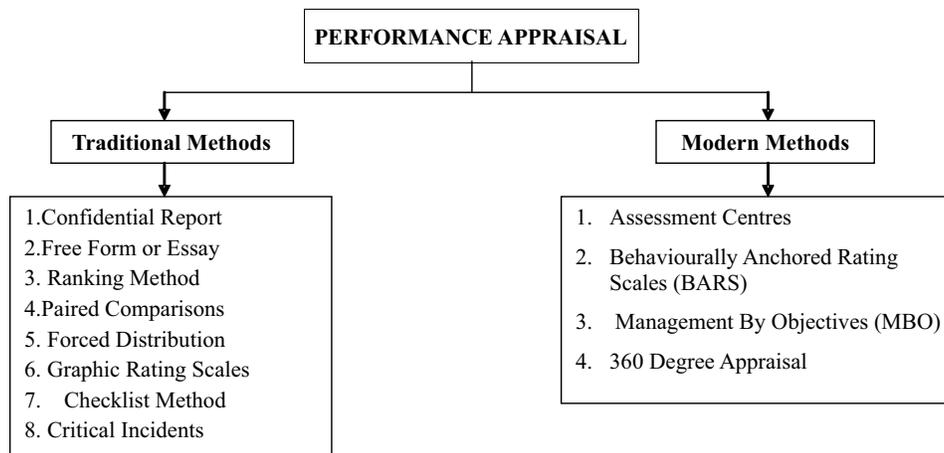
It is very important to choose the right technique to measure performance and inculcate healthy competition in an organisation, rather than creating an environment of animosity and covetousness. We have many different techniques to measure the performance of employees in an organisation, with each technique having its on pros and cons. There is no best technique to measure an employee's performance and to achieve the desired result. A particular technique may benefit one organisation, but prove to be completely catastrophic for the other. Thus, a person dealing in the management of human resources and allotted with the task of evaluating employees must keep in mind that he cannot follow what others are doing. Rather, he is required to study various aspects in relation to his organisation, in order to decide the performance evaluation technique best suited for his organisation. For example, a particular technique can be suitable to measure the performance of semi-skilled employees, but the same technique cannot be used to measure the performance of the company's knowledge workers. Thus, each organisation can use its own technique of performance appraisal and can also use different appraisal techniques and policies, depending on the level of employees (top, middle or lower level) that it is looking to evaluate.

Now, we shall focus on discussing the various techniques of performance appraisal (non-exhaustive list) which have been categorised on the basis of traditional techniques and modern techniques.

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Techniques of Performance Appraisal

PERFORMANCE APPRAISAL

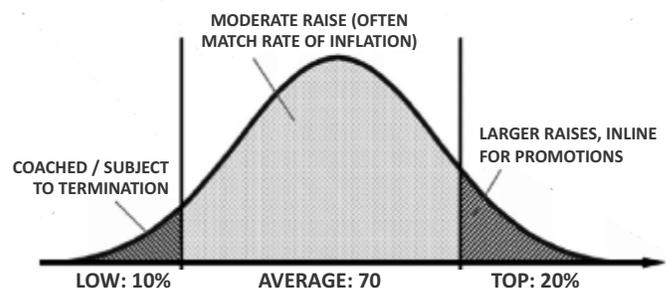| Traditional Methods	Modern Methods
1.Confidential Report 2.Free Form or Essay 3. Ranking Method 4.Paired Comparisons 5. Forced Distribution 6. Graphic Rating Scales 7. Checklist Method 8. Critical Incidents	1. Assessment Centres 2. Behaviourally Anchored Rating Scales (BARS) 3. Management By Objectives (MBO) 4. 360 Degree Appraisal

1. **Confidential Report:** This traditional form of performance appraisal method is prevalent in Government Organisations, wherein the subordinates are evaluated by their immediate superiors on various parameters, including attendance, leadership, technical ability, personality, etc. It generally follows a structured format, but suffers from the problem of subjectivity as it is based on impressions, rather than data.

2. **Free Form or Essay Method:** Under this method, the evaluator writes a narrative description of the employee's strengths, weaknesses, capabilities and potential for improvement. However, this method suffers from various limitations as it does not have a specified format, length or content. Also, it is a time consuming method and is likely to be affected by personal bias of the evaluator.

3. **Ranking Method:** It is one of the simplest and oldest formal method of appraisal, under which the employees are ranked from best to worst/poorest by their evaluator. For using this method, the employees working in the same work unit and doing the same job can be evaluated. However, this method too can be affected by personal bias. Also, it can be a cumbersome job for a manager to rank all his employees, if he has a large span of control. Another demerit of this method is that it fails to highlight the degree of difference in performance level of the employees, as it focuses on merely ranking them.

4. **Paired Comparisons:** This is a modified version of the ranking method. Under this method, the employees are compared with other members of the group, one at a time,

i.e. on one-on-one basis. The number of times an employee is rated better than the other, helps in determining his overall rank. The number of possible pairs for comparison under this method are determined using the formula: $N(N-1)/2$,
where N = number of employees being evaluated.

However, the problem of using this method is that it is subjective as it is not based on specific job related performance and can become quite unmanageable if the number of employees being evaluated are large.

5. **Forced Distribution Method:** Under this method the rating is done on a normal frequency curve, so as to remove the evaluator's bias of central tendency, as well as the leniency and strictness error. The method is simple to apply, easy to understand and reduces rater's bias, making it one of the immensely popular method of performance appraisal at many organisations. However, this method is now being substituted with modern methods because of its limitations such as the restriction on the freedom of choice and non flexibility.

MODERATE RAISE (OFTEN MATCH RATE OF INFLATION)

LARGER RAISES, INLINE FOR PROMOTIONS

COACHED / SUBJECT TO TERMINATION

LOW: 10%   AVERAGE: 70   TOP: 20%

6. Graphic Rating Scales: It is a numerical scale indicating different degrees of a particular trait. The evaluator is given a printed form for each employee, which contains several characteristics related to the personality and performance of employees (Gupta, 2013). It is economical to design and administer rating scales. Moreover, the method is easy to

Table: Mean and Standard Deviation

S No		N	Mean	Std. Deviation	Std. Error Mean
1	Product placement lead to purchase product	100	3.00	.454	.032
2	Product placement is relevant for brands to attract the rural customers	100	3.90	.702	.050
3	Product placement is effective and arouse interest in product	100	4.02	.634	.045

Table: One Sample Test

Particulars	Test Value = 0					
	T	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Product placement lead to purchase product	93.315	99	.000	2.995	2.93	3.05
Product placement is relevant for brands to attract the rural customers	78.585	99	.000	3.900	3.80	4.00
Product placement is effective and arouse interest in product	89.710	99	.000	4.020	3.93	4.10

understand and use, making it one of the widely used method of appraisal. However, for this method to be successful, a mature and experienced evaluator is required. Also, the approach is subjective as specific job related performance criteria are not considered.

7. Checklist Method: The checklist refers to a list of statements that describes the characteristics and performance of employees. The evaluator is required to indicate the behaviour of his subordinate for each statement as positive or negative. For this, an evaluator may use:
(a) Simple Checklist: Where each statement is given equal importance; or
(b) Weighted Checklist: Wherein weights are assigned to different statements based on their relative relevance.
However, this method requires a separate checklist for each job, making it relatively costlier and a lengthy method of appraisal.

8. Critical Incidents Method: This method requires the manager to record significant examples of an employee's positive or negative behaviour during their job performance. For this method to be used as an useful feedback tool, the statements should include a brief description of the critical incidents that took place, along with the circumstances and settings in which they took place. This method also helps in removing the recency error. This method however, suffers from various limitations as it is time-consuming and cumbersome. Also, these critical incidents occur infrequently and what may be critical for one may not be considered as critical for other, because of which a

continuous record of performance may not be available.

Modern Methods:

1. Assessment Centres:The concept of assessment centres as a method of performance appraisal is traced back in 1930s in the Germany where it was used to appraise its army officers. The concept gradually spread to the US and the UK in 1940s and to the Britain in 1960s (Chand, n.d.). The concept has been relatively new in India, with companies like Crompton Greaves, HUL, Eicher and Modi Xerox being some of the companies which have adopted this technique.An assessment centre is a central location where managers come together to participate in well-designed simulated exercises, including role plays, business games and in-basket exercises. They are assessed by senior managers supple¬mented by the psychologists and the HR specialists over a span of 2-3 days.

Advantages:
a)   Helps in performance as well as potential appraisal.
b)   Determining the training and development needs of the employees.
c)   Facilitates accurate evaluation and removes biasness.
d)   Assists in implementing affirmative action goals.

Disadvantages:
The technique is a widely accepted and used one, with a lot of

potential for the future. However, it suffers from various limitations as it is time-consuming and expensive to develop simulation exercises. Also, it might lead to unhealthy competition among employees, thereby disturbing the smooth working of the company.

2. **Behaviourally Anchored Rating Scales (BARS):** This technique looks to combine the graphic rating method with the critical incidents method. Under this method, the critical areas of performance and the most effective behaviour for achieving the desired results are determined in advance. The evaluator then records the behaviour of the employee and compares it with the observations with BARS, to evaluate the actual performance with the desired performance. Developing BARS is a complex and systematic process, involving a series of steps.

Advantages:
a) High accuracy as it is prepared by a team of highly expert people.
b) Clearer standards and better feedback.
c) It is more acceptable due to employee participation.
d) Reduces biasness as the standards are prepared in advance and the actual performance and behaviours are compared with the standards for the purpose of appraisal.

Disadvantages:
Despite of its advantages, the technique suffers from various limitations as it is time-consuming and expensive to develop BARS. Also, the technique can be used for the performance appraisal of the employees performing structured jobs only.

3. **Management By Objectives (MBO):** The term was first coined by Peter F. Drucker in 1954. It may be defined as a process in which the manager along with his subordinates decide the targets and results to be achieved collectively, keeping in view the overall objectives of the organization, jointly identify the key result areas and periodically evaluate the actual results with the pre determined goals and targets. The process of MBO begins with the identification of organizational goals and objectives. Once the corporate goals and objectives are defined, goals are set for each organizational unit. After the corporate goals and unit goals are set, the next step is to fix performance

targets for each manager involved in the process. The targets are stated in quantitative terms. Periodical performance reviews are conducted to identify the corrective areas. At the year end, results are evaluated and the targets are reviewed.
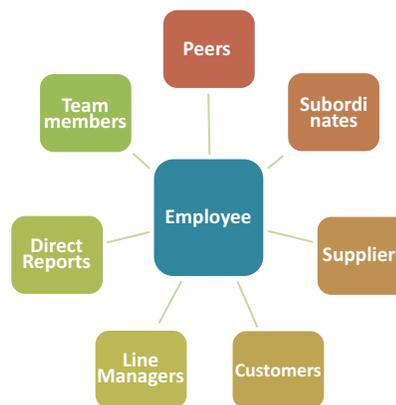
Advantages:
a) Role clarity because of employee involvement, thereby reducing role ambiguity and role conflict.
b) Active participation of employees in goal setting encourages higher involvement and greater motivation.
c) It is more acceptable due to employee participation.
d) Higher employee satisfaction as the targets developed in MBO provide an objective criteria for performance evaluation. Thus, an employee knows what is expected out of him and the basis on which his performance is being judged.

Disadvantages:
Setting targets using MBO is time-consuming and expensive. Also, the technique might not go well with managers adopting an authoritarian leadership style and those who are hesitant in involving employees in the crucial process of goal setting.

4. **360 Degree Appraisal Method:** It is a management tool used in organizations where the employee receives feedback on his job performance and behaviour outcomes as well as his potential from a circle of raters as opposed to a single supervisor. The feedback is received from the superior, subordinates, peers, customers, vendors, suppliers and other interested stakeholders with whom the employee interacts in the course of his job performance (Alexander, 2006). Employee's self evaluation completes the circle. Each source can provide a different perspective about the employees' job performance and behaviour which may not be viewed by any other method.

Advantages:
a) Reduces biasness because multiple stakeholders are involved in the process of rating the performance of a particular employee.
b) The accuracy and scope of assessment increase when consulting a full circle of daily business contacts as opposed to one supervisor.
c) Peer group assessment facilitates better understanding and teamwork thrives.
d) Inflexible managers are forced to initiate self change.

Disadvantages:
The response of peers tends to be bias and the feedback shared by subordinates is often dominated by fear, taking away the essence of this technique. An employee cannot be equally well rated by everyone as it is almost impossible for a single employee to keep all stakeholders happy.

Critical Evaluation

Performance Appraisal has been longed talked of as something integral for an organisation's success. Also, there have been many advancements in the field with modern day companies using a combination of techniques to evaluate their human resources and to identify their training and development needs. With the technological changes, the concepts of computerized and web-based performance appraisal have also emerged as popular techniques to evaluate employee performance.

However, to keep pace with the VUCA (Volatile, Uncertain, Complex and Ambiguous) World, the concept of "Performance Management" emerged. Unlike in the 1990s, Performance Appraisal can no longer be regarded as synonymous with Performance Management. A Performance Management System (PMS) enables organizations to plan, measure and control their performance, so that the decisions, resources and activities can be better aligned with strategies in order to achieve the desired results (Bento and Bento, 2006).

In its very essence, performance management is a broader concept as compared to performance appraisal as it encompasses not only the measurement of performance but also making constant efforts for improvement through various activities. A PMS is broader than a performance appraisal system in the sense that performance management precedes and follows performance appraisal in a virtuous spiral and performance management creates the context for appraisal (Lebas, 1995, p. 34). Thus, it is imperative for all organisations to see a complete picture through the holistic concept of performance management, rather than sticking to the single element of performance appraisal. Studying the concept of performance appraisal in detail is still of high importance, but in order to reap its benefits, it must be correctly applied and used in the larger process of performance management.

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Collaborative Efforts in the Context of Trading Between India & South East Asian Countries

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Abstract

South Asia has the biggest concentration of poor people in the world with approximately more than 500 million people still living in extreme poverty. Many more people, especially women and those working in the informal sector, live just above the poverty line and are vulnerable to economic and environmental shocks and disasters. In the past two decades, around over 50 per cent of South Asians (more than 800 million people) have been affected by at least one disaster. There is increased momentum for regional cooperation particularly in the eastern part of the region, where the borders of India, Bangladesh, Nepal and Bhutan converge. India's relationship with SOUTH EAST ASIAN is a key pillar of our foreign policy and the foundation of our Act East Policy. The up-gradation of the relationship into a Strategic Partnership in 2012 was a natural progression to the ground covered since India became a Sectoral Partner of the SOUTH EAST ASIAN in 1992. There are, in total, 30 Dialogue Mechanisms between India and SOUTH EAST ASIAN, cutting across various sectors. The paper emphasised on the trade potential of India with other south East Asian countries. Study includes revealed comparative advantages, intra-industry trade and trade potential indices. It access and analyse challenges and recommendation to overcome those challenges.

***Keywords:** Collaborative, Intra Industry Trade & International Trade.*

Introduction

India's trade relationship with Southeast Asia has numerous components. Traditionally, trade between India's coastal kingdoms of Orissa and Southern India and countries in Southeast Asia such as Thailand, Malaysia and Cambodia are well documented. Additional, Buddhism and Hinduism, both Indic religions, maintain a strong sway in Southeast Asia, with epics like the Mahabharata and Ramayana being part of the ethos of Southeast Asia.

Apart from the Non-Alignment Movement, communism also influenced India's relations with the region. During the Vietnam conflict, India supported North Vietnam due to its strong opposition at that time to the United States. While the cold war period influenced India's ties with Southeast Asia, given its closeness to the Soviet Union, India also had reasonable ties with Malaysia and was amongst the first countries to grant diplomatic status to Singapore in 1965. In the early 1990's, two major transformations influenced India's ties with the outside world, including Southeast Asia. First, after the dissolution of the Soviet Union, the Cold War order ended. This led to a major shift in Indian foreign policy towards the US, where ideological blinkers gave way to pragmatism.

Second, this period ushered in economic reforms carried out by India in 1991, ensuring that Non Alignment was no longer the cornerstone of India's Foreign Policy not only towards the West, but other parts of the world also. India's Prime Minister during that period, PV Narasimha Rao, along with then-Finance Minister and current Prime Minister Dr. Manmohan Singh framed the Look East Policy in 1992. This policy represents India's efforts to cultivate economic and strategic relations with Asia.

In the same year, India also became a dialogue partner with SOUTH EAST ASIAN. Rao's main aim was to integrate India's economy with a region with which India had historical and cultural links. It was with this in mind, that channels were also opened with Myanmar's dictatorship in the mid-1990.

Economic Overview

The Association of South-East Asian Nations (SOUTH EAST ASIAN) comprises of Indonesia, Singapore, Philippines,

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Malaysia, Brunei, Thailand, Cambodia, Lao PDR, Myanmar and Vietnam. India's focus on a strengthened and multi-faceted relationship with SOUTH EAST ASIAN is an outcome of the significant changes in the world's political and economic scenario since the early 1990s and India's own march towards economic liberalisation. India's search for economic space resulted in the 'Look East Policy'. The Look East Policy has today matured into a dynamic and action oriented 'Act East Policy. PM at the 12th SOUTH EAST ASIAN India Summit and the 9th East Asia Summit held in Nay Pyi Taw, Myanmar, in November, 2014, formally enunciated the Act East Policy.

India's relationship with SOUTH EAST ASIAN is a key pillar of our foreign policy and the foundation of our Act East Policy. The up-gradation of the relationship into a Strategic Partnership in 2012 was a natural progression to the ground covered since India became a Sectoral Partner of the SOUTH EAST ASIAN in 1992, Dialogue Partner in 1996 and Summit Level Partner in 2002. There are, in total, 30 Dialogue Mechanisms between India and SOUTH EAST ASIAN, cutting across various sectors.

SOUTH EAST ASIAN Economic & Commercial Relations Overview

- Thailand is the second largest economy in the Association of Southeast Asian Nations (SOUTH EAST ASIAN) and the Greater Mekong Subregion (GMS). It is an upper middle income country with a Gross Domestic Product (GDP) of US$ 397.6 billion in 2016. The growth of GDP in Thailand has averaged between 3% to 4% in the last decade.

- India's economic and commercial relations with Thailand are rooted in history, age-old socio- cultural interactions and extensive people to people contacts. India and Thailand are celebrating 70 years of diplomatic relations in 2017. India's 'Look East' policy (since 1993) and Thailand's 'Look West' policy (since 1996) which has now metamorphosed into India's 'Act East' and Thailand's 'Act West" are strongly contributing in consolidating bilateral relations including economic & commercial linkages.

- Two-way trade in 2016 totaled US $ 7.72 billion, with about US $5.15 billion in Thai exports to India and US $ 2.57 billion in Indian exports to Thailand. In the SOUTH EAST ASIAN region, Thailand ranks as India's 4th largest trading partner after Singapore, Indonesia and Malaysia. The growing ties between the two countries have come at a time when the AEC is expected to bring greater integration among member countries be it in the form of physical connectivity, economic links, cultural and educational ties.

- The fast growing Indian market remains attractive for Thai investors, given the vast opportunities available in infrastructure sector, tourism and retail industries. India continues to remain an interesting market for export of goods from Thailand. Currently, Thai goods have benefited from tax reduction under SOUTH EAST ASIAN-India FTA in Goods, which came into effect from 01 January, 2010 and resulted to the flow of more goods into Indian market. An Early Harvest Scheme (EHS), covering 82 products (now 83 products) under the proposed India-Thailand FTA, in place since September 2004, has already resulted in phenomenal growth in our bilateral trade.

- Major imports from India are in the following sectors : Chemicals, Jewelry including silver bars and gold, Machinery and parts, Parts and accessories of vehicles, Fresh aquatic animals, chilled, frozen, processed and instant, Electrical machinery and parts, Medicinal and pharmaceutical products, Coffee, tea and spices, other metal ores, metal waste scrap, and products, Vegetables and vegetable products, Iron, steel and products, Yarn and fibers, Fabrics, Metal manufactures and Fertilizer and pesticide., etc.

- Major exports to India are in the following sectors: Polymers of ethylene, propylene, etc. in primary forms, chemical products, Air conditioning machine and parts thereof, Precious stones and jewelry, Motor cars, parts and accessories, Parts of aircraft and accessories thereof, Iron and steel and their products, Machinery and parts thereof, Copper and articles thereof, Radio-broadcast receivers, television receiver and parts, Automatic data processing machines and parts thereof, Spark-ignition reciprocating internal combustion piston, and Rubber products etc.

Table: 1 Size of the SOUTH EAST ASIAN Economies	Population 2014	Area	Gross National Income $ Billions (2014)		Per capita income (2014)	
	Million	Sqkm	CER	PPP	CER	PPP
1.Brunei	.	5.8	15.1	29.3	37320	72190
2.Cambodia	15.3	181.0	15.6	47.2	1020	3080
3.Indonesia	254.5	1910.9	923.7	2592.3	3630	10190
4.Laos	6.7	236.8	11.1	33.8	1660	5060
5.Malaysia	29.9	330.8	332.5	740.8	11120	24770
6. Myanmar	53.4	676.6	68.1	204.3e	1270	
7.Philipines	99.1	300.0	347.5	837.6	3500	8450
8.Singapore	5.5	0.7	301.6	439.0	55150	80270
9.Thailand	67.7	513.1	391.7	1006.9	5780	14870
10.Vietnam	90.7	331.0	171.9	485.2	1890	5350
11.India	1295.3	3287.3	2028	7292.8	1570	5630
Total SOUTH EAST ASIAN	**623.2 (8.6%)**	**4486.7 (3.3%)**	**2578.8 (3.3)**	**6416.4 (5.9%)**		

Source: Table1.1 Size of the Economy, World Development Indicators 2016; GNI-gross national income; CER-current exchange rate; PPP-purchasing. power parity;e-estimate;Th.-thousand Figures within parenthesis indicate share of SOUTH EAST ASIAN in relevant global totals and modified by author

Literature Review

Kojima K (1964) first used the trade intensity index measures, the share of one country's trade with the another country. The formula is used to calculate the trade intensity index by Kojima(1964); rani (2007); Agrawal Pandey (1965), Bano (2012). Rupa Chanda and G. Sasidaran's (2008) examines the reasons underlying India's growing interest in framing various kinds of regional and bilateral agreements with Asian economies. The study concludes by looking at the prospects for future Preferential Trade Agreements by India and the various issues and interests that should shape India's future regional initiatives to assure the realization of its long term economic, strategic, and geopolitical objectives.

Razeen Sally and Rahul Sen (2005), analyze the trade policies in Southeast Asian countries in their wider Asian and global contexts. The paper concludes that for SOUTH EAST ASIAN countries the engine of liberalization and regulatory reform has to be home-driven, with governments taking unilateral measures in response to internal and external conditions. Suparna Karmakar (2005), analyses the economic scenario in the Asia-Pacific region. This paper is an analysis of the economic scenario in the Asia-Pacific region and a macro overview of the trade creation potential of an agreement on trade in services among members of SOUTH EAST ASIAN and India. Mukul Asher and Amitendu Palit (2008) explore India's Look East Policy. India's economic engagement with Southeast Asia has expanded rapidly since the early 1990s.Merchandise trade between India and SOUTH EAST ASIAN has grown from US$2.3 billion in 1991-92 to US$38.4 billion in 2007-08. Bilateral trade has diversified in terms of commodity composition. This further suggests that acceleration in India-SOUTH EAST ASIAN trade coincided with the onset of a robust period of expansion for the global as well as the Indian economy.

Laurence Henry (2007) suggests that the development of trade and economic arrangements between India and Southeast Asia must be rooted within the larger processes of economic and diplomatic exchanges in Asia. The article further highlights SOUTH EAST ASIAN as a successful model of regional cooperation that started its revolutionary growth in the 1990's. According to the author, a major reason for the evolution of the SOUTH EAST ASIAN-India entente is the perceived hegemony of China in Asia. Southeast Asian States are very interested in balancing Chinese power through India, in the region. The association between India and Southeast Asia, in particular SOUTH EAST ASIAN and its member states, reflects the overall tendencies of the emerging regional infrastructure of East Asia.

Research Methodology

Since the study is descriptive in nature therefore it is based upon secondary source of data like WTO data bank, IMF, Foreign Trade Statistics Yearbook and SOUTH EAST ASIAN Merchandise Trade Statistics Database. The statistical tools such as Trade Intensity Index, correlation, Coefficients, regression analysis have been used to achieve the objectives of the paper.

Objectives of Research

1. To analyse the export-import trade relations of India and SOUTH EAST ASIAN countries in quantitative terms.
2. To find out the current position of trade relations between India and SOUTH EAST ASIAN countries.

Data Analysis and Interpretation

Trade Intensity Index:
The trade intensity index (TII) is used to determine whether the value of trade between two countries is greater or smaller than would be expected on the basis of their importance in world trade. It is defined as the share of one country's exports going to a partner divided by the share of world exports going to the, partner. It is calculated as,

$$Tij = (xij/xit)/(xwj/xwt)$$

Where xij and xwj are the values of country i's exports and of world exports to country j and where xit and xwt, are country's i's total exports and total world exports respectively. An index of more (less) than one indicates a bilateral trade flow that is larger (smaller) than expected, given the partner country's importance in world trade.

Trade Intensity Index is further divided in to Export Intensity Index (EII) and Import Intensity Index (III) for looking the pattern of exports and Imports.

Table 1

Year	INDIA EXPORT TO WORLD	India's EII with SOUTH EAST ASIAN	SOUTH EAST ASIAN's EII with India	India's III with SOUTH EAST ASIAN	SOUTH EAST ASIAN's Import II with India
2005-06	10.1	5.86	7.06	6.92	3.72
2006-07	10	6.78	8.17	7.88	4.06
2007-08	10.1	9.38	10.49	9.89	5.45
2008-09	10.3	8.39	10.09	10.68	4.95
2009-10	10.1	10.02	11.93	11.60	6.00
2010-11	10.3	11.81	12.55	12.53	6.57
2011-12	12	12.43	13.97	15.35	7.01
2012-13	11	11.72	13.93	17.47	7.86
2013-14	10.5	12.44	12.96	17.73	9.49
2014-15	10.2	12.57	13.00	18.12	9.93
2015-16	9.6	12.48	13.39	15.27	8.45

Source: Author's calculation by using WTO database
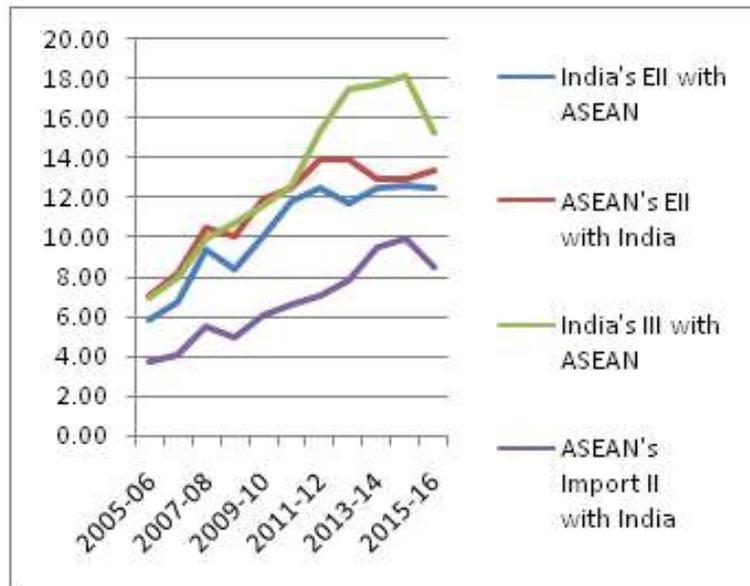
According to the above table trade intensity of India in term of SOUTH EAST ASIAN counties has been increasing with a contant rate EII of India in 2005-06 was 5.86 which was grown approx twice to 12.48 in 2015-16. Morover, there also has been a increasing rate of III of India with South East Countries

Descriptive Statistic

Table 2 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
WORLD IMPORT	11	37275.20	52375.80	45021.2000	4737.70132
WORLD EXPORT	11	30138.05	52460.84	39254.5214	8028.97819
SOUTH EAST ASIAN EXPORT TO WORLD	11	6488.39	12939.88	10314.5684	2345.22487
SOUTH EAST ASIAN IMPORT FROM WORLD	11	5774.17	12546.53	9601.8837	2513.17369
INDIA EXPORT TO WORLD	11	9.60	12.00	10.3818	.63690
INDIAN IMPORT FROM WORLD	11	7.30	10.50	8.9818	.87042
SOUTH EAST ASIAN EXPORT TO INDIA	11	10.88	44.71	31.3755	11.51637
INDIAN EXPORT TO SOUTH EAST ASIAN	11	10.41	36.74	23.8355	9.06532
Valid N (listwise)	11				

(Table create by Author by using secondary data sources)

The above table shows the India's average import to world from 2005 to 2015 is around $8.98billion and has positive deviation of .87. On the other hand India's import from SOUTH EAST ASIAN is $31.37 million. Similarly, India's export to SOUTH EAST ASIAN is average $23.83 million I last 10 years. This indicates that India and SOUTH EAST ASIAN has a good trade relation. Both foreign policies are interdependent to each other.

Regression Analysis:

India's Export to world =X
SOUTH EAST ASIAN import from India = Y
Table 3

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.643[a]	.414	.349	.51399	.414	6.354	1	9	.033

a. Predictors: (Constant), SOUTH EAST ASIAN IMPORT FROM INDIA

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations		
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part
1 (Constant)	9.305	.455		20.468	.000	8.276	10.333			
SOUTH EAST ASIAN IMPORT FROM INDIA	.045	.018	.643	2.521	.033	.005	.086	.643	.643	.643

a. Dependent Variable: Indian export to the world.

In the above table 3, there is positive and high correlation (0.643) between total India's export to world and total import by SOUTH EAST ASIAN counties from India. Moreover R square is 0.414 which means approx 41.4% changes in India export to world are due to changes in the total imports by SOUTH EAST ASIAN counties.

Trade opportunities:

a. SOUTH EAST ASIAN is a monolithic market. - The SOUTH EAST ASIAN with a combined GDP of more than $2.5 trillion would rank as the third largest economy in Asia and seventh largest in the world.

b. SOUTH EAST ASIAN is a growing hub of consumer demand- SOUTH EAST ASIAN, estimated to be around 150 million or one-quarter of the SOUTH EAST ASIAN population, has been fuelling consumer spending and retail sales in the organised channels.

c. SOUTH EAST ASIAN is well positioned in global trade flows- SOUTH EAST ASIAN is the fourth-largest exporting region in the world, Indian exports to SOUTH EAST ASIAN grew from U.S. $ 10.4 billion in 2005-06 to U.S. $ 25.2 billion in 2015-16 and have grown by compound annual growth of 9.2 %

d. Launch of SOUTH EAST ASIAN Economic Community (AEC)- AEC was officially launched on 31st December 2015 to create a single market to enable an easier movement of goods, services, investment, capital and people across the region.

e. Intraregional trade within SOUTH EAST ASIAN likely to surge with implementation of the AEC: Some 25 percent of the region's exports of goods go to other SOUTH EAST ASIAN partners, a share that has remained roughly constant since 2003.

f. The removal of tariffs throughout the AEC presents a significant advantage for Indian companies in two ways. First, companies that manufacture in the region will be able to take advantage of the free flow of goods through the AEC when exporting finished goods. Second, Indian companies that rely on SOUTH EAST ASIAN nations for intermediate goods in their supply chain will benefit from reduced costs not only in goods, but also in simplifying the 'paperwork' necessary to move goods through the region.

Challenges

A stronger trade is contingent upon improved transport network i.e. national railway networks, construction of all weather roads to allow movement of large trucks across the region and efficient ports for the facilitation of sea trade; and harmonization of technical specifications of rolling stock (wagons, vehicles, etc) and infrastructure (rail and roads) to permit interoperability. Only a small proportion of India's trade with SOUTH EAST ASIAN, wiz, Myanmar is conducted through land frontier. A major problem in conducting trade with and through Myanmar with Thailand and other countries in the South East Asia with respect to road connectivity is that there are many missing highway links besides poor condition of roads in some countries which do not facilitate movement of large trucks for trade.

Limitation:

The research paper also have some limitation, author only focus on trade relation between India and SOUTH EAST ASIAN from India's point of view. The paper has a scope to find out more relevant information from SOUTH EAST ASIAN countries point of view, their trade intensity with their prospective.

Conclusion:

Trade relation between two counties or between two regions always create win –win situations. In this paper author found that India economics development is equally dependent on SOUTH EAST ASIAN counties as it is with western counties. Important factor is that India is a developing country and does extremely well in last 20-25 years to grow. Trade intensity index represent clearly about the positive outcomes. The researcher use correlation and regression analysis to find out the relationship and dependency. India and SOUTH EAST ASIAN countries have an opportunity for development as there is a high demandable market. Counties have to improve their logistic connectivity and information technology to enhance for future.

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