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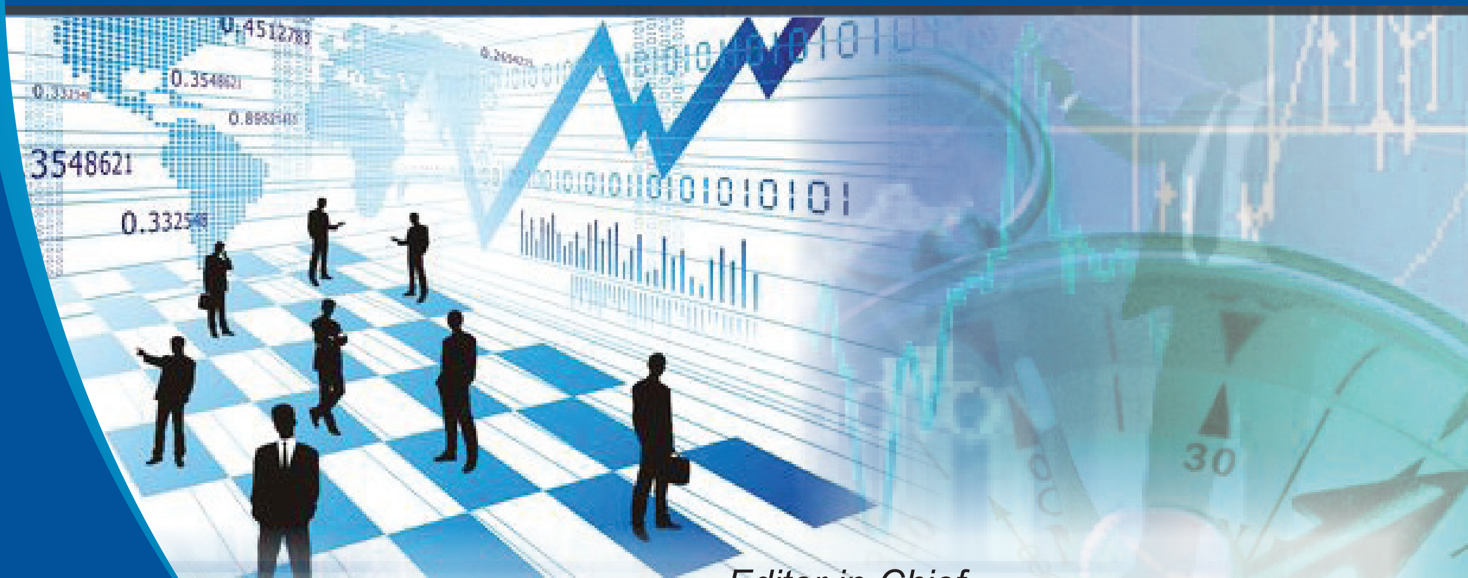

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Bharatiya Vidya Bhavan Institute of Management Science, Kolkata, India was started in the year 2000 under the aegis of Bharatiya Vidya Bhavan as a promising B-School under Maula Abul Kalam Azad University of Technology (MAKAUT). Our MBA program is affiliated to the MAKAUT and is approved by the All India Council for Technical Education (AICTE), Ministry of Human Resource Development, Govt. Of India and Department of Higher education (Technical Education), Govt. Of West Bengal. The Institute conducts a 2 year MBA program on a regular basis.

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Contents

EDITORIAL NOTE

A Tale of Two Cities: The Successes and Problems of Education in India in the Pandemic Era

Prof. Ramakanta Patra
Principal, BIMS, Kolkata

I have deliberately named my article after Charles Dickens' 1859 novel about the French Revolution, *A Tale of Two Cities*, because I find the opening line of the novel apt for the present: "It was the best of times, it was the worst of times." As Novel Coronavirus Disease indiscriminately attacks human lives and makes the present the worst of times, we faculty members and administrators of educational institutions in India are coming up with revolutionary ways to help students and faculty continue their studies and research. In doing so, we have never ceased to try and invert this worst of times to make it the best of times in the field of education.

At a fundamental level, the Government of India, in conjunction with Indian educational institutions, has stepped up to make sure that educational lectures in English and in regional languages are available on national radio and national television. More importantly, though, we have hunted down digital tools that have allowed us to continue teaching students at all educational levels, though teachers and students be divided by social distancing.

Through methods of trial, error, and customization, centrally-aided, state-aided, and privately-funded educational institutions have, hand-in-hand with the Government, dialogically furthered the effectiveness of digital tools for teaching online classes, with faculty members proactively mastering digital pedagogies almost overnight. We have also trained students to use digital pedagogic tools on computers and smartphones. Such tools have helped us reach out to our students in moments of crisis such as the present. More importantly, if we sustain these tools for the long haul, we will be making education feasible for Indian students across financial divides.

It is indeed flattering to note that the Ivy Leagues of the United States of America and the smallest regional colleges of India have, to lesser or greater extents, taken to using the same digital pedagogical tools. This flattening of pedagogical divides has led chains of satirical jokes doing the rounds about educational institutions across the world being reducible to an amorphous and nebulous entity named Zoom University. However, let us not soothe ourselves into complacency with the thought that Harvard University or Columbia University and the smallest and most financially impoverished regional institutions in India are on the same level—we have a long journey ahead of us to cut across divides of pedagogical excellence.

On the research front, we have broken global barriers to conduct webinars in which both students and faculty can participate, regardless of which country they inhabit. These webinars have proved to us that research conferences in Euro-American sites do not constitute a privileged enclave from which countries in the Global South may be deprived. Indeed, I would hazard to guess that such divisions into enclaves have ceased to exist for the foreseeable future. We have, then, in initially fragmented but progressively exponential ways, ensured that divisional factors of social distancing, feasibility, and global demarcation may cease to exist in the pandemic era.

All things considered, though, let us never forget that a developing country like India is indeed a tale of two cities—a city of haves and a city of have-nots. The city of haves can seamlessly participate in our digital educational efforts. However, the city of have-nots is demarcated by another divide—a digital divide—that separates it from the privileged city of haves. In this marginalized city of have-nots reside the likes of 14 year-old Devika Balakrishnan of Kerala. The Dalit daughter of a daily-wage earner, Balakrishnan had access to neither television nor smartphones. Unable to access online classes and to envision an educationally and socially mobile future for herself, Balakrishnan set her body ablaze and died. Her parting note to the world consisted of two heart-wrenching words: “I’m going.” Before we celebrate our breaking down of educational divisions in multiple configurations, then, let us not forget that there are many more such divides to be broken, with these divides being decided by yet more culturally and historically deep-rooted divisive factors like class and caste. Let the example of Balakrishnan perennially remind us during the pandemic that we, as educators who have miles to go before we sleep, should ensure that our students, while travelling these miles with us, may never again be forced to say “I’m going.” This is our greatest challenge for the future of education in India in the pandemic era.

An Investigation on Reviewed Literature on the Impact of Derivative Trading on Stock Market Volatility- A Diagnostic Analysis and Consensus Views

Arya Kumar*

Abstract: *Futures and options are emerged as innovative derivative products. These derivatives products are used to guard the risk adverse economic agents against uncertainties arising out of fluctuations in the assets prices. In general the financial markets are marked by a very high degree of volatility. Through the use of derivative product it is possible to partially or fully transfer of risk by locking asset prices. Derivatives as instrument for risk management generally do not influence the fluctuation of the prices of underlying assets. In fact, by locking in asset prices, futures and options minimise the impact of fluctuation in asset prices on the profitability and cash flow situation. Several quantitative models such as ARCH (Auto Regressive Conditional Heteroscedasticity) family model, VECM (Vector Error Correction Model), VAR (Vector Autoregresion), VDA (Variance Decomposition Analysis) and etc. are used to measure the impact of derivatives on stock volatility. In this paper an attempt has been made to diagnostically review the findings of various existing literatures regarding the impact of derivatives trading on stock market volatility. In addition, a review is made on various models on the basis of research findings. Finally, leverage effects of derivative on stock volatility have been studied.*

Keywords: *ARCH, Derivative Market, GARCH, Spot Market, Leverage Effects, Volatility*

1. INTRODUCTION

The return and risk are always interrelated, which states the positive relation between forecasted return and unexpected risk or volatility. Volatility is a measurement of the difference between current asset prices and its average past price.Incase the fluctuations of prices is observed to be high in a short period, then the volatility is said to be high, if there is slow movement in price then it leads to low volatility.Volatility refers to dispersal from the central tendency that helped researchers to develop several models; some of them are hypothetical while others are empirically tested. Amongst all volatility model 'leverage' or 'asymmetric' technique is widely used. This technique helps to understand the occurrence of volatility is due to any bad or good news. However, it is not easy to measure the future trend of volatility as it is not only affected by a single factor rather several others factors affects like macro economy, corporate planning, government policies, political instability and performance of the firm also has the key role. Still by depending on historical volatility a prediction can be done to identify the trend. This paper examines various literatures of derivative impact on stock market volatility, leverage effect for volatility and various ARCH Family models for the measurement of Volatility clustering.

Namrata Sandhu and Sahil Singh Sandhu (2012) the study inculcates 177 investors who believes the derivative is a myth, they states that derivatives are very complex, high risk and unsuitable to trade in Indian market. Mohite Trupti Ramchandra, Y. M. Satish and M. G. Krishnamurthy (2010) derivative is an old age concept which became prominent in last few decades. The supporters says it is useful for price liquidity and hedging of risk while its critics believe that it makes market instable and less transparency. But it has a great impact on the financial market and on the economy. N. Ramanjaneyalu and A. P. Hosamani (2008) - In the financial market, derivative is considered as cost-effective and risk hedging contracts for the market participants. There is a myth of derivative among the small investors and retailors regarding the volatility that may cause huge loss, while it is a phenomenon for smooth running of market.

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From the above literatures it will ambiguous to conclude on the effect of futures on spot market volatility. So as to conclude a strong study is required to identify the historical developments of derivative impact.

2. CONCEPTUAL FRAMEWORK

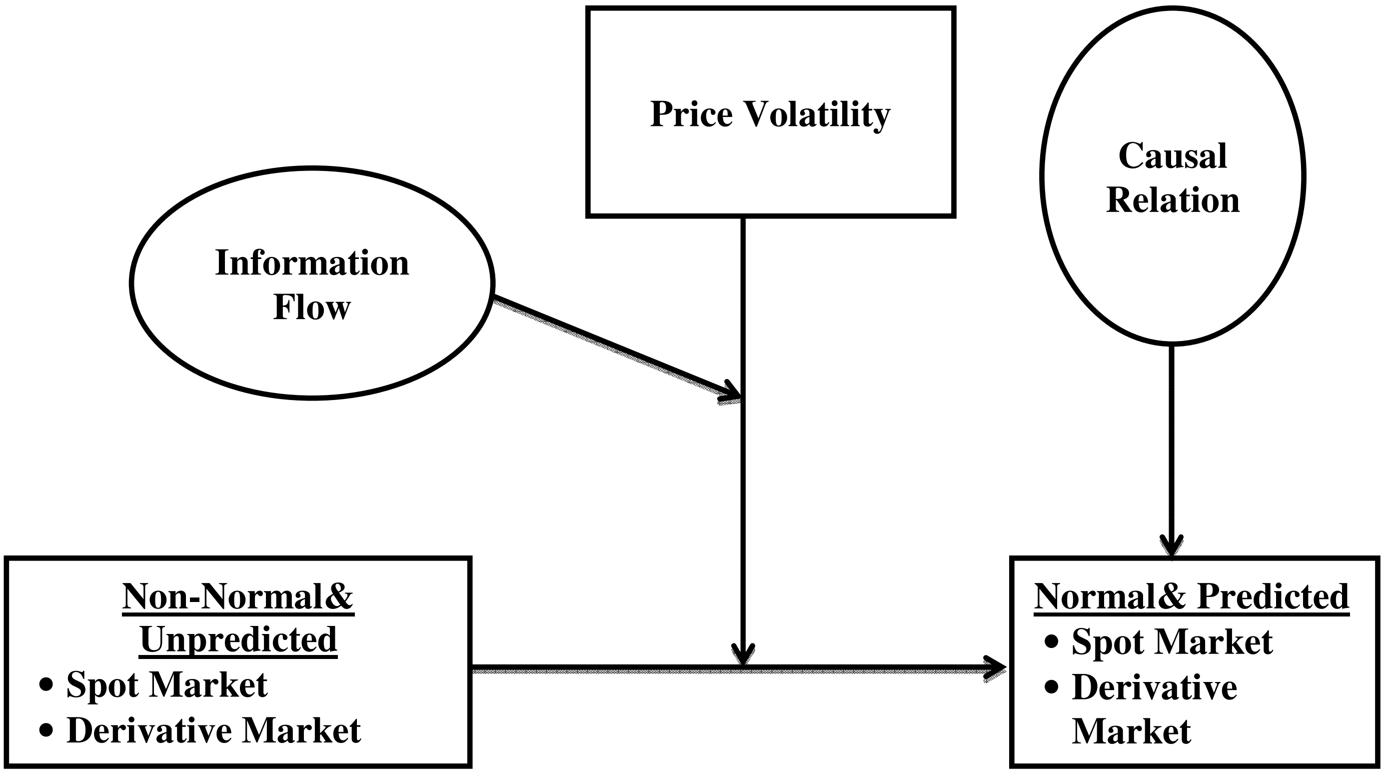

Fig. 1. Conceptual framework of the study

3. OBJECTIVES OF THE STUDY

- To study the review of literature on impact of derivative on stock market volatility.
- To investigate the past literature on ARCH family models for volatility measurement.
- To examine various current and past literature relating to the leverage effect on stock volatility.

4. A DIAGNOSTIC ANALYSIS OF PREVIOUS LITERATURE

Several researches are being conducted on the stock market. Stock market is considered as a platform for investment to increase wealth and prepare a portfolio to minimise the risk. But it is observed that due to introduction of derivative i.e. futures and options stock, there is a fall of volatility in stock market. Many researchers concluded that derivative market puts a positive impact i.e. it increases the volatility while few suggested it has a negative impact that derivatives reduces the volatility. What so ever be the increase or decrease of volatility in derivative market it considered as a reason for the information dissemination. In this study, 382 articles were scrutinized and lists of 68 articles are selected as per the scope of research, quality of research and the findings. Out of the selected articles, the paper are clustered and divided into three parts:

I. Impact of Derivative on Stock Market

For better understanding, the literature review is divided into three sections.

Section- 1

TABLE 1: Derivatives decrease the volatility in stock market

Author & Year	Findings
Bessembinder and Seguin (1992)	An empirical analysis is done with high equity volatility. The result concludes that active future markets leads to high liquidity. The result also found that future market reduces the volatility.
Galloway and Miller (1997)	The examination conducted by them shows a reduction of volatility on spot market after the introduction of Midcap 400 future contract.
Rajput N., Kakkar R, Batra G., Gupta M. (2012)	The data considered for a period of 2003-2011 of S and P CNX Nifty and spot market. The analysis is done through Co-integration tests and Vector Error Correction Models (VECM), Variance Decomposition Analysis (VDA) and Granger causality. The results show that there exists a high volatility in future price and discovery of price can be observed in cash market.

Section-2

TABLE 2: Derivatives increase the volatility in stock market

Author & Year	Findings
Hong Chol et. al. (1994)	An intraday data of the S&P 500 spot market is considered. The result confirmed that the post index future period of major market gives a rise in the average intraday bid ask spread but a moderate change in volatility is observed. However, future trading brought rise in trading volume for the indices and it also bring rise in asymmetry information.
Wei, Poon and Zee (1997)	Examination of spread, trading activity and volatility in price change of 144 OTC USA option stock is considered. The result states about rise in volume and price of stock but different spreads are observed through analysis. Result to which the author confirms that the insider trading is less affected than price volatility due to liquidity, volume and trading.
Chang, Cheng and Pinegar (1999)	The authors observed by analysis that introduction of Japan -Nikkei 255 futures leads to fall in cross sectional dispersion of return index across stock, while the volatility of index was found to proportionally rise than average volatility of individual stock. However, no similar impact is observed in the index and no evidence of off-shore Nikkei 255 future is found in Singapore market.
Sanjeev Verma and Rohit Chauhan (2008)	Indian derivative market has high opportunity as the beta of sensex is showing a high trend with relation to international market.
Bhaumik S.K. and Bose S. (2009)	The effect of derivative on NSE spot market for a period of 6 years i.e. from June 2000 to September 2006. The output shows a rise in the volume of the stock market with a hike in volatility due to derivative contract expiration.

Section-3

TABLE 3: Derivatives shows a neutral effect on the volatility of stock market

Author & Year	Findings
Kamara et. al., (1992)	To understand the impact of derivative of index future S&P 500 the author used Wilcoxon Rank sum test, F-test and Kolmogorov-Smirnov two sample tests and the result shows a significant impact after derivative introduction. The result gives a moderate or no change in the volatility of daily return.
Darrat et. al. (1995)	A study is conducted for period from 1982-1991 on stock market to identify the destabilizing effect on price due to S&P 500 index futures. The study also considers various macro-economic factors like inflation, term structure rate. The authors uses Granger causality test. The result confirms that volatility has not seen due to the futures trading rather it is the term structure rate and OTC index which brings the volatility while risk premium and inflation were found no significant impact on stock price volatility.
Bollen and Nicolas (1998)	The analysis caries an experiment on 745 NYSE-AMEX stocks and 265 NASDAQ stocks. By using generalized methods the authors found no statistical significant result on the stock return variances of option with control group (non-optioned stocks).

While reviewing theliteratures from above tables, the following list of common opinion is observed:

Various researches used several methods of identifying the impact of derivative on spot market to measure the volatility.

- Most of the analysis is carried on pre and post effect of derivative and found reduction in volatility
- Someof researchers used Vector Error Correction Models (VECM), Variance Decomposition Analysis (VDA) and Granger causality and states reduction in the volatility.
- Some of researchers applied regression analysis and multivariate model with intervention, the result gives no significant impact due to future on daily and weekly price.

II. ARCH and GARCH model to test the Volatility Clustering

TABLE 4: Models used to test the Stock Market Volatility

Author & Year	Findings
Benoit M. (1963), Fama E.F. (1965), and Black, F (1976)	The stock return highlight on volatility clustering, Leverage effect, and Leptokurtosis was proposed by three learned researchers.
Engle (1982)	The ARCH models that avoid the past errors parting the unconditional variance constant by changing conditional variance over time.
Engle (1982), and Bollerslev (1986)	The dynamic behavior of stock prices in the financial market allows evaluating and measuring the volatility that supports the investment decision making. The major contributor to such research is who suggest respectively for ARCH and GARCH.
Bollerslev (1986)	So as to overcome the limitation of ARCH model assumption i.e. specifying the conditional variance as a linear function. Bollerslev suggest GARCH Model (Generalized ARCH) which considers the features of ARCH and lagged conditional variances. GARCH model also supports longer data with the flexible lag selection.

Author & Year	Findings
Engle et al. (1987)	The author proposed an advanced method of ARCH model, where it considers the mean to determine the conditional variance and named it as GARCH-M. This empirical analysis helps to identify that risk premium are systematic not time invariant.
Glosten et al. (1993)	GJR GARCH a model introduced by Glosten et al., which is an advanced model to GARCH-M, which shows the uneven volatility due to the shock of positive and negative return.
Gokan (2000), Yalami and Sevil (2008)	A comparing review of GARCH-M, EGARCH, TGARCH, and PGARCH are stated by few researcher base on researchers like that all the asymmetric models in GARCH helps to predict the volatility of daily return on stock throughout the world. Amongst all EGARCH models fits best to measure the volatility.
Brook and Burke (2003), Frimpong and Oteng (2006), and Olowe (2009)	They concluded about ARCH and GARCH models that volatility measurement can only be possible GARCH (1, 1)
Tulika Mattack and Ashit Saha (2016)	the study reveals through ARMA-GARCH models that there is a fall in volatility after the introduction of equity option and futures
Mohammad Irfan andJayant Hooda (2017)	The study considers 10 agricultural commodities that are traded in commodity derivative by using ADF test, PP-test, Johansen co-integration, and Granger causality. The result shows long run equilibrium and a lead lag relationship between spot and futures market.

From the above table of literature review, various models of ARCH and GARCH family model is were considered for the analysis of volatility

- Most of the researches confirmed that GARCH model is more effective technique to measure volatility clustering rather than ARCH model as it avoids the past error.
- Some of the researchers suggest that GACRH-M model can be considered for determining the volatility as it uses mean for measurement.
- Amongst all the asymmetric models in GARCH (GARCH-M, EGARCH, TGARCH, and PGARCH), EGARCH models fits best to measure the volatility.

II. Leverage Effect to test the cause behind stock market volatility

TABLE 5: Research Findings for stock market volatility due to good or bad news.

Author & Year	Findings
Goudarzi and Ramanarayanan (2011)	They used EGARCH (1,1) and TGARCH (1,1) as two non- linear asymmetric model to examine BSE 500 stock index volatility. And through Log Likelihood (LL) Akaike Information Criterion (AIC) and Schwarz Information Criterion (SIC) it is found that TGARCH (1,1) is the best model.
Xu, D., & Li, Y. (2012)	The author uses high frequency data from 1 to 60 mins of six stock indices. The result states that in each sample there exist leverage effect but the persistence at lower frequency is found to be reducing.
Das, S., Kulkarni, A., & Kamaiah, B.	The author incorporated the data of Indian stock market i.e. the daily closing price of CNX NIFTY and S&P BSE Sensex for the period January 2011 to March 2014. The paper uses

Author & Year	Findings
(2014)	models like EGARCH and TGARCH for volatility characteristic. The findings states there exist no persistence of volatility even no leverage effect for the period considered.
Wang, C. D., & Mykland, P. A. (2014)	The analysis considers the noise of both microstructure or without microstructure by incorporating the stochastic volatility. The analysis studies high frequency regression for volatility forecasting and leverage effect it also helps to identify the skewness. The author able to establish from this analysis the volatility of volatility
Yang, T., & Yang, Y. (2015)	The author uses the stock market of Taiwan's institutional investor for the investigation of behaviour. They adopted TGARCH and EGARCH models. The analysis also states about the foreign investors that lead to asymmetric result die to any international news. Lastly they confirm that domestic news is more significant than international news
Khan, F., Rehman, S., Khan, H., & Xu, T. (2016)	The author experimented on Pakistani stock market to test mean reversion, its speed and asymmetry, volatility, its persistence and leverage effect. The tool used is GARCH (1, 1) for characteristic of volatility, to measure the leverage effect and asymmetric EGARCH was used and for pricing risk GARCH-M was used. The output states that there exists persistence in volatility with differences for different sectors. It also states that the volatility is mean reverting, however all the sectors shows different mean reversion in terms of speed. Lastly there exists a positive risk premium especially in case of sectorial level for Pakistani stock Market

On reviewing the above table of literature, regarding the existence of leverage effect i.e. the volatility due to good or bad news the following are the outcomes:

- Most of the researchers uses the statistical tool i.e. GARCH family model to identify the existence of leverage effect.
- Few researchers tried EGARCH (1,1) and TGARCH (1,1) as two non- linear asymmetric model to examined and through Log Likelihood (LL) Akaike Information Criterion (AIC) and Schwarz Information Criterion (SIC) it is found that TGARCH (1,1) is the best model to identify the Leverage effect.
- It is found from the literature review that smaller companies have higher leverage effect.
- Between (asymmetric stochastic Volatility) and (Markov Chain Monte Carlo) they found that ASV model is found to be more effective.

5. DISCUSSION

From the above findings, the paper states that spot market is seem to be less volatile since form the introduction of future derivative market. As the pre and post effect of derivative shows a rising trend in volume of trading for the indices. Several models were evolved to measure the volatility of stock market i.e. ARCH and GARCH family models. To identify the causal relation between the variables Vector Error Correction Models (VECM), Variance Decomposition Analysis (VDA) and Granger causality test are found to be widely accepted as it shows the causal relation between the variable and the lags for the same variables. The paper also shows that small company are highly affected due to flow of any negative news rather than large companies by conducting test of leverage effects through EGARCH and TGARCH.

6. IMPLICATIONS

The study is based on the volatility of spot market due to introduction of derivative market. Thepaper focuses on derivative impact on spot market, various models are considered for measuring the volatility, and leverage effects for volatility.Hence, this wide range of analysis will not only support the literatures, but also provide a base to researchers for further research in academic field. This study will also help the investors, government and corporates to understand and measure the reason and direction of volatility so that they take maximum benefit. This type of work will enhance the knowledge of price differences in the stock market.

7. LIMITATION OF THE STUDY

The paper focuses mainly on the past literature of volatility in spot market due to introduction of future contracts only. An analysis on primary data collection or empirical measurement is not conducted in present study. However, the factors mentioned in the paper are not the only reason for volatility in the stock market while there are several factors that are deprived from the analysis. Hence, this is an area where several empirical analyses can be done to accept or reject the past literature or confirm a new determinants and models for price volatility.

8. FUTURE STUDY

The present study highlighted the major contributors in the particular area, as it is an area of frequent development so more recent outcomes should be considered to understand the progress of derivative market.

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Spirituality in Managing Organizations

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Abstract: *Organisation Behaviour, of-late, has transcended beyond its customary boundaries. The challenges and demands in modern world are mounting day-by-day. The associated pressures are so enormous that in many cases, these result in unholy and unbecoming practices. Scams and frauds reported in the media are umpteen in number besides the fact that people succumb to vices like greed and craving for power. Compounded to the foregoing, is the problem of lockdown in the wake of conoravirus outbreak. The net result is an eroding social culture and upsurge in the number of diseases, health issues and pathological manifestations. The above deplorable state of affairs triggers the need for spirituality in to-day's world. We need unconditioned love, selfless service and rectitude to address the malaise. Our focus needs to remain in simple living yet high thinking. The words of sages ought to serve as guiding principles to build a strong social fabric and architecture. Character is important as it is the bedrock of all other things. It is crucial to bear in mind the adage of the philosopher and poet of ancient China, Lao Tzu, "Watch your thoughts; they become words. Watch your words; they become actions. Watch your actions; they become habit. Watch your habits; they become character. Watch your character; it becomes your destiny." Management also, needs to appreciate the importance of institutionalizing Spirituality in the Workplace not only to achieve performance excellence but also to sustain same.*

Keywords: *Spirituality, Management, Culture, Workplace, Performance.*

1. INTRODUCTION

Spirituality in Managing Organization has emerged as a new topic in the field of Organisation Behaviour. Spirituality is the vertical dimension in our lives, whereby we relate to a higher Being than ourselves and acknowledge that we are not the ultimate power in our own lives and in the lives of those around us. In other words, our spirituality should remind us that we are not totally independent but rather interdependent and members of the same human family.

The term "spirituality" comes from the Latin "spiro", "inspiratio" (breath), with a meaning close to the sanskrit "atma", or the Greek "pneuma".

Spirituality is the state of intimate relationship with the inner self of higher values and morality as well as recognizing the truth of inner nature of people.

It is a way for celebrating the self-behavior of the employees that enables the organization to be different. Firmly rooted at the center of organizational spirituality discussion is the notion of core values. For core values to be inspiring, they must be shared by the organization and its people. Community is perhaps the most frequently discussed value. Community enables workers to find substantive meaning in their work, facilitating them to help co-workers and customers achieve greater success. Teamwork and serving others can create a sense of family that inspires improved creativity and productivity. Closely linked to community are the values accomplished, self-esteem and balanced work life.

The spiritual well-being, which includes a sense of community, will be positively related to co-operation and negatively related to turnover and absenteeism. Several researchers have advanced the idea that sense of community is linked to employee commitment and turnover which is strategy related to intention to quit. Increased workplace spirituality results in organization commitment, intrinsic work satisfaction, more job involvement and organization based self-esteem.

Spirituality is a multidimensional, multilevel phenomenon. Acknowledging that consensus is lacking in spirituality literature on how spirituality should be defined, a conceptual convergence in workplace spirituality literature is reported in terms of harmony with self, harmony in social and natural environment and transcendence. Spirituality is defined as a dynamic

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balance of these three factors. Harmony with self is about finding meaning and purpose in work that includes inner life, joy at work and self-actualizing tendency. The second dimension of spirituality is relational. This is manifested in relation to the environment in general. This dimension is manifested in community. It is about being comfortable with the world. Transcendence, the third aspect of spirituality at work is about the connection to something greater than oneself. The ‘something’ can be other people, cause, nature, or a belief in a higher power.

Thus, spirituality in the workplace can be compared to a values-led approach to management that seeks to recognize the whole person rather than simply the functional person, trying to engage the hearts and minds of the people than simply exchanging money for skills.

Within spirituality is also found a common emphasis on the value of thoughtfulness, tolerance for breadth and practices and beliefs, and appreciation for the insights of other religious communities, as well as other sources of authority within the social sciences. Love and/or compassion are often described as the mainstay of spiritual development.

The International Faith and Spirit at Work Award (formerly the Willis Harman Spirit at Work Award (formerly the Willis Harman Spirit at Work Award) was created by Judi Neal and John Renesch in 2001 to honor companies that have explicit spiritual practices, policies or programs. 47 organizations with a presence in 37 countries have been honored since 2002.

2. LITERATURE REVIEW

Spirituality is a multidimensional, multilevel phenomenon (Pandey and Gupta, 2008). Acknowledging that consensus is lacking in spirituality literature on how spirituality should be defined (Ashforth and Pratt 2003; Benefiel 2003), a conceptual convergence in workplace spirituality literature is reported in terms of harmony with self, harmony in social and natural environment and transcendence (Pandey and Gupta, 2008, Pandey, Gupta and Arora, 2009). Spirituality is defined as a dynamic balance of these three factors. Harmony with self is about finding meaning and purpose in work that includes inner life, joy at work and self-actualizing tendency (Ashmos and Duchon, 2000, Morgan 1993, Ashforth and Pratt 2003; Giacalone and Jurkiewicz 2003). The second dimension of spirituality is relational. This is manifested in relation to the environment in general. This dimension is manifested in community (Ashmos and Duchon 2000). It is about being comfortable with the world (Morgan 1993). Transcendence, the third aspect of spirituality at work is about the connection to something greater than oneself (Ashforth and Pratt 2003; Dehler and Welsh 1994; Sheep 2004). Ashforth and Pratt (2003) explain that the ‘something’ can be ‘other people, cause, nature, or a belief in a higher power’.

The impact of spirituality in the business organization has been reported in terms of job behavior of the employees and overall organizational performance. The literature correlating workplace spirituality related factors with employees’ job behavior shows its positive connection with motivation, commitment, and adaptability and ethical behavior (Jurkiewicz and Giacalone, 2004, Eisler & Montouri, 2003). In terms of organizational performance the impact is reported in better service (Duchon and Plowman, 2005), employee service (Pandey, Gupta and Arora, 2009) and unit performance (Fry, Hannah, Noel, Walumbwa, 2011). In nutshell there are some research finding suggesting the impact of spirituality at work on certain organizational outcome. However the literature is sparse on the antecedents of spiritual aspects of work. Leadership is suggested to be the strongest driver of organizational culture, and climate is the reflection of the culture; hence we aim to examine the impact of certain aspects of leadership on spiritual climate of the teams and groups in organization.

3. OBJECTIVES

The objectives of this paper are three-fold:-

- To understand the notion of Spiritual Leadership in Management
- To track the Emergence of Spiritual Leadership Theory
- To identify Spiritual Practices while managing in organizations

4. SPIRITUAL LEADERSHIP IN MANAGEMENT

What is spiritual leadership? Wolf (2004) defined spiritual leadership as “building an environment of respect, ethics, values and integrity” (p. 23).

Spiritual leadership in Management implies encouraging leaders from managing employees to inspiring employees, a critical component of transformational leadership (Amram, 2005; Bass & Steidlmeier, 1999; Dvir, Eden, Avolio, & Shamir, 2002). Spiritual leadership aligns transformational and servant leadership with spiritual, ethical, and values-based leadership models into a combination of core competencies, skills, and learned techniques to provide a model of behavior for the spiritual leader (Den Hartog et al., 1999; Dent, Higgins & Wharff, 2005; Jurkiewicz & Giacalone, 2004; Reave, 2005; Ryan, 2000). “Spiritual leadership starts with the leader’s own ethics and integrity” (Reave, 2005, p. 663), which would be demonstrated to the organization in both word and deed (Argyris, 1966). Research has shown that a person who is guided by good moral habits and virtuous personal values displays integrity (Argyris, 1966; Caldwell, Hayes, Karri, & Bernal, 2008; Cavanaugh & Bandsuch, 2002; Parry & Proctor-Thomson, 2002).

The enterprise advantages of spiritual leadership include increased organizational performance (Lloyd, 1990), intrinsic employee job satisfaction and involvement (Fry, 2003), higher employee performance resulting in improved customer service (Duchon & Plowman, 2005), and higher rates of return on investments (Jurkiewicz & Giacalone, 2004). The inspirational and/or transformational effect of spiritual leadership can percolate in positive moral behavior of the members of the organization (Bass & Steidlmeier, 1999; Dvir et al., 2002).

A spiritual leadership approach asks fundamentally different questions about what it means to be human, what we really mean by growth and what values and power distributions are needed to enhance both organizations and society as a whole. Spiritual leadership asks the leader to be the one who can show what it means to be human, and what it means to be authentic, which is an important aspect for organizations for gaining deeper insights of spiritual self and of the spiritual lives of others with whom the leaders interact and also those who are affected by the results of their leadership (Singh-Sengupta, 2007).

5. EMERGENCE OF SPIRITUAL LEADERSHIP THEORY

Presently the theory of spiritual leadership is gaining its foothold with many thinkers and business leaders openly discussing it and writing about it. Before coming to spiritual leadership two theories of leadership namely visionary and ethical leadership are worth mentioning which came after situational theory and highlighted some of the deficiencies of situational theory. Visionary leadership addressed the concern with situational leadership that the leader was made a servant of the situation rather than the person who defined what the situation should be to achieve the desired outcome. Westley (1989) argued that the primary responsibility of the leader was to formulate the organization’s vision and the conditions by which that vision would be achieved. The vision represented a social reality that was the core of effective leadership, and leadership effectiveness could be judged by the leader’s success in getting followers to accept the social reality as the leader defined it (Worden, 2005). Worden (2003) suggested that followers more readily accepted the reality defined by the vision when the vision was tied to the strategic plans and goals that followers were specifically responsible for. As such, Carroll (2002) observes, spirituality, deeply held spiritual belief, however we might define these things, are all necessary to achieve real sustainability, and also serve as teacher and guide.

Ethical leadership, often combined with visionary leadership, addressed a second concern with situational leadership. If leadership effectiveness depended solely on performance results, then the ends justified the means. Any leadership style, no matter how negative for followers, was deemed to be effective if the leader achieved the output requirements. Grojean et al.(2004) argued that the first task of a leader was to establish, and model through his/her own behavior, a vision of the ethical tone of their organization that specified which actions would be encouraged and rewarded in followers.

It was essential for the leader to act as a role model to intentionally direct the ethical tone of the organization because followers would interpret the actions of their leaders as indicators of appropriate behavior. This was especially important in the early stages of a new organization when the personal values of the founder became embedded in the organization’s social fabric as the leader established criteria for rewards, resource allocation, and status. Schein (1992) also observed that especially founders had a profound impact on what constituted acceptable strategies, structures, climates and cultures. Ethically appropriate outcomes needed to be rewarded to ensure they were repeated. Buckingham and

Coffman (1999) added that great leaders had to recognize that most followers did not have unlimited potential and most tended not to change much over time. While leaders had to judge followers' performance outcomes, good leaders forgave followers with limited potential and inability to change, perhaps repeatedly, while continuing to insist and motivate those followers to achieve the desired results. Now coming to spiritual theory of leadership, few attempts have already been made in the West to explain it.

According to Fry (2003), "Spiritual leadership is a paradigm for organizational transformation and development designed to create an intrinsically motivated, learning organization. Spiritual leadership taps the fundamental needs of both leader and follower for spiritual well-being. Operationally, spiritual leadership comprises the values, attitudes, and behaviors that are necessary to intrinsically motivate one's self and others so they have a sense of spiritual well-being. The source of spiritual leadership is an inner life or spiritual practice which is a fundamental source of inspiration and insight."

Peter M. Senge (1990) in his book, Fifth Discipline says, "Our traditional views of leaders-as special people who set the direction, make the key decisions and energize the troops-are deeply rooted in an individualistic and non-systemic world view. Especially in the West, leaders are heroes-greatmen (and occasionally women) who rise to the fore in times of crises.... At its heart the traditional view of leadership is based on assumptions of people's powerlessness, their lack of personal vision, and inability to master the forces of change, deficits which can be remedied only by a few great leaders."

To correct this deficiency in the leadership profile, Senge proposes a new view that leaders ' are responsible for building organizations where people continually expand their capabilities to understand complexity, clarify vision and improve shared mental models that is they are responsible for learning'.

In other words, leaders are designers, stewards and teachers, and' leaders who are designers, stewards and teachers come to see their core task very simply'. Senge quotes Martin Luther King Jr, 'Just as Socrates felt that it was necessary to create a tension in the mind, so that individuals could rise from the bondage of myths and half-truths... so must we... create the kind of tension in society that will help men rise from the dark depths of prejudice and racism'. Examining and analyzing the various factors Senge proposes personal mastery as one of the five disciplines. Personal Mastery, which he defines as the discipline of personal growth and learning, has four components: (a) personal vision, (b) holding creative tension, (c) commitment to the truth, and (d) using the subconscious. The subtler aspects of personal mastery include integrating reason and intuition, continually perceiving more of our connectedness to the world, and compassion and commitment to the whole. A spiritual stance is discernible in this.

In a personal note, at the end of his book, The Seven Habits of Highly Effective People, Stephen Covey (1990) says, "As I conclude this book, I would like to share my own conviction concerning what I believe to be the source of correct principles. I believe that correct principles are natural laws and that God, the creator is the source of them and also the source of our conscience. I believe that to the degree people live by this inspired conscience, they will grow to fulfill their natures; to the degree they do not they will not rise above the animal plane; to the degree to which we align ourselves with correct principles, the divine endowments will be released within our nature in enabling us to fulfill the measure of our creation." Some of the views that emerge from above regarding spiritual leadership are values, inner life, intrinsic motivation, connectedness, compassion, natural laws, divine endowments, and spiritual well-being. Still the true nature and dimension of spiritual leadership is eluding the western thinkers and this write-up attempts to provide the solution for the ideal spiritual leadership from the Indian spirituality and offers Rajarshi leadership as an ideal model of spiritual leadership (Chakraborty, 2004).

6. FEW SPIRITUAL PRACTICES FOR ORGANIZATIONS TO FOLLOW

- Psychological practices, for example meditation
- Yoga
- Somatic practices, like light and balanced eating
- Social practices, such as offering help to the needy by way of discharging corporate social responsibility
- Spiritual practices, to include, daily prayers, sharing the "Aha" moments of the day amongst employees

biweekly through well-orchestrated informal group sessions

- Conceptual practices, embracing briefings, panel discussions by experts, corporate-managers who have practiced spirituality in management in their respective workplaces
- Quality Mind practices, entailing at the end of day-long activities, the employees carrying out a process of emotional purification (Chittashuddhi) routinely for 30 minutes under the guidance of a facilitator
- Working from home
- Online Learning at home

7. SPIRITUAL PRACTICES AS EXPERIENCED WHILE WORKING ACROSS ORGANIZATIONS

1. The first incident relates to 1974, one year after I commenced my professional career. I was working in a leading US multinational pharmaceutical company. One of my peers working in field sales in another territory developed an eye-problem. Having medicinal samples within his reach he applied few drops into both eyes several times; after sometime, he started experiencing blurring of vision. Taken to the eye-specialist immediately thereafter, the doctor diagnosed herpes simplex, a neuro-viral infection in which case steroids are absolutely contraindicated. Unfortunately, the eye-drop which my colleague had naively instilled into his eyes contained steroids. The ophthalmologist said that indiscriminate self-medication has caused this mess. The office-colleagues accompanying the afflicted colleague became panicky and asked the doctor as to whether there was any way to salvage the situation. The doctor said, there is an antidote eye-preparation manufactured by the same company, however, not available in India, but marketed in other western countries. Provided this can be procured with the next 72 hours and applied, it can resurrect the derogatory situation. In those days, where mobile phones, computers in India were distant realities, we informed our company through cable/telegram, long-distance calls, and the parent company in USA on knowing about this precarious situation briskly acted upon the same to get rushed 2 vials by air-lifting same from three different Continents and our colleague's eye-problem could be corrected. This was spirituality in action on the part of management where the company went out of its way to come to the rescue of one of its employees demonstrating exemplary care and concern.

2. The second example dates back to 1984 when my only child (daughter) was born. The company, an Indo-Hungarian organization where I was employed, was empathetic to my domestic front, periodically inquiring with me about the well-being of my wife then admitted to a nursing home for delivery. The attending gynecologist kept saying that everything was normal in the pre-natal stage right up to the time of delivery, when he said that a Cesarean section operation needs to be performed. Ultimately, everything transpired well and both mother and child remained well post-natal stage. The company, all through, telephonic-ally, from Bombay was in touch with me at Calcutta. On the next visit of the Marketing Chief to Calcutta, during an informal chat initially, while exchanging pleasantries, handed over an envelope to me which I opened to find a cheque for Rs 5000/-. On inquiring what this amount was for, I was told by the Marketing Chief that the company pre-empted that since my child's birth was through Cesarean section operation, I would have likely incurred upon sizeable expenses towards fees of the attending anesthetist, gynecologist, for which this was a token gesture from the company to be by my side emotionally towards my pecuniary needs. I was greatly touched at this benevolence and in hindsight realize that this was exemplary spirituality in management practice representative of compassion and love.

3. The third example relates to my experience while working in a Dutch multinational pharmaceutical company in 1987 wherein I witnessed that as a part of its policy, they hire the services of deaf-and-dumb ladies from deaf-and-dumb school for working in the quality control department for its pharmaceutical laboratory who were engaged in visually inspecting glass-containers discarding defective ones and retaining normal bottles. This is indeed an example of compassion and care for the differently- abled people,-an exemplary spirituality in the workplace practiced by spiritual leadership

approach in the organization thus exemplifying spirituality in management,

4. Yet another glaring example which I noticed in 1996 while working for a leading Indian multinational pharmaceutical company is that it has definite CSR practices for less-privileged kids who are deprived of basic education and have to perform certain jobs to earn their daily bread albeit child-labor is prohibited by law. The first phase is CAP (Child and Police project) where police is involved to wean out such children from their respective employers who are surreptitiously utilizing their services as rag-pickers and other menial type of jobs. Such children are put into "bridge-schools" which acclimatize them to cope up with the rigor of conventional education in normal schools. Once this is over, they are put into the second phase, namely, LABS(Livelihood Advanced Business Schools),where such children after their basic education are provided training on vocational skills, like: garment-stitching, vending, automobile-repair, etc., so that they can earn their daily-living by meeting pecuniary needs. This is therefore an example of self-less service, altruism which are also fundamental ingredients of spirituality in management.

8. CONCLUSION

Organizations have been realizing that spirituality promotes effective leadership practices which can have a significant impact on organizational life and ultimately organizational success. It is a culture driven by distinct ethos and values. Individuals and organizations who perceive themselves as more "spiritual" are more creative, productive, and adaptive since work is connected to a bigger picture.

The cumulative result of spirituality in management will be an enhanced quality of work-life, which will lead to decreased attrition-rate, promote employee loyalty and foster total employee involvement, resulting in enhanced workplace performance.

All the three P's of Triple-Bottom-line Concept in Management, namely, Profits, People and Planet can be effectively met once spirituality in management gets its roots entrenched in the organization DNA. The denouement will be a caring organization which is committed to achieving performance excellence with its ethos targeted to make it a great place to work in for people both in normal and abnormal times such as lockdown.

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A Study on Ansoff Matrix Technique: As A Growth Strategy and an Adaptive Learning Technique Adopted in the Leading Brand of Products

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Abstract: *The purpose of this research paper is to explore the extent to which Ansoff matrix is utilised widely by the marketers which diversifies the market into four segments which is popularly known as four quadrants to Ansoff, which includes Market Penetration, Product development, market development and Diversification strategy.*

The author in this study has also used this theory and its applicability in the flourished markets of leading brand of products which includes Coca-cola industries which is an adaptive strategy throughout the world. The product has been analysed from the early 1920's and its reign throughout with the adoption of this theoretical framework, if we assume a new product to be new to the firm, the product will simultaneously take the firm from the unfamiliar market, and also its interpretations includes the combination on new products in the new ventures in its completely new business or already flourished business.

Keywords: *Ansoff Matrix, Diversification, Market Penetration, Market Development, Ansoff Quadrants.*

1. INTRODUCTION

It is a strategic management and planning tool that helps the marketing management team to plan strategies for expanding this future business. It is named after the Russian American Igor Ansoff, an applied mathematician. It is described as a four growth alternatives for developing the organization and protecting it from different levels of risks in an organization, which can be inferred from the chart 1:

Personalised analysis of the selling history of this leading brand of cool drinks throughout the world is mainly based on the adoption of Ansoff matrix strategy.

Chart 1

Existing Products		**New Products**
Existing Products	Market Penetration Strategy	Product Development Strategy
New Products	Market Development Strategy	Diversification Strategy

Market Penetration:

This strategy is adopted by first introducing the product at a decreasing price which thereby increases the promotion and distribution support, by taking over the competition by modest product refinements.

Market Development

This is done by differentiating customer segments from industrial buyers to households and also acquiring new areas and regions including foreign markets.

Product Development

It tries to create, investment on research for acquiring rights of other competing products and branding it as their own by acquiring the various firms distribution channels.

Diversification

In this strategy the organization tries to grow by expanding its markets towards more risk strategy by establishing a perfect synergy between existing business and new market space. It is a useful tool for an organization which tries to explore the various risk quadrants and which offers the best successful quadrant to face the multiple unrelated markets.

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1.2 ANSOFF MATRIX STRATEGY IN COCA-COLA INDUSTRY

Ansoff Matrix is an universal marketing strategy with different problems which can be sorted out by proper strategic planning. To understand this theory even better it is applied with one of the leading brand of cool drinks Coca-cola which is one of the well-known brands in the world. Consequently, the objective of any business is growth, being a newly start-up business or an established enterprise the main aim of any business is its profitability. Ansoff matrix is trying its level best to find out a permanent solution for this by applying its theoretical framework in the walks of business, by assuming and assessing various risks and uncertainties associated with the strategic marketing plan.

The Ansoff matrix theory is applied in Coca-cola which is operating in over 200 countries, and has almost adopted with 100 growth strategic techniques. A major example was a launch of cherry flavoured coke in 1985, which was first established beyond its originality which also involved a launching of other flavours such as lemon, lime and vanilla. A number of strategic decisions will have to be made in order to remain competitive in the foreseeable future. New products, allowing consumers a greater understanding, flexibility and visibility which will be required to attract new clients as well as increase the market share and remain competitive.

The modern business environment has often been turbulent and volatile. Indian organisations are required to engage international and local competitors and customers in a more regulated manner, and despite years of experience in the local environment, even the most successful and established organisations have committed strategic errors in both the local and international markets. The purpose was to gain an understanding into the business intelligence activities that are undertaken by the organisations within the long-term industry:

- Utilisation of business intelligence in decision-making; however, the results distinctly provide evidence that larger organisations make greater use of business intelligence than smaller organisations
- Business intelligence that is valid, reliable and actionable.

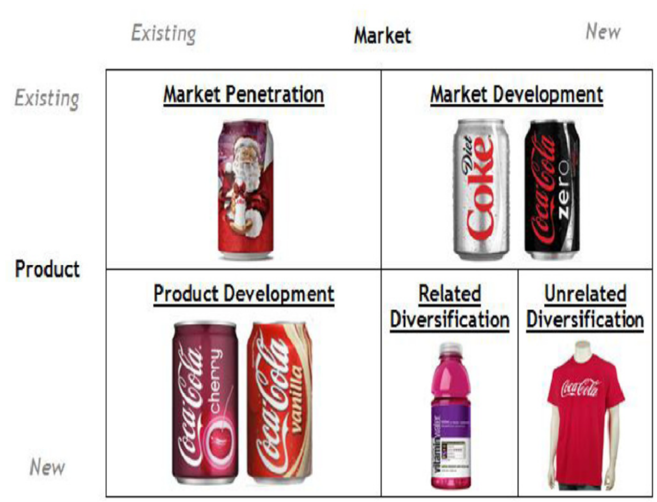
To understand the rusticity of Ansoff Matrix theory, it has been applied to Coca-Cola, the most well-known trade name in the world and a company today operating in over 200 countries; and a brand that has undertaken countless growth strategies in its 100+ year history.

Market Penetration and Coke – Existing Market and Existing Product

Under this strategy which involves an attempted way to increase the share of the the product in the market along with the existing competing brand of products and making it available to the new levels of customers or by finding a new set of customers within these markets thereby adopting the “Promotion” as a marketing mix element. The mass industrial technology of coke is able to maintain its image by adopting the market penetration strategy by creating an merger between Coca-cola industry and advertising media and communication industry, which played a major role in boosting up the sales of this product towards the new scenario.

Coke and Product Development – Existing Market and New Product

This is the strategy which adopts the development of new products in the existing markets just by analysing how much is this product will reach the customers' expectations by just slashing down the products of the competitors. The main example of this brand was the launching of Cherry coke in 1985 which was the first innovative technique adopted by this industry breaking the stereotypes and which was also the strategy thriving to be undertaken by the competing brand of other small-



scale industries who tried to adopt a same technique after viewing the profitable scenario of coke industry by adding cherry flavours to their products and selling it. The company also became more successful in launching other flavours like lime, lemon and vanilla.

Coke and Market Development – New Market and Existing Product

This is the third development strategy and under this, the strategy pertains in analysing a new set of customers for a prevailing product. This induced the launching of Coke Zero in the year 2005 as a classic example of this concept, which is exactly similar to Diet Coke with zero sugar and low calories. Diet coke which was preferred by most women at those times which was also considered as their daily brand of soft drink which thereby moved of the teenage girls to directly shed off opting that brand due to the perceptual assumption that it was actually a women drink .It was launched with its shiny black can opposite various advertising campaigns and it was the brand which attracted more female customers apart from more masculinity appeal.

Coke and Related Diversification- New Market and New Product

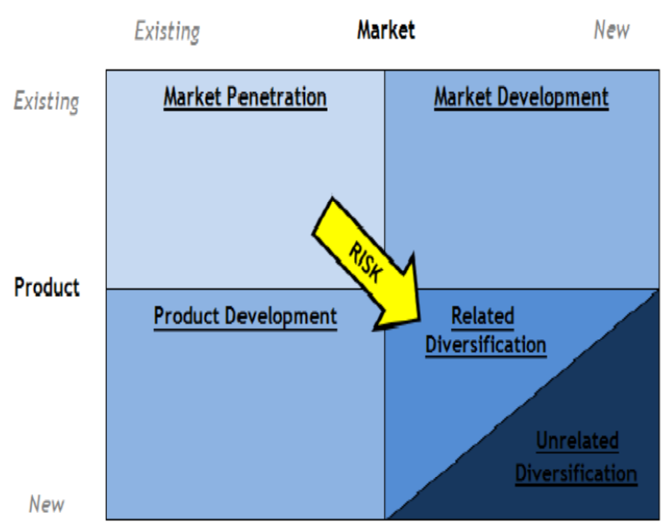
This is the process which involves the new phase of production strategy of producing a new category of products that supplements the already prevailing product structirte in effect to induce a new in a more related market. In the year, 2007, Coca-cola spent almost 4.1 billion dollars to acquire the market, which also includes the launching of its mineral vitamin water. Its sales started to reach the decline year by year which involved carbonated soft-drinks like coke, and also this brand requires to be branded with a sales tag less-sugar in the future upcoming products which made the product to move on board in the category of health drinks.

Coke and Unrelated Diversification – New Market and New Product

This is the final stage which, which pushes the products towards unrelated diversification and paves way the entry into a new industries which does not resemble with the already prevailing marketing conditions. Coca-cola company usually avoids entering into riskiest adventures of capturing or entering into the unknown marketing areas which involves more uncertainties, rather it involves its brand value and strength to continue growing in the same strategy. This includes, that coke industry offers variety of consumer durables like glasses and refrigerators which removed the cliché of any soft-drink industry by breaking all stereo-types.

Ansoff matrix is trying its level best to find out a permanent solution for this by applying its theoretical framework in the walks of business, by assuming and assessing various risks and uncertainties associated with the strategic marketing plan.

This proves that Ansoff Matrix paved the major way to Coca-cola industry in increasing the market share in the ever growing competitive market, which also involved by exclaimimg the various risk factors involved with various uncertainities. Ansoff strategy is always considered as the best strategy including market penetration, development and diversification factors.



The modern business environment has often been turbulent and volatile. Indian organisations are required to engage international and local competitors and customers in a more regulated manner, and despite years of experience in the local environment, even the most successful and established organisations have committed strategic errors in both the local and international markets. The purpose was to gain an understanding into the business intelligence activities that are undertaken by the organisations within the long-term industry:

1.3 ANSOFF MATRIX Vs NESTLE

Ansoff Matrix is considered as a well-known marketing tool which was first reviewed in the Harvard Business Review in 1957 in the article named "Strategies for Diversification". It is always used by various marketers who are in the urge of attaining the massive economic growth. Ansoff matrix often builds up the way and clears out the obstacles ad mist any industry to reach the goals set forth by the organization. This involves the four main quadrants of main categories which involves various categorical changes.

Among these Market Penetration strategy is considered to be less risky since it has lifted up many industries using its strategically formulation from the firms already existing resources and capabilities. In the growing competitive world, simply increasing and sustaining the market share is alone not enough, it may result in growth strategies but reaching the optimum capacity with moving the competitors behind is more important and this is effectively done by the use of market penetration strategy. But, this penetration strategy has its limits until it reaches the market saturation stage and this also protects and safeguards any industry from reaching its decline phase.

This phase may increase the consumption of the products enforced by Nestle Company which also increases the quality of its products. In Market development strategy which targets on the customers with a non buying nature and who are considered as the primary aim of this company. Nestle often aims at earning the best customers with utmost confidence and prior preference to anticipate and follow the new changing customer trends, thereby creating and reacting to the demand for its products. Nestle has always been a leading customer brand operating in over 138 countries all over the world.

Nestle is always trying to keep improving and increasing their market share and the non buying customers ad mist the tough competitive environment. Transportation and storing functions of the product, paves the major role in selecting the best product comparing all the distribution channel techniques which thereby results towards market development. It is a must for all the products to select the perfect and more appropriate distribution channels which involves easy transportation and storage capacities. Thus, it proves that the proper selection of distribution channel includes the geographical selectivity and consideration within the location of the manufacturing place.

1.4 PRIMARY OBJECTIVES OF THE STUDY

- To study the extent to which Ansoff matrix strategy is utilised in the leading competitive brands.
- To analyse how Ansoff matrix strategy forms a vital component of strategic management.
- To find out the values added to the strategic management process.

1.5 SECONDARY OBJECTIVES OF THE STUDY

- Organisations current adoption and creation of strategic intelligence of Ansoff matrix strategies.
- Information systems currently utilised by various organisations.
- Strategic decision making of this matrix in long-term organisations throughout the world.
- Organisations implementation in strategic adoption of this technique.

2. REVIEW: AN IDEOLOGY OF ADOPTING ANSOFF MATRIX TECHNIQUE

This Strategic intelligence technique can be viewed as what a company needs to know of its business environment to enable it to gain insight into its present processes, anticipate and adapt to the changes foreseeable in the future to fit in the appropriate strategies that will create business value for customers, and improve profitability in current and new markets.

Ansoff matrix consists of the aggregation of the various types of intelligence, which creates a synergy between business intelligence, competitive intelligence, and knowledge management to provide a value-added information and knowledge toward making organisational strategic decisions. The four quadrants signifies the creation and transformation of information or knowledge that can be used in high-level decision-making.

2.1. Past studies:

According to the **"Report Submitted by Innovative Marketing Scenario"** the term Ansoff matrix is defined by its category types and its applicability types at 2019 Digital Journal, which discusses various global reserves and trends, growth, share, size and forecast towards the increasing growth strategies of 2023" published by Virtual Reality Content Market Research by Kevin Thomas- Pune, India (SBWIRE) 22/8/2018- Virtual reality Content Market.

Dawes and John (2018)," The Ansoff Matrix a legendary tool, but with two logical problems." As specified in the Social Science Research Network. John & Dawes suggested that "Ansoff Matrix has been widely taught as a part of business education for over 50 years, He studied that the problems relate to the assumptions and interpretations pertaining to the newness. The Ansoff quadrants includes the combination of new products in to the markets which does not always equate to diversification"

As posted in **"Marketing and Strategic Terms"** (2017) a reviewed journal explained by **Joseph Rodrigy** in which the total reads specify that the definition, strategies and various Ansoff Matrix classifications and its advantages and disadvantages and the products influencing the market by adopting Ansoff Matrix strategy.

On **October 2013** review by **Tom Spencer**, explains the framework to help executives based on Ansoff Matrix and help managers and marketers to devise strategies for future growth. He explains in general a market should not be defined too broadly or too narrowly which is the key purpose of any marketing definition – Quick MBA: Ansoff Matrx, quickmba.com. **"ANSOFF 1 – Strategies for Diversification (Sep – Oct 1957)"** , Harvard Business review explains the group analysis – this report comprises of profiles of major companies operating in the Global Market key players operating in the Global Market.

2.2 Methodology of The Study

There are four main aspects involved research methodology: design, sampling, data collection and data analysis. The author in this study, selected the appropriate method of data collection, in order to attain the objective of the study.

Primary Sources of Data: The method of data collection used by the researcher includes the **"Survey Method"** which will be used as a research approach to visit many respondents to collect all the required information. And this study also involves the study of the characteristics feature of the predefined population by means of an observational strategy which falls under **"Descriptive Research Study"** and "**Structured Questionnaire**,' is used as the research instrument to make the data collection process easier. The questionnaire is circulated among the 50 respondents in Tiruchirapalli (JK Nagar extension locality) and their responses are sought for further analysis.

Secondary Sources at Data: in this method, data was collected from books, magazines, journals, internet sources and the collected data is edited, analysed and presented in a prescribed format.

Tools of Analysis: The data collected, as per the guidelines provided under research methodology, is further analyzed and interpreted with the help of statistical tools like, Correlation test and Factor Analysis.

Sample size Determination: Cross sectional studies or cross sectional survey are done to estimate a population parameter for finding the average value of some quantitative variable in a population of 50 respondents using **Convenience Sampling Technique**.

FACTOR ANALYSIS TEST

Table Showing the Keiser-Meyer-Olkin (KMO) and Bartlett's Test for the Dimension Brand Awareness and Reliability Through Ansoff Matrix

Keiser-Meyer-Olkin Measure of Sampling Adequacy		.832
Bartlett's test of Sphericity	Approx. Chi-Square df Sig.	269.667 105 .000 (<0.05)

Interpretation:

From the above table representing KMO and Bartlett's Test, the KMO measure of sampling adequacy is .832 which means Factor Analysis is gainful for these fifteen variables. Further the chi-square value is significant (<0.05), means that the correlation matrix between these fifteen variables are highly significant.

Table Showing the Keiser-Meyer-Olkin (Kmo) and Bartlett's Test for the Dimension Ansoff Matrix and Choice of Brand

Keiser-Meyer-Olkin Measure of Sampling Adequacy		.754
Bartlett's test of Sphericity	Approx. Chi-Square df Sig.	106.630 28 .000 (<0.05)

Interpretation:

From the above table representing KMO and Bartlett's Test, the KMO measure of sampling adequacy is .754 which means Factor Analysis is gainful for these eight variables. Further the chi-square value is significant (<0.05), means that the correlation matrix between these eight variables are highly significant.

Table Showing Inter Correlation Matrix Among Various Dimensions of Effects of Product Endorsements by Adopting Ansoff Matrix Strategy

ANSOFF MATRIX QUADRANTS • Market Penetration Strategy • Product Development Strategy • Market Development Strategy • Diversification Strategy	**Buying desire & product price score**	**Brand awareness & Reliability score**	**Choice of brand score**	**Brand impact score**	**Media vehicle score**	**Brand usage & Familiarity score**	**Brand association score**	**Brand satisfaction score**	**Overall score**
Buying desire & product price	1								
Brand awareness & Reliability	-.072	1							
Choice of brand	.114*	.062	1						
Brand impact	.095	.166**	.125*	1					
Media vehicle	.135**	.171**	-.066	.094	1				
Brand usage & Familiarity	-.058	-.080	.001	.003	.020	1			
Brand association & Credibility	-.060	.275**	.112*	.236**	.129**	-.039	1		
Brand satisfaction	-.002	.019	.031	.043	.047	-.039	.126*	1	
Overall	.377**	.459**	.405**	.640**	.190**	.209**	.427**	.338**	1

***** Correlation is* significant *at the* 0.01 *level***
** Correlation is significant at the 0.05 level*

Interpretation

The above table shows that there is a significant correlation between the Buying Desire and Product Price dimension with adopting Ansoff Matrix strategy and choice of brand and there is a significant correlation between Ansoff Matrix strategies and Choice of Brand dimension with the Brand impact and Brand association and credibility. Similarly, there is a highly significant correlation between Brand Impact dimension with Brand association and Overall effects of product endorsement. And there is a highly significant correlation between Brand Usage and Familiarity dimension with Overall effects of product endorsement by celebrities. And there is a highly significant correlation between Brand Association and Credibility dimension with Overall effects of product endorsement by celebrities. And there is a highly significant correlation between Brand Satisfaction dimensions with Overall effects of product endorsement by celebrities.

Table Showing Karl Pearson's Co-Efficient of Correlation Between the Respondent's Desire and Effects of Product Endorsements by Ansoff Matrix Strategy in Various Dimensions

S.No	Effects of product endorsements by celebrities	Correlation value	Statistical Interface
1.	Product price score	(-)0.033	P > 0.05 Not Significant
2.	Brand awareness & Reliability score	0.050	P > 0.05 Not Significant
3.	Celebrity endorser & Choice of brand score	(-)0.002	P > 0.05 Not Significant
4.	Brand impact score	(-)0.018	P > 0.05 Not Significant
5.	Media vehicle score	0.032	P > 0.05 Not Significant
6.	Brand usage & Familiarity score	**0.115***	**P < 0.05 Significant**
7.	Brand association & Credibility score	0.017	P > 0.05 Not Significant
8.	Brand satisfaction score	**(-) 0.110***	**P < 0.05 Significant**
9.	Overall score	0.014	P > 0.05 Not Significant

Interpretation

The above table shows Karl Pearson's correlation between the Respondent's Desire and various dimensions of Effects of product endorsements by Ansoff matrix strategy. Their desire negatively correlates with Product Price score (r= (-) 0.033, p > 0.05), Brand Awareness And Reliability score(r= 0.050, p > 0.05), Choice Of Brand score(r= (-) 0.002, p > 0.05), Brand Impact score(r= 0.018, p > 0.05), Media vehicle score(r= 0.032, p > 0.05), Brand Association and Credibility score(r= 0.017, p > 0.05) and Overall score(r= 0.014, p > 0.05).

Further, There is a significant correlation between the age and Brand usage & Familiarity (0.115*, p < 0.05) and Brand satisfaction (r= (-) 0.110*, p < 0.05). Further, we can say that there is a negative correlation between Brand Association and credibility, so as the desire increases the brand satisfaction.

2.3 LIMITATIONS

This analytical study has various limitations attached to it which can be taken into consideration to gain further insight into it:

- The management which undertakes Ansoff Matrix could be misleading. It does not take into account the activities of the competitors.
- The ability of the competitors and also their counter-moves are just simply ignored by the marketers undertaking this theory.
- It also fails to consider the challenges and rules of changes to business as usual activities.
- Transferable and flexible risks are failed to be considered in this marketing strategy.
- The logical issues pertaining to newness is questioned.
- The product is simultaneously taken into the new and unfamiliar market and sometimes also in a completely unknown business.

3. ANALYSIS AND DISCUSSIONS RELATED TO THE STUDY:

3.1 FINDINGS - Competitive Intelligence

Knowledge management activities that take place within the organisations in the long-term industries. Based on the results obtained, the results suggest that:

- There is strong evidence that organisations believe that Ansoff matrix as a knowledge management tool assists in creating value out of their organisations intangible assets.
- Organisations view this technique of knowledge management as a strategic tool.
- The majority of organisation’s organisational culture is conducive to the sharing of knowledge to the potential target audience.
- Overall, the organisations benefit from the processes created to contribute knowledge management by adopting a four quadrant technique.

3.2 SUGGESTIONS FOLLOWING ANSOFF MATRIX QUADRANTS

To gain an understanding of the competitive intelligence activities that takes place within organisations within the long-term industry. The results suggest that:

- A high number of organisations do make use of competitive intelligence in decision-making even if no formalised function exists for the management of competitive intelligence.
- The vast majority of organisations do utilise external sources of information for market research
- The most important sources for the collection of competitive intelligence included the analysis of competitor’s products, websites, annual reports and research reports.
- The most common analytical methods or models used within the organisations to generate competitive intelligence included SWOT analysis and competitor analysis, customer segmentation analysis, industry analysis, and financial analysis and valuation.
- Very few organisations made use of competitive intelligence software applications.

The objective of every business is to grow, be it a start-up that’s just closed its first deal or an established market leader seeking to further increase profitability. The Ansoff Matrix strategic mechanism provides the qualitative solution by assuming the risk factors considering whether to seek growth through existing or new products in existing or new markets.

4. CONCLUSION

It is clear from the study that, Ansoff Matrix plays an incremental role by assuming all the risk factors by adopting a four quadrant technique. Due to the growing technological changes it is required for the marketers to adopt a step by step procedure to make its product acceptable in the highly competitive environment by taking market penetration aspect which includes various uncertainities and other diversification strategies to acquire a relatively risk free company. Taking the example, Coca-cola which also involves market penetration as its important strategy. And selecting this variable to be more useful in the highly competitive marketing scenario. This clearly proved that all the organizations which has followed this competitive strategic marketing intelligence has reached to the unforeseen heights which therby increases the market share of the concern to match the competing global competition. Even so, Coca-Cola would not be the power house it is today without knowing when to step out of its comfort zone – the Glaceau acquisition being a clear case in point.

Challenges in the global economy, not to mention the challenges faced in the local economy, have amplified the necessity for organisations to remain one step ahead of their competitors. Lack of information and knowledge of decisions taken by all role players within the organisations external, and often internal business environments, has led to the weakening and even failure of organisations. Worldwide, the Marketing management based industries have undergone many changes in its working model with changes focused on increasing the attractiveness of the industry to consumers.

With the advent of technological advances that allow all consumers to shop around for the best products and pricing, and the globalisation of markets allowing organisations to compete globally, organisations are required to stay a step ahead of their competitors. Our initial proposition was that the identification and utilisation of the most important factors of a strategic intelligence framework would greatly enhance global corporate decision-making and result in competitive advantage and constant innovation within the business environment.

5. SCOPE FOR FURTHER RESEARCH:

Research studies can be extended to various dimensions related to the following topics,

- Market Penetration and Market Development: the Importance of integration of Strategic Intelligence in Ansoff Matrix.
- Market Diversification and its Applicability in Supply Chain Intelligence using Ansoff Matrix Technique.
- Product Diversification abilities and transformational marketing styles.
- Competitive intelligence with Ansoff Matrix Applicability: a multiphasic precedent to marketing strategy.
- Emotional intelligence and its relationship with Product Penetration strategy and its effectiveness towards competing markets.
- Competitive intelligence: construct exploration, validation and equivalence

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BIMS Journal of Management

Business Analytics for Decision Making a Viewpoint

Dhruv Agarwal*

Abstract: *This article aims to trace the history, application areas and users of Classical Analytics and Big Data Analytics. It discusses different types of Classical and Big Data Analytical techniques and application areas from the early days to present day. It has found that businesses can benefit from a deeper understanding of Classical and Big Data Analytics to make better and more informed decisions. This is a historical perspective from the early days of analytics to present day use of analytics.*

Keywords: *Big data, Analytics, Decision support systems, Internet/e-commerce*

1. INTRODUCTION

Analytics in business is undoubtedly as old as business. But what analytics means differs from person to person. So, first let us understand what analytics implies in today's context. On a broad level, analytics can be defined as using information to make better decisions. The decisions can be made in business contexts, or even personal lives.

Anytime we take some information, structured or unstructured, analyses it, and then base a decision based on the analysis, we are by definition engaging in analytics. So, it is no surprise that all of us have been doing analytics in some shape or form!

However, here we will focus on using analytics in business, and we will consider a more stringent definition of analytics, so that our scope is limited to business decisions and also limited to the tools and technology that is available today and being built for tomorrow in the context of modern industry.

2. ANALYTICS IN BUSINESS

Analytics in modern day business can be best defined as engaging in use of data – structured or unstructured, with formal analysis – statistical or machine learning, to arrive at learnings that help in making better business decisions. The outcome of modern day analytics is more often than not a probabilistic outcome, in that analysis helps generate probabilities for various outcomes instead of suggesting one deterministic outcome with certainty.

3. EARLY ERA WITH DECISION SUPPORT SYSTEMS

The advent of formal tools and technology based analytics in business is considered to be the development of Decision Support Systems (or, DSSs for short) starting in late 1960's. The earliest DSSs were designed to help business decision makers in areas where more often than not a mathematical optimization could be done. Such examples included the problem of allocating sales force across different sales territories, determining salesperson's itinerary across clients, optimizing resource or budget allocation, production planning, portfolio management and airline ground operations management (Keen and Morton, 1978; Power, 2007).

A common characteristic of these early DSSs was that they required significant amount of quantified data as well as a fair amount of managerial judgments or subjective inputs. DSSs used deterministic mathematical equations and relationships and usually an optimization algorithm to finally generate a deterministic output. The DSS users could then take these outputs, apply further What if scenario analysis and arrive at a decision. In that sense, these tools and technologies were in the business of supporting decisions, and hence aptly called as DSSs.

We find evidence of DSSs even today, only that they have grown more sophisticated, more accurate and more useful. One important difference in modern day DSSs is that they have become more probabilistic and less deterministic. Also, over time, DSSs have evolved from being a reporting tool to dashboards with drill-down capability, to hypothesis testing to prediction and optimization (Figure 1).

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4. SCANNER PANEL DATA IN CPG INDUSTRY

Along with the evolution of DSSs, analytics use grew in business with the introduction of some specific products and services. Most notable of which is scanner panel data in consumer packaged goods industry. Information Resources Inc. (founded in 1979) and later A. C. Nielsen built consumer panels that supplied store purchases data across product categories across time.

With digitally scanned data on all purchases made by the panelist households, Information resources Inc. (IRI) Infoscan product, introduced in 1987, started a whole new set of analytics services, which continues up until today. It also facilitated a number of academic contributions focused on grocery retail industry issues of pricing, promotions, advertising, customer loyalty, switching, segmentation, market structure, etc. (Grover and Srinivasan, 1989; Zenor and Srivastava, 1993; Agrawal, 1995).

Starting with store-level scanning, A. C. Nielsen added handheld scanning wands for use at home to scan literally every purchase a panel household made. Nielsen also pioneered to integrate TV and PC usage behaviour with the scanner data, thus broadening the scope of consumer-level information apart from purchase information.

This field of work continues to be strong and vibrant even today. Big consumer goods companies such as Proctor & Gamble, Unilever, Kraft Foods, General Mills and others are heavy users of the scanner panel data analytics.

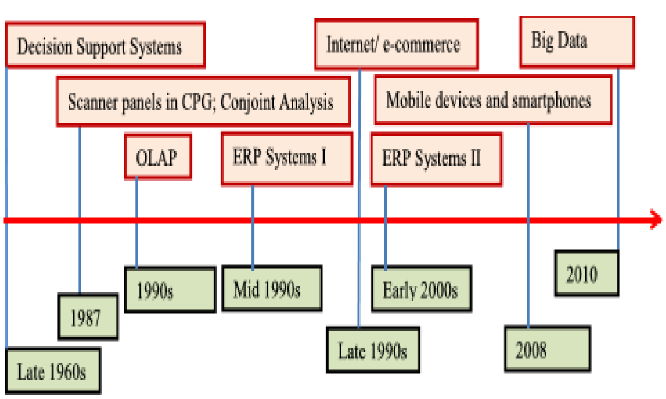

Fig. 1. Timeline of Analytics

In India, a similar technology-based scanner panel (but not the same because scanning is done manually at home and not at retail stores) is run by A. C. Nielsen, and most Fast moving consumer goods (FMCG) companies use that data to analyse product purchases and competition.

5. ENTERPRISE RESOURCE PLANNING SYSTEMS AND CUSTOMER RELATIONSHIP MANAGEMENT SYSTEMS

Enterprise Resource Planning (ERP) systems such as SAP, PeopleSoft and Customer Relationship Management (CRM) systems such as Salesforce, NetSuite and Microsoft Dynamics started in early 1990s and had a second coming in early 2000s. These systems organize enterprise-wide information into databases, which are accessible, queriable and analyzable. They form perhaps the most important source of data within a company used for analytics.

6. SOFTWARE-BASED ANALYTICS TOOLS

With the development of computer industry, as it evolved from main frames to mini computers to desktop PCs and laptops, analytics also kept a good pace. The earlier software's focused on reporting capabilities, most commonly displayed as a digital dashboard with online analytical processing capability. Beginning in 1990, the Online analytical processing (OLAP) tools from companies like Cognos, MicroStrategy, Business Objects, Oracle, Microsoft and IBM gave an important capability to the users; in that they could slice and dice the data in many different ways. The earlier OLAP tools were mainly a reporting tool. The OLAP tools were pre-cursors to more sophisticated computer-based analytics software in later years.

One specific domain area that built a significant presence due to computerization of analytical methodology is Conjoint Software. Conjoint analysis is a quantitative statistical technique that allows measurement of consumer preference structure. It is a technique for understanding how consumers and business decision makers make trade-offs to arrive at a choice or decision.

It breaks down consumer choice or decision problem into a set of attributes that can be acted upon to design optimal products and services and for positioning and messaging to meet customer needs. Most common applications of conjoint analysis are in product design, feature prioritization and pricing. The technique itself was introduced to business domain in 1971 (Green and Rao, 1971), but it was not until Sawtooth Software's Adaptive Conjoint Analysis package in 1987 (Johnson, 1987), and Bretton Clark's 1988 computer-based conjoint products called conjoint Designer, Conjoint Analyzer, SIMGRAF and Conjoint Simulator, did we start to see business use of conjoint analysis take off.

Apart from conjoint analysis, software products aimed squarely at analyzing data were introduced by SAS Institute, SPSS Inc., Matlab, Mathematica, Minitab and others. These software products made it possible for analytics industry to take off in a big way. SAS and SPSS in particular were pioneers in introducing menu-based statistical analysis, which was quite successful, as it allowed even relatively less sophisticated analysts to perform statistical analysis.

7. INTERNET/E-COMMERCE DATA

Next big paradigm shift occurred with the advent of Internet and e-commerce. That started around 1995 with Yahoo coming out with a portal with a directory of links to other websites, and several companies introducing e-commerce sites selling everything from home and garden products, house rentals and sales, autos, music, books, insurance and so on. That list continues to grow to date.

What e-commerce did to analytics though is very significant. Let us look at the ways, analytics changed with the introduction of e-commerce. First thing Internet and e-commerce did to analytics was in the form of making available huge amounts of data, almost instantaneously. Everything that the user did on the web browser, including website visits, clicking, navigating, selling and buying could be easily captured and analysed.

This spawned yet another suite of analytics products and services much like what scanner panel data made happen in 1990s'. Specialized products such as Webtrends (1993), Omniture (1996), and later Google Analytics (2005) came into being. These products computed and displayed a wide variety of metrics such as number of unique visitors, pages viewed and minutes spent, etc. on websites, as well as e-commerce transactions data.

Media Metrix (1996), later purchased by ComScore in 2002 was a pioneer company that built Internet user panels to track all web activity of the panellists. That Internet panel data also spawned a significant set of analytics products and services and continues to flourish even today.

Early users of Internet/e-commerce data were the big technology and e-commerce companies such as America Online, Yahoo, Microsoft, eBay, Amazon as well as online advertising agencies. They used the data in different ways for different purposes, the former for understanding usage behaviour of the users of their products and services (e.g. websites), and the latter to understand, price, buy and sell online advertising.

In India, ComScore Media Metrix service operates an Internet panel on audience statistics. Internet/ e-commerce data also led to several academic work and publications. Whether the amount of academic work on Internet/e-commerce data is more or less compared to the work done with Consumer packaged goods (CPG) scanner panel data is a good unanswered question, but there is no doubt that Internet/e-commerce data heralded another paradigm shift.

8. MOBILE DEVICES, SMART PHONES, OTHER DEVICES AND SENSORS

Coming on the heels of Internet/e-commerce revolution, was the mobile devices revolution. Starting around the year 2003, mobile phone penetration started to take off in advanced economies. And a few years later, it took off in many developing countries driven by low-cost handsets and attractive pricing. Companies like Nokia led this revolution.

With mobile phones and devices, along came new streams of data. Companies like ComScore began tracking mobile phone usage, e-commerce and advertising on mobile phones in 2008 via mobile phone user panels (called m:metrics panel), similar to PC Internet user panels.

In India, Nielsen/Netratings operates a small panel of smartphone users to generate audience statistics on metrics such as top 10 smartphone applications, books, e-tailing sites, etc.

TABLE 1: Decisions by Applying Analytics

Common decisions helped by analytics	Objective
Concept development and testing	To enable testing and choice of the most promising product or service concept using quantitative data
Product development and feature prioritization	To design products and prioritize features using customer preferences
Advertising testing	To enable testing and choice of the most promising advertising creative using quantitative data
Brand strength, preference and perceptions	To know brand strengths and weaknesses, relative position *vis-a-vis* competing brands
Customer satisfaction and loyalty	To know extent and strength of satisfaction and loyalty among current customers
Marketing mix optimization	To optimally allocate marketing budget across variety of marketing options
Pricing	To set optimal price to enable business growth and customer loyalty
Customer segmentation	To understand similarities and differences among customers, to know who the best customers are
Text mining – sentiment analysis	To learn what customers are saying about the company on social media and other platforms

Apple revolutionized the mobile devices industry with the introduction of Apple iPhones, iPods and iPads. With a worldwide smartphone market share of 16 per cent, they are a leader in the proprietary handheld devices today. Rivals using open source Android operating system hold 78 per cent share, in which Samsung has the largest 30 per cent market share of smartphones on a worldwide basis (Gartner Report, February, 2014). These mobile devices generate large streams of analyzable data. Analytics continues to grow focused on these new streams of data.

We are at the beginning of yet another paradigm shift. We are beginning to get newer streams of data from smart wearables and devices such as watches, medical devices such as pacemakers, heart and lung monitors and others. These data streams will almost surely form the next frontier in analytics as far as data are concerned.

9. ANALYTICAL TECHNIQUES

So far, we have talked about different eras and corresponding paradigm shifts that occurred in analytics driven by the arrival of new data sources. However, it is also true that a parallel shift, or rather an evolution was taking place in the analytical methods and techniques. Almost all of us are familiar with a fundamental statistical quantity called correlation. Built on the correlation concept are several other popular techniques of regression, discriminant, cluster, factor, multi-dimensional scaling, conjoint analysis, logistic regression, classification trees and others. These are available in software products such as SAS, SPSS, Matlab, Minitab and Stata.

Data visualization, which enables representation of data in easy-to-understand visuals in the form of graphs and tables has always been a key requirement ever since the days of early DSSs and OLAP tools. Data visualization remains a key area for improvement (Table I).

10. WELL-KNOWN USERS OF ANALYTICS

Netflix, an online movie rental business uses an analytics product called Cinematch to recommend movies to its subscribers using subscriber profiles, movie types and movie ratings. The company is also highly successful with analytics to assign shipping priority to infrequent users over frequent users (called as "fairness algorithm"), and to decide how much to pay for distribution rights for a movie (Davenport and Harris, 2007).Companies using analytics as a competitive strategy are:

- Netflix (movie rentals).
- Proctor & Gamble (consumer products).
- Federal Express (courier).
- Walmart, Target, Tesco, Kroger, JC Penny, Best Buy (all retail).
- Astra Zeneca (healthcare).
- Google (search).
- Amazon (e-commerce).
- Facebook, Twitter, LinkedIn (social).
- Marriott (hotels).
- CEMEX (building materials supplier).

Davenport and Harris (2007) posit that above companies go beyond using analytics as a mere support function to using analytics as a competitive strategy. At a macro level, these companies use analytics to better understand their customers, competitors and markets, and have been successful in creating a competitive advantage for themselves.

In India, traditionally FMCG and other consumer facing companies have been in the forefront as far as using analytics is concerned. Lately, however, e-tailers such as Amazon.in, flipkart.com have been focusing on building analytics capabilities.

Much of the above discussion is about what we can call as Classical Analytics. There is now a new and emerging field which concerns with analyzing Big Data.

11. BIG DATA – WHAT IS IT?

The newest development in analytics space is emergence of "Big Data" concept circa 2010 which is different from the other "Classical Data" in three distinct ways:

- Big Data is usually large in quantity, complex and typically continuously generated. This implies that real-time analytics is usually the requirement, along with the ability to handle and analyse petabytes of data instead of megabytes or gigabytes. Classical Analytics techniques generally do not apply so newer machine learning analytical techniques are used.
- Another characteristic of Big Data is that it contains structured and unstructured data, with more emphasis on unstructured data such as data collected from social media, devices, sensors and such. Sources of Big data include web logs, CRM and ERP systems, customer transactions, videos, audios, medical records, e-commerce transactions, social media, etc.
- Third distinctive characteristic of Big Data is that it has much greater and tighter dependence and co-existence with technology. Data engineering is a term usually applied to the function in Big Data Analytics, which concerns with creating, maintaining and evolving the (information Technology) IT infrastructure to capture, store and manage data streams. Without close working relationship with data engineering, Big Data Analytics cannot be done. This is different from the Classical Analytics where there is no such heavy inter-dependence with IT. Cloud computing that offers flexible and on-demand computing coupled with inexpensive storage represents a key Data engineering ingredient in success of Big Data Analytics.

TABLE 2: Analytics as Strategy

Common applications of Big Data Analytics	Objective
Exception detection/Outlier detection	Detect outliers or exceptions, which trigger subsequent steps. Commonly used by credit card companies to detect fraudulent transactions
Correlations	To find correlations among variables in data steam. For example, businesses try to find association rules such as do buyers of product X tend to buy product Y?
Segmentation	To segment users on the basis of similarities or dissimilarities. Popular technique in Classical Analytics as well. It helps businesses understand underlying clusters of customers and serve them better
Prediction	To predict next big purchase a card holder will make, or to predict churn, i.e. probability that a current customer will continue or stop buying or will/will not renew a membership/subscription/policy
Others	Machine learning is used for speech recognition and face recognition, to predict bond prices, or where to drill for oil or gas using sound, video and text data

12. POPULAR BIG DATA ANALYTIC TECHNIQUES

At a fundamental level, identifying patterns and compute/assign probabilities to different states is what Big Data Analytics is about. Some of the popular Big Data analytical techniques are:

- Artificial Neural Networks for classification and prediction.
- Random Forests for classification.
- Support Vector Machine for classification.
- Bayesian Networks for creating probabilistic graphical models representing impact of interconnected nodes/objects.
- Text Mining to perform sentiment analysis of unstructured text.
- Hidden Markov Models for speech, handwriting and gesture recognition.

Kalman Filers for prediction in areas such as guidance, navigation and control of vehicles, particularly aircraft and spacecraft, also used in signal processing and econometrics.

Skills required to perform Big Data Analytics usually centre on skills in handling unstructured data, optimization algorithms, simulation, machine learning, visualization and statistics (Table II). Companies using Big Data Analytics are:

- Amazon (e-commerce).
- Netflix (movie rentals).
- Google (search).
- Walmart (retail).
- Facebook, LinkedIn, Twitter (social).
- eBay (e-commerce).
- General Electric (airplane engines).
- Boeing (airplanes).

13. SUMMARY

In this article, we have traced the evolution and current applications of analytics in business from the early days of DSSs to the modern day of Big data. All along this evolution, the key premise and principles have not changed, namely, using data to make better and more informed decisions. Indeed, as it is often said that information is power, and because data contains information, therefore data is capable of giving power. Analytics is the endeavor which makes it possible to realize the true power of data. That is perhaps the best way to understand what analytics is really about.

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The Difference between Our Online and Offline Personalities - A Study in Indian Context

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Cervone and Shadel and etal. (2001)[1] presents a social-cognitive theory of personality assessment. The implications of social cognitive theories of personality for the question of what constitutes an assessment of personality structure and behavioral dispositions, have been articulated. The theory consists of five social-cognitive principles of assessment. Personality assessments should distinguish the task of assessing internal personality structures and dynamics from that of assessing overt behavioral tendencies, identify the personality systems that function as personal determinants of action, treat measures of separate psychological and physiological systems as conceptually distinct, employ assessments that are sensitive to the unique qualities of the individual, and assess persons in context. Social-cognitive theory is distinguished from an alternative theory of personality structure and assessment, five-factor theory, by articulating the strategies of scientific explanation, conceptions of personality structure and dispositions, and the assessment practices that differentiate the approaches.

Strack and Deutsch (2004)[2] explain a two-system model, that describes social behavior as a joint function of reflective and impulsive processes. In particular, it is assumed that social behavior is controlled by two interacting systems that follow different operating principles. The reflective system generates behavioral decisions that are based on knowledge about facts and values, whereas the impulsive system elicits behavior through associative links and motivational orientations. The proposed model describes how the two systems interact at various stages of processing, and how their outputs may determine behavior in a synergistic or antagonistic fashion. It extends previous models by integrating motivational components that allow more precise predictions of behavior.

Gangadharbatla (2007)[3] has asserted that, within the user-generated content sites, the role and growth of social networking sites has been undeniably overwhelming. Social networking sites (SNS) generate millions of dollars in revenue and advertising, yet little is known about why college students join and participate in these sites, which allow users to create their own content or space. This study adopts survey methodology to investigate the influence of college students' level of internet self-efficacy, need for belongingness, need for cognition, and collective self-esteem on their attitude toward SNS. Internet self-efficacy, need for belongingness, and collective self-esteem, all have positive effects on attitudes toward SNS. Furthermore, attitude toward SNS mediates the relationship between willingness to join SNS and internet self-efficacy, need for belongingness, and the mediation is only partial between willingness to join and collective self-esteem.

Young and Dutta and etal. (2009)[4] have expressed that, online social network users may leave creative, subtle cues on their public profiles to communicate their motivations and interests to other network participants. Psychological predictions can be made about the motivations of social network users by identifying and analyzing these cues. Focusing on the domain of relationship seeking, it has been predicted that people using social networks for dating would reveal that, they have a single relationship status as a method of eliciting contact from potential romantic individuals. It has also been predicted that people attempting to attract users of the same religious background would report a religious affiliation, along with a single relationship status. The implications for extracting psychological information from facebook profiles have been discussed. It has been suggested that, information from publicly available online social networking profiles can be used to predict people's motivation for using social networks.

Brandtzaeg and Luders and etal. (2010)[5] have explored the two most important criteria for the success of social network sites (SNS) i.e. content sharing and sociability,

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and how these affect privacy experiences and usage behavior among SNS users. It has been revealed that facebook users in all age groups reported more contact with several different groups of people, which reflects different types of social capital i.e. family, friends, and acquaintances, because of facebook, but not without consequences for privacy. Having too many facebook friends and access to different social capital disrupt the sharing process due to experiences of social surveillance and social control. This social control often forces younger people in particular to use conformity as a strategy when sharing content to maintain their privacy. Furthermore, the study revealed different motivations and usage patterns, when older and younger users are compared. A significant difference has been found difference between younger and older adults in time completion and task completion related to facebook settings.

Mehdizadeh (2010)[6] has stated that, online social networking sites reveal an entirely new method of self-presentation. These cyber social tools provide a new site of analysis to examine personality and identity. The author has tried to examine, how narcissism and self-esteem are manifested on facebook. It has been found that, individuals higher in narcissism and lower in self-esteem were related to greater online activity as well as some self-promotional content. Gender differences were found to influence the type of self-promotional content presented by individual facebook users.

Wilson and Fornasier and etal. (2010)[7] have expressed that, young people are increasingly using social networking sites (SNSs) like MySpace and Facebook to engage with others. The use of SNSs can have both positive and negative effects on the individual. This study aims to predict young adults' use of SNSs and addictive tendency toward the use of SNSs from their personality characteristics and levels of self-esteem. It has been found that, extroverted and unconscientious individuals reported higher levels of both SNS use and addictive tendencies.

Gonzales and Hancock (2011)[8] has tried to examine the effect of facebook exposure on self-esteem. Objective Self Awareness (OSA) from social psychology and the Hyperpersonal Model from computer-mediated communication were used to argue that, facebook would either diminish or enhance self-esteem respectively. The results revealed that, in contrast to previous work on OSA, becoming self-aware by viewing one's own facebook profile enhances self-esteem rather than diminishing it. It has been suggested that, selective self-presentation on digital media, which leads to intensified relationship formation, also influences impressions of the self.

Haferkamp and Kramer (2011)[9] are of the opinion that, through features like profile photographs or the personal vita, online profiles on social-networking sites offer a perfect basis for social comparison processes. By looking at the profile photograph, the user gains an impression of a person's physical attractiveness, and the user's vita shows which career path the person is pursuing. Against the background of Festinger's Social Comparison Theory, the focus of this research was on the effects of online profiles on their recipients. It has been indicated that, recipients have a more negative body image after looking at beautiful users, than persons who were shown the less attractive profile pictures. Furthermore, it has been found that, male participants who were confronted with profiles of successful males, showed a higher perceived discrepancy between their current career status and an ideal vita, than male participants who looked at profiles of less successful persons.

Kim and Lee (2011)[10] have tried to investigate, whether and how facebook increases college-age users' subjective well-being by focusing on the number of facebook friends and self-presentation strategies i.e. positive versus honest. It has been revealed that, the number of facebook friends had a positive association with subjective well-being, but this association was not mediated by perceived social support. Additionally, it has been found that, there was a negative curvilinear relationship between facebook friends and perceived social support. As for self presentation strategies, whereas positive self-presentation had a direct effect on subjective well-being, honest self-presentation had a significant indirect effect on subjective well-being through perceived social support. This study suggests that the number of facebook friends and positive self-presentation may enhance users' subjective well-being, but this portion of happiness may not be grounded in perceived social support. On the other hand, honest self-presentation may enhance happiness rooted in social support provided by facebook friends. Implications of the findings are discussed in the light of affirmation of self-worth, time and effort required for building and maintaining friendships, and the important role played by self-disclosure in signaling one’s need for social support.

Gosling and Augustine and etal. (2011)[11] are of the opinion that, despite the enormous popularity of Online Social Networking sites (OSNs) i.e. Facebook and Myspace, little research in psychology has been done on them. Studies examining how personality is reflected in OSNs revealed several connections between the Big Five personality traits and self-reported facebook-related behaviours and observable profile information. Extraversion predicted not only frequency of facebook usage, but also engagement in the site with extroverts, showing traces of higher levels of facebook activity. As in offline contexts, extroverts seek out virtual social engagement, which leaves behind a behavioral residue in the form of friends lists and picture postings. Results suggest that, rather than escaping from or compensating for their offline personality, OSN users appear to extend their offline personalities into the domains of OSNs.

Zwier and Araujo and etal. (2011)[12] have aimed to contribute to an emerging literature that seeks to understand how identity markers on social networking sites (SNSs) shape interpersonal impressions, and particularly the boundaries that SNSs present for articulating unconstrained ‘‘hoped-for possible selves.’’ It has been shown that, appearing with friends on a facebook profile picture as well as increasingly higher number of facebook friends strengthened perceptions of a person’s hoped-for level of social connectedness. Excessive numbers of friends, however, weakened perceptions of a person’s real-level social connectedness, particularly among participants with smaller social networks on facebook.

Hong and Tandoc and etal. (2012)[13] have tried to examine the effects of social cues in self-presentations and the congruence of other-generated comments with the self-presentation in people’s evaluations of a profile owner. It has been shown that, a profile owner was perceived less socially attractive, when other-generated comments were incongruent with the profile owner’s self-presentation. No matter how people package themselves with extravagant self-presentations, it cannot be very successful without validation from others. An interaction effect between congruence and the level of social cues suggested that, perceived popularity was low in the incongruent condition, regardless of the level of social cue.

Kapidzic (2013)[14] has asserted that, the rising popularity of social networking sites raises the question of whether and how personality differences are manifested on them. The author has carried out a systematic analysis of the relationship between narcissism and motivations behind facebook profile picture selection. It has been found that, narcissism is a significant predictor of the motivation for selecting profile pictures, that emphasize attractiveness and personality for both men and women.

Wilcox and Stephen (2012)[15] have demonstrated that, social network use enhances self-esteem in users who are focused on close friends i.e., strong ties while browsing their social network. This momentary increase in self-esteem reduces self-control, leading those focused on strong ties to display less self-control, after browsing a social network. This research extends previous findings by demonstrating that, social networks primarily enhance self-esteem for those focused on strong ties during social network use. Additionally, this research has implications for policy makers because self-control is an important mechanism for maintaining social order and well-being.

Stieglitz and Dang-Xuan (2013)[16] have tried to examine, whether sentiments occurring in social media content is associated with a user’s information sharing behavior. The research has been carried out in the context of political communication on twitter. It has been found that, emotionally charged twitter messages tend to be retweeted more often and more quickly compared to neutral ones. As a practical implication, companies should pay more attention to the analysis of sentiments related to their brands and products in social media communication, as well as in designing advertising content that triggers emotions.

Huang and Park (2013)[17] have spoken about prior studies in social psychology, which indicated that East Asians from collectivistic and interdependent socio cultural systems are more sensitive to contextual information than Westerners, whereas Westerners with individualistic and independent representation have a tendency to process focal and discrete attributes of the environment. In this paper, they have demonstrated that such systematic cultural variations can also be observed in cyberspace, focusing on self-presentation of photographs on facebook, the most popular worldwide online social network site. It has been shown that, East Asian facebook users are more likely to deemphasize their faces compared to Americans. Specifically, East Asians living in HongKong, Singapore, and Taiwan exhibited a preference for context inclusiveness in their profile photographs, whereas Americans tended to prioritize their focal face at the expense of the background. Moreover, East Asian facebook users had lower intensity of facial expression than Americans on their photographs. These results demonstrate marked cultural differences in context-inclusive styles versus object-focused styles between East Asian and American facebook users.

Blachnio and Przepiorka and etal. (2013)[18] have aimed to present the main trends in facebook research and to provide an overview of major empirical findings. Among the most intensively explored topics in facebook research, studies that concentrate on personality and individual differences among users, the role of self-efficacy, and motivation for using that specific social networking site were identified. There is also a growing trend in empirical studies that focuses on testing advanced theoretical models of facebook usage determinants. Technology acceptance model, presented in this article, is one of the most often used among them. This kind of approach may serve as a suggestion for a methodological conceptualization in the future confirmatory research on facebook.

Johnston and Chen and etal. (2013)[19] have expressed that, as social computing systems persist over time, many elements such as user experience, perceptions, attitudes and interactions may change. Facebook and Twitter are two social computing systems that have become increasingly popular among university students. The results clearly highlight the changes in usage, attitude and perception of facebook over time, and provide a starting point for assessing how usage and attitude to twitter may change.

Blackwell and Lauricella and etal. (2014)[20] are of the opinion that, the internet is quickly becoming a favoured medium for children, but few studies have investigated the content and types of activities children active online. This study indicates that, YouTube and Facebook are the two most favored Web sites. Additionally, there were significant differences by age and gender. Overall, it has been indicated that, children's web site preferences are consistent with emotional, social, and cognitive development encountered in middle childhood.

Chan (2014)[21] has examined how facebook usage affects individual's empathic social skills and life satisfaction. Following the self-presentational theory, this study explores a key component of the Internet paradox, whether facebook suppresses or enhances users' interpersonal competence, specifically empathic social skills, given their respective personality makeup. Going further, the study assesses these events' subsequent impacts on users' psychological well-being. It has been indicated that, while empathic social skills are positively associated with life satisfaction, facebook activities mainly exert suppression effects. Only upon low usage can facebook activities lessen the negative effect of neuroticism on empathic social skills, suggesting that facebook may appear as a less threatening platform for social interactions among neurotics. Results in general suggest that, undesirable effects may occur at high levels of facebook usage, whereby both extroverted and neurotic users displace real world social ties to online ones. It has also been pointed out that, social media usage may impact the livelihood of users.

Park and Lee (2014)[22] have explored the associations between motivations for using facebook among college students, their concern for impression management, facebook intensity, and psychological outcomes including sense of belonging and satisfaction with campus life. This study found that four motivations i.e entertainment, relationship maintenance, self-expression, and communication, together with impression management, were significantly associated with facebook intensity. However, the impacts of facebook intensity on psychological consequences were relatively limited. Theoretical implications of the study have also been discussed.

Celli and Rossi (2015)[23] have addressed the issue of how emotional stability affects social relationships in twitter. A huge collection of twitter posts have been annotated with the personality recognition system. This system exploits linguistic features, such as punctuation and emoticons, and statistical features, such as follower count and retweeted posts. It has been shown that, secure users have more mutual connections, whereas neurotic users post more than secure ones and have the tendency to build longer chains of interacting users. It has also been revealed that, whereas secure users tend to build stronger networks, neurotic users have difficulty in belonging to a stable community. Hence, they seek for new contacts in online social networks.

Jeong and Coyle (2014)[24] have examined privacy protection and behavior on two different types of social network sites (SNSs) i.e. facebook and twitter. This study explores the relationships between privacy concerns and uses of SNSs, as well as between privacy concerns and uses of privacy protection on SNSs. It has been indicated that, young users are more concerned about the information they provide to facebook than twitter. Users worry more about information on those sites being accessed by parents, teachers, or other people with authority roles than by those they know less about, such as marketers, advertisers, and those in distant relations. Implications for advertising on social media and policymaking have also been discussed.

Koc and Gulyagci (2013)[25] have explored facebook addiction among Turkish college students and its behavioral, demographic, and psychological health predictors. It has been revealed that weekly time commitment, social motives, severe depression, and anxiety and insomnia positively predicted facebook addiction. Neither demographic variables nor the interactions of gender by usage characteristics, were found to be significant predictors.

Karahanna and Xu Xin and etal. (2015)[26] have aimed to build on and extend research on psychological ownership based on the concept of psychological ownership motivation. Drawing on psychological ownership theory, that has identified the underlying motives i.e., the need for effectance, self-identity, and for having a place, that are the roots of psychological ownership, the authors defined psychological ownership motivation as the drive to engage in behaviours to satisfy the motives, that underlie psychological ownership. Psychological ownership motivation drives individuals to engage in social media use, because social media have affordances to fulfill the underlying needs of psychological ownership. It has been indicated that, these needs collectively contribute to psychological ownership motivation, which, in turn, drives social media use.

Smith and Sanderson (2015)[27] have examined the instagram feeds of a number of professional athletes to determine, how athletes are using the visual social media site for self-presentation. They have explored the photographs and captions to ascertain, what behaviors and themes emerged. The self-presentation styles of athletes of both genders, as well as the main differences between them were examined, and significant differences emerged that confirmed the previously established gender norms. Findings with respect to captions align with previous research on athlete self presentation on social media. Theoretical and practical implications, as well as directions for future research are discussed.

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Women Entrepreneurship in India-Problems and Prospects

Rajeev Jain*

Abstract: *The educated Indian women have to go a long way to achieve equal rights and position because traditions are deep rooted in Indian society where the sociological set up has been a male dominated one. Despite all the social hurdles, Indian women stand tall from the rest of the crowd and are applauded for their achievements in their respective field. The transformation of social fabric of the Indian society, in terms of increased educational status of women and varied aspirations for better living, necessitated a change in the life style of Indian women. She has competed with man and successfully stood up with him in every walk of life and business is no exception for this. These women leaders are assertive, persuasive and willing to take risks. They managed to survive and succeed in this cut throat competition with their hard work, diligence and perseverance. The present paper endeavors to study the concept of women entrepreneur‐ Reasons women become entrepreneurs -Reasons for slow progress of women entrepreneurs in India - suggestions for the growth of women entrepreneurs-Schemes for promotion & development of women entrepreneurship in India-Case study of a women entrepreneur of Ludhiana.*

Keywords: *Entrepreneurship, Women, Business, Gender.*

1. INTRODUCTION

The educated women do not want to limit their lives in the four walls of the house. They demand equal respect from their partners. However, Indian women have to go a long way to achieve equal rights and position because traditions are deep rooted in Indian society where the sociological set up has been a male dominated one. Women are considered as weaker sex and always made to depend on men folk in their family and outside, throughout their life. The Indian culture made them only subordinates and executors of the decisions made by other male members, in the basic family structure. While at least half the brainpower on earth belongs to women, women remain perhaps the world‗s most underutilized resource. Despite all the social hurdles, India is brimming with the success stories of women. They stand tall from the rest of the crowd and are applauded for their achievements in their respective field. The transformation of social fabric of the Indian society, in terms of increased educational status of women and varied aspirations for better living, necessitated a change in the life style of Indian women. She has competed with man and successfully stood up with him in every walk of life and business is no exception for this. These women leaders are assertive, persuasive and willing to take risks. They managed to survive and succeed in this cut throat competition with their hard work, diligence and perseverance. Ability to learn quickly from her abilities, her persuasiveness, open style of problem solving, willingness to take risks and chances, ability to motivate people, knowing how to win and lose gracefully are the strengths of the Indian women entrepreneurs.

2. CONCEPT OF WOMEN ENTREPRENEURS

Women Entrepreneurs may be defined as the women or a group of women who initiate, organize and operate a business enterprise. The Government of India has defined women entrepreneurs as―an enterprise owned and controlled by women having a minimum financial interest of 51 per cent of the capital and giving at least 51 per cent of the employment generated in the enterprise to women‖. Women entrepreneurs engaged in business due to push and pull factors which encourage women to have an independent occupation and stands on their on legs.

A sense towards independent decision-making on their life and career is the motivational factor behind this urge. Saddled with household chores and domestic responsibilities women want to get independence. Under the influence of these factors the women entrepreneurs choose a profession as a challenge and as an urge to do some thing new. Such a situation is described as pull factors. While in push factors women engaged in business activities due to family compulsion and the responsibility is thrust upon them.

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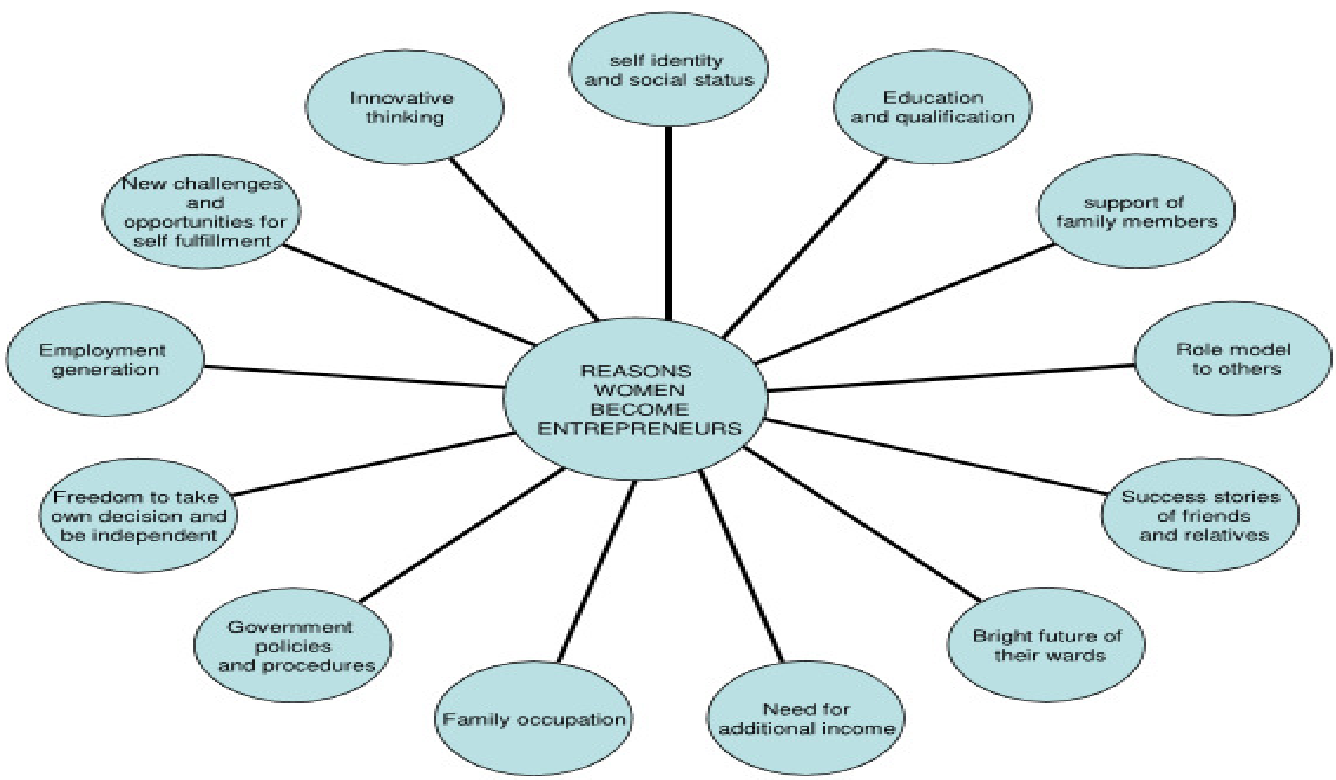
3. OBJECTIVES AND RESEARCH METHODOLOGY OF THE STUDY

The study is based on secondary data which is collected from the published reports of RBI, NABARD, Census Surveys, SSI Reports, newspapers, journals, websites, etc. The study was planned with the following objectives:

- To evaluate the factors responsible for encouraging women to become entrepreneurs
- To study the impact of assistance by the government on women's entrepreneurship.
- To study the policies, programmes, institutional networks and the involvement of support agencies in promoting women's entrepreneurship.
- To critically examine the problems faced by women entrepreneurs.

4. REASONS FOR WOMEN BECOMING ENTREPRENEURS

The glass ceilings are shattered and women are found indulged in every line of business. The entry of women into business in India is traced out as an extension of their kitchen activities, mainly 3P‘s, Pickle, Powder and Pappad. But with the spread of education and passage of time women started shifting from 3P‘s to modern 3E‘s i.e., Energy, Electronics and Engineering. Skill, knowledge and adaptability in business are the main reasons for women to emerge into business ventures. ‗Women Entrepreneur‘ is a person who accepts challenging role to meet her personal needs and become economically independent. A strong desire to do something positive is an inbuilt quality of entrepreneurial women, who is capable of contributing values in both family and social life. With the advent of media, women are aware of their own traits, rights and also the work situations. The challenges and opportunities provided to the women of digital era are growing rapidly that the job seekers are turning into job creators. Many women start a business due to some traumatic event, such as divorce, discrimination due to pregnancy or the corporate glass ceiling, the health of a family member, or economic reasons such as a layoff. But a new talent pool of women entrepreneurs is forming today, as more women opt to leave corporate world to chart their own destinies. They are flourishing as designers, interior decorators, exporters, publishers, garment manufacturers and still exploring new avenues of economic participation. The following flow chart shows the reasons for women becoming entrepreneurs-



5. REASONS FOR SLOW PROGRESS OF WOMEN ENTREPRENEURS IN INDIA

The problems and constraints experienced by women entrepreneurs have resulted in restricting the expansion of women entrepreneurship. The major barriers encountered by women entrepreneurs are:

- The greatest deterrent to women entrepreneurs is that they are women. A kind of patriarchal- male dominant social order is the building block to them in their way towards business success. Male members think it a big risk financing the ventures run by women
- Male chauvinism is still prevalent in many parts of the country yet. Women are looked upon as —abla‖ i.e. weak in all respects. In a male dominated society, women are not treated equal to men that act as a barrier to woman‘s entry into business.
- Women entrepreneurs have to face a stiff competition with the men entrepreneurs who easily involve in the promotion and development area and carry out easy marketing of their products with both the organized sector and their male counterparts. Such a competition ultimately results in the liquidation of women entrepreneurs.
- Lack of self-confidence, will-power, strong mental outlook and optimistic attitude amongst women creates a fear from committing mistakes while doing their piece of work. The family members and the society are reluctant to stand beside their entrepreneurial growth.
- Women in India lead a protected life. They are even less educated, economically not stable nor self-dependent which reduce their ability to bear risks and uncertainties involved in a business unit,
- The old and outdated social outlook to stop women from entering in the field of entrepreneurship is one of the reasons for their failure. They are under a social pressure which restrains them to prosper and achieve success in the field of entrepreneurship
- Unlike men, women mobility in India is highly limited due to many reasons. A single women asking for room is still looked with suspicion. Cumbersome exercise involved in starting with an enterprise coupled with officials humiliating attitude towards women compels them to give up their spirit of surviving in enterprise altogether.
- Women's family obligations also bar them from becoming successful entrepreneurs in both developed and developing nations. The financial institutions discourage women entrepreneurs on the belief that they can at any time leave their business and become housewives again.
- Indian women give more emphasis to family ties and relationships. Married women have to make a fine balance between business and family. The business success also depends on the support the family members extended to women in the business process and management.
- Women‘s family and personal obligations are sometimes a great barrier for succeeding in business career. Only few women are able to manage both home and business efficiently, devoting enough time to perform all their responsibilities in priority.
- The educational level and family background of husbands also influences women participation in the field of enterprise.
- Absence of proper support, cooperation and back-up for women by their own family members and the outside world people force them to drop the idea of excelling in the enterprise field. They are always making many pessimistic feelings to be aroused in their minds and making them feel that family and not business is a place meant for them.
- Many women take the training by attending the Entrepreneurial Development programme without an entrepreneurial bent of mind. Women who are imparted training by various institutes must be verified on account of aptitude through the tests, interviews, etc.
- High production cost of some business operations adversely affects the development of women entrepreneurs. The installations of new machineries during expansion of the productive capacity and like similar factors discourage the women entrepreneurs from venturing into new areas.
- Women controlled business are often small and it is not always easy for women to access the information

they need regarding technology, training, innovative schemes, concessions, alternative markets, etc. Just a small percentage of women entrepreneurs avail the assistance of technology and they too remain confined to word processing software in the computer. They hardly make use of advanced software available like statistical software SAP, Accounting Package like TALLY, Animation software 3D MAX, internet, etc

- Lack of awareness about the financial assistance in the form of incentives, loans, schemes etc. by the institutions in the financial sector. So the sincere efforts taken towards women entrepreneurs may not reach the entrepreneurs in rural and backward areas.
- Achievement motivation of the women folk found less compared to male members. The low level of education and confidence leads to low level achievement and advancement motivation among women folk to engage in business operations and running a business concern.

Apart from the above discussed problems there may occur other series of serious problems faced by women entrepreneurs as improper infrastructural facilities, high cost of production, attitude of people of society towards the women modern business outlook, low needs of enterprise. Women also tend to start business about ten years later than men, on average. Motherhood, lack of management experience, and traditional socialization has all been cited as reasons for delayed entry into entrepreneurial careers.

6. SUGGESTIONS FOR THE GROWTH OF WOMEN ENTREPRENEURS

- Right efforts from all areas are required in the development of women entrepreneurs and their greater participation in the entrepreneurial activities. Entrepreneurship basically implies being in control of one‘s life and activities and women entrepreneurs need to be given confidence, independence, and mobility to come out of their paradoxes. The following measures are suggested to empower the women to seize various opportunities and face challenges in business.
- There should be a continuous attempt to inspire, encourage, motivate and co- operate women entrepreneurs.
- An Awareness programme should be conducted on a mass scale with the intention of creating awareness among women about the various areas to conduct business.
- Attempts should be there to enhance the standards of education of women in general as well making effective provisions for their training, practical experience and personality development programmes, to improvise their over-all personality standards.
- Organize training programmes to develop professional competencies in managerial, leadership, marketing, financial, production process, profit planning, maintaining books of accounts and other skills. This will encourage women to undertake business.
- Vocational training to be extended to women community that enables them to understand the production process and production management.
- Skill development to be done in women's polytechnics and industrial training institutes. Skills are put to work in training-cum-production workshops.
- Educational institutes should tie up with various government and non-government agencies to assist in entrepreneurship development mainly to plan business projects.
- International, National, Local trade fairs, Industrial exhibitions, seminars and conferences should be organized to help women to facilitate interaction with other women entrepreneurs.
- Women in business should be offered soft loans & subsides for encouraging them into industrial activities. The financial institutions should provide more working capital assistance both for small scale venture and large scale ventures.
- Making provision of micro credit system and enterprise credit system to the women entrepreneurs at local level.
- The weaker section could raise funds through various schemes and incentives provided by the government to develop entrepreneurs in the state. E.g. the Prime ministers Rozgar Yojana, The Khadi and Rural village industries scheme, etc.

- In the initial stages women entrepreneurs may face problems but they must persevere, believe in themselves and not give up mid way.
- Attempts by various NGO's and government organizations to spread information about policies, plans and strategies on the development of women in the field of industry, trade and commerce. Women entrepreneurs should utilize the various schemes provided by the Government.
- Women should try to upgrade themselves in the changing times by adapting the latest technology benefits. Women must be educated and trained constantly to acquire the skills and knowledge in all the functional areas of business management. This can facilitate women to excel in decision making process and develop a good business network
- Self help groups of women entrepreneurs to mobilize resources and pooling capital funds, in order to help the women in the field of industry, trade and commerce can also play a positive role to solve this problem.
- Women's entrepreneurship must be examined both at the individual level (i.e. the choice of becoming self-employed) and at the firm level (the performance of women owned and managed firms) in order to fully understand the differences between men's and women's entrepreneurship.
- To establish all India forums to discuss the problems, grievances, issues, and filing complaints against constraints or shortcomings towards the economic progress path of women entrepreneurs and giving suitable decisions in the favor of women entrepreneurs and taking strict stand against the policies or strategies that obstruct the path of economic development of such group of women entrepreneurs.

Thus by adopting the following aforesaid measures in letter and spirit the problems associated with women can be solved. Entrepreneurship is not a bed of roses to women. Women participation in many kinds of economic activities to complement to their family income, their participation in no way reduces their family duties. The task of women has become more tedious and full of challenges. Let us all make efforts to help women rediscover her.

7. STEPS TAKEN BY THE GOVERNMENT

Development of women has been a policy objective of the government since independence.Until the 70s the concept of women's development was mainly welfare oriented. In 1970s, there was a shift from welfare approach to development approach that recognised the mutually reinforcing nature of the process of development. The 80s adopted a multi-disciplinary approach with an emphasis on three core areas of health, education and employment. Women were given priorities in all the sectors including SSI sector. Government and non government bodies have paid increasing attention to women's economic contribution through self employment and industrial ventures.

The First Five-Year Plan (1951-56) envisaged a number of welfare measures for women. Establishment of the Central Social Welfare Board, organization of Mahila Mandals and the Community Development Programmes were a few steps in this direction.

In the second Five-Year Plan (1956-61), the empowerment of women was closely linked with the overall approach of intensive agricultural development programmes.

The Third and Fourth Five-Year Plans (1961-66 and 1969-74) supported female education as a major welfare measure.

The Fifth Five-Year Plan (1974-79) emphasized training of women, who were in need of income and protection. This plan coincided with International Women's Decade and the submission of Report of the Committee on the Status of Women in India. In1976, Women's welfare and Development Bureau was set up under the Ministry of Social Welfare.

The Sixth Five-Year Plan (1980-85) saw a definite shift from welfare to development. It recognized women's lack of access to resources as a critical factor impending their growth.

The Seventh Five-Year Plan (1985-90) emphasized the need for gender equality and empowerment. For the first time, emphasis was placed upon qualitative aspects such as inculcation of confidence, generation of awareness with regards to rights and training in skills for better employment.

The Eight Five-Year Plan (1992-97) focused on empowering women, especially at the Gross Roots Level, through Panchayati Raj Institutions.

The Ninth Five-Year Plan (1997-2002) adopted a strategy of Women‘s Component Plan, under which not less than 30 percent of funds/ benefits were earmarked for women related sectors.

The Tenth Five-Year Plan (2002-07) aims at empowering women through translating the recently adopted National Policy for Empowerment of Women (2001) into action and ensuring Survival, Protection and Development of women and children through rights based approach.

At present, the Government of India has over 27 schemes for women operated by different departments and ministries. Some of these are:

- Integrated Rural Development Programme (IRDP) Khadi And Village Industries Commission (KVIC)
- Prime Minister‘s Rojgar Yojana (PMRY)
- Entrepreneurial Development programme (EDPs)
- Management Development progammes
- Women‘s Development Corporations (WDCs)
- Marketing of Non-Farm Products of Rural Women (MAHIMA)
- Assistance to Rural Women in Non-Farm Development (ARWIND) schemes
- Trade Related Entrepreneurship Assistance and Development (TREAD)
- Working Women‘s Forum
- Indira Mahila Yojana
- Indira Mahila Kendra
- Mahila Samiti Yojana
- Mahila Vikas Nidhi
- Micro Credit Scheme
- Rashtriya Mahila Kosh
- SIDBI‘s Mahila Udyam Nidhi
- Mahila Vikas Nidhi
- SBI‘s Stree Shakti Scheme
- NGO‘s Credit Schemes
- Micro & Small Enterprises Cluster Development Programmes (MSE-CDP).
- National Banks for Agriculture and Rural Development‘s Schemes
- Rajiv Gandhi Mahila Vikas Pariyojana (RGMVP)
- Priyadarshini Project- A programme for Rural Women Empowerment and Livelihood in Mid Gangetic Plains‘

The efforts of government and its different agencies are ably supplemented by NGOs that are playing an equally important role in facilitating women empowerment. Despite concerted efforts of governments and NGOs there are certain gaps. Of course we have come a long way in empowering women yet the future journey is difficult and demanding.

8. RAJNI BECTOR: A CASE STUDY OF SUCCESSFUL WOMEN ENTERPRENEUR

Cremica is one of the largest food processing companies of India with an annual growth rate of 30%. The quality, the taste and the penchant for perfection is what has given the required thrust to sales. From a single plant at Phillaur, today Cremica has a number of plants situated at various locations all over India. Cremica‘s presence in the market is visible on account of its vast range of products, which include: Biscuits, Sauces, Jams and Ketchups, Indian Snacks, Ready to Eat Food, Condiments, Frozen Products and Bakery Products.

A homegrown business, Cremica was founded by Mrs. Rajni Bector, who started making ice creams in her garage. Though she had no formal training or background, her recipes were a runaway success in Punjab.

Rajni Bector is one of the first women entrepreneurs in Ludhiana. While she insists on being a woman entrepreneurship comes to her easily; it‘s been a long journey to success, nevertheless. Rajni Bector was just a housewife before she started selling her kitchen-made ice creams at Diwali Melas in the late 1970s. Today, Cremica group does sales of Rs.200 crore (Rs.2 billion) and is an important link in the supply chain to the fast food industry with an inventory of buns, breads, sauces, ketchups and ice creams toppings to the likes of McDonalds and syrups and mayonnaise to Barista..

Below are the steps of success in which Mrs. Bector made growth in her business to be the successful women entrepreneur.

- 1980: Mrs. Rajni Bector an arts graduate, founder of the MRS. BECTOR'S CREMICA started her new career from a housewife to an entrepreneur with a meager investment of Rs. 20000/- for the manufacturing of Ice Creams & Bakery items from the backyard of her residence.
- 1982: Mr. Ajay Bector her eldest son joined her to help her with the increased business volumes.
- 1986: She started another unit at Ludhiana for the manufacturing of Bread and bakery biscuits with an investment of Rs. 1.00 Lac.
- 1989: Mrs. Bector's younger sons Akshay Bector & Anoop Bector after completing their education joined the business in and a unit for manufacture of bread was established at Phillaur near Ludhiana for the manufacture of 50000 loaves of bread per day.
- 1991: Mrs. Bector started another fully automated unit for the manufacture of Biscuits at Phillaur with a capacity of 7200 M.T. of Biscuits per annum with an investment of Rs.75.00 Lacs.
- 1992: Mrs. Bector's Cremica established a manufacturing facility for confectionery items followed by a unit for the manufacture of Namkeens.
- 1997: By seeing the quality of the products being manufactured McDonalds approached Mrs. Bector for supplies of various products i.e. buns, liquid products and batters & breading. This was a golden opportunity for the Bector Family and the family entered into various Joint ventures so that international expertise could help them produce international level products compared to the best in the world.
- 2002: A modern Bun Manufacturing facility manufacturing over 150000 Buns per shift was established at greater Noida for supplies to McDonalds. This is one of the most modern units of its type in the country.
- 2003: A foray was made into Fresh Vegetable Processing and a modern facility for processing of fresh vegetables like lettuce, cut vegetables etc for supplies to McDonalds was made at an investment of Rs. 15.00 Million.
- 2004: Mrs. Bector's Cremica entering into an Agreement with ITC Ltd. for the manufacture of Biscuits on contract manufacturing basis at Tahliwal, Distt Una (H.P.). A state of the art facility was established for the manufacture of 60000 M.T. of biscuits at a cost of over Rs. 25.00 Crores producing biscuits valued at over Rs. 200 Crores P.A. This unit produces 30000 M.T. of biscuits for ITC under the SUNFEAST BRAND and 30000
- M.T. under the Mrs. Bector's Cremica label.
- The Group also entered in to an agreement with Cadbury India Ltd. for supply of
- Cadbury Bytes with an investment of Rs. 3.00 Crores producing goods valued at Rs. 30.00 Crores annually.
- 2007: The Group was offered an opportunity for Equity participation by Goldman Sachs.
- The liquid products & biscuit operations were valued by Goldman Sachs at Rs. 500.00
- Crores. The group offered Goldman Sachs 15% equity for Rs. 75.00 Crores to help speed up its expansions with the equity infusion.
- McDonalds offered Mrs. Bector the bun business for West & South India and a new state of the art unit was established at Taloja, Navi Mumbai.
- Mrs. Bector acquired a unit at Karnal, Haryana for the manufacture of Indian Namkeens.
- The group has acquired new industrial sites at Ludhiana (Punjab), Kundli (Haryana), Raigad (Maharastra) & Pune in Maharastra for further expansions.
- Her mantra of success, ―Just remember that work is worship — whatever you do, be it at home or outside, treat it respectfully.‖

9. CONCLUSION

It can be said that today we are in a better position wherein women participation in the field of entrepreneurship is increasing at a considerable rate. Efforts are being taken at the economy as brought promise of equality of opportunity in all spheres to the Indian women and laws guaranteed equal rights of participation in political process and equal opportunities and rights in education and employment were enacted. But unfortunately, the government sponsored development activities have benefited only a small section of women i.e. the urban middle class women. Women sector occupies nearly 45% of the Indian population. At this juncture, effective steps are needed to provide entrepreneurial awareness, orientation and skill development programs to women. The role of Women entrepreneur in economic development is also being recognized and steps are being taken to promote women entrepreneurship. Resurgence of entrepreneurship is the need of the hour emphasizing on educating women strata of population, spreading awareness and consciousness amongst women to outshine in the enterprise field, making them realize their strengths, and important position in the society and the great contribution they can make for their industry as well as the entire economy. Women entrepreneurship must be moulded properly with entrepreneurial traits and skills to meet the changes in trends, challenges global markets and also be competent enough to sustain and strive for excellence in the entrepreneurial arena. If every citizen works with such an attitude towards respecting the important position occupied by women in society and understanding their vital role in the modern business field too, then very soon we can pre-estimate our chances of out beating our own conservative and rigid thought process which is the biggest barrier in our country‘s development process.

We always viewed that a smart woman can pick up a job any day, but if she becomes an entrepreneur she can provide a livelihood to 10 more women at least..!! Highly educated, technically sound and professionally qualified women should be encouraged for managing their own business, rather than dependent on wage employment outlets. The unexplored talents of young women can be identified, trained and used for various types of industries to increase the productivity in the industrial sector.

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BIMS Journal of Management

Review of Literature on Behavioural Finance

Ritu Madan*

Abstract: *Investors are rational and that they consider all available information in portfolio investment decision process is the main assumption of standard finance and this holds true by Efficient Market Hypothesis (EMH), being an important theory of Standard finance. Over the years this assumption has been challenged by the psychologists and they argue that investors can't be rational as their decisions are influenced by cognitive and psychological errors. The work done by the various prominent psychologists in this direction resulted in the development of a new branch of financial economics, known as Behavioral Finance. Behavioral finance considers how various psychological traits affect the way investors make their investment decisions. Against this backdrop, in present paper a modest attempt has been made to review various studies in this area so as to have clear understanding of the subject and to see how significant it is in financial decision making. From the review of literature it is deduced that behavioural finance tries to fill the gap between actual behavior (Normal behavior) and expected behavior (Rational Behavior), however, currently there is no unified theory of behavioural finance that gives a proper place to the factors influencing financial decisions of investors.*

Keywords: *Finance, Behavior, Heuristics, Rationality, Herd, EMH.*

1. INTRODUCTION

A paradigm shift has taken place in recent years in the study of stock market behavior and this shift has changed the direction of research from the study of financial environment to the agents of this environment, all this has led to the development of a new field of financial research namely "Behavioral Finance". Up to 1970s the most of the research studies in the area of finance were directed towards the environment and it's functioning. Financial environment includes different types of markets like bond markets, forex markets, stock markets, commodity markets, OTC (over the counter) markets, real estate markets and cash or spot markets. After this phase researchers realized that in order to understand the environment in itself it is necessary first to understand the psyche of the agents of the environment because these agents (people) are sine-quo-non in the financial environment. These agents of environment are identified as new „subject of study‟ and they include individual investors, fund managers, analysts, broking firms and government. Another important factor that leads to the acceptance of individual agents rather than the collection of agents (i.e. market) as the subject matter of the study was the fact that a few individuals cannot be regarded as the representatives of all the population, as humans are the most diverse entities of the universe. All this has culminated into the fact that the factors (agents) of environment are more important for the study of entire financial environment and as such new subject called "Behavioural Finance" evolved.

Up to 1970s the focus of the researchers in the area of finance was on the logic behind the thinking process of investors and hence the way investor should think in this regard. The element of study was the environment itself as it was thought to be significant enough, so its fluctuations can result in some noticeable change. Normally this era of research can be divided into two phases. During the first phase (i.e. up to 1952) the dominant force was that of traditional finance theory, wherein it was assumed that investors have no difficulty in making financial decisions and they are well informed, careful and are not swayed by their emotions. The models within the standard finance paradigm assume that investors act rationally and expectedly consider all the available information in portfolio investment decision process. The traditional finance theory also assumes that security prices adjust rapidly to the arrival of new information in an efficient capital market and the current prices of securities reflect all information about the security. However, the question of whether capital markets are efficient became one of the most controversial arguments in finance research. Later on, in the second phase (i.e. during 1960s and 1970s) neoclassical finance came into existence and the major attractions of this period were Capital Asset Pricing

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Model (CAPM) and EMH, and Arbitrage based Option Pricing theory. Most of the earlier works related to efficient market was based on the random walk hypothesis, which contended that changes in stock prices occurred randomly. This early academic work contained extensive analysis without much theory behind it. In this context, (Fama, 1970) attempted to formalize the theory and organize the growing empirical evidence. Fama presented the efficient market theory in terms of a fair gone model, contending that investors can be confident that a current market price fully reflects all available information about a security and the expected price based upon this price is consistent with its risk. He goes one step forward and stated that it would be impossible for a trading system based on current information to have excess returns consistently. The recent sub-prime crises and earlier South Asian crises obviously resulted in considerable drop in all major stock markets. Most of the stock markets negatively reacted to these crises but they are in itself not very extraordinary. However, what was remarkable were the extreme fluctuations that occur in stock market irrespective of the fact that markets are believed to be efficient. How could these drastic fluctuations occur? Fundamentals can only explain this question to a certain extent. Evidently there is some other force with enough penetrating power to turn the financial world upside down. In this context, review of the earlier studies by Benesh & Peterson (1986), Bernerd & Thomas (1989), and Baruch (1989) contended that the reason for the stock price drift was the earnings revision that followed the earnings surprises and contributed to the positive correlation of stock prices. Similarly Branch (1977) and Branch & Chang (1985) proposed a unique trading rule for those interested in taking advantage of tax selling towards end of the year to establish losses as stocks that have declined. After the new year, the tendency is to reacquire these stocks or to buy other stocks that look attractive. This scenario produces downward pressure on stock prices at the end of financial year and positive at the beginning of financial year. Such a seasonal pattern is inconsistent with the EMH since it is eliminated by arbitragers, who buy at the end of the year and sell at the beginning of the year. Thus, traditional finance theory plays a limited role in understanding issues such as:

- Why do individual investors trade?
- How do they perform?
- How do they choose their portfolios? and
- Why do returns vary across for reasons other than risk?

During 1980s, the basic assumptions of the standard finance theory were questioned and it was observed that investors rarely behave within the premises of assumptions made in traditional finance theory and as such over last two decades behavioural researchers stated that finance theory should consider observed human behavior in order to analyse changes in the financial markets and the impact of various human biases on the decision making behaviours of the agents of this environment. All this has resulted into new branch of finance namely Behavioural Finance, which mainly studies the psychology of financial decision making. In recent times,, neuro-finance‟ has become the attraction of behavioural finance researches. The failures of various stock markets world over and perception of economists and consequently the theories they swear by on various occasions has put forward the questions: are people really rational? or, are they swayed by bouts of emotions like fear, confirmation and greed, which could lead to bad decisions? Evidence reveal pattern of irrationality, inconsistency and incompetence in the ways investors arrive at decisions and choices when faced with uncertainty Bernstein, 1998. Thus assumption of EMH that investors take rational and unbiased decisions has been drubbed by psychologists for a long before Nofsinger (2001). The theoretical and experimental work of two famous psychologists Daniel Kahneman and Amos Tversky made some remarkable contributions to psychology literature that served as a foundation and gave rise to this new paradigm. Thus this new branch of financial economics was added in 1980s and then became part of standard finance theories during 1990s.

Behavioural finance is based on the notion of “Bounded Rationality” (Uzar & Akkaya, 2013). The term “Bounded Rationality” is used to designate rational choice that takes into account the cognitive limitations of the decision maker, limitations of both knowledge and computational capacity. Thus the limitations of human beings, in making rational choices, that are the result of basic human nature like emotions, limited mental capacity, limited knowledge etc. act as boundaries of rational thinking and make humans bounded rational rather than full rational entities. Bounded Rationality is the central theme in the behavioural approaches to economics, which is deeply concerned with the ways in which the actual decision making process influence, the decisions that are reached Tseng (2006). It is behavioural finance that tends to explain such anomalies in the traditional finance which cannot be explained by classical financial theories. Behavioural finance considers how various psychological traits affect the ways that individuals or groups act as investors, analysts, and portfolio managers. Investors are “rational” in standard finance but they are “normal” in behavioural finance. Rational people are about utilization features but not value expensive ones, are never confused by cognitive errors, have perfect self-control, are always averse to risk, and are never averse to regret. Normal people do not obediently follow that pattern. Thaler in his paper “Towards a Positive Theory of Consumer Choice” argued that the orthodox economic model of consumer behavior is, in essence, a model of Robert-like experts and no human psychology/biases play any role in financial decision making (Thaler, 1980). The traditional finance researchers see financial settings populated not by the error prone and emotional “Homo Sapiens”, but by the awesome “Homo Economicus”. Behaviorists in finance seek to replace Homo Economicus with a more realistic model of the financial actor (Bloomfield, 2010). After all the market performance is determined by people and they cannot always be considered rational in all their investment decisions, especially during times of financial distress because one has to analyse how investors process information to reach decisions and preference regarding investments (Shefrin, 2000).

Under the behavioural finance it is argued that if the assumption of full rationality was relaxed, various financial phenomenon would be better understandable. Subsequently different models came into being. Some of the models assume that investor only fail to update their beliefs promptly, while other consider scenarios where they were updating their beliefs rationally, but making narratively questionable choices. The behavioural finance does try to prove any of the traditional theories obsolete but essentially tries to achieve the ways to supplement the traditional finance theories by merging it with human psychology, so as to determine complete model of human behavior in the process of investment decision making (Thaler, 2005), as such traditional finance stays at the heart of behavioural finance (Uzar & Akkaya, 2013). Thus to identify the origin of behavioural finance and the factors that lead to criticism to age old assumption of rationality of traditional finance is a multi-dollar question to answer.

2. OBJECTIVES

The study aims at to achieve the following objectives:

- To review available literature on the subject
- To figure out a unified theory of behavioural finance that will help in identifying portfolio anomalies of traditional finance theory.

3. REVIEW OF LITERATURE

The proposition that has dominated finance for over 30 years is Efficient Market Hypothesis (EMH). EMH is based on three basic theoretical arguments: firstly, investors are rational and thus they value securities rationally; second, people consider all the available information before making investment decisions; and lastly, decision makers always pursues self-interest. However, it has been noticed that investors are exposed to a range of decision making biases that negatively affect their investment performances. Investors in the stock market are inclined towards behavioural biases, which make them to commit cognitive errors. While trading in liquid assets one needs to be aware of the ideas such as market sentiments, resistance, support etc. (Dehnad, 2011). Under difficult and risky situations investors make predictable, non-optimal choices because of heuristic simplifications. Thus, behavioural biases abstractly are defined in the same way as systematic errors are in judgment (Chen et al, 2004). Advocates of behavioural finance have been able to explain a number of these biases as psychological characteristics and these behavioural traits have a significant relation with the decision making process of the investors (Shahzad et.al. 2013). The investors, who are not literate enough to do the detailed financial analysis base their decisions on various heuristics like fear, affect heuristics and anger. Fear helps investors in taking precaution in financial decision making process, while affect heurists and anger have negative impact on the decision making process of the investors (Hassan et. al., 2013). Throughout the past five decades researchers have distinguished specific biases in their studies and behavioural finance research relies on a broad collection of evidence pointing to the ineffectiveness of human decision making in various economic decision circumstances (Pompian, 2006). Some researchers refer to biases as heuristics (Brabazon, 2000; Parikh, 2011) while classifying biases along cognitive or emotional lines (Shane, 2005; Kristensen and Garling, 1997; Montier, 2002). However, experts of behavioural finance believe that investors are more affected by cognitive errors than behavioural biases (Jureviciene & Jermakova, 2012). Proponents of behavioural finance have argued that investors make seemingly irrational or illogical decisions when they spend, invest and mostly these investment decisions are based on hunches or emotions (Sewell, 2007; Shefrin, 2000; Belsky and Gilovich, 1999; Fama, 1998). Herbert (1979) has proposed much earlier that decision makers should be viewed as “Boundedly Rational”, rather than rational, and has offered a model in which utility maximization was replaced by satisfaction; however, Gustavo (2010) argued that consensus as there appears to be around bounded rationality is only very superficial.

While the expected utility theory implies that people depart from risk neutrality only when facing prospects that might have a major effect in lifetime wealth, which is not true. Loss Aversion, i.e. tendency to feel the pain of a loss more acutely than the pleasure of an equal gain, and mental accounting i.e. the tendency to isolate each risky choice, must be the key components of a good descriptive theory of risk attitudes. Economists should realize that now expected utility theory is an ex-hypothesis, and should concentrate on developing better descriptive model of choice under uncertainty (Rabin & Thaler, 2001). Mostly investors are risk averse and prefer investment in assets that are safe, familiar and offer security of capital (Srivastava, 2012). Huberman (2001) revealed that people invest in the securities that they are familiar with though it goes against the advices of portfolio theory and this is termed as home country bias. Loss aversion provides complete account for risk aversion for risks with equal probability to win or lose (Novemsky & Kahneman, 2005). Nothing can be said about the normative status of loss aversion or of other reference effects but there is a principled way of examining the normative status of these effects in particular cases (Tversky & Kahneman, 1991). However, the boundaries of loss aversion can be explained through emotional attachment and cognitive prospective (Ariely et al, 2005).

The standard finance theory argues buying and selling of a security should have been outcome of various relevant but significant factors other than the purchase price of the security itself, however, research has shown that investors base their buying- selling decisions on their sale prices and sales price acts as a reference for their decision. This effect is known as „disposition effect‟ (Kaneko, 2004). Even when the paste price trends are not known and people are told that price changes are independent, investors want to know past trends and these past trends act as reference points and this effect is known as „reference point effect‟ (Weber & Camerer, 1998). Although the disposition effect may affect market prices, its economic significance is likely to be greatest for individual investors. Individual investors prefer to sell winners and hold losers, except when tax motivated selling prevails (Odean, 1998).

Male and female investors significantly differ in disposition effect (Lin, 2011). Economists believe that only incremental costs should influence investment decisions and the past investment i.e. sunk costs should have no effect on the present investment decisions but research has revealed that people hold investments which otherwise they would have ignored because they have incurred sunk costs in these investments (Arkes & Blumer, 1985). People feel a sense of belonging to the project/ asset in which they have incurred a sunk cost and this may also be explained via endowment effect. Endowment effect and loss aversion are the fundamental characteristics of references (Kahneman et. al., 1990).

In the situations of decision making under uncertainty under standard finance investors‟ decisions are assumed to follow the rules of probability. But in violation to Bayes‟ rule, most people over-react to unexpected and dramatic news events (Bondt & Thaler, 1985). The winner-loser effect cannot be attributed to changes in the risk as measured by CAPM beta. The earnings of the winning and losing firms show reversal patterns that are consistent with overreaction (Bondt & Thaler, 1987). The overreaction anomaly can be explained by behavioural finance theory (Reedman, 2005).

People have erroneous intuitions about the law of chance. In particular they regard a sample randomly drawn from a population as highly representative (Kahneman and Tversky, 1971) and “representativeness” plays a key role in intuitive predictions made by investors (Kahneman and Tversky 1972, 1973). The three heuristics and biases i.e., "representativeness”, “availability”, and “anchoring” as used by the investors in various decision situations leads to improve their judgment in situations of uncertainty. The choice of investors is also affected by the "framing effect", which refers to the way in which the same problem is explained in different ways and presented to decision makers and effect helps one to study how axioms of rational choice does not hold (Tversky and Kahneman, 1981). Framing also results in the violation of the rule of dominance. The role of transparency and the significance of framing are consistent with the concept of bounded rationality (Tversky & Kahneman, 1986). The investors place much more weight on the outcomes that are perceived more certain than those that are considered mere probable, a feature known as the "certainty effect" (Kahneman and Tversky,1979). Another tendency among people was recognized that they segregate their money into different accounts based on varying criterions and treat these accounts differently, leading to another behavioural bias known as "Mental Accounting" (Thaler, 2008). Investors along with many other biases were seen exposed to this bias as well (Jureviciene & Jermakova, 2012). Thaler made a remark in National Bureau of Economic Research (NBER) conference to traditionalist Robert Barro and said "The difference between us is that you assume people are as smart as you are, while as I assume people are as dumb as I am". This statement beautifully illustrated how modest differences in traditional and behavioural viewpoints can be amplified by framing and presentation e Normal consumers, unlike experts, do not spend whole of the time in thinking about the decisions they have to make. They simple follow some simple rules to arrive at decisions, rather than going into some experts‟ complex models and details (Thaler, 1980). Thaler (1999), in an article "The End of Behavioural Finance," predicted that in the not-too-distant future, the term behavioural finance will be correctly viewed as a redundant phase. What other kind of finance is there? In their enlightenment, economists will routinely incorporate as much „behavior‟ into their models as they observe in the real world. After all, to do otherwise would be irrational"

Often investors hold on to losers too long and sell winners too soon. Apparently, investors fear losses much more than they value gains. This is explained by "prospect theory", which contends that utility depends on deviation from moving reference points rather than absolute wealth (Kahneman and Tversky, 1979). Another bias documented by Solt and Statman (1989) for growth companies is over confidence in forecasts, which causes analysts to overestimate growth rates for growth companies and over emphasize good news and ignore negative news for these firms. Investors generally think they are smarter and have better information than they actually do (Pompian, 2006; Shefrin, 2000). Investors are positive about the likely performance of the shares that they own rather than the ones they don‟t own (Hassan et al, 2013). Investors exhibit behavioural biases and make poor trading decisions, while as experienced investors make more trading mistakes (Chen et al, 2004). A common trait among investors is a general over confidence of their ability when it comes to pricing stocks and to decide when to enter or exit a market. These tendencies were researched by Odean (1998) and he manifests that traders who conduct trades were average and had under performance compared to market. Further, psychologists have determined that over confidence causes people to overestimate their knowledge, under estimate risks and exaggerate their ability to control events. Studies reveal gender has an impact on overconfidence and generally men are more overconfident compared to females (Bondt, 1998 & Lin, 2011). This type of behavior exhibits the highest level of over confidence (Nofsinger, 2001). Sometimes investors disregard the reason that stocks evident drop, the anchored higher price is mentally considered its "rightful" price. The stock is therefore believed to bounce back over a certain time period (Phung, 2008; Fagerstrom, 2008).

An investor generally feels that the stocks of growth companies will be good stocks. This bias is referred to as „confirmation bias", whereby investors look for information that supports their prior opinions and decisions. As a result, investors place incorrect value for the stocks of generally popular companies. Similarly some investors have tendency to think that one would have known actual events prior to the time when they actually unfold, had one be present then or had he paid serious attention, referred to "Hindsight Bias" (Shiller, 2000; Hertwig et al, 1997).

In this context, Monti and Legrenzi (2009) investigated that relationship between investment decision making and hindsight bias and concluded that there is a strong evidence for the consequences that hindsight bias has affected the investor‟s portfolio decisions, portfolio allocation and risk exposure. Sometimes an investor operates in stock market under the perception that errors in random events are self-correcting and present trend will reverse automatically, is generally referred to as "Gamblers Fallacy Bias" (Kahneman and Tversky, 1971; Shefrin, 2000). Gambler‟s Fallacy is believed to be a product of "Representativeness" and analysts are prone to exhibit Gambler‟s Fallacy (Shefrin, 2007).

A study by Brown (1999) explained the effect of noise traders on the volatility of closed- end mutual funds. When there is a shift in sentiments, these traders move together which increases the crisis and the volatility of the securities during trading hours. The noise traders normally tend to follow newsletter writers, who in turn tend to follow the herd. The researchers have stated that the herd are always wrong and actually contribute to excess volatility (Economo et al, 2010; Welch, 2000). Investors apply to herd behavior because they are concerned of what others think of their investment decisions (Scharfstein and Stein, 1990) and it been seen that gender has a remarkable effect on herding (Lin, 2011). Banerjee (1992) made an attempt to develop a simple model wherein he studied the rationale behind this kind of deficiency is that firstly, the realities within the model are assumed ones and secondly, the decision makers under this model are classified under two categories only. The role played by these assumptions in reaching the equilibrium was further analysed by Morone (2008) and he argued that the assumption „whenever a decision maker has no signal and everyone else has chosen zero, he/she will always choose zero‟ was replaced by the assumption „whenever a decision maker has no signal and everyone else has chosen zero, he/she will always choose randomly among all possible actions‟ and it was concluded that breaking herd behavior is possible. Chandra (2008) explained the impact of behavioural factors and investors".

Psychology on their decision making and examined the relationship between investors‟ attitude towards risk and behavioural decision making. The findings of the study reveals that unlike the classical finance theory, the investors do not always make rational investment decisions. They are influenced by behavioural factors like greed and fear, cognitive dissonance, heuristics, mental accounting and anchoring. Many experienced retail brokers believe that investors use various decision criteria while choosing stocks. Contemporary concerns such as international operations, environmental track record and the firms‟ ethical posture are given only cursory consideration by experienced stock investors, although some mutual funds specializing in such stocks have been successful in attracting investors (Nagy & Obenberger, 1994). Standard finance cannot explain the behavior of investors and in order to understand this behavior we need both standard finance as well as behavioural finance (Sadeghnia et al, 2013). Statman (1995) in his paper "Behavioural finance versus Standard finance" argued "Standard finance is indeed so weighted down with anomalies that it makes much sense to continue the reconstruction of financial theory on behavioural lines". Realities put forward by the prospect theory and regret aversion theory while heuristics also seem to play their role in decision making process of the investors (Ahmed et al, 2011). While standard finance theory assumes rationality of investors, behavioural finance theory assumes their „bounded rationality‟ and investors being humans cannot be assumed as „complete rational‟ (Uzar & Akkaya, 2013). Shefrin (2001) describes escalation bias, which causes investors to put more money into a failure that they feel responsible for rather than into a success. This leads to the relatively popular investor‟s practice of averaging down on an investment that has declined in value since the initial purchase rather than consider selling the stock if it was a mistake

Researches reveal arguments in favour of both the theories. None of the theories can be considered absolute inoperative. Behavioural finance acts as a supplement, and not as a replacement, in order to explain those phenomena that cannot be explained by the classical finance theory (Birau, 2012 & Singh, 2012). Theories of behavioural finance that are built on the models of standard finance can help the investors to understand their own behavior and thus help them to improve upon their decision making process (Sewell, 2007 and Kannadhasan, 2006). Opiela (2005) found that behavioural understanding of decision making process not only help the individual investors but also investment planners who can understand their own behavioural biases and also the biases their clients are prone to while taking investment decisions. Thus helping themselves and the clients to overcome these biases, as there is possibility to overcome these biases by following simple expert suggestions. Individual traits can influence ones‟ behavior and hence influence their financial decisions (Kiyilar & Acar, 2009).

In order to provide a room for the limitation of the standard finance model, behavioural finance has added a few assumptions about the cognitive limitations to the basic models of standard finance (Kahneman, 2003). Adaptive market hypothesis can better explain the market behavior as compared to EMH (Tseng, 2006). Behavioural finance cannot be considered as a separate discipline but instead a part of main stream finances (Ritter, 2003). The efficient model theory has failed to such an extent that it would be impossible to attribute this failure to as data error, price index error or change in tax laws (Shiller, 1981). This philosophy is so strong that we need to redefine and readjust our legal fundamentals to the new insights of behavioural finance (Spindler, 2011).

4. CONCLUSION

Up to 1970s when the focus was on the study of the environment, the agents of the environment were set under some basic assumptions of standard finance theory. These assumptions were unrealistic and hence lead to erroneous conclusions. So during 1980s when these assumptions were questioned the agents of the decision making process and environment, i.e. the people became the subject matter of the study. This gave rise to a different branch of finance called behavioural finance, wherein analysis is made about the role of psychological biases in decision making.

This branch tried to relax the assumptions of standard finance theory and build the improved models of decision making process. From the analysis of the review of literature it can be deduced that currently there is no unified theory of behavioural finance but the emphasis has been on identifying portfolio anomalies that can be explained by various psychological traits in individuals or groups when it is possible to develop highly lucrative portfolio by exploiting the behavioural bias and to recognize that rational behavior and profit maximization is not complete since it does not consider individual behavioural traits/biases of investors, analysts or portfolio managers. Further, behavioural finance only acts as a supplement and not as a replacement to standard finance theory because it explains those phenomena that cannot be explained by the traditional finance theory. Theories of behavioural finance that are built on the models of standard finance can help the investors to understand their own behavior and thus help them to improve upon their decision making process keeping in view the models of traditional finance theories.

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Human Resource Predictive Analytics (HRPA) A Tool for Growth Centric Organization

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Abstract: *Human resource predictive analytics is an evolving application field of analytics for HRM purposes. The purpose of HRM is measuring employee performance and engagement, studying workforce collaboration patterns, analyzing employee churn and turnover and modelling employee lifetime value. The motive of applying HRPA is to optimize performances and produce better return on investment for organizations through decision making based on data collection, HR metrics and predictive models. The paper is divided into three sections to understand the emergence of HR predictive analytics for HRM. Firstly, the paper introduces the concept of HRPA. Secondly, the paper discusses three aspects of HRPA: (a) Need (b) Approach & Application (c) Impact. Lastly, the paper leads to the conclusion on HRPA.*

Keywords: *Predictive Analytics, Talent Analytics, HR Analytics, Human Resource Management, Modelling, Return on Investment (ROI), Decision Making.*

1. INTRODUCTION

HR analytics is a multidisciplinary approach to integrate methodology for improving the quality of people-related decisions in order to improve individual and organizational performance. There are interchangeable terms used for HR analytics are talent analytics, people analytics, and workforce analytics. HR analytics plays a role in every aspect of the HR function, including recruiting, training and development, succession planning, retention, engagement, compensation, and benefits. HR analytics are those that involve "high-end" predictive modelling where what-if scenarios forecast the consequences of changing policies or conditions. Traditional HR analytics focuses on the present, that is, items such as turnover and cost per hire. But most organizations lacked a consistent and general view of the workforce and thus needed HR analytics to perform workforce optimization and hence it became important for HR to develop IT and finance analytical skills and capabilities to produce better Return on Investment (ROI). [1], [2], [3]

Further advancement of technologies when combined with predictive analytics exponentially enhanced HR purposes in last decade. HRPA generates insights that cannot be achieved through traditional benchmarking as HR analytics is reactive and an evidence-based decision system whereas HRPA is proactive and fact-based decision system. [4]

Three significant changes that have really created a hunger for predictive analytics in HR and these are: [5]

1. Major boost in computing power and its affordability

2. HR big data digitally accessible via cloud storage for processing

3. Global talent war to protect and pursue talent streams.

Predictive analytics is unlike descriptive analysis which considers external benchmarking data and involves tables, reports, ratios, metrics, dashboards or complex maths; it is about data-derived insights that drive better decisions. It includes statistical techniques, machine learning methods, and data mining models that analyse and extract existing and historical facts to make predictions. It enables organizations to analyse the past and look forward to spot trends in key factors related to voluntary termination, absences and other sources of risk.

Predictive analytics involves models of organizational systems for prediction of future outcomes and realize the significances of hypothetical changes in organizations. Predictive analytics have led to prescriptive analytics where HR gets decision options to optimize performance and reshape entire HRM decision making. [6]

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Being an evolving phenomenon HRPA has much scope for HR purposes in future. Predictive analytics might be unexplored zone for HR, therefore to fully realize its profits; HR personnel need to team up with other business units and customer-facing functions to understand how they pull data and analytics to create value. [7] HRPA faces constraints of training and resistant to adapt from HR Personnel for e.g. a score of an employee engagement survey may mean different things to different lines of business, and regions around the world, depending on business purposes, economic actualities and workforce size. Collin says,

[8] HRPA is an art and a critical skill to bring out the business insights of data analysis. There are opportunities for HRPA in HRM to expand due to necessary boost provided to enhance HR functions, to better business outcomes and to improve ROI. TimesJobs.Com COO Vivek Madhukar indicated to the fact that the ability to move from gut-based judgments to data-driven decision-making is making HRPA the future of HRM in India. Over 55 per cent of organizations feel that HRPA predictions help to secure quality hires. [9]

2. ASPECTS OF HRPA

- **Need**

Organizations make sure the right people are in the right place at the right time by means of analytics. [10] To remain commercially relevant HRM needs to provide senior executives with a predictive analytics based justification for important talent related decisions. No organization is identical in terms of workforce, talent, environment, strategies, and market type. And hence one successful but fixed model cannot be applied to any function of HR. Only past data of the particular organization or its identical culture have ability to provide right decision for HRM. Thus HRPA becomes essential for industries which desire for bringing unique decision policies. The HR requires skills of technology and management both where technology is not limited to analytics. HR should be able to create insights into data and produce predictive models that optimize the organizational performance. Advent of advance machine learning programs and HR expert systems [11] has eased to achieve organizational objectives of human capital management (HCM), workforce planning, employee management, and performance management etc.

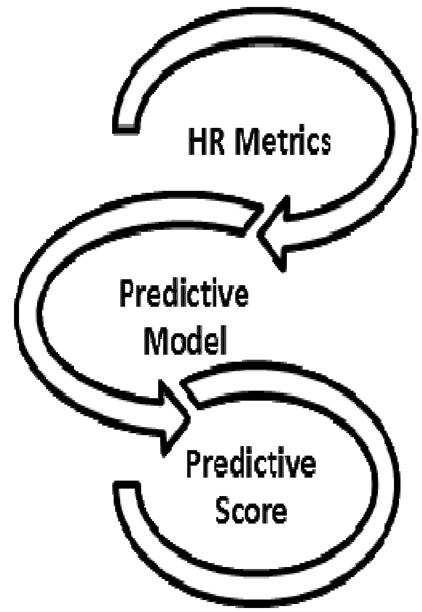

Fig. 1. HRPA Approach for Decision Making

- **Approach & Application**

HR metrics are clearly defined to assess and collect essential data and then predictive models are built for each HR function which is needed to produce insights from historical data for future decision making in HRPA. [12]

HR Metrics:

The organizations use metric values to scale HR functions in terms of recruitment time, attrition level, employee turnover, and probability of success. Having concrete metrics is crucial to exhibit senior leaders and executives how strategic HR initiatives can help affect an organization's bottom line. There are 13 famous HR metrics [13] as follows;

1. Monthly turnover rate
2. Revenue per Employee
3. Yield Ratio
4. Human capital cost
5. HR to staff ratio
6. Return on investment

i Promotion rate

ii. Percentage female at management level

iii. Employee absent rate

iv. Worker's compensation cost per employee

v. Worker's compensation incident rate

vi. Overtime per individual contributor headcount

vii. Average employee age.

- **Predictive Modelling**

Predictive model combines analytical algorithms and provide results in form of a value or probability scores based on which decisions are taken. HCM: 21 Model [14] is one such predictive model proposed for HRM strategies inspired from Dr. Jac Fitz-Enz which states four stages of HRM, 1.Scan 2.Plan 3.Produce 4.Predict and HRPA applies the same.

Predictive modelling [4], [15], [16] is applied on HR functions for decision making in various field of HRM as follows;

viii. Turnover Modelling: Predicts future turnover of business in specific functions, business units, geographies and countries by looking at factors such as commute time, time since last role change, and performance over time. Thus this can scale hiring efforts accordingly, reducing empty desk time and panic hiring, which can lead to lower cost, higher quality hiring.

ix. Response Modelling: Use old advertising jobs data from previous campaigns to avoid contacting Candidates or using channels that don't yield a response and focus on those channels that do work.

xi. Predictive Retention Modelling: Identify high-risk employees, build profiles, predict vacancies and leadership needs, and understand how risk is distributed throughout the organization.

xi. Risk Modelling: Develop a profile of candidates with a higher risk of leaving prematurely or performing below standard.

xii. Talent Forecasting: Being able to predict which new hires, based on their profile, and are likely to be high fliers and then moving them in to your high potential programs.

- **Impact**

Vestas [17], a US wind turbine maker, changed recruitment and retaining policies after HRPA suggested women employees performs 5% better than men. Gallup, a global consulting company, in their recent survey found that employee engagement can help companies survive, and possibly even succeed, in tough economic times. It promotes that companies with high engagement have a 20% boost in efficiency and effectiveness. Cisco [18] used IBM SPSS analytics tool to transform the relationship between its HR analysts and its executive leaders. It predicted and prevented attrition level.

3. CONCLUSION

It is evident that industries cannot survive in the long run if they do not possess predictive analytics skills from the human resource management. The usefulness of predictive analytics is wider and hence application in all related areas of HRM is essential. HRPA helps organizations contain HR-related costs while optimizing business performance as well as employee engagement and satisfaction. HRPA is rapidly changing and growing technology which has potential to achieve 100% accuracy in decision making for HR. Till 2020, HRPA will fully take over traditional analytics in organizations.

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