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FROM THE DIRECTOR

The Year 2017 has been a watershed year for revolutions related to financial technology. While crypto-currencies took away most of the limelight for financial technology-related innovations, most digital currencies still are a "buyer's beware".

With data becoming the digital currency of the day and people being the key to digital success, the only investment that can become an increasingly valuable commodity among companies and endure the test of time, and become is data! And hence an investment in analytics and IoT makes perfect business sense.

Digitization has led to an explosion of new data, and the use of technology in solutions for data management, protection, analysis and delivery has become invaluable. Companies that invest in Business Intelligence often find a range of substantial benefits from brand valuation and recognition to strengthening their product and service mixes to improving customer metrics and ultimately affecting their bottom-line.

A new wave of AI based disruption is expected to begin; techniques where one AI application is used to improve the performance of another shall be evident through methods including Generative Adversarial Networks (GANs) which shall be deployed to enhance production AI systems. These technological alignments would used to evolution of synergistic solutions. There would be technologies including blockchain that shall find their application in broader usage areas, beyond financial transactions to ensure secure and undeniable transactions. IoT is going to see its embedment into B2B products at a pace faster than the consumer market can keep up. Evidence-based methodologies to set targets and design interventions that help employees achieve their full potential and deliver effectively would be what matters the most.

Digital skills that are actually important for the current workplace are going to see a change as there will be an increasing demand for candidates with the aptitude to co-create and adapt to change not to mention empathy and agility.

Some of the HR tools to support a broad-based enablement of new and digital skills shall include talent development, skill up gradation and cross-retraining. For example, an IT staff can pick up Native Bayes algorithm for classification and a manufacturing operations staff can learn dashboard and analytics.

To develop truly innovative offerings and remain relevant it is essential that businesses seek to indulge in meaningful co-creation partnerships as well ensure that technology goes hand in hand with the industry expertise because as technologies transmute the workplace, people are the ones who will accelerate its impact.

As businesses transform and strive to remain relevant, turning their digital vision into a practical reality will take more than just technology or best practices. Having the right people with the right mix of digital skills, attitudes and behaviour, can help shape an environment where digital projects can fail fast and fail forward thereby creating space for new innovations.

Dr. Ashok Gupta
Director

EDITOR'S NOTE

Conversations online have reached to a point wherein declarations of absolute inevitability and power are given more weightage than the audacity to admit that, in the whole structure of things, no one really knows much of anything. It looks more of a democratization of discourse which I believe need not always be good or rather it seems something that can be potentially good is being used in bad ways. Here the opinions are created equivalent—and the very notion that the online readers shall post immediate feedback and issue urgent pronouncements on these opinions builds a kind of picture that prompts a lot of people to speak out, with no one actually being expected to listen. It becomes harder to take anything in; as there's always something different, gaudier, more piercing, or even more offensive right around the corner. It becomes more of a prioritization of sentiments over facts. But it hasn't been always like this and social media definitely bears much of the blame.

The current issue of OORJA is a special one as it comes to its readers with its rich flavor of research findings and readings on topics as broad as "Millennial Mothers and factors affecting consumer decision Making in Indian Context by Dr. Swati Soni and Dr. Sheenu Jain to "Testing Reliability of Beta as an Indicator of The Volatility in Stock Prices" by Dr. ShaliniTalwar and Ms. Gunjan Pathak.

The paper on "Transforming India through Quality Elementary Education" by Dr. Bharti Sharma and Ms. Meenakshi Bordia gives an overview on the quality of young India vis a vis the elementary education system of the country. Ms. Shipra Goyal, and Dr. Shuchi Singhal in their paper on "Impact of Work Environment on Employee Satisfaction: An Empirical Study" have made an excellent attempt to measure the relationship between work environment and employee satisfaction. The paper on "Chemists' Perception Towards over The Counter Brand Medicine Marketing with Special Reference to Rajasthan" by Abhishek Dadhich presents to readers the impact of marketing mix factors on chemist perception and attitude.

Dr. Aruna Kaushik through her paper on "Venezuela: Descent of An Oil Rich State into Abyss" has made an able attempt to explore the major political and economic drivers that have led to the current crisis in Venezuela. The paper on "Air India: Comparative Study of Revenue Drivers in Indian Airlines" by Professor Harsh Dwivedi, Dr. Raghuvir Singh and Shivram Choudhary is an attempt to present the various parameters that contribute towards revenue in aviation sector with special reference to Air India. Shekhawat H. & Batra D in their paper on "Psychological Characteristics and Mobile Phone Addiction Among Adolescents" have tried to establish a correlation between overuse of mobile phones and the psychological aspects of young people.

The Book review on "Algorithms to Live By: The Computer Science of Human Decisions", by Brian Christian and Tom Griffiths presents a fascinating taste of ways the application of computer algorithms can help decipher decision making problems and illuminate the working of human mind.

The issue ends on a high note with the book review on the book "Reach: How to build confidence and step outside your comfort zone authored by Dr. Andy Molinsky.

We look forward to bring you an interesting and thought provoking reading in future as well.

Prof. Manju Nair
Editor-in-Chief

MILLENNIAL MOTHERS: A STUDY OF FACTORS AFFECTING CONSUMER DECISION MAKING IN AN INDIAN CONTEXT

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Abstract

Millennial mothers is an emerging segment of consumers in India-a segment which is substantially different from the earlier generation mothers. The study intends to investigate:

- Is there really a substantial difference between the millennial moms and the erstwhile moms in their demographic, psychographic and behavioral patterns?

- Do these differences actually impact consumer decision making and thus render millennial moms as a segment amenable to a differential marketing stimuli (Marketing Mix)?

- How do millennial mothers buy products for themselves and households?

Unit of study is millennial mothers and the research design is exploratory/descriptive. The measurement instrument employed is a questionnaire on Likert Scale. Data collected from 153 millennial mothers is analyzed using SPSS. Five categories of products have been included in the study-Baby Care, Gadgets, Grooming, Apparels and Groceries. The geographical scope of the study is Jaipur City, Rajasthan.

Barring a few countries, not much literature pre-exists on millennial mothers' decision making. The paper provides practical insights and thus enable marketers to pitch themselves better to this digitally connected segment of consumers and create better engagement for their products.

Keywords: Generation Y, Millennial Mothers, Social Media, Consumer Decision Making.

Introduction

Motherhood is a very challenging milestone in a woman's life. However, these challenges are very different for the mothers of today – the millennial moms. The word 'millennial' denotes the clear distinction of how the new age mothers are different from the older counterparts. It basically refers to the people born between the mid '80s and the late '90s – the mothers who grew up in the first decade of the new millennium. This distinction is important and is also studied because the people falling under the category are the ones who were introduced to the smart - technology, internet, ecommerce and social media while they were growing up. They discovered modern media as it was developing. Technology is a natural habitat for them. The millennial mothers grew up with the modern media and information technology and are very closely connected with them. They represent a segment that is unique, differentiable, substantial, and accessible and respond well to the marketing stimuli.

Mothers have always been one of the most lucrative demographic groups for the Indian marketers. They are the gateway to sales as they play a key role in the purchasing decisions in a household. The current cultural milieu is witnessing a sea change in the family roles coupled with the need for dual-income in households-this has made millennial mothers empowered decision makers in family purchase decisions. They represent a growing freight train of economic power. They do not just buy

for themselves; they buy for their entire family and across all categories.

Review of Literature

As part of the study it is important to understand and recognize what this 'coming of age' or millennial mother generation is all about and why they are chosen for the purpose of study and as unit of analysis. The available literature on millennial mothers categorizes them as the mothers who are born between 1980 and 2000, Geraci & Nagy (2004), Gurau (2012); Williams et al (2012), Tanyel et al (2013). Researchers have recognized millennial mothers as diverse group who has unique shopping habits, consumption habits, and varied and high online time spending behavior Tanyel et al (2013), Gurau (2012). Millennial mothers can be segmented primarily based on their life-stage Gurau (2012). Tanyel et al (2013) propose the millennial mothers are either stay at home mothers or working mothers who are working as salaried professional or self-employed. This paper primarily focuses on their changing habits, consumption of social media, and it is assumed that this generation mothers are truly digital natives Williams et al (2012).

Digital natives mothers today are more powerful, empowered, educated, and choice driven Williams et al (2012), which takes us to the notion that they are selective, and cautious in their decisions as they have plenty of information available for conformity and verification before making a decision. Earlier marketers were finding it difficult to reach out to this segment Geraci & Nagy (2004) which can also be attributed to diversity and inaccessibility to the segment. The research studies compares the consumer behaviour of two generational cohorts- the millennial moms and the non-millennial moms. The gaps in existing literature indicate towards the originality of the research.

Changing Psychographics and Behaviours

Technology and Social Media- A Way of Life

Earlier, the mothers could spend a lot of their time at home with their families. The information technology has evolved drastically. The social interaction was not as easy and boundary less as it is today. The mothers are not restricted to simple linear customer journeys anymore. Now they retweet, like and share about the products/services they probably used and choose to review online to tell about their experience to the other "mommy – friends". 'Digital Natives' is a better descriptor for the millennial mothers (Nelson, Erin 2012).

Millennial mothers are having connect on 3-4 social media platforms to keep their pace with the millennial generation. This review and share pattern has literally formed a community online that is based on trust. It plays a major influential role in the purchase decisions of many. This review pattern is not restricted merely to social media. The e-commerce websites offer a wide range of customer reviews and ratings based on their usage and experience. Not only that, the advent of   e-commerce has brought about a revolution in the purchasing style of every millennial mom. The degree of comfort, variety, comparison, time – efficiency – these websites have a great deal to offer over traditional buying. With the convenience of mobile apps, the millennial moms are constantly on their smart phones and practically in touch with the world around them. This makes them aware of the online opinions and brand favourability.

Changed Belief and Value System

Millennial mothers are found to be realistic and more pragmatic than their elder counterparts and have shattered stereotypical beliefs and ideologies. They are more matured and experienced

because of the fact that they are older than the previous first time mothers Buttons (2014). They have a different perspective over things and would make smarter decisions for their families. Instead of simply following an advertisement, they would rather choose to go for an in-depth exploration about any product/service before buying it. Hence it has become important for the marketers to understand every aspect of the modern mother decision making in order to be able to sell their products.

Increased Capacity to Spend

With changes in society towards gender equality and career driven women, family income is on the rise. According to Newton, Cara (2013) 71% of millennial mothers are working women and that has led to increased family income and capacity to spend as these working mothers and their families have deeper financial pocket.

Changing Lifestyles

With the changing scenario, the lifestyles of the Indian moms are changing. They cannot limit their roles as the caretakers or nurturers. Their role has evolved and has become more dynamic. While managing the house and family forms a greater part of their motherhood, their roles have now become multi – dimensional. They have their own professional lives, targets, stress and are on a constant quest for a work-life balance. This is also accompanied by keeping themselves healthy and fit, both physically and mentally. With their own set priorities, the millennial moms are more self-dependent and self-oriented. They hit the gyms and yoga centers, follow diet and zumba routines, update and maintain their social profiles and they do it all. The marketers need to creep into this lifestyle and engage the moms in a manner that leaves an impact on their buying decisions.

Millennial moms are also conscious about their food and are emerging as healthy eaters. According to Sprankles, Julie (2014) millennial moms have strong inclination towards a healthy life and organic food in their diet for themselves and their family. They propose, that higher the income levels, more the likelihood to shop in high end shopping stores for organic food for their families. Millennial mothers with limited capacity to spend are equally health conscious for themselves and their families, and take to healthy cooking back home.

Emergent Personality Traits

Literature suggests that millennial mothers are assumed to possess traits like high self-involvement, child-centric attitudes, family - centric attitudes, workplace aspirations and are high on self-esteem. Instant gratification is yet another personality trait. Personality is an important determinant of consumer behaviour and hence its impact on decision making process can never be undermined. Marketers need to unearth the personality traits in order to gain proximity of the millennial mothers. According to Krogstad, Jens Manual (2014) millennial moms are purchasing familiar brands online, primarily to connect to heritage and family value in this changing world.

Rise of Do-it-Yourself Moms

There is a rise in the millennial mothers Do-it-Yourself (DIY) segment. They believe in doing things on their own. According to Wang, Wendy and Taylor, Paul (2015) a vast majority of millennial mothers like to take DIY jobs to save money and time and also to show their creativity and this culture is blossoming and spreading fast and spreading across social media channels as well. These platforms give them opportunity to curate and show their creativity. Today advertisers are also creating brand awareness using interactive and visual tools, which keeps millennial mothers hooked to them

especially with home décor brands. Home and entertainment segment is a large spending choice for millennial mothers these days.

Receptive to Cause Marketing

Millennial mothers are more amenable to cause marketing, where they are inclined towards purchasing products of the brands who support big charitable causes. Millennial mothers are specially inclined towards charities for humanitarian reasons, support for children and of course charities for religious reasons.

Purpose of Study

Millennial mothers is an increasing and emerging segment of consumers, which is substantially different from the earlier generation mothers in their demographic, psychographic and behavioural make-up. The authors intend to address the following research questions:

- Is there really a substantial difference between the millennial moms and the erstwhile moms in their demographic, psychographic and behavioural patterns?

- Do these differences actually impact consumer decision making and thus render millennial moms as a segment amenable to a differential marketing stimuli (Marketing Mix)?

- How do millennial mothers buy products for themselves and households?

The answers to these questions shall help the marketers to pitch themselves better to this connected segment of consumers and create better engagement for their products and services.

Methodology

Authors have used a combination of qualitative and quantitative data collection approach to answer the research questions. Robust review of existing literature is employed to draw insights on the significant differences that exist between the new gen millennial moms and the erstwhile moms in their demographic, psychographic and behavioural constitution. These differences create a difference in the decision making process of the two generations of mothers and thus makes millennial mothers as a marketable segment to the marketers. The marketing mix to address the millennial mothers needs a change as they shall respond to a differential marketing stimuli which cannot be employed with the same efficiency on the erstwhile mothers.

More specifically the research focuses on five categories of products that have been included in the study-Baby Care, Gadgets, Grooming, Apparels and Groceries. The intent is to study consumer behaviour across these five categories. The five primary parameters used were price, quality, brand, durability, and cost. The categories are much in sync with the distinctive traits of the millennial mom-tech savviness, self-indulgence, family and child centricity.

The focus of this research is to understand perception and experiences of millennial mothers, so qualitative research method was used in consideration. Focus group discussion was conducted with a set of millennial mothers to understand and explore their perceptions towards brand and brand engagement and evaluate the same. Though it is not intended to generalize the findings as our sample size is limited and restricted to Jaipur city, but we have tried to maintain a level of homogeneity in our sample by choosing the respondents who share similar characteristics in terms of age, education level and active use of social media platforms. The sampling procedure employed was a judgement sample. We conducted 6 focus group interviews with 6 participants in each group

for the purpose of our study.

In order to discover and interpret millennial mother behavior and attitude towards chosen product categories, quantitative instrument of questionnaire on Likert scale was designed and administered to 153 randomly chosen millennial mothers of Jaipur city. Data thus obtained is analysed using SPSS.

Data Analysis

The demographic details of the sample of 153 respondents is depicted in **Table 1**

Table 1: Respondent Demographic Details

Particulars	Percentage	Frequency
Educational Qualification		
Under Graduate	2.6%	4
Graduate	46.4%	71
Post Graduate	42.5%	65
Others	8.5%	13
Occupation		
Business	32.7%	50
Salaried	41.2%	63
Housewife	26.1%	40
Personal Annual Income		
Less than 2 lacs	24.2%	37
2-5 lacs	24.8%	38
5-8 lacs	30.1%	46
8 -10 lacs	13.7%	21
Above 10 lacs	7.2%	11

Social Media Usage
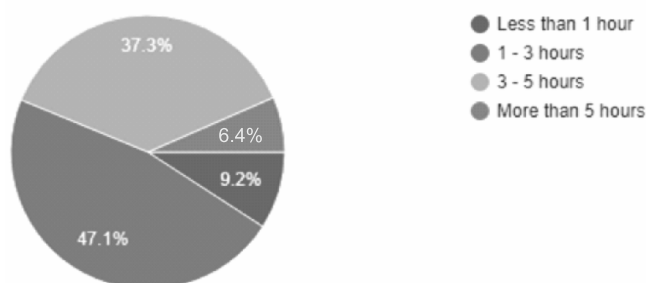
Figure 1: Social Media Usage of Respondents

The **Figure 1** suggests that 47.1 % of the millennial mother respondents use social media for 1-3 hours per day. They can be termed as 'moderate' users of social media. This segment is followed by a

segment of 37.3 % millennial mothers who are 'passionate' about social media and use it for 3-5 hours on an average. 6.4 % of the respondents are 'fanatic' about social media and devote more than five hours per day for the same.

Digital Behaviour of Millennial Mothers

Figure 2 suggests that the most ubiquitous use of digital media by millennial mothers is for shopping. Data suggests that 100 % of the millennial mothers use digital media for shopping. Also significant is the social media usage of these digital natives- to the extent of 84.3 % mothers visiting social media platforms. Interestingly, video streaming has also emerged to be an important trend amongst the millennial mothers.
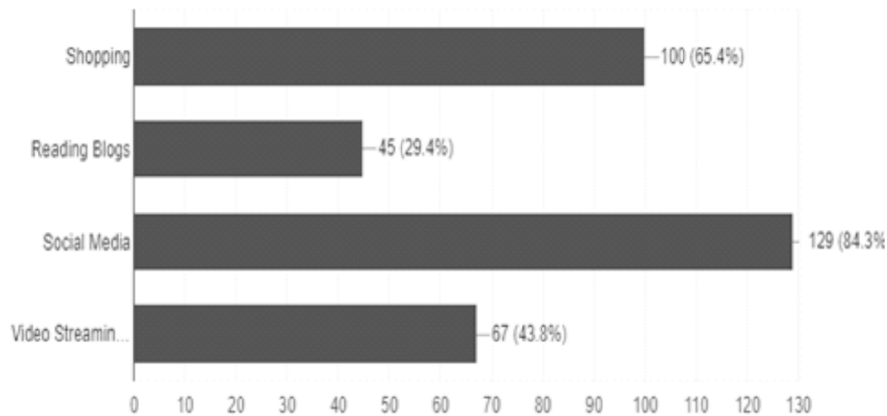
Figure 2: Purpose of Digital Platform Usage

Reasons for Being Online
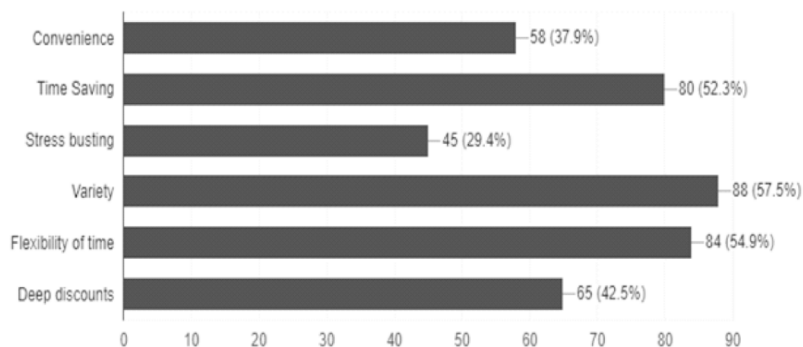
Figure 3: Reasons for Online Presence

Figure 3 shows that Variety, flexibility, and time saving have emerged to be the most important reasons for being online with 57.5 %, 54.9 % and 52.3 % of millennial mothers citing it respectively. Contrary to the expected belief, deep discounts is not a major motivator for millennial women resorting to online shopping. Despite the above data, focus group studies reveal that some of the

millennial mothers still feel that they miss bargaining on online shopping and many quoted that physical touch is something which they again miss on online shopping.

Online Experience Sharing
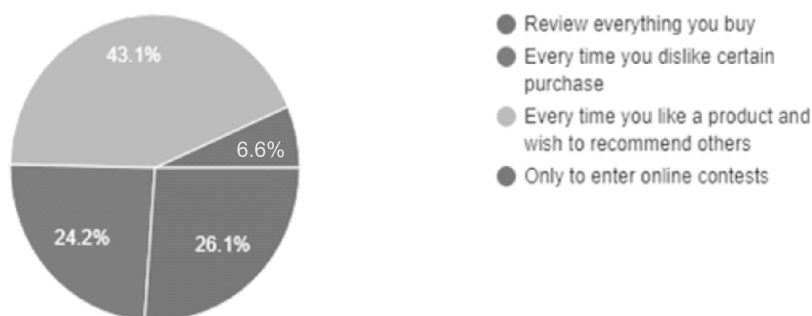
Figure 4: Data on Online Experience Sharing by Respondents

Data as depicted in Figure 4 suggests that 43.1 % of respondents tweet, retweet, share, recommend, like every time they buy and like a product. Also observed is a similar behavior of tweeting, retweeting, sharing, disliking and not recommending by 24.2 % respondents who dislike the product each time it fails to meet their expectations.

Findings and Recommendations

100 percent of the respondents shop online. This confirms that this is a lucratively marketable segment and thus a huge business opportunity for marketers.

The sample shows a very high inclination for sharing, tweeting and recommending online products that they buy to other women in their cohort. Similarly, there is an inclination for disliking and not recommending products that fail to meet their expectations. There is thus a word of caution for the marketers. This behavior is akin to an 'echo chamber' and all feedback is echoed back to the audience active on the platform.

The avid and fanatic shoppers have expressed reservations on not buying those products online where physical touch, feel, texture and fit are important. Thus, marketers need to foray into to the realm of augmented reality to overcome this constraint.

A huge percentage of respondents have indicated that they value a shopping experience and are variety seekers as in their consumption patterns. A superlative experience and magnanimous assortment is thus an important traffic builder to online platforms.

Conclusion

Millennial mothers are growing as an impactful segment. It is very much evident that they have grown in a digitally immersive world and have tremendous purchasing power, though they have a combination of traditionalist as well as progressive behavior. A change in their lifestyle, social media consumption behavior and emerging changing choices for family needs a marketer's attention in the design their marketing campaigns. Outcome of this research study is professionally very relevant to

marketers, as it contributes on the grey areas where they can look up, and fill the gaps. It is definitely a happy news for marketers that millennial mothers are responding to their campaigns and engaging effectively. Catching them first and catching them fast is the success mantra for the marketers!

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TESTING RELIABILITY OF BETA AS AN INDICATOR OF THE VOLATILITY IN STOCK PRICES

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Abstract

The purpose of this study is to investigate the reliability of beta as the predictor of volatility of stock prices for select stocks listed on NSE. The stocks identified for the study are Ambuja Cement, Ultratech Cement, L&T, Asian Paints, ITC, HUL, Cipla, Dr. Reddys Lab, HCL, Infosys, HDFC Bank, SBI, Hero Motors, Mahindra & Mahindra, and Tata Motors. These stocks represent 6 key sectors of the Indian Economy, namely, Pharma, FMCG, Construction, Banking & Financial Services, IT, and Automobile. The study has used monthly closing stock prices of the selected stocks for 48 months ending June 2016 to measure their beta. Further, daily data for the same stocks is taken for a 180 days period starting from June 01, 2016 to test the reliability of beta estimated through the 48 month data. Nifty 50 closing levels have been taken for the same data duration to represent the market for beta calculations. Secondary data extract from Yahoo Finance has been analyzed through regression analysis using MS Excel 2010.

No specific conclusion could be drawn based on the study. Beta was seen to hold for few stocks but for most it did not. No sector specific conclusions could be drawn based on the analysis undertaken in the current study as no such pattern emerged. Statistical analysis of the output reveals that beta calculated and used so freely by industry for portfolio optimization purpose may lack statistical validity in many cases.

Key words: Beta, Alpha, r-square, Multiple r, Regression, Standard Error, Nifty 50, Systematic Risk

Introduction

Stock market plays an important role in stimulating economic growth of a country. It helps to channel fund from individuals or firms without investment opportunities to firms who have them and thus improves the country's economic efficiency. However, stock market is a volatile financial market, in which various factors can affect the return that investors can gain from investing in stocks. The uncertainty of reward from stock market is translated into risks that investors have to bear for investing in stocks. Broadly, risks existing in the stock market can be categorized into unsystematic risk which is as a result of company specific factors and systematic risk which is a consequence of market related factors. Off the two broad types of risks, the unsystematic risk can be diversified away through diversification of portfolio and thus the capital markets do not reward investors for bearing this type of risk. Instead, the capital markets only reward investors for bearing systematic risk that cannot be eliminated through diversification. Systematic risk of any stock is measured in terms of beta of that stock. Beta of a stock is a measure of how the stock moves vis-à-vis the market, where movement of market is taken to be represented by some or the other index that represents the market. In India, S&P BSE SENSEX and CNX Nifty are the two key broad market indices that are used for beta calculations. As beta represents volatility of a stock, it is a measure of the uncertainty of stock return and understanding beta helps knowing the risk and return nexus in the stock market.

This is crucial for investors to maximize their return and minimize their risk, thereby ensuring the attractiveness of investing in stock markets.

The current study investigates the reliability of beta as an indicator of the volatility of select companies in India, using Nifty 50 as the index representing the market. The stocks identified for the study are Ambuja Cements, Ultratech Cement, L&T, Asian Paints, ITC, HUL, Cipla, Dr. Reddys Lab, HCL, Infosys, HDFC Bank, SBI, Hero Motors, Mahindra & Mahindra, and Tata Motors. The selected stocks represent 6 key sectors of the Indian Economy, namely, Pharma, FMCG, Construction, Banking & Financial Services, IT, and Automobile.

No specific conclusion could be drawn based on the study. Beta was seen to hold for few stocks but for most it did not. No sector specific conclusions could be drawn based on the analysis undertaken in the current study as no such pattern emerged. Statistical analysis of the output reveals that beta calculated and used so freely by industry for portfolio optimization purpose may lack statistical validity in many cases.

Literature Review

Volatility in stock market is the main reason for the difference between expected and actual return of any stock. This volatility of stocks is attributed to a variety of factors. Study of volatility of stocks, be it its causes, measurement or forecasting, has been a key topic of focus for researchers interested in financial markets. There are many studies that have analyzed different aspects of volatility and beta in the context of stock prices individually and markets as a whole. A study by Khandaker and Islam (2015) found empirical evidence that certain emerging economies exhibited higher levels of stock return volatility and co-movement behavior during the study period (2001-2012) than the developed economies. In their study of Dubai Financial Market, Alsharairi and Abubaker (2016) found that the effect of Arab Spring on volatility of this market was limited to just two indices namely, the Telecommunications and Transportation indices.

In their study on the dynamics in realized betas, vis-à-vis the dynamics in the underlying realized market variance and individual equity covariances with the market, Andersen et al. (2004) found that realized variances and covariances were well approximated as fractionally integrated, realized betas.

Novak (2015) showed in his study that using forward-looking beta and modifying assumptions about expected market returns made beta highly significant to realized stock returns. The study confirmed that the relationship between beta estimated ex-post and realized stock returns is flat (or even slightly negative in the case of the sample used for this study), and also showed that when beta is estimated ex-ante it becomes positive and significant.

Taher and Khokan (2010) examined capital asset pricing model (CAPM) beta in Dhaka Stock Exchange and found that beta instability increased with number of holding periods. The study revealed existence of inter-period as well as intra-period beta instability and the fact that a small emerging capital market like Dhaka had the same extent of beta instability as that in any developed market.

Verma (2011) studied the forecasting power of the conditional relationship between beta and international stock returns and found the relationship between current period beta and future stock returns to be insignificant.

Das and Barai (2015) attempted to empirically estimate industry beta in Indian stock market and compare the accuracy of alternative models used for the study. The study confirmed the existence of dynamic beta in Indian market and revealed that Kalman Filter had lower forecasting errors than the rolling regression model.

These studies and their findings reinforce the need to investigate beta and volatility further in context of different markets and different stocks belonging to different sectors.

The current study attempts to investigate the reliability of beta in the context of fifteen stocks listed on National Stock Exchange in India.

Research Methodology

The purpose of this study is to investigate the reliability of beta as the predictor of volatility of stock prices in the future. To achieve the objective of the study, stocks having liquidity, appreciable volume of trading, high market capitalization, and representing key sectors of economic activity have been identified. The stocks used for the study are Ambuja Cements, Ultratech Cement, L&T, Asian Paints, ITC, HUL, Cipla, Dr. Reddys Lab, HCL, Infosys, HDFC Bank, SBI, Hero Motors, Mahindra & Mahindra, and Tata Motors. The selected stocks represent 6 key sectors of the Indian Economy, namely, Pharma, FMCG, Construction, Banking & Financial Services, IT, and Automobile. The study has used monthly closing stock prices of the selected stocks for 48 months ending in June 2016 to measure beta of these stocks. Further, daily data for the same stocks is taken for a 180 days period starting from June 01, 2016 to test the reliability of beta estimated through the 48 month data. Nifty 50 closing levels have been taken for the same data duration to represent the market for beta calculations.

Secondary data extract from Yahoo Finance has been analyzed through regression analysis using MS Excel 2010. The closing price levels have first been converted to returns using natural log, as given below.

Ret(stock) = ln(Current Closing Level/Previous Closing Level)*100

Each selected stock's monthly returns for the 48 month period ending in June 2016 are regressed to Nifty 50's return for the same period to compute the historical beta of each stock. Thereafter, stock prices of the same stocks are observed for the next six months to explore their movement with respect to the market, as represented by Nifty. This is done to examine if the beta calculated using the preceding 4 year returns data holds true for the time period under observation (6 months). Line graph is used to chart the percentage change in returns of the stock with respect to the percentage change in returns of the market to visually represent the co-movement of the stock and the market.

Data Analysis

Detailed analysis of each of the stock with respect to the calculated beta value is illustrated in this section.

Ambuja Cements

Alpha and beta values of Ambuja are obtained by regressing its returns on those of NIFTY 50. As seen in **Table 1**, beta of Ambuja = 1.17 and Alpha = -0.149. Here the beta value of 1.17 with standard error of 0.174 is statistically significant, thereby rejecting the null hypothesis that Ambuja's true beta is zero. The alpha value of -0.149 is statistically insignificant and the null hypothesis of the true value

of alpha being zero cannot be rejected.

The value of multiple r equal to 0.703 is quite high, indicating that Ambuja follows the movement in Nifty 50 quite closely. The second statistic, r square, with a value of 0.4945 indicates that 49.45 % of the variance in Ambuja's returns is attributable to the variation in the returns of Nifty 50. The third statistic, adjusted r square, is 0.4835 (slightly less than r square) as it corrects for an upward bias in the value of r square coming from the use of the fitted values of alpha and beta. With the number of observations used, this bias is quite small. Next statistic, standard error or the standard deviation of residuals, is 4.942 which represents the portion of returns of Ambuja that is independent of Nifty 50.

Table 1: Regression Statistics of 15 companies under the Study

AMBUJA CEMENTS		HUL		HDFC BANK	
Alpha	-0.149	Alpha	1.043	Alpha	0.583
Beta	1.17	Beta	0.592	Beta	1.084
Multiple R	0.703	Multiple R	0.383	Multiple R	0.821
R Square	0.495	R Square	0.146	R Square	0.673
Adjusted R Square	0.484	Adjusted R Square	0.128	Adjusted R Square	0.666
Standard Error	4.942	Standard Error	5.978	Standard Error	3.154
ULTRATECH		CIPLA		SBI	
Alpha	0.511	Alpha	0.499	Alpha	-0.765
Beta	1.288	Beta	0.528	Beta	1.71
Multiple R	0.651	Multiple R	0.281	Multiple R	0.143
R Square	0.423	R Square	0.079	R Square	0.02
Adjusted R Square	0.411	Adjusted R Square	0.059	Adjusted R Square	-0.001
Standard Error	6.283	Standard Error	7.521	Standard Error	49.511
L&T		DR REDDYS LAB		HERO MOTORS	
Alpha	-0.504	Alpha	1.334	Alpha	0.209
Beta	1.726	Beta	0.215	Beta	0.898
Multiple R	0.788	Multiple R	0.119	Multiple R	0.521
R Square	0.621	R Square	0.014	R Square	0.272
Adjusted R Square	0.613	Adjusted R Square	-0.007	Adjusted R Square	0.256
Standard Error	5.631	Standard Error	7.523	Standard Error	6.146
ASIAN PAINTS		HCL		MAHINDRA AND MAHINDRA	
Alpha	1.27	Alpha	2.5	Alpha	0.028
Beta	1.043	Beta	0.052	Beta	0.135
Multiple R	0.577	Multiple R	0.028	Multiple R	0.07
R Square	0.333	R Square	0.001	R Square	0.005
Adjusted R Square	0.318	Adjusted R Square	-0.021	Adjusted R Square	-0.017
Standard Error	6.17	Standard Error	7.583	Standard Error	8.01
ITC		INFOSYS		TATA MOTORS	
Alpha	-0.344	Alpha	2.041	Alpha	0.025
Beta	0.486	Beta	-0.201	Beta	1.481
Multiple R	0.289	Multiple R	0.056	Multiple R	0.608
R Square	0.084	R Square	0.003	R Square	0.37
Adjusted R Square	0.064	Adjusted R Square	-0.019	Adjusted R Square	0.356
Standard Error	6.728	Standard Error	15.039	Standard Error	8.076

The value of beta for Ambuja Cements equal to 1.17, indicates that it is more volatile than Nifty but not by much as this value is near one. This value is justified by the fact that construction supplies tend to have a beta of greater than 1 as seen in many research reports.

Now this historical beta of Ambuja will be tested to check if it holds good for a future period of 6 months, that is, is this value of beta reflected in the returns for the subsequent period?
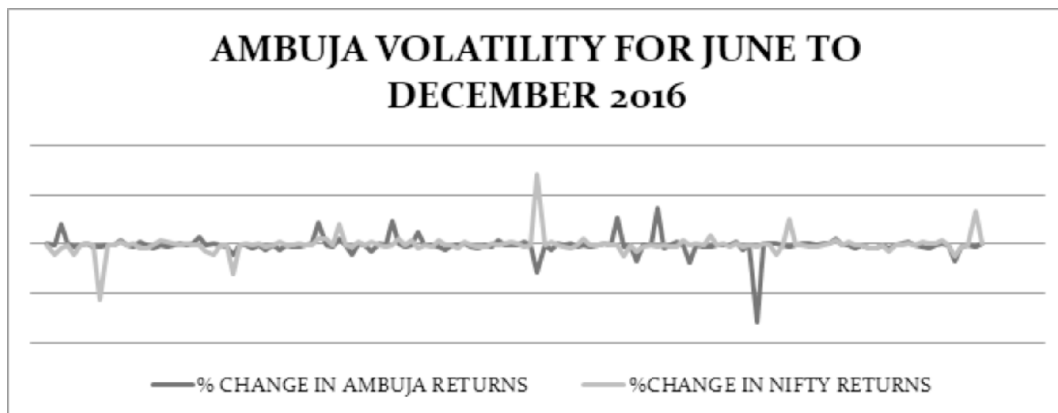
Figure 1: Co-movement of Ambuja Cements and Nifty 50 during the Test Period

(June 2016 to December 2016)

As exhibited in **Figure 1**, it is observed that percentage change in Ambuja's returns is at times more than the percentage change in market returns and sometimes the movement is in the opposite direction, that is, the market return is rising but the stock return is falling. However, more often than not, Ambuja has risen little more than the market and fallen more than the falling market as justified by a beta of little more than 1. There are many days during the period under observation when the percentage change in the returns of this scrip as well as the market has been nearly the same. Thus, the movement of returns of Ambuja vis-à-vis the market indicates that the beta calculated for the test period of preceding 48 months holds for the period under observation.

Ultratech

Ultratech has as statistically significant beta value of 1.29 with standard error of 0.222. The alpha value of 0.511 is statistically insignificant. The value of multiple R is 0.65 which suggests that Ultratech closely follows the market. The R square value is 0.42 suggesting that 42% of the variance in Ultratech is because of the market.

The beta value calculated for Ultratech indicates that the scrip is more volatile than the market. Now this historical beta of Ultratech will be tested to check if it holds good for a future period of 6 months, that is, is this value of beta reflected in the returns for the subsequent period?
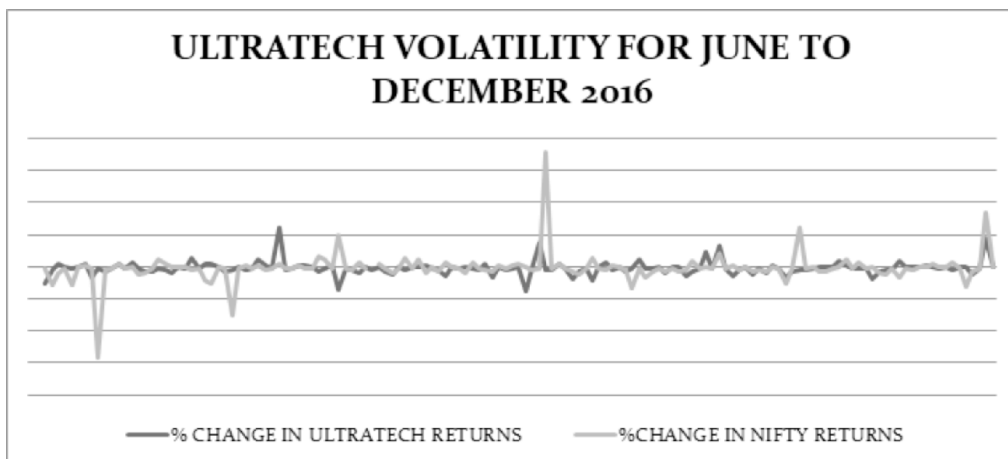
Figure 2: Co-movement of Ultratech and Nifty 50 during the Test Period

(June 2016 to December 2016)

As exhibited in **Figure 2,** the volatility of Ultratech during the six months period under observation doesn't justify its beta of 1.29 calculated for the preceding four years data. Nifty is more volatile than the Ultratech scrip on most occasions. In fact, for most of the period under observation, Ultratech's returns are represented by a graph that is deviating less than Nifty, showing that the beta computed for the past four years doesn't hold for Ultratech stock for the period under observation.

L&T

Alpha and beta values of L&T are obtained by regressing its returns on those of NIFTY 50. Beta of L&T is 1.73 with a standard error of 0.199 and Alpha = -0.504. Here the beta value is found to be statistically significant, thereby rejecting the null hypothesis that L&T's true beta is zero. The alpha value is found to be statistically insignificant.

The value of multiple r equal to 0.788 is quite high, indicating that L&T follows the movement in Nifty 50 and the positive value of beta indicates that the change is in the same direction. Further the value of beta at 1.73 indicates the scrip is more volatile than the market. The second statistic r square, with a value of 0.6213 indicates that 62.13% of variance in L&T's returns is attributable to the variation in the returns of Nifty 50. The third statistic, adjusted r square, is negative. 5.63 % of returns of L&T is independent of Nifty 50.

Now this historical beta of L&T will be tested to check if it holds good for a future period of 6 months, that is, this value of beta reflected in the returns for the subsequent period?

Figure 3: Co-movement of L& T and Nifty 50 during the Test Period
(June 2016 to December 2016)

As exhibited in **Figure 3,** the volatility for L&T during the six months period under observation doesn't justify its beta of 1.73 calculated for preceding four years data. Nifty is more volatile than the L&T scrip on most occasions. In fact, for most of the period under observation, L&T's returns either trail the Nifty returns or even move in opposite direction, showing that the beta computed for the past four years doesn't hold for L&T stock.

Asian Paints

Alpha and beta values of Asian Paints are obtained by regressing its returns on those of NIFTY 50. As seen in **Table 1,** beta of Asian Paints = 1.04 and Alpha = 1.270. Here the beta value of 1.04 with standard error of 0.218 is statistically significant, thereby rejecting the null hypothesis that Asian Paints' true beta is zero. The alpha value of 1.270345 is statistically insignificant and the null hypothesis of the true value of alpha being zero cannot be rejected.

The value of multiple r equal to 0.577 is moderately high, indicating that Asian Paints follows the movement in Nifty 50 but not too closely. The second statistic, r square, with a value of 0.3327 indicates that 33.27 % of the variance in Asian Paints' returns is attributable to the variation in the returns of Nifty 50. The third statistic, adjusted r square, is 0.318.

The value of beta for Asian Paints equal to 1.04 indicates it is as volatile as Nifty as this value is near one. This value is justified by the fact that Asian Paints falls in the Chemical (Specialty) sector which has a beta value of 1.00 as per a NYU research report.

Now this historical beta of Asian Paints will be tested to check if it holds good for a future period of 6 months, that is, is this value of beta reflected in the returns for the subsequent period?
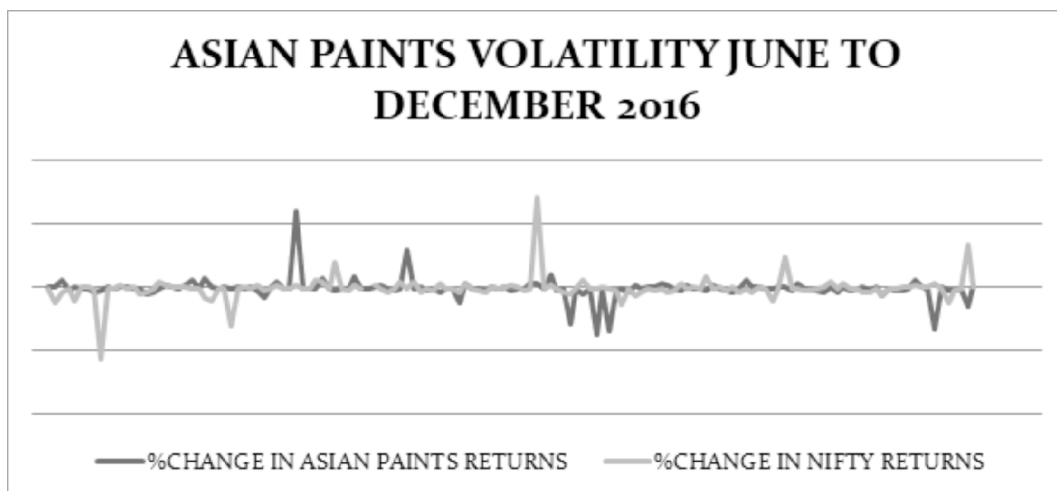
Figure 4: Co-movement of Asian Paints and Nifty 50 during the Test Period
(June 2016 to December 2016)

As exhibited in **Figure 4,** it is observed that percentage change in Asian Paints' returns is at times more than the percentage change in market returns and sometimes the movement is in the opposite direction, that is, the market return is rising but the stock return is falling. However, for most of the period under observation, Asian Paints' returns plot in line with the market's return, as justified by a beta of 1.04 calculated for the test period of preceding 48 months. Thus, there is a specific trend in the change in returns of Asian Paints as compared to the change in Nifty returns and it can be said that beta computed for the past four years holds for Asian Paints' stock.

ITC

Beta of ITC is 0.49, with standard error of 0.237 and Alpha = -0.344. Here the beta value is statistically significant, thereby rejecting the null hypothesis that ITC's true beta is zero. The alpha value is statistically insignificant.

The value of multiple r equal to 0.289 is low, indicating that ITC doesn't follow the movement in Nifty 50 too closely. The second statistic, r square, with a value of 0.083 indicates that only 8.3 % of the variance in ITC's returns is attributable to the variation in the returns of Nifty 50. The third statistic, adjusted r square, is 0.063. The value of standard error indicates that 6.73 % of returns of ITC is independent of Nifty 50.

The beta value calculated for ITC is 0.49 which indicates that the scrip is less volatile than the market. Now this historical beta of ITC will be tested to check if it holds good for a future period of 6 months, that is, is this value of beta reflected in the returns for the subsequent period.

Figure 5: Co-movement of ITC and Nifty 50 during the Test Period
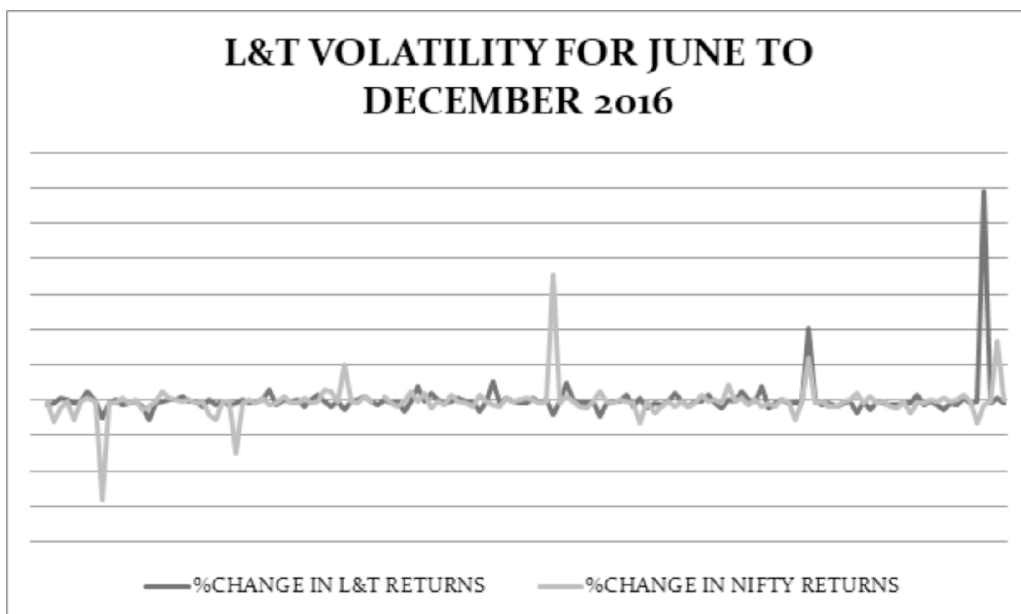**(June 2016 to December 2016)**

It is seen that the change in Nifty returns is more than the change in ITC returns, which is in sync with the calculated beta. As exhibited in **Figure 5**, the volatility for ITC in the six months period under observation is justified by its beta of 0.49 calculated for preceding four years data. Nifty is more volatile than the ITC scrip on most occasions. In fact, for most of the period under observation, ITC's returns plot on a less deviating path as compared to the Nifty returns, Showing that the beta computed for the past four years holds for ITC stock.

HUL

Beta of HUL is 0.59 with standard error of 0.211 and Alpha = 1.043. Here the beta value is found to be statistically significant, thereby rejecting the null hypothesis that HUL's true beta is zero. The alpha value is statistically insignificant.

As the value of multiple r is low at 0.383, the impact of market on the stock price is not very significant. The value of r square is .146, which means that only 14.63% of the variance in HUL price is explained by the variance in the market index.

The beta value calculated for HUL indicates that the scrip is less volatile than the market. Now this historical beta of HUL will be tested to check if it holds good for a future period of 6 months, that is, is this value of beta is reflected in the returns for the subsequent period?

Figure 6 : Co-movement of HUL and Nifty 50 during the Test Period
(June 2016 to December 2016)

We can see that the market returns vary more than the stock's return which suggests that the beta calculated for HUL is correct in predicting the volatility. As exhibited in **Figure 6**, the volatility for HUL in the six months period under observation justifies its beta of 0.59 calculated for preceding four years data. Nifty is more volatile than the HUL scrip on most occasions. Except for few spells of high volatility, for most of the period under observation, HUL's returns plot in an almost straight line near Nifty returns, showing that the beta computed for the past four years holds for HUL stock.

CIPLA

Alpha and beta values of Cipla are obtained by regressing its returns on those of NIFTY 50. As seen in table 3, beta of Cipla = 0.53 and Alpha = 0.499. Here the beta value of 0.53 with standard error of 0.265 is statistically significant, thereby rejecting the null hypothesis that Cipla' true beta is zero. The alpha value of 0.499 is statistically insignificant and the null hypothesis of the true value of alpha being zero cannot be rejected.

The value of multiple r equal to 0.281 is low, indicating that Cipla doesn't follow the movement in Nifty 50 too closely. The second statistic, r square, with a value of 0.0791 indicates that only 7.91 % of the variance in Cipla's returns is attributable to the variation in the returns of Nifty 50. The third statistic, adjusted r square, is 0.059. Next statistic, standard error, is 7.521, which represents the portion of returns of Cipla that is independent of Nifty 50.

The value of beta for Cipla equal to 0.53 indicates it is less volatile than Nifty as this value is less than one. A research report published by NYU indicated that the beta value for drugs (pharma) industry is 1.02. It seems that the volatility of Cipla is less than the industry volatility.

Now this historical beta of Cipla will be tested to check if it holds good for a future period of 6 months, that is, is this value of beta reflected in the returns for the subsequent period?
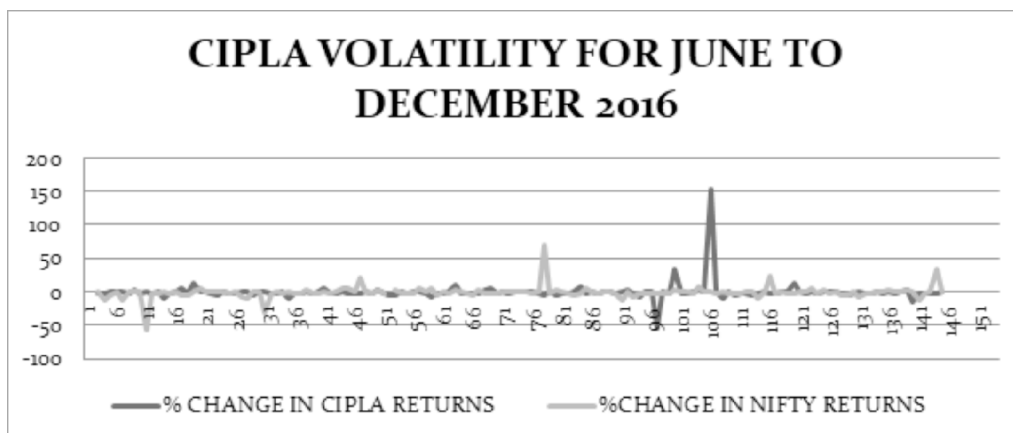
Figure 7: Co-movement of Cipla and Nifty 50 during the test period
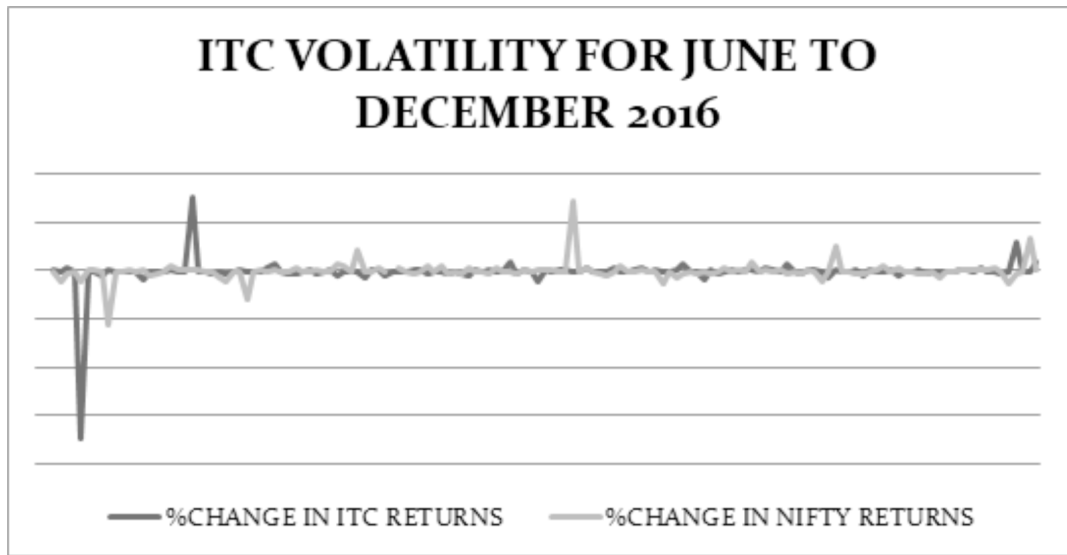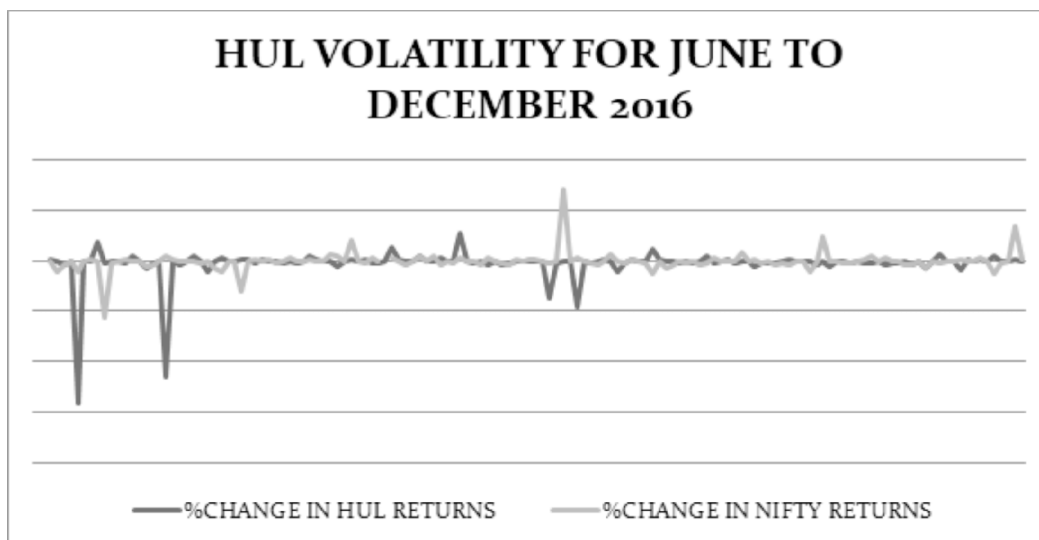**(June 2016 to December 2016)**

As exhibited in **Figure 7**, it is observed that percentage change in returns of Cipla is seldom more than the percentage change in market returns and very rarely, the movement is in the opposite direction, that is, the market return is rising but the stock return is falling. In fact, for most of the period under observation, Cipla's returns plot in almost a straight line with a slightly more mobile market return line, as justified by a beta of 0.53 calculated for the test period. Thus, there is a specific trend in the change in returns of Cipla compared to the change in Nifty returns and it can be said that beta computed for the past four years holds for Cipla' stock.

Dr Reddy's Lab

Alpha and beta values of Dr Reddy's Lab are obtained by regressing its returns on those of NIFTY 50. As seen in table 1, beta of Dr Reddy's Lab = 0.22 and Alpha =1.334. Here the beta value of 0.22 with standard error of 0.265 is statistically significant, thereby rejecting the null hypothesis that Dr Reddys Lab' true beta is zero. The alpha value of 1.334 is statistically insignificant and the null hypothesis of the true value of alpha being zero cannot be rejected.

The value of multiple r equal to 0.119 is low, indicating that Dr Reddy's Lab doesn't follow the movement in Nifty 50 too closely. The second statistic, r square, with a value of 0.014 indicates that only 1.41 % of the variance in Dr Reddy's Lab's return is attributable to the variation in the returns of Nifty 50. The third statistic, adjusted r square, is negative.

We see that the value of beta for Dr. Reddy's is 0.22. It indicates that the stock is less volatile than the market. The industry beta is 1.02 for drugs (Pharma). So this stock has very low volatility as compared to other players in the industry.

Now this historical beta of Dr. Reddy's will be tested to check if it holds good for a future period of 6 months, that is, is this value of beta reflected in the returns for the subsequent period?
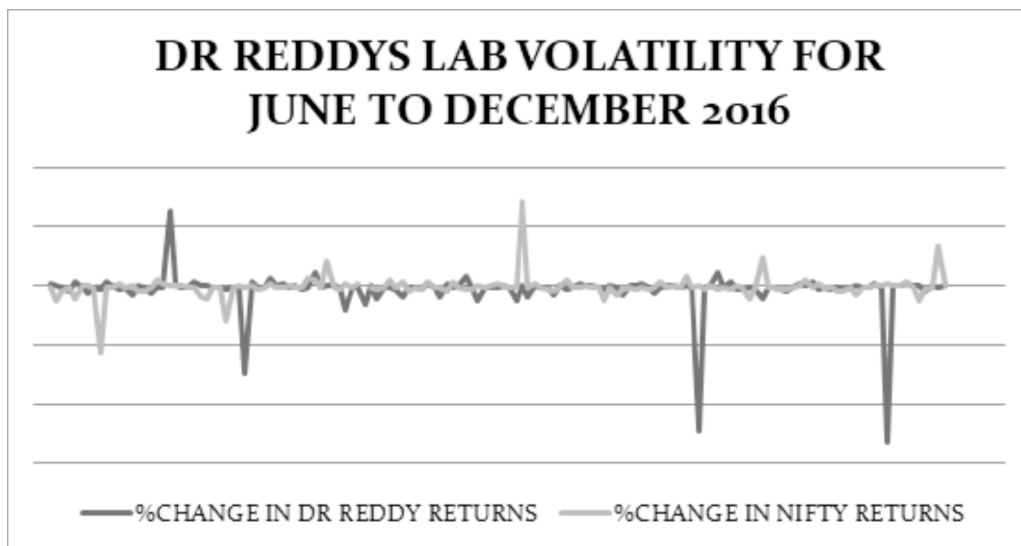
Figure 8: Co-movement of Dr. Reddys Lab and Nifty 50 during the Test Period

(June 2016 to December 2016)

As exhibited in **Figure 8,** it is observed that percentage change in Dr. Reddy's Lab's returns is more than the market on more than few occasions. On some occasions, the movement is also in the opposite direction, that is, the market return is rising but the stock return is falling. For substantial part of period under observation, Dr. Reddy's Lab's returns plot in almost the same way as the market return line, though not justified by a beta of 0.215. So it can be said that beta computed for the past four years doesn't hold for Dr. Reddy's Lab's stock.

HCL

Alpha and beta values of HCL are obtained by regressing its returns on those of NIFTY 50. As seen in **Table 1**, beta of HCL = 0.05 and Alpha = 2.5. Here the beta value of 0.05 with standard error of 0.268 is statistically significant, thereby rejecting the null hypothesis that HCL's true beta is zero. The alpha value of 2.5 is statistically insignificant and the null hypothesis of the true value of alpha being zero cannot be rejected.

The value of multiple r equal to 0.028 is low, indicating that HCL doesn't follow the movement in Nifty 50, though positive value of beta indicates that the change is in the same direction. The second statistic, r square, with a value of 0.0008 indicates that no variance in HCL's returns is attributable to the variation in the returns of Nifty 50. The third statistic, adjusted r square, is negative.

The beta value calculated for HCL is 0.05, indicating that the scrip is less volatile than the market. Now this historical beta of HCL will be tested to check if it holds good for a future period of 6 months, that is, is this value of beta reflected in the returns for the subsequent period?

Figure 9 : Co-movement of HCL and Nifty 50 during the Test Period

(June 2016 to December 2016)

As exhibited in **Figure 9**, it is observed that percentage change in HCL's returns is more than the percentage change in market returns on few occasions only but on all such occasions the percentage increase in HCL has been noticeably high. In fact, for most of the period under observation, HCL's returns vary more erratically than justified by a beta of 0.05 calculated using returns of preceding four years. So it can be said that beta computed for the past four years doesn't hold for HCL stock.

Infosys

The value of multiple r is 0.055 shows this regression model is not statistically significant. The R square is 0.003 which means that only 0.3% of the variation in stock is due to the market returns. The beta value is -0.201 with an error of 0.531.

The beta value calculated for Infosys is -0.2, which indicates that the scrip moves in opposite direction of the movement in the market. Now this historical beta of Infosys will be tested to check if it holds good for a future period of 6 months, that is, is this value of beta reflected in the returns for the subsequent period?

Figure 10: Co-movement of Infosys and Nifty 50 during the Test Period

(June 2016 to December 2016)

As exhibited in **Figure 10**, Infosys doesn't follow the volatility as calculated. Although there are some instances when the market increases and the stock returns of Infosys decrease and vice versa, but there is no specific trend followed, showing that the beta computed for the past four years doesn't hold for Infosys stock.

HDFC Bank

Alpha and beta values of HDFC Bank are obtained by regressing its returns on those of NIFTY 50. As seen in **Table 1**, beta of HDFC Bank = 1.08 and Alpha = 0.583. Here the beta value of 1.08 with standard error of 0.111 is statistically significant, thereby rejecting the null hypothesis that HDFC Bank's true beta is zero. The alpha value of 0.583 is statistically insignificant and the null hypothesis of the true value of alpha being zero cannot be rejected.

The value of multiple r equal to 0.821 is quite high, indicating that HDFC Bank follows the movement in Nifty 50 and the positive value of beta indicates that the change is in the same direction. The second statistic, r square, with a value of 0.6732 indicates that 67.32% of variance in HDFC Bank's returns is attributable to the variation in the returns of Nifty 50. The third statistic, adjusted r square, is negative.

The beta value calculated for HDFC Bank is 1.08 which indicates that the scrip is as volatile as the market. Now this historical beta of HDFC Bank will be tested to check if it holds good for a future period of 6 months, that is, is this value of beta reflected in the returns for the subsequent period?

Figure 11: Co-movement of HDFC Bank and Nifty 50 during the Test Period
(June 2016 to December 2016)

As exhibited in **Figure 11**, volatility for HDFC Bank in the six months period under observation doesn't justify its beta of 1.08 calculated   for the preceding four years data. Nifty is more volatile than the HDFC bank scrip on most occasions. In fact, for most of the period under observation, HDFC bank's returns plot away from the Nifty returns, showing that the beta computed for the past four years doesn't hold for HDFC bank stock.

SBI

The value of multiple r is 0.143, which is quite low indicating that SBI doesn't follow the market closely.

The r square is 0.02 indicating that only 2% of the variation in SBI stock price is due to the market. The beta value is 1.71 with a standard error of 1.747 is significant.

The beta value calculated for SBI is 1.71 which indicates that the scrip is more volatile than the market. Now this historical beta of SBI will be tested to check if it holds good for a future period of 6 months, that is, is this value of beta is reflected in the returns for the subsequent period?

Figure 12: Co-movement of SBI and Nifty 50 during the Test Period
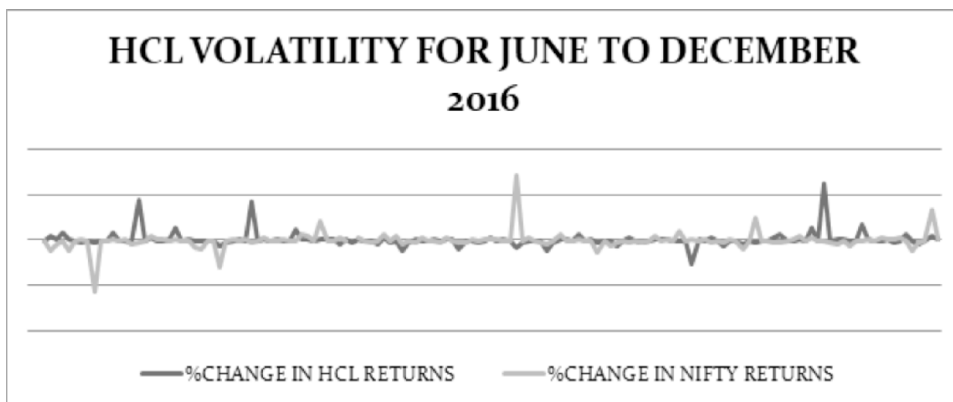
(June 2016 to December 2016)

As exhibited in **Figure 12,** the volatility of SBI in the six months period under observation doesn't justify its beta of 1.71 calculated for the preceding four years data. Nifty is more volatile than the SBI scrip on most occasions. In fact, for most of the period under observation, SBI's returns seem to deviate less than the market, showing that the beta computed for the past four years doesn't hold for SBI stock.

Hero Motors

The value of beta is 0.89 and it is significant with standard error of 0.217. The value for multiple r is 0.521, which means that the stock prices of Hero follows the market to a moderate level. The adjusted r value is 0.256, which means that only 25.58% of the variance in stock price of Hero Motors is explained by the variation in market.

The beta value calculated for Hero Motors is 0.89 which indicates that the scrip is little less volatile than the market. Now this historical beta of Hero Motors will be tested to check if it holds good for a future period of 6 months, that is, is this value of beta reflected in the returns for the subsequent period?
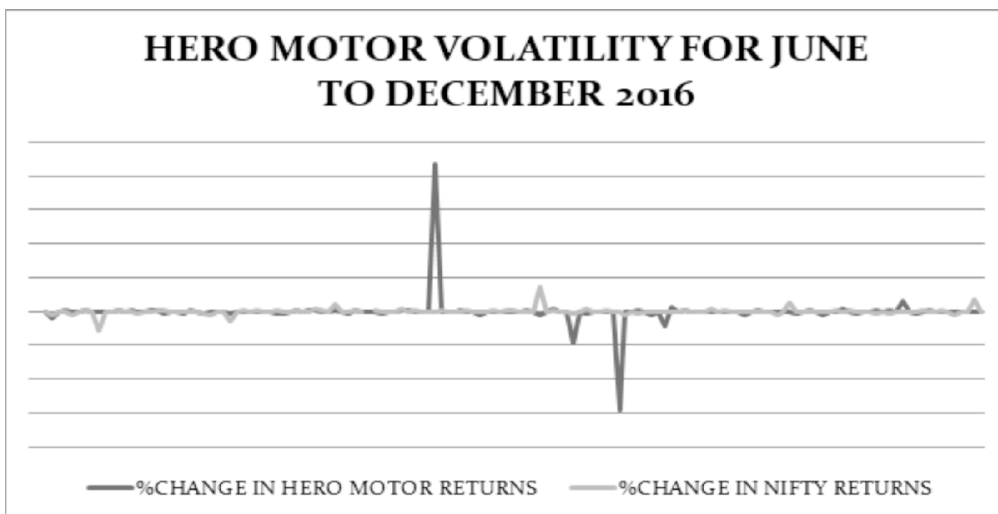
Figure 13: Co-movement of Hero Motor Corps and Nifty 50 during the Test Period
(June 2016 to December 2016)

As exhibited in **Figure 13,** the market returns have been more volatile than the stock returns during the period under observation. We see that the percentage change in returns of Hero Motors have been very flat in this period. This behavior of returns doesn't reflect a beta of near one, 0.89 to be specific. Thus, the beta calculated using the returns data of preceding four year period doesn't hold for the period under observation.

Mahindra & Mahindra

The multiple r value is very low at 0.07, which indicates that M&M doesn't follow the market closely. The r square value is also very low suggesting that only 0.4 percent of variance in the stock return is explained by the variation in market. The beta value for the stock is 0.14 with a standard error of 0.283.

The beta value calculated for M&M is 0.14, which indicates that the scrip has very low volatility as compared to the market. Now this historical beta of M&M will be tested to check if it holds good for a future period of 6 months, that is, is this value of beta reflected in the returns for the subsequent period?
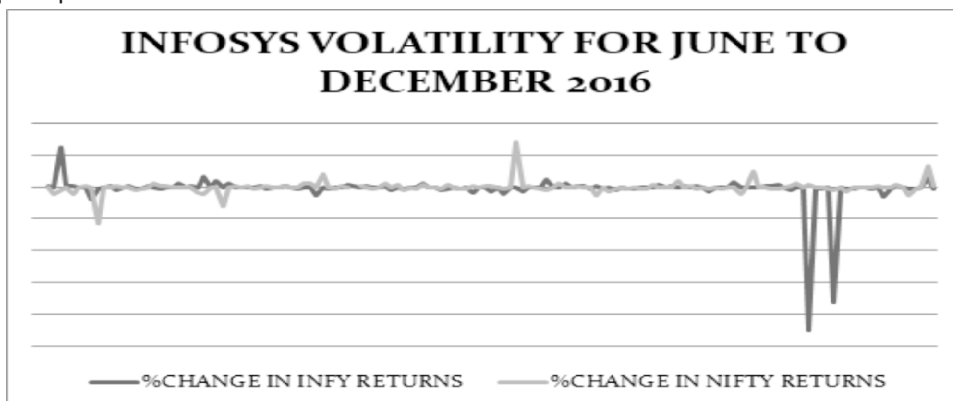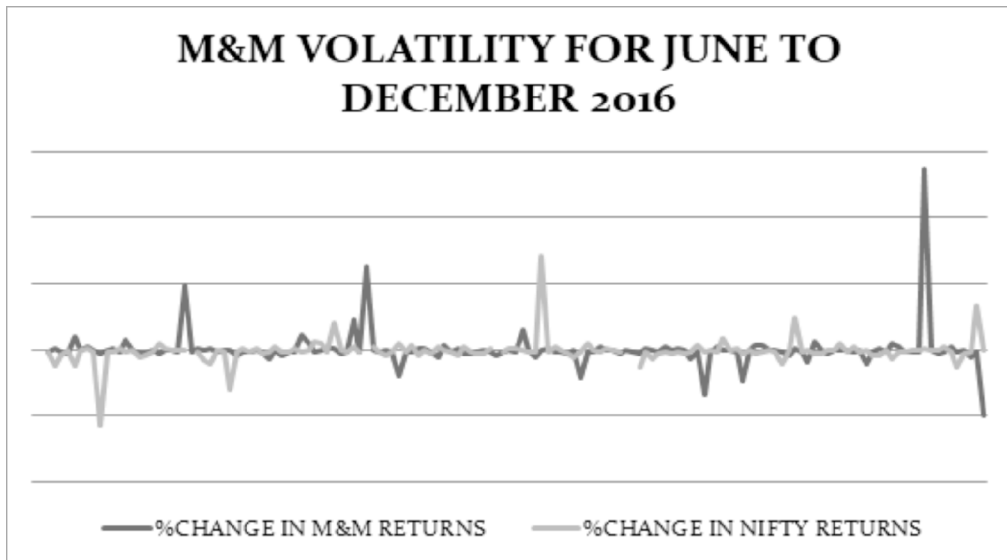
Figure 14 : Co-movement of M&M and Nifty 50 during the Test Period

(June 2016 to December 2016)

As exhibited in **Figure 14,** there is no specific trend followed by M&M. The volatility for M&M during the six months period under observation doesn't justify its beta of 0.14 calculated for preceding four years data. Percentage change in returns are more volatile for the stock than Nifty on more occasions than not. In fact, for most of the period under observation, M&M's returns plot away from the Nifty returns, showing that the beta computed for the past four years doesn't hold for this stock.

TATA Motors

The value for multiple r is 0.608, which is quite high suggesting that Tata Motors follows Nifty quite closely. The value of r square is 0.36 indicating that 36% of the Tata Motors share price variation is due to the stock market. The value of beta is 1.48 with a small error of 0.285.

The beta value calculated for Tata Motors is 1.48 which indicates that the scrip is more volatile as the market. Now this historical beta of Tata Motors will be tested to check if it holds good for a future period of 6 months, that is, is this value of beta reflected in the returns for the subsequent period?
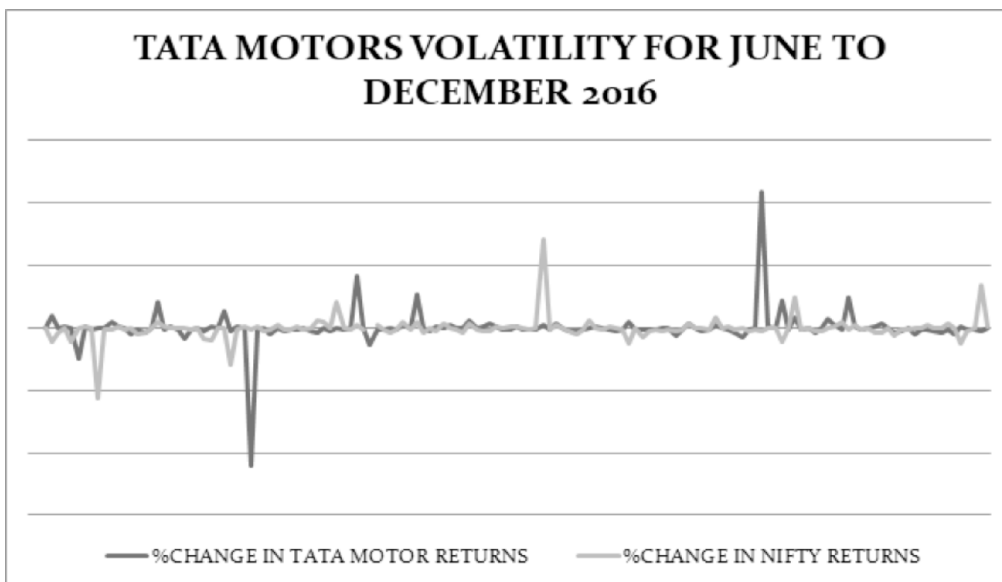
Figure 15 : Co-movement of TATA Motors and Nifty 50 during the Test Period
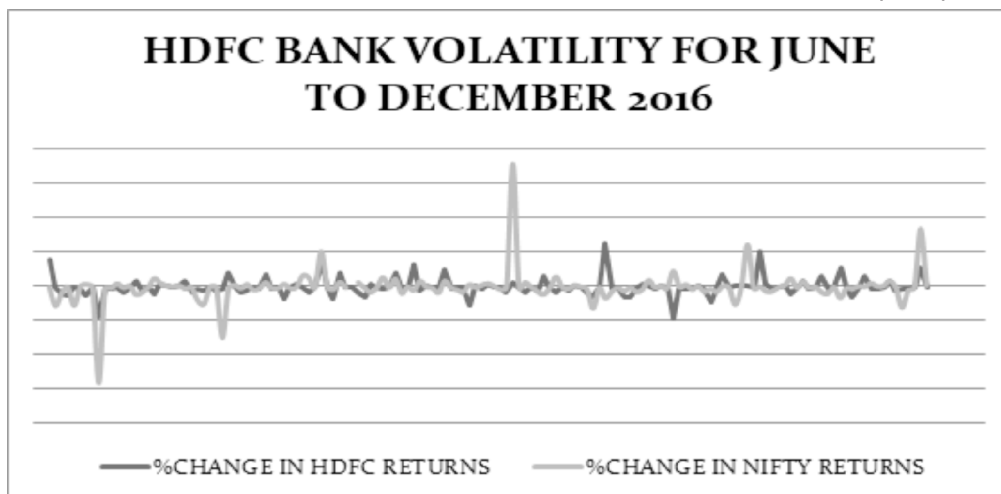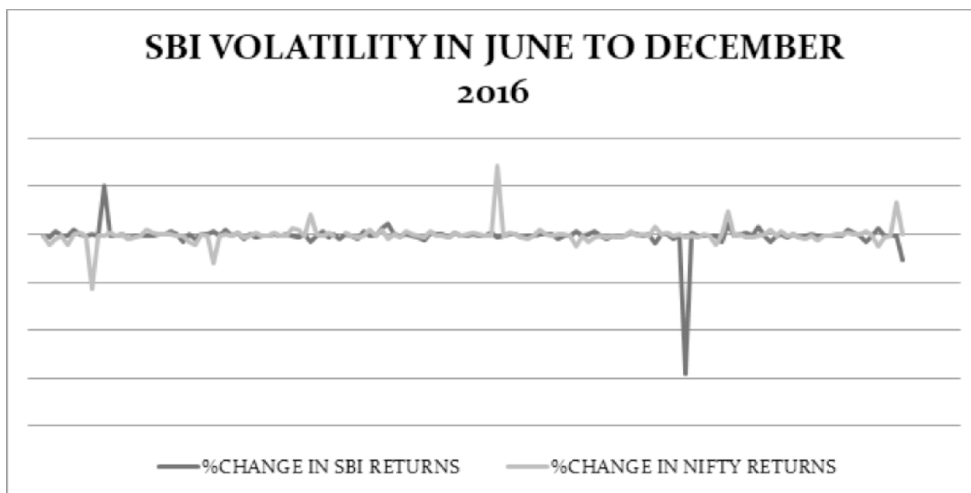**(June 2016 to December 2016)**

As exhibited in **Figure 15**, variance of Tata Motors returns is mostly more than the variance of the market except on some days where it has lower volatility. However, the volatility of the stock is not that higher than the market to justify a beta of 1.48, showing that the beta computed for the past four years doesn't hold for Tata Motors stock.

Summary and Limitations of the Study

The authors have used simple and time tested method of regression analysis for beta measurement. Regression analysis provides insights into the statistically significance of the values computed. Analysis of the values thus computed for the test period of 48 months and their comparison with the movements in prices observed during the observation period of following six months reveal some interesting facts. Beta computed for the test period seems to hold for five scrips, namely, Ambuja, Asian paints , ITC, HUL and Cipla. It doesn't hold for Ultratech, L&T, Dr. Reddys Lab, HCL, Infosys, HDFC Bank, SBI, Hero Motors, M&M and Tata Motors. Thus, beta has been reliable in predicting the volatility for 5 out of 15 stocks taken for observation. It is very difficult to say if the same reliability will be seen for these stocks in the future.

It can be further concluded that reliability of beta is not a sector specific phenomenon as it seems to hold for some scrips in a sector but not for others. For instance, it holds for Cipla but not for Dr. Reddys Lab.

The current study has many limitations. This study is just a preliminary attempt to increase the understanding of investors and researchers about the measurement of beta and its time-varying nature. More research needs to be undertaken by rolling windows across different periods of time to draw more robust conclusions. In addition, though it is always preferable to take as much data for study as is available for analysis to draw more reliable conclusions, this study is based on limited monthly data spanning 48 months ending in June 2016. The time period used in the study for

observation is six months which is also relatively small, leading to less reliable conclusions.

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TRANSFORMING INDIA THROUGH QUALITY ELEMENTARY EDUCATION

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Abstract

A country's ability and potential for growth is determined by the size and capability of its youth population. Hence all concerned stakeholders need to understand that this section of the population needs to be nurtured, skilled, streamlined and motivated to meet and confront the challenges ahead so that they may eventually contribute to the overall progress of the country.

According to the census data (2011), India accounts to have 229 million of 15 to 24-year-olds claiming to be the world's highest youth population. Further only 4.5 percent of the population in the country is educated up to the level of graduate or above while a majority of 32.6 per cent population is not even educated up to the primary school level. Also more than 20 per cent of the youth in the 15-24 age group is jobless and seeking work. This statistics is really worrying and needs the cognizance of all.

Out of the 17 UN Sustainable Development Goals (SDGs) of Agenda 2030 for sustainable development, 'Quality Education' has been declared as the most important and the most necessary standalone goal for the success of the remaining 16 goals – health, poverty, inequality etc.

Quality Education means education that builds the character, increases the strength of mind, sharpens the intellect and above all makes the individual self – independent. In addition, it should help young India to become creative thinkers and entrepreneurs. But we need to think that whether the basic schooling of India preparing the 21st century learners or not.

The onus of quality education lies on the shoulders of teachers, who are the linchpin of the education system of the country. A good teacher in a classroom can beat and overpower any level of technology tools. But has India produced quality teachers, or are our existing teacher education policies capable enough to produce 21st century teachers.

The present paper is an attempt to explore the quality of young India that is being produced and the challenges faced by the elementary education system of the country in producing the 21st century learners. The paper would also try to suggest some strategies to strengthen the elementary education system of the country and hence achieve the UN goal of 'Quality Education'.

Keywords: Youth, Quality Education, Elementary Schools, Teachers

Introduction

Status of Education and Employment in India

According to the census data (2011), India is the world's second most populous country with about 1.21 billion population. Also India accounts to have 229 million of 15 to 24-year-olds claiming to be the world's highest youth population. By 2020, India is ready to become the world's youngest country with

the average age of 29 and 64% of its population in the working age group.

Also according to the census data (2011), only 4.5 percent of the population in the country is educated up to the level of graduate or above while a majority of 32.6 per cent population is not even educated up to the primary school level. India is the home of the largest population of illiterate adults in world – 287 million, amounting to 37% of the global total.

According to Labour Bureau's "Third Annual Employment & Unemployment Survey, 2012-13" the unemployment amongst the graduate youth that happened to be at 19.4 per cent in 2011-2012 increased to 32 per cent during 2012-2013 4.

Also, 60% of the eight lakh engineers graduating from technical institutions across the country every year remain unemployed, according to the All India Council for Technical Education.

So this means that sooner India will be the most populated country with highest youth population and working population but unemployed and uneducated. Such unemployed population will eventually put the country at high risk of social inclusion, cohesion and stability.

Reason Behind Uneducated and Unemployed Youth

The EFA Global Monitoring Report (2011) indicates that countries have shown tremendous progress in achieving the first three goals – access, enrollment and retention but the goal of quality education is yet to achieve. Report say that today millions of children passing out from elementary education system have far below levels of expected standards of reading, writing and numeracy. Further this cohort is transferred to the secondary level which too has poor quality curriculum and no connection with the world of work. The students belonging to the secondary education are aimless with respect to the career they want to pursue and this leads to entry of students with no career and professional aims into higher education.

Hence youth with low levels of basic skills and no career and professional aim in mind are produced.

And even if some of them attain higher degrees, they don't learn the important technical and soft skills that employers look for in them. The Labour Bureau survey states that in India, every one youth out of three with a graduation degree and above is found to be unemployed. Every year almost two lakh engineering students out of four lakh strive for jobs. This statistics is really worrying and needs the cognizance of all.

The mismatch of the world of education and world of employment has resulted into uneducated and unemployed youth.

According to a World Bank study, every extra year of elementary education improves a person's hourly wage rate (productivity) by 10-30%. It also states that an 8 percent increase in agricultural production arises from minimum four years of basic education. Also increase in girls' enrollment in elementary education decreases several health related issues (UNICEF, 2015).

Thus the above discussion clearly states that we cannot build upon a strong youth force until and unless the basic elementary education is made strong and competent enough to produce students efficient in the three basic skills – reading, writing and numeracy. **(Refer Figure 1)**
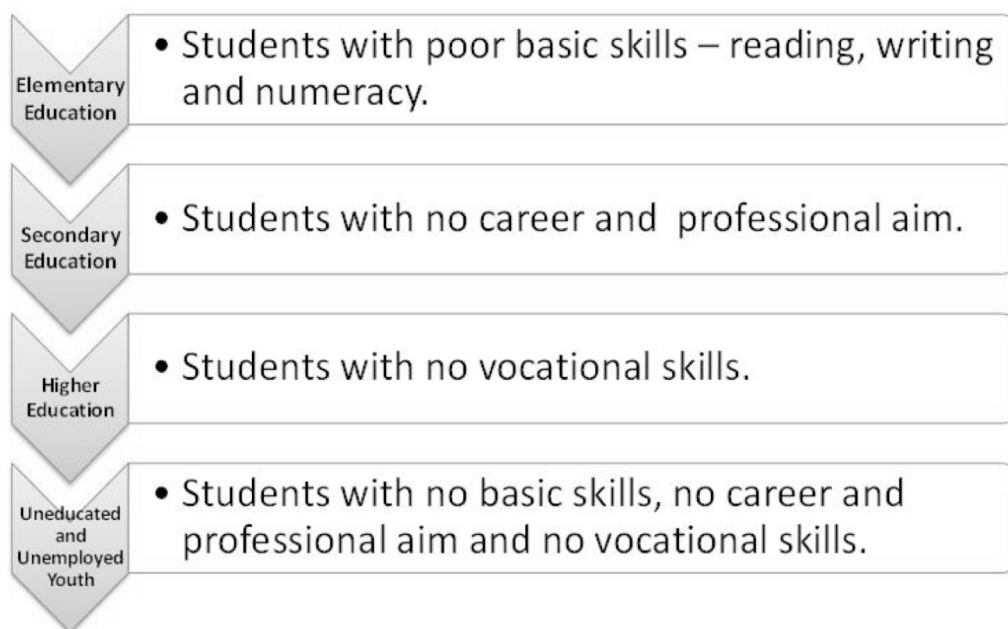
Figure 1: Education System of the Country

Status of Elementary Education in India

It is almost two decades of inception of basic education program - Sarva Shiksha Abhiyan (SSA) – and today it proudly serves about 200 million children living in over a million habitations across the country. This has made, India, one of the largest elementary education programs in the world. The huge success of goal of Universal Access needs accolades.

However, today, almost 95 percent of Indian children attend primary school but just 44 percent enroll into class V. This shows that the goal of Universal Access is yet to be achieved in secondary education.

Now out of this 95 percent, only a handful of the elite group of learners which come from very well- to-do families of classes I-VIII goes to private schools of different boards. Next those who cannot afford private schooling attend English-language government-aided schools, affiliated to state-level examination boards. The last but not the least is the huge percentage of children who go to poorly managed government or municipal schools. This clearly reflects that both Universal Access and Quality of Education received by these students depend on their social status and economic background.

A study conducted by Annual Status of Education Report (ASER) shows that children of elementary level are not acquiring even basic abilities in reading and arithmetic. For example, ASER reported that about 53% (in 2009) of children in Standard V was unable to read a Standard II-level text book. In 2013, this figure changed to just about 47%. Also in 2009 about 36% of Standard V children were not able to solve a three digit by one digit division problem. Similar studies by ASER (2013) reported that

only a little more than 50% of standard V children could do a two-digit subtraction problem with borrowing. Further in a research done by ASER in 2014 showed that a downward trend has been observed in the ability of Class-VIII students to do a division problem from 2010 (68.3%) to 2014 (44.1%) .

Such statistics clearly state that the elementary education of India is witnessing a lot of problems that need to rectified soon.

Problems Faced by Elementary Education System of India

Focus on Input Parameters Rather than Output Standards by Regulatory Bodies

Till now all the regulatory bodies for elementary education system that decide norms and design frameworks for schools focus on input parameters such as entity format, land and infrastructure requirements, faculty-student ratios, funds available, admission criteria, fee structures etc for schools. But now it is high time that they work on making policies for an outcome based school system leading to schools and concerned bodies focusing solely on student learning, teaching methods and styles practiced by teachers and continuous training of teachers. Research has proved that learning deficits in elementary schooling have ultimately transferred unprepared children in terms of reading, writing and speaking skills to the secondary schooling.

Robust Theoretical Curriculum Taught in Schools

The curricula of various boards taught by schools in India are quite robust and theoretical in nature. Both the teacher and student are in a hurry to complete the syllabus prescribed for the standard and then focuses on vomiting it out in the exams. Several studies have shown that the pace of learning that children exhibit are far lower than that of what is expected of them by the curriculum and textbook content. Hence the designers of the curriculum of different boards have to understand that the 21st century learners cannot be produced with the same 18th century education system.

The concept of studying too many subjects without understanding them and further without exploring on them and without focusing on any one leaves our students justify the saying **"*Jack of all trades, master of none*"** .

The future world would honour and respect only those who do different things differently. Creative learners and thinkers would be held high than the rest.

Thus the curriculum to be taught should be according to the needs of the young people and the community they live in. Curriculum should help them acquire problem solving skills with apt knowledge, deep rooted study rather than broad coverage of subjects and most important learning by doing. Also theory and relevant realistic material on gender-sensitive issues and other emerging issues like pollution, water crisis, global warming etc. should be included in the new curriculum.

Uneducated Teachers

Research says that one of every five teachers of elementary schools in the country does not have the requisite qualifications to teach young children. This means, it may be that even a XII class passed student turned teacher would be teaching a IX class student or teachers without PTC or B. Ed would be allowed to teach in schools.

Actually, the qualification criteria set for the elementary schools' teachers is not at all suitable in today's competitive world. How can just a XII pass student with just two years Primary Teaching Certificate (PTC) become a 21st century teacher! When the student-teacher himself lacks the requisite subject knowledge, pedagogical and child development skills, how can he teach the students of classes I - V. This means that we train uneducated students to become teachers.

Thus qualification criteria to become elementary teachers need to be addressed soon by our educationists. India needs to learn from countries like Finland where the entry qualification for even pre-primary teachers is a master's degree.

Researches also state that the roles and responsibilities of teachers are constantly changing from a mere teacher to an able motivator, mentor and above all a friend of students. Also emergence of new areas of learning such as health problems, sex education, life skill training that never were talked about in past lay emphasis on teachers with strong social relations and interpersonal skills.

Thus we need to define the qualification criteria of teachers keeping in mind the changing roles and responsibilities of the teachers.

Untrained Teachers

Now the quality of pre- service training provided to the candidates is found to be quite low. The PTC or a B. Ed degree is just a means to get a job for a candidate but the curriculum of such pre-service trainings plays no role in the intellectual growth of the candidate. Also the manners in which teaching skills are learned and practiced during pre-service trainings remain quite different as they are used in the actual classroom settings (Bhargava, 2009). Hence pre-service trainings adds no value to the competence of the student –teacher.

Also there is very less focus paid to the in-service training of the teachers. Government teachers are provided 10 days training in a whole year by government run organization known as DIET (District Institute of Education and Training), but researches show that these trainings have nothing new to tell to the teachers, and teachers often find them boring, ineffective and repetitive. Further private schools feel a dire vacuum of efficient trainers who can train teachers.

It has been also found that the teachers and trainers have a tendency to teach what they may be familiar with instead of what their students need to learn. In India, it has been found that after starting practicing as a teacher/trainer, the individual is found to be rarely up grading and skilling himself/herself on a regular basis. Also initiatives taken up by the concerned educationists and authorities are so minimal that teachers and trainers themselves get obsolete.

Whereas in Finland and Singapore, trainers and teachers are found to be self aware of their training needs and most of the trainings are managed by universities that are directly linked to schools where student – teachers get training through practicing teaching in real classrooms.

Lack of Respect for the Teaching Fraternity

Does the society respect teachers who teach students of classes I-VIII? Do we call and acclaim teachers as professionals?

In India, teaching is a profession that has lost its glory that it used to have in its olden times. It is sad to

say that neither the teachers feel themselves responsible and accountable for their work nor the society gives them their expected admiration and respect. Teaching in schools and that too at elementary level is not at all considered to be valuable. Lack of infrastructural facilities and educational resources has added more to the problem and has resulted into demotivation of the existing pool of the teachers. Hence the cohort which comes to become teachers is themselves untrained, unprovoked and uninterested in the profession and the sense of professionalism and dedication towards teaching is found absent in them.

In countries like Finland, Singapore etc. teaching is the most sought after profession and thus the most educated and trained candidates enter the profession. Here in India, only few are found to be really interested in the teaching profession, rest enter it because they don't have any other job option to pick.

Suggestions for Improvement in Elementary Education System of India

In order to achieve improvement in the elementary education system and the learning outcomes of the children, the first three important things that needs to be done are: -

1. Define output outcomes for schools by authorities

2. Revision of curriculum and

3. Improved infrastructural learning environments in schools

But above all these the most important pillar of elementary education system are the teachers. Research has proved that highly effective teachers can have an enriching effect on not only the daily lives of children but also on their lifelong educational and career aspirations in spite of poor educational facilities, textbooks and infrastructure. Well–educated, well–trained, learned and emotionally stable teachers make the children competent and confident individuals. **(Refer Figure 2)**

With respect to teachers, we have three subgroups – teacher educators, existing teachers and new teachers.
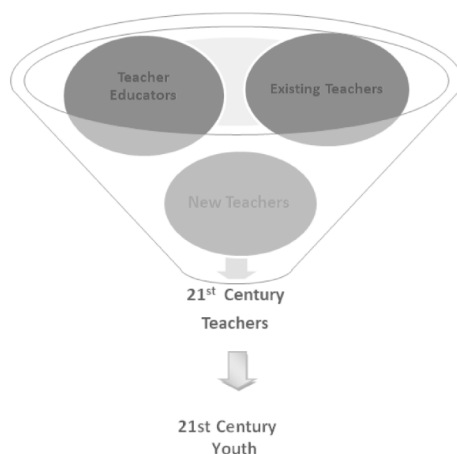
Figure 2 : Elementary Education System

In order to produce 21st century youth we need to develop and design schemes and policies that make the above three important subgroups as 21st century teachers which will eventually produce 21st century students.

Some of the suggestions to make Indian existing and new teachers and teacher educators of elementary education system of world – class quality are:-

Teacher Educators

Teacher educators, the often neglected group of professionals play a crucial role for maintaining - and improving - the high quality of the teaching workforce. Whether providing new teachers with initial teacher education of the highest quality or motivating the existing teachers to continue developing and extending their competences and skills throughout their careers, teacher educators have a paramount place in the education system. Also the adult style of learning is quite different and complex than that of children as they tend to associate lessons taught to them directly to their work. Hence role of teacher educators cannot be ignored.

- **Expertise with Knowledge as the Criteria for Selection of Teacher Educators (trainers)**

Educationists and school managements should ensure that the selected group of teacher educators should include professionals of requisite expertise with knowledge from different educational backgrounds, qualifications and work contexts. Today teacher educators from mere education field would not work and an inclusion of experts from engineering, management, medical, information technology, sociology, psychology and other fields is quite necessary to make a strong pool of trainers.

- **Professional Development of Teacher Educators**

Apart from recruiting experts from different fields as teacher educators, it is also necessary that continuous professional development of these experts is done through their active participation in conferences, writing research papers, exchange programs with universities of other countries, interaction with industry people and so on10.

Existing Teachers

- **Make Teachers Ready to De-learn Out-dated and then Learn New Theories and Practices**

In order to complete the skill - gap of existing cohort of teachers we need to first make an attempt to help existing teachers de –learn their old and out-dated concepts and theories and make them ready for change. Unless these teachers accept that a change in their traditional teaching style is needed, nothing can be done.

- **Strong In-service Trainings**

Next with the help of a strong group of trainers that comes from all sections of the society and from all disciplines of education, we need to devise strong in–service trainings that are given on a continuum basis to the teachers. This pool of trainers includes strong professionals like university professors, doctors, engineers, scientists and many more from the world of employment who may guide the existing teachers about the skills that they are looking for in their future employees. The existing cohort of teachers can be made 21st century teachers only through regular, continuous and updated

trainings and professional development workshops arranged specially for them keeping in mind their needs, and the requirements of the outer world of work. The methods and techniques used in the workshop and the content of the trainings should be novel with a direct relationship with the daily working of the teachers. Collective follow up of these trainings by trainers and school heads and evaluation of trainings have to be done in a judicious manner so that all efforts and pain put into the training exercise are judged. External agencies working in similar fields, NGO's, and universities should also be brought together to plan and give trainings to the school teachers.

- **Conducive Working Environment**

In order to apply the teaching styles and methods learned during the trainings, the existing cohort of teachers are required to have all necessary resources and infrastructure in schools. Providing such a healthy working environment is the sole responsibility of the school managements and the government bodies.

- **Autonomy with Responsibility**

Ample time and autonomy to explore about subject knowledge along with pedagogical and student – centric issues should be given to teachers so that they can themselves research, discover and think for new things and devise new effective teaching styles. Researchers, teachers and students need to work as a team to solve problems related to them and their subjects. This type of learning activity would definitely promote critical thinking, problem solving, teamwork, and community involvement skills in students to make invaluable contributions to the society (Kanyike, L., Namanya, P., & Clair, N., 1999). Thus autonomy to teachers to research along with the responsibility to produce learned students would result in efficient and motivated teachers.

- **Meaningful Feedback for Instructional Improvement**

School heads, senior colleagues and peers should work as a team to give regular, timely and meaningful feedback to each other to improve in their teaching and administrative styles. This calls for building up of a sharing and trustworthy culture in the organization. This exchange and share of teaching practices helps teachers to solve their day to day problems and queries related to their subject and classroom management with their colleagues.

New Teachers

- **Revision in Qualification Criteria of Teachers**

The world's best performing school systems of countries like Finland, Singapore and South Korea frame policies to ensure that the most talented educators are attracted, developed and retained and are made to teach students of all socio – economic backgrounds. This has been done only by raising the entry qualification and stringent examination pattern being practiced for elementary teachers.

India hence, needs to learn a lesson from the same and should raise the qualification criteria of teachers of elementary as well as secondary level. An effective teacher should possess at least a thorough knowledge of the subject matter to be taught, an appropriate repertoire of pedagogical skills, and motivation to work and professional commitment.

Thus the new teachers produced in few years would be able to match the needs of the future

students.

- **Enhancement of Quality of Pre-service Training**

Due care for the revision and up-dation of examination pattern and syllabus of courses like PTC and B. Ed should be done keeping in mind the needs of the job market. The pre- service trainings of the new teachers should be grounded on the latest research done on the teaching styles of the teachers. Also during pre –service trainings student –teachers should get ample chance to practice teaching so that they get a real feel of the actual classroom. PTC and B. Ed should not be done just for the sake of name but concerned authorities, colleges and universities should check that the student –teachers are getting fully trained to become competent teachers.

Whether teacher–educators, existing teachers or new teachers, trainings should be made an integral part of their career cycle. The country needs a huge pool of such trainers who train our future teachers.

Conclusion:

In 2010, the no-detention policy was implemented as part of the Continuous and Comprehensive Evaluation (CCE) under the RTE Act in India. The main objectives behind this policy were to reduce stress on students and to reduce dropout rates in schools. Educationists and academics accept the fact that the no-detention policy and CCE are grounded on sound principles of pedagogy and student assessment which are practiced in many of the top–performing countries of the world like Finland, Singapore etc. But both the schemes have failed to give the desired fruits. It has been accepted that the failure of CCE scheme is due to the inadequate training given to teachers to implement the policy. Some other reasons were:

- No module of CCE in pre–service training was introduced. Hence no awareness among the new recruits about the system of assessment of students. Moreover, 'Assessments' is an optional paper in pre-service training.

- Reduction of In-service training to 7-10 days, made it difficult to train the teachers about CCE.

- Procedures for applying CCE were not planned of properly which confused teachers and students in using them successfully.

- Dearth of trainers that could have explained the idea behind the implementation of CCE to teachers and train them on strategies to assess and evaluate students.

Hence failure of CCE scheme should be taken as a lesson and reasons for the same should be thought of carefully so that before imposing any new scheme on our teachers, a pool of trainers is ready to train them on the new scheme. It should also be ensured that such schemes should not be put in action in schools until all the teaching workforce is fully trained on the new scheme.

Thus the paper concludes that in order to produce employable youth - governments, academicians and educationists need to align education policies, curricula and training programmes, in such a way that they produce fully competent and trained teachers. Out of the 17 UN Sustainable Development Goals (SDGs) of Agenda 2030 for sustainable development, 'Quality Education' has been declared as the most important and the most necessary standalone goal for the success of the remaining 16

goals – health, poverty, inequality etc.

Hence the government should understand that the education policies should be made keeping the nations' development as the main priority and having a keen watch on the international challenges and labour market requirements. Government of India has been striving hard to devise policies and programs like 'Skill India' and 'Make in India' to help youth of India to be skilled as per the world standards. But our government needs to understand that a strong building of youth cannot be built on a weak foundation of elementary education. And so the new goal of the education policy of the country should be: ***"Access to competent, caring, qualified, trained and skilled teachers."***

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IMPACT OF WORK ENVIRONMENT ON EMPLOYEE SATISFACTION: AN EMPIRICAL STUDY

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Abstract

The workplace within the organisation plays a vital role in developing the interpersonal relations, building satisfaction and thereby having an impact on productivity. A satisfied employee performs more efficiently and acts as a driving force for others. The Indian financial sector is very diverse with huge number of institutions providing multifaceted services. Among them are the Big 4's namely Deloitte, PricewaterhouseCoopers, KPMG and Ernst & Young. The work environment in these companies is said to be very different from other organisations as well as there is a difference in work environment of these four companies.

Powerful outcomes and profitability may be expected if employees are highly satisfied. The aim of the present study is to analyse the impact of work environment on employee satisfaction in Deloitte. Stratified random sampling method was used in present study. This study is conducted in major 5 cities in India and sample size was 125 employees working in Deloitte.

Varied statistical techniques were applied to test the reliability of the instrument used and to measure the relationship between work environment and employee satisfaction. Karl Pearson's Correlation and Regression analysis along with Coefficient of Determination were used to test the relationship and interpret the results.

The study offers useful managerial implications by which the company can understand the relevance of work environment as a component of employee satisfaction.

Key Words: Work Environment, Employee Satisfaction, Human Resource Management, Deloitte, Big 4.

Introduction

An attractive and strong workplace (Biswas et. al., 2017) can be portrayed as an environment that pulls individuals into the professions, inspire them to stay in the organisation and equip them to work efficiently. The motivation behind giving alluring workplaces (Huang et. al., 2017) is to make motivators for entering in the organisation (recruitment) and for staying in the workforce (retention).

Working environment can be classified into two segments - physical and behavioural. The physical environment comprises of those elements which facilitate to develop a physical interface with their office environment. The behavioural environment consists of those elements that help an individual to interact with each other, and the affect conduct of the individual.

The effectiveness of employees depends, to a great extent, on the environment in which they work. Workplace comprises of many variables which have a direct or indirect impact on the employee. Under Industrial psychology, there are three areas namely physical, mental and social in which individuals work and which should be investigated to recommend upgrades in them. The essential point is to make a situation which guarantees the best condition is harmonious, repetitiveness and

fatigue are limited and work execution can be expanded in order to enhance productivity.

Review of Literature

According to Haynes (2008), the physical environment with the profitability of its inhabitants falls into two principle classifications office format (open plan verses cellular workplaces) and office comfort (coordinating the workplace condition to the work forms), and the behavioral condition speaks to the two primary segments to be specific connection and diversion.

According to Scott (2000) detailed that working environment allies with employees work association and job satisfaction. Strong et al (1999) in an investigation found that there is an impact of social, authoritative and physical settings in the workplace which has an impact on the way workers execute their work. Looks into on nature of work life have additionally settled the significance of protected and solid working conditions in deciding employees work execution.

According to Franco execution depends on inward inspiration yet nearness of inner factors, for example, important aptitudes, scholarly limit and assets to carry out the activity obviously have an effect. As a result businesses should give fitting working conditions with a specific end goal to ensure the execution of representatives meet the required gauges.

Elements of work environment

Work environment in an organisation may be divided into three broad categories namely-physical, mental and social environment.

Physical Environment: Physical condition comprises lighting, ventilation, temperature, noise level and so forth.

i. Lighting: Satisfactory and legitimate lighting is basic for employees as it empowers them to work with speed and precision. Then again poor lighting causes eye strain, mental weariness, discomfort and lack of focus. Thus the quality and amount of work execution suffer adversely. Regular light or sunshine is the perfect requirement for work.

ii. Ventilation and temperature: Stale air at the work place makes inconvenience and fatigue to workers and reduces their productivity. Hence, ventilation is important to give fresh air. Temperature ought not to be outrageous as this may cause distress. It is important to keep the air sensibly cool and dry. Air should also be free from dust, toxic gases and fumes. Fans, coolers, heaters and air conditioners may be used for this purpose.

iii. Noise: Noise implies any sort of sound unpleasant to ears. It causes weariness and decreases effectiveness of work. Intermittent noise is more irritating than continuous noise. A person cannot remain indifferent to noise. The effort made to ignore noise causes fatigue and adverse effect on the nerves of a worker. Therefore efforts should be channelized to reduce noise. Noisy work should be kept apart from the quieter work.

Mental Environment: Mental environment comprises the psychological factors which influence the attitude, behaviour and performance of a worker. Leadership (Akdol & Arikboga, 2015) provided to workers is an important part of mental environment. A cooperative and sympathetic leader can inspire workers to put in their best.

Social Environment: Social environment refers to the group in which the worker works and is comfortable. Within a large formal work group (e.g, assembly shop in an automobile factory) workers

form informal groups of their own and develop a sense of belongingness to their group. The norms of the group influence significantly the attitude and behaviour of its individual workers. Therefore, management should understand and make constructive use of groups.

Job Satisfaction

Job satisfaction is the feeling that gives a sense of achievement and happiness of a person after performing a particular task. Job satisfaction is not the same as motivation and morale. Motivation is related to the eagerness to work. Morale suggests a general mentality towards work and workplace. Job satisfaction might be viewed as a measurement of motivation and morale could likewise be a source of work. Job satisfaction, despite what might be expected, is the feeling sensed after completion of a task which may impact subsequent behaviour of an employee.

Job satisfaction is a fundamental part of organisational wellbeing and an essential component in industrial relations. The level of job satisfaction appears to have some connection with different parts of work conduct like productivity, turnover, dedication etc. Several research have uncovered differing degrees of association between job satisfaction and these variables of work behaviour. Thus, it signifies that work environment is closely associated with job satisfaction.

Objectives of the Study

The study aims at fulfilling the following objectives:

- To find the factors affecting the work environment in Deloitte, a MNC Big 4 company.
- To analyse the impact of work environment on employee satisfaction in Deloitte.

The study will help to understand the work environment of employees in financial sector in India. The study will unveil the following factors:

- The working environment of employees in Deloitte.
- The gender ratio in Deloitte.

Hypotheses of the Study

Ho: There is no significant impact of work environment on employee satisfaction.

Ha: There is significant impact of work environment on employee satisfaction.

Research Methodology

The present study has adopted descriptive as well as quantitative method, because descriptive research is to extract all possible information regarding the current status of the phenomena to describe "what exist" or what is the actual picture of any concerned area in today's perspective, in accordance with variables or conditions in any given circumstances, where quantitative method helps in enlightenment of an observable fact by collecting numerical data that are analyzed using mathematically based method. In view of this, the use of quantitative strategy was judged completely appropriate.

Sampling methods are used to select a sample from the population. They are essential for removing bias in the selection process. Basically there are two types of sampling methods i.e. probability and non-probability method. The sample to be studied for the present study has been selected through Probability Sampling Method "Stratified Random Sampling Method". A sample of 125 employees was collected by stratified proportional random sampling technique.

Area of study: The area of study covers respondents from 5 major cities in India.

- Gurgaon
- Mumbai
- Bangalore
- Chennai
- Hyderabad

25 employees from each city has been taken under study in order to have the complete overview of the work environment in Deloitte.

Research Design

The research design has been adopted so as to suit the empirical analysis based on primary data which is collected through questionnaire. Schedules and personal interviews are used for primary data collection. We presented 10 statements to edge questions and five point Likert scale is used for assessing work environment and satisfaction level of employees. To find the satisfaction level of employees, they were inquired to rank their satisfaction level on the scale of 1-5, where 1 is equal to strongly disagree & 5 means highly satisfied. The inner reliability has been tested with the help of Cronbach's Alpha and KMO statistic and the value was attained by using SPSS (version 22.0).

Various tools of analysis are used depending upon the nature, need and suitability of the data available. Various tests are applied on the data collected to get significant output and results.

Data Analysis

Reliability

The questionnaire used for measuring the satisfaction level of employees was verified and tested for reliability using Cronbach's alpha. The detail values are depicted in the Table listed below:

Table 1: Reliability Statistics

Reliability Statistics	
Cronbach's Alpha	N of Items
.876	10

Source: SPSS 22

From the above **Table 1**, it can be concluded that Cronbach's alpha is 0.876 which indicates a high level of internal consistency for the scale used in the study.

To test the reliability KMO test was also conducted using SPSS 22 which gave the following results: **(Refer Table 2)**

Table 2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.808

As the value is greater than 0.7, we can conclude that the instrument used is reliable and can be used for further analysis.

Demographic Analysis

The sample of employees working in Deloitte, one of the MNC Big 4 companies, has been taken from five cities of India. The respondents' demographic analysis reveals the following facts:

Table 3: Demographic Profile of Respondents

Demographic Profile of Respondents			
Parameters	Category	Frequency	Percentage
GENDER	Male	77	61.6
	Female	48	38.4
Total		125	100.0
AGE	20-25	41	32.8
	25-35	62	49.6
	35-45	18	14.4
	Above 45	4	3.2
Total		125	100.0
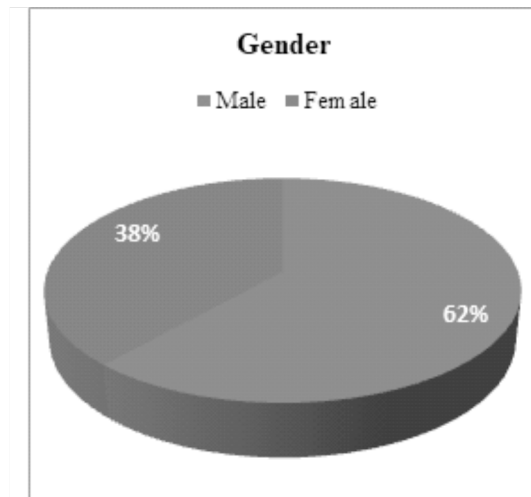
Figure 1: Gender of Respondents   Figure 2: Age of Respondents
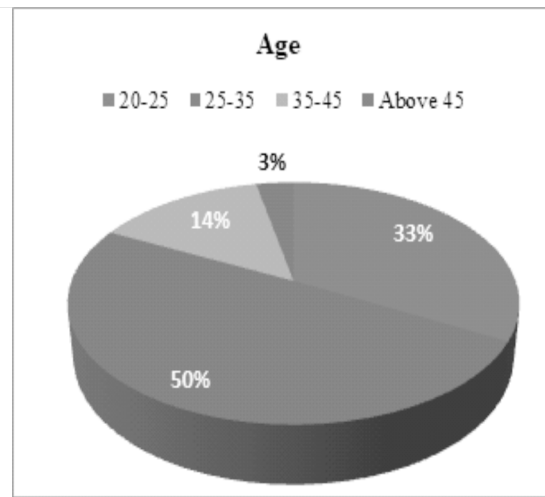
The gender of respondents states the fact that out of 125 employees, 62% respondents were males and 38% were females. It was found that 33% respondents were between 20-25 years old, 50% respondents lie between 25-35 years, 14% respondents fall under 35-45 years slab and rest 3% are above 45 years. **(Refer Table 1 & Figure 1 & 2)**

Descriptive Statistics

Various parameters of employee satisfaction and work environment has been studied using a questionnaire. The parameters has been grouped into two dimensions namely work environment and employee satisfaction. The mean and standard deviation for both dimensions has been calculated and as depicted in **Table 4**.

Table 4: Descriptive Statistics

Descriptive Statistics			
	Mean	Std. Deviation	N
Work Environment	3.4016	.31876	125
Employee Satisfaction	3.5184	.48599	125

Correlation Analysis

Karl Pearson's correlation analysis has been used to study the degree of relationship between the aforesaid parameters. The following matrix was obtained:

Table 5: Karl Pearson's Correlation Analysis

Correlations		Work Environment	Job Satisfaction
Work Environment	Pearson Correlation	1	.427**
	Sig. (2-tailed)		.006
	N	125	125
Employee Satisfaction	Pearson Correlation	.427**	1
	Sig. (2-tailed)	.006	
	N	125	125
**. Correlation is significant at the 0.05 level (2-tailed).			

The above **Table 5** revealed that there is a significant relationship between Work Environment and Employee Satisfaction. Above analysis shows that Pearson correlation value is 0.427 and p value (sig value) is .006 which indicates there is significant moderate positive correlation between work environment and employee satisfaction.

Regression Analysis

Linear regression analysis has been performed on the variables under study to find the impact on the dependent variable in terms of explained variation depicted through coefficient of determination i.e. R^2 as depicted in **Table 6.**

Table 6: Regression Analysis

Dependent Variable	Independent Variable	R	R²	Adjusted R²	F Sig.	Unstandardised Coefficient (B)	t Sig.
Employee Satisfaction	Model	0.427a	0.182	0.162	0.006	2.24	0.006
	Work Environment					0.376	0.00
a- Predictors:+ (Constant),Work Environment							
b- Dependent Variable: Job Satisfaction							

In the Model Summary, the R2 value is 0.182 of work environment (independent variable) explain 18.2% of the variability of Employee Satisfaction (dependent variable).

Unstandardized coefficient as specified in the above regression analysis **Table 6**, indicates how much the dependent variable varies with the independent variable. The t sig. value is 0.000 is less than 0.05, which concludes that null hypothesis is rejected. Thus, it can be said that there is a significant impact of work environment on employee satisfaction in Deloitte.

Discussion & Conclusion

Discussion concludes that work environment has a significant impact on employee satisfaction in financial sector in India. Work environment have r value 0.427 (p= 0.000), r2 value is 0.182 of work environment explain 18.2% of the variability of Employee Satisfaction.

Conclusion

Effective management of human resources through congenial working environment always lead to employee satisfaction and their enhanced performance which is reflected in improved productivity. Thus, the study focus on the study of the work environment of Deloitte at five major cities and the results are analysed using varied statistical techniques.

As per the data analysis, we can draw the conclusion that work environment constitutes the most important factor for employee satisfaction. It is quite clear that financial sector should provide a healthy work environment for employee satisfaction. It has found that work environment and employee satisfaction has moderate relationship (r = +0.427) which indicates that if the organisation create a healthy and safe work environment for their employees it will uplift their motivation and satisfaction level. Further, the coefficient of determination signifies that the 18.2 % is the explained variation in employee satisfaction which is explained by work environment. It indicates the presence of other significant factors also which may impact employee satisfaction in Deloitte.

This study reveals that work environment directly or indirectly has an impact on employee satisfaction. Effective work environment ultimately effects the individual performance as well as organisational performance.

Way Forward

There is a huge scope for further research on the basis of this study. A comparative study between Indian Financial sector & Foreign Financial sector can be done on the same parameters. The study may be extended to Non-Financial sector in India. There is a scope of future research on the effect of work environment on the performance of financial sector and can be compared with the findings of this study. Further research may be conducted exploring the other variables apart from work

environment which may have an impact on employee satisfaction and a model may be constituted which can further be authenticated using Structural Equation Modelling.

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CHEMISTS' PERCEPTION TOWARDS OVER THE COUNTER BRAND MEDICINE MARKETING WITH SPECIAL REFERENCE TO RAJASTHAN

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Abstract

The study intends to explore the chemist attitude and perception towards brand OTC medicine marketing strategies performed by the major pharmaceutical companies in Rajasthan. It also aims to study the impact of marketing mix factors on chemists' perception and attitude. The research is descriptive in nature and based on primary data collected via structured questionnaire, floated among chemist in Rajasthan. The study was conducted in period of July to November 2017. Totally 174 chemists participated on a random basis. The dependent variables like chemist perception and attitude and independent variables like product, price, place, and promotion with product labelling are considered in the research study. It is observed in the study that OTC product labelling has positive impact on chemist attitude in compare to other variables whereas OTC marketing mix elements like place and promotion have positive impact on chemists' perception. These marketing mix elements should be considered in marketing strategies plan by the pharmaceutical companies to create a successful brand in the OTC marketplace.

Keywords: Over-The-Counter (OTC) Medicine, Pharmaceutical Marketing, Chemists' Perception, Chemists' Attitude

Introduction

Over-the-counter (OTC) drugs are medicines sold directly to the consumer without any prescription while prescription medicines are sold to patient only on valid physician prescription. In India the phrase OTC has no any regulatory recognition but all the medicines which are not scheduled drugs are considered as a non-prescription medicines or OTC medicines.

With the changes in lifestyles and increase in self-medication practices with healthcare awareness the OTC medicine market steadily increased in the Indian as well as global pharmaceutical market. The easy accessibility and availability of OTC medicines make consumer convenient to treat their common ailment like headache, fever, constipation, acidity, and fatigue without any consulting with physicians and other healthcare professionals.

With more consumer awareness and easy availability of OTC medicine the over-the-counter medicine market in India having a worth of $6292 million and it is projected to be growing at a CAGR of 14.6%, to be reach $12440 million by 2021. In pharma emerging market like India, chemist, and pharmacy attendants play an important role in promoting and selecting various brand OTC medicine among consumers. In India where literacy rate lies at 74%, the role of chemist is important in helping the consumers for buying and safely use of OTC medicine available in drug market. In this way chemist are the most important link between the pharmaceutical companies and the consumers who decide the best OTC medicine for their consumers and perhaps it is important to know how marketing mix elements effect chemist buying decision towards branded OTC medicine.

OTC Brand Medicine and Chemist

The pharmaceutical companies are looking towards chemist recommendation for any of the OTC brand medicine because recommended OTC medicine from chemist will produce more sale and make more profit. As the chemists are the important link after the physician who recommended the OTC medicine or other healthcare supplements to consumers and conveys the idea that the product is special, will treat the consumer problem, and can be trusted. In this way the responsibility level of chemist is important when they recommended the OTC product to consumer.

To perform the role of chemist, it is important that they must have knowledge about the condition of the patient experiencing, including the treatment options available and when self-medication may not be appropriate. Secondly, chemist have a responsibility to educate their consumer about the safe and effective use of OTC medicines. If chemist recommendation promotes trust in that product, then chemist have a responsibility to make sure that patients should understand how to use the OTC medicine safely and in this way chemist expect that OTC medicine marketed by pharmaceutical companies should have detailed information about OTC medicine so that it will assist them in counseling the consumer for safe and effective use of OTC medicine.

Statement of the Problem and Need of the Study

As the numbers of OTC products are available in market with different therapeutic segment to consumers and most of the purchasing of OTC are made through Pharmacist or chemist retailer. The author, here studied the chemist perception regarding OTC brand medicine marketing strategies promoted by major pharmaceuticals companies in Rajasthan as it will be helpful to understand their purchase behavior of the OTC products. This research study will be helpful to pharmaceutical companies in planning and designing effective promotional communication which have more impact on chemist perception and positively enhance the growth for OTC medicine market.

Review of Literature

Khan Yaqub (2013) In this article "A Review on Marketing of OTC Drugs", the author narrates about the regulation of marketing and sales of OTC drugs in developed countries like US and Canada, He also discuss that OTC medicine which are listed as 'Ayurvedic Medicines' are also regulated under drug and cosmetic act and rule. The author did a pilot study to understand the attention, attitude, and practice of OTC medicine among adults in the National Capital Region. A sample of fifty respondents was chosen using convenience and judgmental sampling which included people of both genders with different demographic background. Information was gathered by using a designed questionnaire. The study showed a rich inclination among both doctors and consumers to accept more OTC medicines. The author also suggested that sellers should consider the worth of each model based on category of product change, presently retail influenced and the degree of consumer knowledge with the brand due to existing prescription status. The study also revealed that by making understanding to community on how to treat and how to prevent common ailments which may reduce the effort of general practitioners where lack of medical facilities was existing, pharmacists should be permitted to counsel and guide patients that deliver better healthcare solutions to prevent reoccurrence of these common ailments by suggesting them better OTC drug product.

Bhalerao (2016) In their research paper on "Consumer and Chemist Preferences towards Analgesics and Antipyretics in Drugstores in Nashik City" The research study revealed that increase in

consumption of OTC medicine among the educated crowd as well as the ignorant is due to diverse reasons such as awareness or self-assurance about different medicine among the educated while unfamiliarity of the potential risks towards self-medication among the ignorant. In some cases of unfamiliarity about a brand or a molecule, the pharmacist plays a main role in counselling about the brand medicine to the patient particularly when the patient is interested in practicing self-medication with OTC medicine. The researcher also focused on advertising of OTC products on television which falls in specific category like Digestives, Antacids, Cold rubs and Analgesic etc. The study includes descriptive research, in which 91 Pharmacist were selected from two different regions of Nashik city with an objective to identify most sold molecule to patients, most demanded brand by patients and most recommended brand by Pharmacist. The study reveals that Pharmacists (44 percent) prefer to sell Paracetamol, 28 percent interested to sell Nimesulide and 22 percent prefer to sell paracetamol + ibuprofen combination. Hence the self-medication among the consumer was performed due to their awareness about different drug molecule to treat common ailments.

Shroti Rahul (2011) In their research paper on "A study on over the counter drugs in retail pharmacies in Indore city", The study was conducted to determine the prevalence of over the counter medications and to assess patients' perceived safety of these medications in Indore city. The author conducted the cross-sectional study to determine the extent and pattern of use of over the counter medications. Data were collected from a random sample of 127 pharmacists from various pharmacies in city following WHO methods. The questionnaire was developed and administered to collect information on the demographic profile and use of over the counter medication among the consumers or patients. In the research paper author asked principal pharmacists about the prevalence of use of over the counter drugs, categories of medications preferred, safety priority of using the drugs and knowledge of use of over the counter drugs. The study concluded that the prevalence of over the counter drug use was estimated and found substantial use of over the counter medicine. The author also suggested that there should be a strong patient education system and government legislative framework should be there to control the sale of medication in the country.

Srivastava RK W. S. (2017) In their research paper "Study of consumers' perception towards pharmaceutical over-the-counter products in emerging markets – India", the study was conducted to know the consumer perception towards over the counter medicine and influencing factors for purchasing OTC medicine in India. In the study author studied demographic variables as well as independent variables like lifestyle, mental health, attitude and personality and some influencing factors like doctor advice, prior awareness, brand name and promotional strategy by pharmaceutical companies were also studied. The study results revealed that doctors and pharmacist are the most reliable source of information before taking OTC medicine, there is significant difference between male and female perception about the use of OTC medicine. The study results also revealed that most of the India population is aware of OTC products. The author suggested that OTC market is coming up future of the pharmaceutical industry due to increase in health awareness among people. To provide rich information about OTC product to consumer author suggested that FMCG model should be applied to the over the counter pharmaceutical marketing laterally with traditional marketing.

Objective of the Study

The objective of the present research pursuit to make analysis of chemist perception towards

marketing mix elements that is product, price, place, and promotion of OTC medicine brands promoted by major pharmaceutical companies in Rajasthan.

Following are the key objective of proposed research

1. To find out the correlation between chemist attitude and OTC brand marketing
2. To find out the correlation between chemist perception and OTC brand marketing

Materials and Methods

The present research is based on the descriptive research that studied chemist perception about OTC brand marketing performed by the major pharmaceutical companies. The research study also evaluates the chemist attitude towards OTC brand marketing strategies promoted by the major pharmaceutical companies under quantitative research.

Research Design

The research is descriptive in nature. It was based on the primary data. Primary data were collected via structured questionnaire. In the study, a sample size of 174 chemist was considered. Data obtained were analysed to identify the correlation between chemist perception and OTC brand marketing.

Sample size and sampling techniques

In the present study a sample size of 174 chemist was calculated as shown in **Table 1** based on consumer chemist ratio by using following formula :

$$\frac{\text{Total Rajasthan Population} \quad x \left(\dfrac{\text{Estimated OTC Consumer 5\%}}{100}\right)}{\text{Chemist Retail Shop in Rajasthan}}$$

So, the consumer and chemist ratio = 100:1

Sample size = 100 consumer per chemist

Table 1 : Descriptive statistics of chemist location

Location	Frequency	Percent	Cumulative Percent
Near hospital/Clinic	53	30.5	30.5
Near residential area	74	42.5	73
Near commercial place	47	27	100
Total	**174**	**100**	

The study sample size was comprising of 174 chemists depending upon their location. The maximum chemist respondents are from residential location 42.5%, 30.5% respondents are from near hospital or clinic and rest of 27% are located near commercial place. Thus. the results revealed that there was maximum number of chance of those consumer that visit chemist shop without prescription.

Research Questionnaire Design and Data Collection

The research questionnaire was designed accordance with the objective of research. The primary data were collected through the structured questionnaire with interview technique. The chemists were asked to reply to the questions in the questionnaire which will be related to chemist perception about OTC brand products marketing. The questionnaire is developed based on the dependent variables like chemist perception and the independent variables like Product, Price, Product labelling, Promotion, and Place.

Reliability of the Questionnaire

The Cronbach's alpha test was calculated to measure the internal consistency and reliability of the instrument use for consumer response. The Cronbach's alpha was calculated as 0.916, thus the instrument was considered as reliable for the present study.

Results and Discussion

The data collected undertook for descriptive and inferential analyses.

Highest Selling OTC Medicine Segments Among Chemists

It was asked from the chemist "For what type of common ailments or symptom do you sell OTC medicines". This question was asked to chemist to find out the highest selling OTC medicine segment among chemist.

Table 2 : Highest Selling OTC Medicine Segments

Type of Common ailments	Frequency	Percent	Cumulative Percent
Cough and Cold Fever	26	14.9	14.9
Headache	31	17.8	32.8
Skin Problem	27	15.5	48.3
Gastritis / Acidity	71	40.8	89.1
Muscle Pain	15	8.6	97.7
Vitamins/mineral supplements	4	2.3	100
Total	**174**	**100**	

Inference

From the above **Table 2** it is noticed that chemist sells highest OTC medicine is for 'Gastritis/Acidity' with 48.3%, followed by 'Headache' with 17.8%, 'Skin problem' with 15.5% and 'Cough and Cold fever' with 14.9%. Rest of the minor ailments share small portion of the OTC medicine sell which is 'Muscle pain' and Vitamins supplements with 8.6% and 2.3% respectively. Thus, the above table shows that Gastritis/Acidity was the highest selling OTC medicine segment among chemist.

Chemist Opinion Regarding Effective Source of OTC Product Information

It was asked from the chemist "State the importance of medium providing OTC medicine information available in market" to identify the effective source of information regarding branded OTC product.

Table 3 : Chemist Opinion Regarding Effective Source of OTC Product Information

S. No.	Effective source of information	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Agreement	Rank (based on agreement)
1	Sales representative	16.7	28.7	5.2	31.6	17.8	49.4	2
2	Print and Electronic media advertisement	12.6	8	24.1	41.4	13.8	55.2	1
3	Customers	11.5	20.1	24.7	39.7	4	43.7	3
4	Company's conference	5.2	25.3	27.6	28.2	13.8	42	4

From the above **Table 3**, it presents the chemist opinion regarding effective source of information regarding OTC medicine. 55.2% of chemist shows their level of agreement with media advertisement as an effective source of OTC medicine information, followed by sales representative with 49.4% agreement level, Customers are also important source of information for new branded OTC medicine with agreement level 43.7% and the least one is company conference with 42% of level of agreement.

Thus, it revealed that chemist rely on media advertisement as an effective source of OTC brand product information. So, the pharmaceutical companies should specially focused on print and electronic media advertisement when they perform OTC brand product promotions.

Multiple linear regression model for chemist attitude

Multiple regression analysis was performed to examine the relationship between Chemist attitude and the independent variables like Product, Price, Product labelling, Promotion, and Place. Based on the data set received a multiple regression model was formulated for Chemist attitude. The model shows the impact of various OTC marketing mix on chemist attitude if other factors were kept constant.

Inference

The multiple regression model with predictors Product, Price, Product labelling, Promotion, Place produced $R^2 = .065$, $F (5,168) = 2.333$, $P < .05$ which can be observed from tables model summary and ANOVA. Thus, the results revealed that 6.5% variability was observed in dependent variable (Chemist attitude) due to predictors.

Thus, it revealed that from all the predictors of OTC marketing mix element only Product labelling can have an impact on chemist attitude that is up to 6.5%, Thus if a pharmaceutical company wants to make OTC brand marketing impact than they should consider Product labelling as an important element of OTC marketing mix which perform positive impact on chemist attitude about OTC brand product.

Table 4: Coefficients of ANOVA for Chemist Attitude

	Coefficients									
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics		Impact
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF	
(Constant)	2.663	0.341		7.805	0	1.99	3.337			
Price	-0.04	0.034	-0.088	-1.162	0.247	-0.107	0.028	0.974	1.027	No Impact
Product	-0.016	0.066	-0.02	-0.247	0.805	-0.146	0.114	0.84	1.19	No Impact
Place	0.017	0.064	0.022	0.271	0.787	-0.109	0.143	0.833	1.2	No Impact
Promotion	0.077	0.067	0.094	1.155	0.25	-0.055	0.21	0.843	1.187	No Impact
Product labelling	0.159	0.065	0.193	2.434	0.016	0.03	0.288	0.887	1.127	Positive Impact
Dependent Variable: Chemist attitude										

From the above **Table 4** of coefficient, it was revealed that Product labelling have a significant positive regression weight, indicating chemist responded with higher scores on this variable was expected to have higher dependent variable i.e. Chemist attitude after controlling the other variables in the present model. Thus, to make an OTC brand marketing impact on chemist attitude, pharmaceutical companies must consider product labelling so that chemist can easily counsel the consumer about product use in indications and enables them about safe as well as effective use of OTC medicine.

Following **Figure 1** shows the normal P-P plot of regression for Chemist attitude. The bubbles denote the observed responses against straight line representing expected responses. The co-linearity of both indicates the suitability of the model. Hence, it may be concluded that model is suitable and can be used to find out Chemist attitude level if responses for other independent variables are present or vice versa.
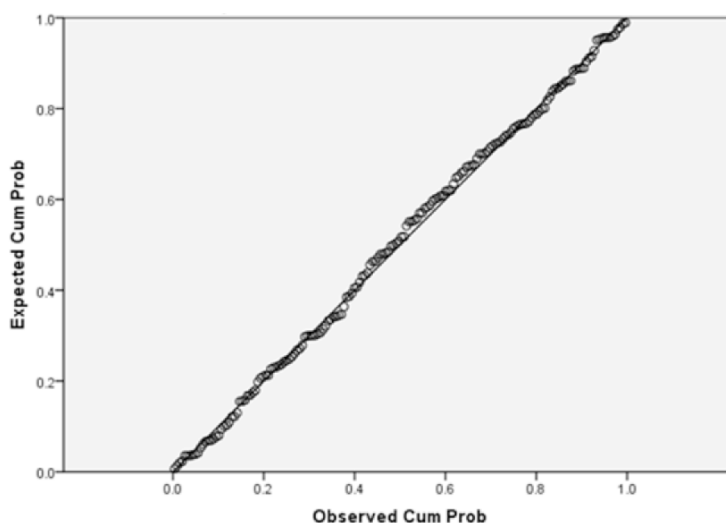
Figure 1: Normal P-P Plot of Regression Standardized Residual for Chemist Attitude

Multiple Linear Regression Model for Chemist Perception

In the following regression model analysis was performed to examine the relationship between Chemist perception and the independent variables like Product, Price, Product labelling, Promotion, and Place. Based on the data set received a multiple regression model was formulated for Chemist perception. The model shows the impact of various OTC marketing mix on chemist perception if other factors were kept constant.

Inference

The multiple regression model with predictors Product, Price, Product labelling, Promotion, Place produced R^2= .076, F (5,168) = 2.760, P <.05 which can be observed from tables model summary and ANOVA. Thus, the results revealed that 7.6% variability was observed in dependent variable (Chemist perception) due to predictors.

Thus, it revealed that from all OTC marketing mix elements Place and Promotion have an impact on chemist perception regarding OTC drug marketing is up to 7.6%.

Table 5 : Coefficients of ANOVA for Chemist Perception

Coefficients										
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics		Impact
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tole-rance	VIF	
(Constant)	2.063	0.364		5.673	0	1.345	2.781			
Price	0.025	0.036	0.051	0.678	0.499	-0.047	0.096	0.974	1.027	No impact
Product	0.002	0.07	0.002	0.023	0.981	-0.137	0.14	0.84	1.19	No impact
Place	0.15	0.068	0.179	2.204	0.029	0.016	0.284	0.833	1.2	Positive impact
Promotion	0.15	0.071	0.169	2.096	0.038	0.009	0.291	0.843	1.187	Positive impact
Product labelling	-0.008	0.07	-0.009	-0.109	0.914	-0.145	0.13	0.887	1.127	No impact
Dependent Variable: Chemist perception										

From the above **Table 5** of coefficient, it was revealed that Place and Promotion have significant positive regression weight, indicating chemist responded with higher scores on these variables was expected to have higher dependent variable i.e. Chemist perception after controlling the other variables in the present model. Thus, to make an OTC brand marketing impact on chemist perception, both marketing mix elements that is Place (product availability at different distribution channel) and OTC product promotion must be considered by pharmaceutical companies.

Following **Figure 2** shows the normal P-P plot of regression for Chemist perception. The bubbles denote the observed responses against straight line representing expected responses. The co-linearity of both indicates the suitability of the model. Hence, it may be concluded that model is precise and can be used to find out Chemist perception level if responses for other independent variables are present or vice versa.
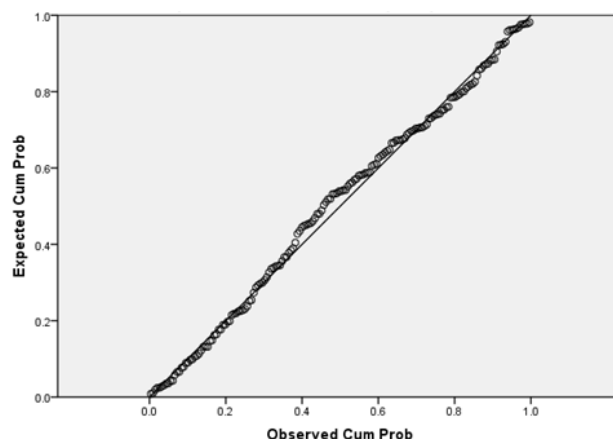
Figure 2 : Normal P-P Plot of Regression Standardized Residual for Chemist perception

Conclusion and Recommendation

The above conducted study gave insight about perception and attitude of chemist towards OTC marketing strategies performed by the pharmaceutical companies. The results revealed that OTC medicine marketing mix elements like place and promotion has positive impact on chemist perception which shows that OTC product availability at different distribution channels (Place) like pharmacy store, healthcare store is important factor in deciding chemist perception towards OTC brands. Another marketing mix element Promotion is also having significant impact on chemist perception because OTC product promotion make them easier to recall the brand as well as it helps them to push brand OTC medicine among consumers who are already aware about OTC brand name. The OTC product labelling is important factor for deciding chemist attitude which indicates that though OTC medicine is marketed by pharmaceutical companies, but product labelling is important factor to consider as a brand OTC medicine because product labelling assist chemist to make proper counselling of consumer regarding safe and effective use of OTC medicine in common ailments. The study may attract attention and useful to the pharmaceutical companies in assessing their OTC medicine marketing strategies from chemist perspectives which it creates and influenced with its efforts. The research study helps in finding the congruence between pharmaceutical companies presumed positioning strategies for their OTC brand product and chemist's perception of OTC marketing strategy.

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VENEZUELA: DESCENT OF AN OIL RICH STATE INTO ABYSS

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Abstract

This paper aims to outline and examine the major political and economic drivers which have contributed to the current crisis in Venezuela. It focuses mainly on the policies and triggers that led to the present scary condition in the country. Venezuela, which has more oil reserves than any other country in the world, was at one time the richest country in Latin America. Many consider Venezuela as a classic example of "Dutch Disease" a term used to describe an economic phenomenon when growth of natural resources sector in the country attracts considerable attention and leads to decline in other sectors like manufacturing, agriculture etc. While this notion is not wrong, the facts in the study point to something more serious. It brings out that more than the 'Dutch disease' it was the country's political dispensation and grossly misplaced economic policies that have brought this misery to the nation. Venezuela is a grim reminder to the world of what can be expected when a government goes all out on populist measures and takes shelter in leftist ideology. The sheer waste of Venezuela's resources and foreign exchange and its transition to a failed state is a sad story of modern political and economic history. The fortunes of Venezuelan economy are linked to recovery in oil sector, but the Oil industry itself has been hurt by Government polices and needs massive investments which are nowhere in sight as the country is already reeling under debt burden. A broader political and economic restructuring needed to break this impasse appears nowhere in sight.

Keywords: Venezuela Economy, Venezuela Debt, Hyperinflation, Chavez Legacy, Oil Crisis

Introduction

Venezuela represents one of the dramatic growth experiences in the world and equally quick fall as a failed nation. It is a paradox that a country with the largest oil reserves stands at the door steps of an economic breakdown.

While Venezuela's economy has many times moved in tandem with oil prices and a fall in oil prices had a negative impact on the economy, the damage to its social and economic fabric appears much large and may not be due to downswing in oil prices alone. As the country economy stands totally crippled, it is evident that Venezuela has landed into this mess not only due to decline in oil prices but more due to polices followed by its political leaders and mainly policies of Late President Hugo Chavez (1998-2013). President Chavez in a bid to consolidate his power over all wings of Government and perpetuate his rule imposed his leftist ideology on the country, followed populist polices, took massive debt when oil ruled high, left little scope for private investments, tinkered with country's oil production companies, imposed capital curbs and weakened almost every institution in the country.

The country's ongoing economic problems got accentuated by the drop-in oil prices became serious from 2013 onwards. The negative impact on the economy was very swift as years of mismanagement had left the economy quite vulnerable. The economic drift became harsher as

export revenues continued to nose dive. Poor economic policies, large flight of capital, leaving of multinational companies due to unjust demands have led to decline in oil production in a country with the highest oil reserves. Additionally, a substantial amount of oil production is mortgaged and held up towards debt payments, leaving only a fraction of the oil exports to generate revenue. Thus there was not enough money left to import essential items in a nation which was largely dependent on imports even for essential items.

Recession which became prominent in 2013 continued to deepen and has taken the shape of economic, social and political crisis of unforeseen magnitude. The country is faced with hyperinflation, electricity and water cuts, acute shortages of many essential goods, price and foreign currency controls and rising political and social conflict. The polices of government has not only led to flight of foreign investment and packing up of international companies but has also led to exodus of people from the country. More than a million people had left the country before the start of crisis due to repressive policies and many others are leaving now as they find hard to survive in the country beset with total breakdown.

Venezuela: An Oil Rich Country

Venezuela, named as the "Bolivarian Republic of Venezuela" since 1999 (by President Chavez), is located on the northern coast of South America. The country comprises a continental mainland and numerous islands in the Caribbean Sea and is bestowed with Andean peaks in the west, Amazonian jungles in the south and considerable natural resources. Large reserves of crude oil were first found in Venezuela in 1914. Production began during World War I and the resource quickly replaced agriculture as the base of the Venezuelan economy.

As on 2014, the proven oil reserves in Venezuela are recognized as the largest in the world, totalling 297 billion barrels surpassing that of Saudi Arabia. This represents approximately 20% of world's oil reserves. Venezuela is a founding member of the Organization of the Petroleum Exporting Countries (OPEC). The country's reserve-to-production rate is among the highest in the world, as a spate of wrong policies followed by those at helm of the country has led to shrinkage of country's oil production capacity particularly in the last two decades.

Venezuela: A History of Political Turmoil (Before President Chavez)

Venezuela political history has been characterised by considerable coup attempts, fragile governments and internal strife with overall leftist leanings.

 A time line which is indicative of its restive political past is as follows:

1. 1810: Venezuela which was Spanish colony declared freedom taking advantage of Napoleon Bonaparte's attack on Spain in Europe.

2. 1908-35 - Dictator Juan Vicente Gomez took reins. In this period Venezuela becomes world's largest oil exporter.

3. 1945 - A military coup established first democratically elected government.

4. 1948 – The democratically elected Government is overthrown in military coup

5. 1958 - Admiral Wolfgang Larrazabal throws out the military Government and restores back democracy. A Government with leftist leaning comes to power.

6. 1973: The Gulf crisis of 1973 leading to boom in Petroleum prices rakes in significant gains

for Venezuela. The Government continuing with its leftist agenda nationalises oil and steel industries.

7. 1989 - Carlos Andres Perez elected president amid economic depression, launches austerity programme with IMF loan. Riots and violence on street claims many lives, martial law and general strike follow

8. 1992 - Colonel Hugo Chavez and supporters make two coup attempts. Col Chavez jailed for two years before being pardoned.

9. 1993-95 - President Perez impeached on corruption charges.

10. 1998 - Hugo Chavez elected president

Venezuela: The Chavez Era

Colonel Hugo Chavez who had earlier attempted two coups in 1992 and was granted amnesty two years later, was elected the President in the general elections of 1998. He served as Venezuelan president from 1999-2013. He saw himself as an anti-imperialist revolutionary and his policies were a mix of Latin American leftism, socialism and extreme nationalism. He ushered in polices better known as "Bolivarian Revolution," a socialist revolution that brought in a new constitution with populist economic and social policies & renamed the country as 'Bolivarian Republic of Venezuela'. A slogan coined by him as part of Bolivarian Revolution was "Motherland, socialism, or death. Apart from various measures to strengthen his hold over the country that included rewriting the constitution, some of his key policies included nationalization of key industries, large spending on social welfare, vocal anti US rhetoric, Opposition to neoliberalism, support for participatory democracy at workplace etc. The high oil prices at that time allowed him to fund these populist measures. With the oil riches he donned the mantle as the defacto leader of the left leaning Latin American countries and tried to curb the U.S. influence in the region. He also pulled Venezuela from the World Bank and the IMF.

All along his polices were aimed at consolidating his power and he gradually assumed sweeping powers. In further continuation of his leftist policies and signs of his tilting further towards Cuban political and economic model, President Chavez in 2001 passed various laws aimed at redistributing land and wealth. In 2002 there was violent standoff between government and Petroleos de Venezuela (PVDSA) state oil monopoly managers and unions and President Chavez was taken into custody as part of coup which failed, and he got elected again.

In the year 2003, President Chavez struck back at state-run oil corporation, PDVSA where he had been trying to extend his complete influence. In an autocratic move that had a devastating effect on oil production in Venezuela, President Chávez, fired more than 18,000 employees of the state-controlled oil corporation, PDVSA. The employees had participated in a strike call to protest the politicisation of the company. This represented about half of the company's workforce. Further to punish them even more, they were barred from seeking employment with any company that was doing business with PDVSA. In one action, Venezuela lost its oil intelligentsia and professionals with specialised knowledge of the field and oil production never recovered from this shock.

Pursuing his leftist polices further in 2005, President Chavez signed decree on land reform to eliminate Venezuela's large estates. Later in 2007 his nationalisation efforts extended to key energy

and telecommunications companies. Two leading US oil companies, Exxon Mobil and Conoco Philips, refused to hand over majority control of their operations to the Venezuelan government and left the country.

Though his policies benefitted a large section of poor and working class, the economy took a downturn as it remained dependent on oil export and his policies gradual decline of both government sector industries as well as private sector. It is estimated that during his time 1.5 million people left the country, including highly qualified oil sector professionals and as the end of his period approached, country started facing food and water shortages, high inflation rates, shortages of medicines and black outs. He died of cancer in 2013.

Venezuela Post Chavez: Continuing with his Legacy

When President Chavez realized that his cancer had reached a terminal stage, he appointed Nicolas Maduro, a former bus driver and union leader, as his political heir. In subsequent elections in April 2013 Maduro won with a very narrow margin amid complaints of vote-rigging. There were violent protests in which many people died. The regime not only continued with Chavez era policies but became more authoritarian and made frequent arrest of dissidents.

The President Maduro whose re-election chances in next general elections are rated quite low by independent observers, has taken a leaf from Chavez era and has gone ahead with creation of a "Constitutional assembly" which will rewrite the constitution and will have more powers than legislature itself. Marred by allegations of fraud, a controversial electoral process has been conducted to form a constituent assembly tasked with rewriting the constitution. Venezuelan constituent assemblies have sweeping power not only to change the constitution but also to dismiss existing officials and institutions and even delay forthcoming elections.

Venezuela: Political & Economic Events & Current State of Economy

At the political level, Venezuela has proactively promoted the advancement of leftist ideas and President Hugo Chavez tried to consolidate anti US and leftist forces and provide leadership in the region. He also tried to make a group of Latin American nations and nurtured close bilateral ties with governments such as Cuba, Bolivia, Brazil and Ecuador. His other international friends included Libya, Iran, China and Russia.

While it cannot be denied that Bolivarian revolution at one point of time distributed the largesse from oil sales to the lower/middle income class people. it was not a sustainable way of doing it and its legacy has resulted in a defunct economy and divided the nation. The sacristy of essential items is highlighted by the fact that government has banned desperate shoppers from lining up overnight at supermarkets. Apart from slowdown due to downtrend in oil prices the economy suffered from inefficiency in oil production sector and a lack of investment in other sectors. Some indicators showing the drift in economy are shown in **Table 1.**

Table 1: Venezuela - Economic Indicators					
Indicator	2013	2014	2015	2016	2017*
GDP PPP ($ Billions, 2011)	534	514	482	395	
GDP per capita PPP ($ Thousands, 2011)	17,651	16,733	15,483	12,533	
Inflation	40.60%	62.20%	121.70%	475.80%	1660.10%
Unemployment rate	7.50%	6.70%	7.40%	18.10%	21.40%
Source: IMF World Economic Outlook					
* Estimated					

As shown in above **Table 1** inflation quickly galloped and turned into hyperinflation clocking a rate of 1660% in 2016, which may be the highest rate in the world. Hyperinflation was fuelled by high monetization of the public debt by the Central Bank and strong depreciation of the currency. Additionally, Currency controls had resulted in a black market and the fall in actual value of currency has been much steeper. Further left with little money to import meant severe shortage of goods leading to acute scarcity and scramble. There were incidents of stores or food vans being looted by agitated people. The unemployment rate has been rising due to systemic closure of private sector due to Government policies. Further the regime's hostility to foreign business created a corporate exodus. Pepsi, General Motors and United Air Lines are some of the companies that either left the country or significantly cut down their operations.

The situation in the country is scary with extreme shortages of food, medicine and other essentials and the government has to make a hard choice between buying imported goods or making due payments to the institutions and bondholders from which it had taken enormous debt. Venezuela's foreign reserves have dropped below the $10bn mark for the first time in 15 years as after effect of misplaced polices, gross mismanagement, inefficiency in government sector, corruption and subdued oil prices have taken their toll. As is evident from the **Figure 1**, the decline has been steep.
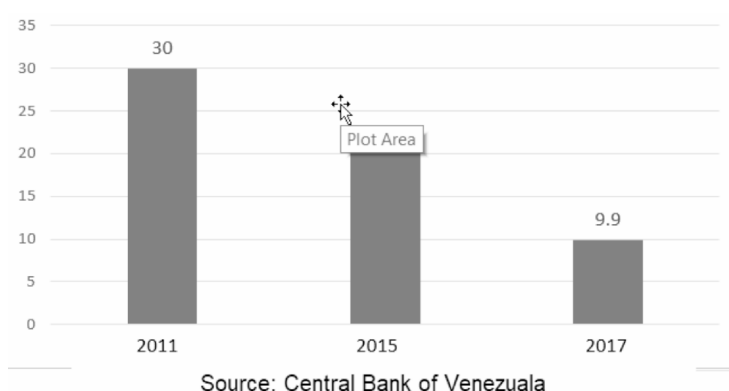
Figure 1 : Venezuela Central Bank Reserves (Billion US $)

Venezuela's economy has seen repeated cycles of economy moving in tandem with oil prices and every boom in oil cycle has led to a binge of government spending with difficult periods thereafter. However, President Chavez in his bid to consolidate his power under the garb of revolution and to create a large devoted vote bank made blatant use of oil income to give disproportionate benefits to

some sections of society. He even gave subsidised oil to other countries to project him as a leader of the deprived world capable of standing against US capitalism. His single pursuit of this idea along with steps like price and capital control etc. were injurious to the economy and even the oil sector which was bread and butter of the country got hurt.
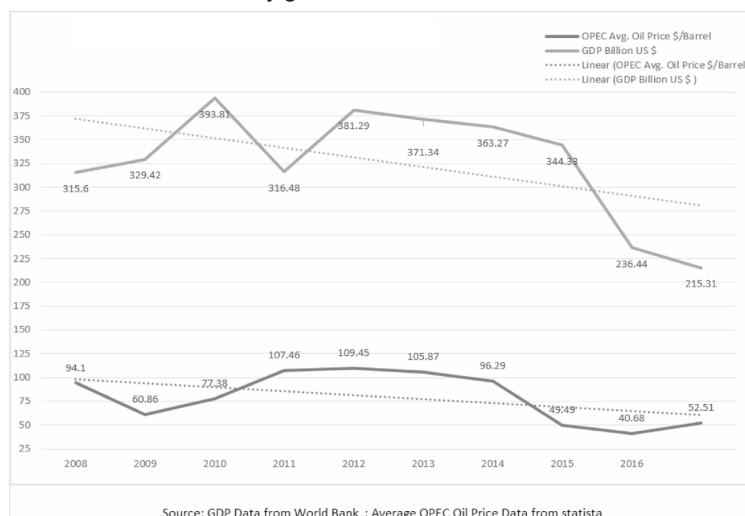
Figure 2 : Venezuela: Trend in Oil Prices and GDP

The above **Figure 2** is indicative of the fall in GDP as prices of oil plummeted over the last few years. It is also suggestive that that the fall in GDP has been more and a look towards the end of the chart (2016 onwards) indicates that even a slight recovery in oil prices, contrary to general expectations has seen the GDP going further downhill. This has happened because damage to economy and investments in oil sector was so high that it was not able to take advantage of positive external triggers and failed to raise output of its oil sector.

When to feed his political and social agenda, President Chavez went out on a borrowing spree many nations and capital market were happy to lend to Venezuela considering its huge cushion of oil reserves. In 2004 the public external debt was in region of $25 billion and in 2017 it nears $180 billion, more than a seven-fold increase.

The biggest disservice by President Chávez's "socialist revolution" came when he shook the foundations of state oil company PDVSA by firing half the employees in 2003. The loss of skilled personnel was a such a big blow which handicapped the oil exploration and development, running of operation, safety and created a management void. Consequently, oil production stagnated and even during periods when oil prices skyrocketed, Venezuela was unable to lift its production and take the benefit.

As per figures of 'The Centre for Energy Orientation', a Venezuelan NGO, the number of incapacitating injuries due to accidents at PDVSA rose from 1.8 per million man-hours in 2002 to 6.2 in 2012. Further price controls, expropriation of numerous farmlands and various industries, changing government policies, freeze on any access to foreign currency not only made people's life worse but also suffocated the industry and several technological and automobile companies shut down ther operations in the country.

Chávez's nationalisation of industries extended to cement and steel and many other core sectors and left the country increasingly dependent on imported goods putting further pressure on scare foreign exchange. The lack of domestic supplies of building materials like steel, aluminium and cement led to contraction in construction sector as well leading to loss of jobs. This happened even as the Government was giving high priority to housing for the poor.

Need for Comprehensive Economic Reforms & Restructuring:

Under Chavez's leadership, the state slowly achieved control of the oil sector and later other core industries as well. Ownership of these resources by the state and frequent meddling together with taking possession of oil assets of large multinationals who had access to considerable know how took its toll on the oil sector in the country. As pointed out earlier in the paper, the biggest blow to the oil industry was dismissing of about half the work force in one stroke and disallowing them even to seek any alternative employment with other companies. These professions left for foreign shores and many of them played a vital role in revving up the oil industry in Canada and Colombia. The impact of all these together with exchange controls was no modernisation and expansion of this vital industry and instead of raising the Oil production the regime policies resulted in almost the opposite.

Venezuela faces a contradictory or Catch 22 situation with respect to the options to shore up its economy. To come out of the debt trap it needs to ramp up its oil production. However, to quickly shore up its oil production it needs considerable investments and technical knowhow which it lacks as this juncture and cannot achieve without rise in oil revenue i.e. oil production. Also, with the present trend of oil prices, the country cannot generate sufficient revenue from oil exports to service its debt and still leave enough money to buy essential items required to meet the basic needs of people. Venezuela may need a sea change in its outlook and policies to break this vicious cycle. Sadly, by all indications the present rulers are focusing predominantly on consolidating their own power and are subverting all possible institutions that may come in their way.

The country may need to seriously change its basic polices and realize that they are at the root of its problems and have wrecked more havoc on its economy than fluctuations in oil prices. The only course left may be a serious effort at debt restructuring and making conditions amenable for investment from other countries. Venezuela needs to negotiate with several nations, variety of lenders and financial institutions where the options are again limited due to strong anti US leaning of the Government, bad experience of earlier multinational oil companies and other international companies. The willingness of large donors like china and Russia to restructure their loans or to take a haircut can provide some relief. Further reforms in direction of letting the market mechanism take over and dismantle price controls, move towards free float of exchange and selectively disinvest Government owned companies etc. may be needed to raise resources and bring some order in the economy. All this must be accompanied by broad economic reform package and restructuring and may need a regime change accompanied by ideological shift at the political level.

Conclusion

Venezuela was counted as an affluent country with the largest proven fossil-fuel reserves in the world. In past few years its economy has been shrinking at an alarming rate. Inflation is spiralling out of control, there is shortage of essential items and medicines and violent protests have become norm of the day. The paper has examined the irony that how a country that is bestowed with abundant

resources and that proclaimed to have set out on the path of a revolution with the aim to wipe out poverty has today ended up making more people poor.

The miserable state of the Venezuelan economy given that the country has the largest proven capacity of oil reserves has important political and economic lessons for other nations as well. Venezuelan people are going though very painful period as the country has a meagre amount left after catering to external debt. There seems to be no end to this debt burden as in addition to present debt outgo the country in the long run owes vast sums to China, Russia and Development institutions like Latin American Development Bank. Additionally, there is a string of international cases and arbitration proceeding with companies whose assets were seized or where contracts were not honoured. These cases are at various stages with international bodies and ultimately Venezuela will have to be settle them at considerable cost if it wants to tap finance from a wider gamut of nations.

Despite hardships of unbearable magnitude being faced by the citizens, a corrupt and authoritarian Government is engaged in the dangerous game of amassing unrestrictive power over all institutions in the country and has vested interest to carry on with its populist measures which have brought the country to present state. As highlighted earlier in the paper the damage to oil production industry due to misdeeds of the Government is of such proportions that it is difficult to ramp its capacity on need basis and even a relief rally in oil prices may only provide a marginal relief to the economy. The repressive and whimsical policies of the regime in last two decades has caused irreparable damage to Venezuelan economy in many ways. Apart from flight of capital, there has been a massive outflow of talented and qualified professionals. Similarly, departure of many important business organisations including multinationals like Pepsi and oil companies like Exxon Mobil has hurt the economy financially as well led to lack of investment in country.

This paper shows that the malaise the country faces is much larger and only part of the problems that Venezuela faces today can be attributed to what is accounted by a phenomenon called 'Dutch Disease' which refers to an economic phenomenon when growth of natural resources sector in the country attracts considerable attention and leads to neglect/decline in other sectors of economy. Drop in Oil prices has also contributed to this state of economy, but the country has more to blame itself as it has used every rise in oil cycle in the past to go on a binge of spending and add to its debt burden. The problem lies more in political ambitions and in a country that has a history of political instability, the final and most damaging blow has come from the repressive and wrong economic policies of President Chavez whose legacy continues. Thus a potent mixture of problems of country rich in one natural resource (Dutch disease), market fluctuations in oil prices, inability to use this surplus effectively and on top of all revolutionary socialist policies which many times actually were aimed at preserving the power of few have contributed to this collapse.

The paper shows that Venezuela is typical of what can be expected when left leaning governments talk of revolution to solve problems of impoverished citizens of a country. While Venezuela has a history of political strife and mismanagement of oil revenues, the squandering of nations resources when oil prices ruled high crossed all limits under President Chavez. His policies and urge to further his rules at any cost is the single most factor that outweighs even losses due to downtrend in oil prices. President Chavez paralyzed all state institutions by rewriting the constitution, indulged in witch hunting of dissidents and played havoc with the economy by mis allocation of resources, giving windfalls to certain sections of society, establishing price and exchange controls leading to rampant

black market and corruption etc. Futher outspending on social programs, government interfere in every sphere and finally chasing of foreign companies from Venezuela and resulting destruction of private sector has led to this grave situation. Today the country is left with a shattered private sector that could have otherwise provided employment, imports all goods as most industrial units have shutdown, exchange restrictions have ensured that the official currency is now worthless and debt to fund social extravaganza has made inflation to cross 1000% and the stores are empty. There is no opportunity in the private sector, since it has been systematically destroyed by periodic nationalization, confiscation and resultant exit of international private companies.

At the end, the revolution has perhaps only benefited the ruling political elite and sections like military whose interests are in line with political class. Sadly, the political class in power continues to pursue Chavez legacy. The study brings out that contrary to widely held notion that Venezuelan economy has gone into abyss due to rock bottom oil prices, the blame lies significantly on the wrong political and economic polices of erstwhile President Chavez who has deceived the nation with the promise of a revolution for betterment of masses. The present political dispensation is likely to further harm the economy which has totally collapsed and seems to be at the point of no return. In a narrative that is reminiscent of George Orwell's Political satire 'Animal Farm', the present Venezuelan regime blames its opponents for Venezuela's economic woes and says United States is waging an economic war on Venezuela.

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AIR INDIA: COMPARATIVE STUDY OF REVENUE DRIVERS IN INDIAN AIRLINES

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Abstract

In this paper, the researcher has compared various revenue parameters which help airlines generate revenue with special focus on Air India and also with reference to its peer group of airlines in Indian viation pace. A comparison of global standards on various parameters mostly in context to aviation industry in USA as also incorporated in the paper. The good thing about aviation sector is that allmost, all the data is available in the public domain however analysis and interpretation requires a bit of work.

The researcher has reviewed various factors responsible for driving revenue for five major airlines operating in Indian aviation space, some of which are low cost carriers however the line dividing the two has been increasingly becoming thin and since the comparision is only on technical parameters this difference has been conveniently ignored.

The thumb rule like any other business is to keep revenue factors high and cost factors low.

Keywords: Air India, Revenue Drivers in Airline, Air India Revenue

Air India: Comparative Study of Revenue Drivers in Indian Airlines

Indian Air Transport Industry started in 1932, when Tata Airline which started as a department at Tata Sons Limited was converted as a public limited company. The Air India Limited was formed in 1946, by taking over Tata Airlines with all its aircrafts, equipment, engineering facilities, training personal, airmail contracts etc.

The Air Transport Industry was nationalized on 1st August 1955 whence Air Corporation took over the business of **Refer Table 1**:

Table 1 : Companies in Aviation Industries in India

Old Company	New Company
Air India Limited	Air India International Corporation (Later named Air India in June 1962)
Air Services of India Limited	Indian Airline Corporation Limited
Airways (India) Limited	
Bharat Airways Limited	
Deccan Airways Limited	
Himalaya Aviation Limited	
Indian National Airways Limited	
Kalinga Airlines Limited	

The aviation industry in India was predominantly controlled by these two airlines unless Government of India came out with "Open Sky Policy" in 1991.Post 1991 Indian air space saw introduction of various airlines like: Jet Airways, Air Sahara, Damania Airways, Modiluft (later named Spice Jet), Air Deccan, Kingfisher Airlines etc. The policy was focused on implementing fundamental economic

reforms, industry deregulation in key sectors, attracting & accelerating foreign direct investment and pushing forward the privatization of public sector undertakings including the aviation industry. The duopolistic aviation industry of the 1980s and 1990s transformed into oligopoly due to this policy change. During the course of these twenty-seven years, few airlines have closed down and few were acquired, hence we have following major airlines in Indian Air Space as on September 2017 which have been included in our study. We have Included only major five airlines out of thee in our study due to the long duration of sustained operations of the airlines and for ease of data comparison: **(Refer Table 2)**

Table 2 : Air Line Companies included in Study

S. No.	Name of Airline
1	Air India (Includes Air India Express & Alliance Air)
2	Jet Airways (Also includes Jet Lite)
3	Spice Jet
4	Indigo
5	Go Air
6	Vistara
7	True Jet
8	Zoom Air
9	Air Asia

Air India Current Status

Currently Air India globally ranks at 53rd position-out of 848 registered airlines. It is ranked 38th on ASK's, 40th on Cargo payload, 37th in AFTK's and 54th in frequencies of flights. Air India Fleet has a total of 220 Airplanes and have 45 Airplanes on order which shall be delivered by early next year.

This paper shall cover five revenue drivers: Capacity, Load Factor, Passenger Yield, Cargo, Ancillary Revenue.

Revenue Driver: Capacity

Capacity in Airlines is a revenue driver as it creates the potential for customer revenue. Airline capacity helps to understand the planned total seat capacity airlines expect to offer in future. It is dependent on the demand for airline tickets, obliviously it has to higher during peak seasons or at times when the customer movement is higher. As per **Table 3**, Air India has the highest capacity of around twenty-seven thousand, Jet Airways has a capacity of around twenty-one thousand followed closely by Indigo. The capacity though gives us an idea of the ability of an airline to cater to the number of customers however it does not give any idea of the customers served by the airline. Air India though have the highest capacity it does not mean that Air India also has the maximum customer share and highest revenue. For getting an idea about the customer share and revenue one has to understand other factors of the airline business. If the capacity data of 2014 are compared, it is evident that all the airlines except jet airways have increased their capacity by foreseeing the demand as well as the better outlook of the market post 2014 due to decrease in crude oil prices. Jet Airways has been cautious in the proposed fleet expansion however Indigo has been very aggressive in its fleet expansion and have increased number of airplanes from 27 to 107 in a span of two years and also gave another order of new highly fuel efficient alpha planes to Airbus. Indigo has advantage of using single configuration airplanes (Airbus A320-200) whereas other airlines use

various kinds of airplanes in their fleet. Indigo is also aggressive in changing its airplanes quiet frequently to decrease its cost. The average life of aircraft in Indigo is lowest (Two Years One Month).

Table 3 : Capacity of Various Airlines in Indian Airspace as on 31st March 2016

Airline	No. of Air Crafts	Capacity	% of Capacity
Air India	136	27,492	34%
Jet Airways	116	20,860	25%
Indigo	107	19,260	23%
Spice Jet	43	6,552	8%
Go Air	19	3,420	4%
Other Airlines (Vistara, Air Asia, Air Pegasus, Trujet etc.)	22	3,112	4%

In USA, the capacity remained same from the period of 2007 to 2014 however to capitalize on the declining fuel prices the airlines have started to add to the capacity cautiously from the second quarter of 2014.

Revenue Driver: Load Factor (LF)

Load Factor (LP)/Passenger Load Factor (PLF) measures as to how much an airline's passenger carrying capacity is used. It is calculated by the division of Revenue Passenger Kilometers (RPK) and Available Seat Kilometers (ASK). If we assume, the capacity to remain same, then RPK is directly proportional PLF. Airlines try to maximize PLF and this also helps management in taking decision about pricing, capacity and frequency of flights.

On analysis of the Indian Airlines, it is obvious that Spice Jet had the highest increase in PLF from 2014-15 to 2015-16 which is about 10%. This can be largely contributed to Flash Sales done by Spice Jet during this period.

The same it applicable in case of other airlines where the maximum contribution comes from Air Asia who have mastered the pricing for Indian market.

Table 4 : Capacity of Various Airlines in Indian Airspace as on 31st March 2014

Airline	No. of Air Crafts	Capacity	% of Capacity
Air India	133	25,887	36%
Jet Airways	123	18,690	26%
Indigo	77	13,860	19%
Spice Jet	58	9,435	13%
Go Air	18	3,420	5%
Other Airlines (Air Asia (India) Ltd. & LEPL Projects Ltd.)	5	314	0.4%[1]

Another factor contributing to the increase in PLF is the fact that there has been high growth of 21.58% in the number of domestic passengers during 2015-16. The PLF was 74.6% in 2012-13 and slightly low at 73.3% in 2013-14, increased to 82.9% in 2015-16 and was 79.0% in the year 2014-15. **(Refer Table 4)**

Despite of the overall growth in PLF in Indian market, Air India's PLF grew only by 2.2% in one year. The main reason for Air India's bad performance can be attributed to its bad customer service and low on time performance. Air India lags far behind its peers in on time performance, customer service, cleaning of Air Crafts and has the highest number of customer complaints. These operation issues if dealt better, may help Air India increase its PLF.

In USA, the average load factor of all the airlines has more or less remained constant from the beginning of 2012, it has stayed between 84.9% to 86.1% whereas in India it has been 82.9% highest in the best season of 2015-16 which saw maximum increase in the number of passengers.

Revenue Driver: Passenger Yield

The average fare paid per passenger kilometer flown gives the value of passenger yield. It is calculated by the following formula

$$Passenger\ Yield = \frac{Passenger\ Revenue}{Kilometers\ traveled\ by\ Passenger}$$

This is calculated in Rupees per Kilometer and is useful measure for assessing fare changes over a period of time. Yield does not give the complete picture of comparisons across markets and/or airlines, as it varies dramatically by stage length and does not incorporate load factor, hence is not useful for comparisons across markets and/or airlines.

Yield Management was first implemented by American Airlines in in 1980s with the objective to maximize customer revenues by selling right seat to the right customer at right price. The effort can be broken down into two components : pricing & yield management.

Pricing—the determination of fare structure (fare classes and levels) and restrictions (advance purchase conditions, cancellation penalties, Saturday night stay requirements, etc.)— depended on a number of factors, the most important of which were the airline's cost structure and pricing philosophy, its competitors' behavior, and its customers' travelling preferences. There are mainly two types of pricing as a practice full fares and discounted fares (with restrictions).

Once prices and restrictions had been determined; it is yield management's responsibility to control the number of seats available in each category. **(Refer Table 5)**

Table 5: PLF of Indian Airlines as on 31st March 2016

Airline	PLF 2014-15 (%)	PLF 2015-16 (%)	YoY Growth in PLF (%)
Air India	73	75.2	2.2
Jet Airways	79.25	79.9	0.75
Indigo	79.4	84.1	4.7
Spice Jet	81.8	92	10.2
Go Air	79.1	83.7	4.6
Other Airlines[1]	67.9	77.8	9.9

In Indian Aviation Industry **(Figure 1)**, the average passenger yield has been Rs. 4.97 per km & Air India has a passenger yield of Rs. 4.1 per kilometer and it stands 9th in a club of thirteen airlines. If the three airlines are clubbed: Alliance Air, Air India Express and Air India,the cumulative passenger yield shall be Rs. 5.73 per km. In USA, the average passenger yield for all the airlines for the year 2016-17 has been USD 1.17 per mile.
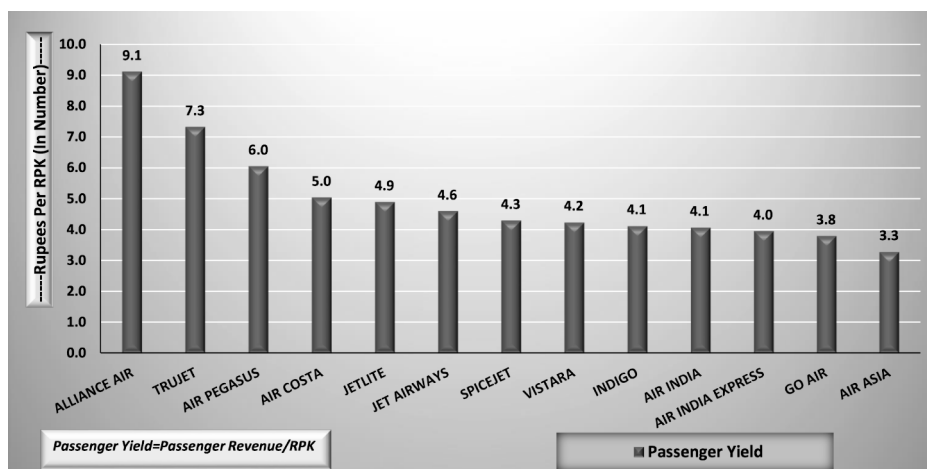
Figure 1 : Passenger Yield in Indian Airlines 2016-17

Revenue Driver: Cargo

Cargo is defined as the goods carried on a plane. Cargo "freighters" carry only goods, but freight also travel's in the holds of passenger planes. Combination planes have a main deck that is divided into a cargo area and a passenger area. This is also a driver through which airlines generate revenue. This type of cargo (carried in passenger planes) is known as Belly Cargo. **(Refer Table 6)**

Table 6 : Cargo: Freight Traffic (Domestic & International)

Freight Traffic	2016-17	2015-16	2014-15
Domestic	6.38 Lakh MT	6.24 Lakh MT	5.91 Lakh MT
International	15.13 Lakh MT	14.04 Lakh MT	13.68 Lakh MT

The domestic cargo traffic grew by 6.3% (CAGR) over the period from 2007-08 to 2016-17 while the growth in International cargo traffic is of 4.4% (CAGR) during the same period.

On analyzing the cargo carried by major Indian Airlines it is inferred that Jet Airways carries maximum amount of belly cargo amongst its peers, Air India is second and Indigo is a close third. Indian market is price sensitive and the Air Cargo is not the preferred mode of transportation, the customers prefer to send material by road for domestic transportation and prefer sea for International transportation. The freight rates of Indian Airlines are relatively high compared to Road or Sea and since the travel time is more of less constant, businesses are able to plan as per this timeline as well. Since they consider the lead time from order to dispatch, they also plan for an additional transportation time hence the penetration of Air Cargo in Indian markets is less. **(Refer Table 7)**

The case is more or less same in USA as cargo revenue generated from freight & mail services accounts for only 2% of total airline revenue.

Table 7 : Cargo carried by Major Indian Airlines for last three years.

Cargo Carried in Thousands of Tons			
Airline	2017 *	2016	2015
Air India	131.07	195.3	215.9
Jet Airways	191.6	242.7	235.3
Indigo	111	173	146
Spice Jet	40	64.7	55.4
Go Air	29.2	55.3	56.3

* 2017 data is taken till July 2017
· Jet Lite & Jet Airways have been clubbed and considered a single entity
· Air India also include alliance air and air India express
· Sum of all the flights have been included like: Scheduled Domestic, Non-Scheduled Domestic, Scheduled International

Revenue Driver: Ancillary Revenue

"Any revenue generated by any product or service by direct sales to passengers minus the revenue generated by sale of thicket."

Idea Works Company includes categories like, frequent flying, advertising, a la carte, commission-based products in ancillary revenue."

Domestic airlines have been levying a fee for choice of seat, use of lounge and onboard meals only as of now and Indian domestic airlines have a long way to go as ancillary revenue made up only 0.7% and 3.3% of total revenue of Spice Jet and Jet Airways respectively in 2012. In India possibility of earning revenue through ancillary means have not be explored fully, as not only airlines did not pay required attention but the DGCA (Regulatory Authority) also discouraged airlines to charge higher for non-ticket services. Earlier, airlines were only allowed to charge for certain services like food but for any other service to become chargeable it needed a go ahead from the DGCA.

According to a survey by US-based consultancy firm IdeaWorks Company, "in 2015 airlines earned $26 billion in ancillary services revenues. According to the survey, US-based low-cost airline Spirit earned about 43.4% of all its revenue from ancillary sources, followed by Allegiant Air and Wizz Air, which earned 37.6% and 36.4 %, respectively, of their revenue from ancillary sources."

This however does not give the correct picture as the airline which have earned the maximum revenue from ancillary services are low cost airlines whose ticket prices are low however they charge for every other service including baggage except hand bag. That being said the fact remains that in India , airlines have still not exploited the opportunities of increasing revenue by means of providing ancillary services on charge basis as this driver is an important revenue generator.

Currently some airlines (e.g Fin Air, Lufthansa) have included third-party merchandise with adhoc inventories – such as hotels, restaurants, duty free retailers, cab companies, sellers of event tickets – to develop a retail environment as part of their in-flight Internet portals.

Indian Airlines have long way to go in generating revenue, as of now the revenue is so less that it does not get featured in DGCA reports.

Findings

The paper helps us understand the major revenue parameters in aviation sector. Air India is behind its peers in all the factors and needs lot of improvement. Air India's bad performance is attributed to its bad customer service, low on time performance, use of old planes etc.

Apart from Air India not performing, other carriers have a long way to go as far as generating more revenue is concerned. India has to deregulate the pricing of ancillary services and DGCA should focus more on safety and compliance and less on allowing the carrier to find ways and means to generate revenue.

Indian aviation has a long way to go with respect to aviation services in developed countries.

Conclusion & Further Study

The analysis presents a comprehensive approach of revenue parameters for Indian airline sector. The revenue parameters shall help us to understand the ways and means by which airlines maximize their revenue and become more sustainable. The other factor that determines any company's growth are the cost parameters. Cost parameters include fixed and variable costs incurred by the company and can be studied further for airline industry to get a holistic perspective of the industry. Any company desiring to grow and sustain should maximize revenue parameters and minimize cost parameters.

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PSYCHOLOGICAL CHARACTERISTICS AND MOBILE PHONE ADDICTION AMONG ADOLESCENTS

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Abstract

Mobile phones have gained immense popularity in the contemporary times. Everywhere be it offices, colleges, schools, homes, parks, malls, trains, buses etc. we see people hooked onto mobile phones. Especially young people or adolescents are spending most of their times on mobile phones these days. In fact, it would not be wrong if we say that people, mostly adolescents, are addicted to mobile phone. These addicts may manifest symptoms like low self-esteem, escapism and find it extremely difficult to maintain healthy social relationships but can establish very good relationships within the artificial or cyber world. A slight abandonment of mobile phones may result in anxiety, stress, sensitiveness, shivers, insomnia and other metabolic disorders in them. In this research paper, we attempt to study what is the connection between psychological features and mobile phone overuse in young people.

Keywords: Mobiles, Young People, Overuse, Psychological Features

Introduction

In the modern society, cell phones hold an important place in the current times and are regarded as an important aspect of everyday life. For some people, the situation is that they can't even imagine a life without a mobile. While, we don't find lot many studies on disproportionate usage of mobiles, indications show that unjustifiable usage of smart phone is regarded as a technological obsession. The people who overuse mobiles show symptoms like low self-esteem, escapism and find it extremely difficult to maintain healthy social relationships but can establish very good relationships within the artificial or cyber world. A slight abandonment of mobile phones may result into anxiety, stress, sensitiveness, shivers, insomnia and other metabolic disorders in them.

Cell phone has become the prime private communication tool globally as studied by Leung & Wei (1999), Ling (2000), Wei (2006). Mobile phone as an important communicating tool while commuting and moving and also an indispensable shared fixture in as per Peters & Allouch (2005). The custom of mobiles has converted into a collective spectacle, happening in a common perspective and impacted via the sensitivities about offerings, and common customs opines Roos (1993).

Nevertheless, it is found that over use of cell phones is a habitual and addictive malady that may be observed as a leading non-drug compulsion according to Madrid (2003). Aoki and Downes (2003), studied mobile phone and addiction, but there are very few studies which examined association amid phone habit and change in behaviour. Reason of addiction is colossal & convenient features of cell phone like portable music player, extremely high speed Wi-Fi. People find it very convenient to carry and work on a mobile phone than PC. The present day smart phones contain very innovative and very user friendly apps and games. Now a days, a very new type like SNS or app addiction is added to smartphone addiction. Smartphone needs more mediation by theme, instant connection and public interaction.

In this research paper, we attempt to study what is the connection between psychological features and mobile phone overuse in young people.

Objectives

The main objectives of the research are as given under:-

1. To understand mobile phone addiction in adolescents and its impact.
2. To study what is the connection between psychological features and mobile phone overuse in young people.

Methodology

Research Type: Exploratory Research

Type of Data/Data Source used: Secondary Data/Data source.

The study takes into account secondary data. The necessary information has been derived from various research papers, books, articles from Newspapers, Magazines, and from numerous web-sites which deal directly or indirectly with the topics related to mobile phone addiction in adolescents. Relevant information was subsequently analysed to address the objectives of present study.

Main Text and Finding

Paper is focusing on the impact of mobile phone addiction in terms of distinct psychological and physical aspects in adolescents.

Sleep Disorders

Adolescents using their mobile phones extremely are more likely to manifest disrupted sleep, disquiet, stress and exhaustion. Loughran, et al. (2005) establish that over use of mobile results into rapid eye movement, sleep dormancy and insomnia. Soderqvist, et al. (2008) explored Swedish adolescents and exhibited that people who are over using smart phone testified health problems like tiredness, anxiety, difficulties in concentration and sleep disorders. Over use and addiction of mobile phones causes users to lose their sleep, get angry over trivial issues Francisca LT (2007). Sara Thomee et al. (2011) carried out research relating mobile phone addiction and perceived stress, dejection, sleep disorders on medical and IT students. Gross (2004) clarified several mental and physical ailments like sleep deficiency, lethargy, weak immunity among some other problems. If cell phone addiction gets serious it will worsen the sleep quality Sahin, Ozdemir et al. (2013). Sleep disorders, anxiety, anxiety and dejection are some of additional negative concerns resulting from smart phone overuse Thomee, Harenstam & Hagberg (2011). Aoki and Downes (2003) steered a study on students in US and proposed that most of students take late night calls which leads to insomnia and sleep disorders.

Anxiety and Restlessness

Acharya, et al. (2013) studied physical impact of mobile phone overuse in pupils of professional disciplines in universities and Institutions. Scholars of both sexes manifested that headache was the general indications and subsequently bad temper/rage. Some psychological indicators incorporated attentiveness difficulties, low examination results, sleeplessness, and unease amid others. Most mobile addicts become irritable and anxious when they are unable to use their mobile phones as per Francisca L T (2007). Gaby Badre (2008) in the study on teenagers in Sweden reveal that over use of

mobile phones cause restlessness. Humphreys (2005) detected that smart phone over use may cause social anxiety, feelings of insecurity and abandonment also anger towards other people.

Lot of stress and anxiety is observed due to overuse of mobile phones and technology. This overuse and addiction has changed the way we personally communicate with each other, and has created a lot of distance in our interactions and relationship building process. Smart phones and overuse of technology has compelled a block between intimate and direct interactions between people. This results in obstructing personal well-being and causes needless anxieties, stress and pressures.

The indications take into account busyness with the phone, extreme usage of loss of control, usage in socially unfitting situations, adversative impact on connections, indications of escape (e.g. ire, strain, dejection while the phone is not nearby, ringtone unease, persistent thoughts that battery may be out any time, yearning signs), symptoms of acceptance (craving for an innovative mobile handset, extra applications, softwares and added time of usage), handy/behaviour related damages (deceitful, opinions, humble attainments, withdrawal, engaging in phony conversations to avoid others). This is similar to substance dependence syndrome and is hence imminent to consider mobile phone dependence (MPD) as an analytical unit.

Stress

Jenaro et al. (2007) in his paper examined cell phone excessive usage among Spanish college students, and established females reflect high usage of phones and having high anxiety and sleep disturbance. James and Drennan (2005) in their study asserted that some of the widespread negative results of cell phone addiction included financial issues, spoiled relationships, and emotional stress. In the present period, teenagers are so concerned with their data viz. text messages, photos, address book etc and if the phone is lost or broken then as there is a possibility of data being gone, this creates huge stress in their minds.

Physical and Biological Problems

Exceeding use of smart phone results into physiological problems like body aches, fatigue, headaches, eye strains, earache, and musculoskeletal indications. The addiction to smart phones makes people to suffer from aches, pain and some or the other disability Francisca LT (2007).

Teenage years is a time of acute change in psychological, physical & biological growth in addition to susceptibility to environmental differences. Adventurousness is a normal disposition at this age and other studies consider it as phases of usual, biological and physical growth Irwin CE (1989). Nevertheless, hazardous risk taking occurs when usual young evaluation becomes skewed & gets impenetrable into a design by way of chiefly adverse results and defined as 'risky behavior' as per Ponton L (1997). Gustafson et al (2003) in their study explored adolescent's familiarity, outlook and vigour in association with continuous usage of IT & recognised there are physical and psychological health issues involved with over use of technology.

Escapism

James and Drennan (2005) studied Australian university students' cell phone use and revealed characteristics related to addictive use. These were: impulsiveness, stress, failure of control mechanism and withdrawal indications. Park (2005) categorised mobile phone using respondents into light user and heavy users. Some factors were used to determine mobile phone addiction which

were tolerance, cutting down withdrawal, unintended use, displacement of other activities, time spent, and continued use. Addiction to mobile phone causes mood swings, withdrawal, and frequent conflicts with people, behavioural and cognitive salience, and relapse (Griffiths, 1996). Withdrawal means negative feelings of stress, guilt, anxiety, tension or worry related to abandonment with smartphone.

A certain analysis of 'dependency syndrome' is sternly done and only if 3 or more of these stay together at time in yesteryears: sturdy desire or indication of itch to have the substance; problems in monitoring its usage during starting, expiry and form of usage; level of escape; patience levels; continuous and increasing abandonment of substitute inclinations and comforts, amplified extent of usage or enhanced time used for retrieval; insistent use in spite of clear indication of obvious harmful results.

Summary of Studies Reviewed (Refer Table I)

Table I : Summary of Studies Reviewed

Author(s)	Physical/ Psychological Characteristics	Impact of Mobile Phone Addiction
Loughran, et al. (2005)	Sleep Disorders	Establish that over use of mobile results into rapid eye movement, sleep dormancy and insomnia.
Soderqvist, et al. (2008)	Sleep Disorders	Explored Swedish adolescents and exhibited that people who are over using smart phone testified health problems like tiredness, anxiety, difficulties in concentration and sleep disorders
(Francisca LT, 2007)	Sleep Disorders	Over use and addiction of mobile phones causes users to lose their sleep, get angry over trivial issues
Sara Thomee et al. (2011)	Sleep Disorders	Carried out research relating mobile phone addiction and perceived stress, dejection, sleep disorders on medical and IT students.
Gross (2004)	Sleep Disorders	Clarified different mental & bodily issues like insomnia, lethargy, and weak immunity among some other problems.
Sahin, Ozdemir et al. (2013)	Sleep Disorders	If cell phone addiction gets serious it will worsen the sleep quality
Thomee, Harenstam & Hagberg, (2011)	Sleep Disorders	Sleep disorders, anxiety, constant worry and hopelessness are some additional consequences which result from smart phone overuse
Aoki and Downes (2003)	Sleep Disorders	Steered a study on students in US and proposed that most of students take late night calls which leads to insomnia and sleep disorders.
Acharya, et al. (2013)	Anxiety and Restlessness	Students of both genders manifested that headache was the general indications and subsequently bad temper/rage. Some psychological indications that entail attentiveness difficulties, low examination results, sleeplessness, unease amid others.
Francisca L T, (2007)	Anxiety and Restlessness	Most mobile addicts become irritable and anxious when they are in any situation and dispossessed of mobile regardless of cause.
Gaby Badre (2008)	Anxiety and Restlessness	Study on teenagers in Sweden reveal that over use of mobile phones cause restlessness.
Humphreys (2005)	Anxiety and Restlessness	Detected that smart phone over use may cause social anxiety, feelings of insecurity and abandonment also anger towards other people.
Jenaro et al. (2007)	Stress	Examined cell phone excessive usage among Spanish college students, and established that people of opposite gender are related to more usage of smart phones and having high anxiety and sleep disturbance.
James and Drennan (2005)	Stress	Asserted that some of the widespread negative results of cell phone addiction included financial issues, spoiled relationships, and emotional stress. In the present period, teenagers are so concerned with their data viz. text messages, photos, address book etc and if the phone is lost or broken then as there is a possibility of data being gone, this creates huge stress in their minds.

Author(s)	Physical/ Psychological Characteristics	Impact of Mobile Phone Addiction
Francisca LT (2007).	Physical and Biological Problems	Exceeding use of smart phone results into physiological problems like body aches, fatigue, headaches, eye strains, earache, and musculoskeletal indications. The addiction to smart phones makes people to suffer from aches, pain and some or the other disability
Irwin CE (1989)	Physical and Biological Problems	Youth is acute mobility and entails psychological, physical & biological growth using susceptibility to environmental differences. Adventurousness is conjoint inclination during young age & additional studies consider the young age involving phases of usual, biological and physical growth.
Ponton L (1997)	Physical and Biological Problems	Nevertheless, hazardous risk taking occurs while usual pubescent evaluation becomes skewed & come to be impenetrable in design alongside mostly adverse results and defined as 'risky behaviour'
Gustafson et al (2003)	Physical and Biological Problems	Explored adolescent's familiarity, outlook and wellbeing on context of continuous usage of IT & established there are physical and psychological health issues involved with over use of technology.
James and Drennan (2005)	Escapism	Studied Australian university students' cell phone use and revealed characteristics related to addictive use. These were: impulsiveness, stress, failure of control mechanism and withdrawal indications.
Park (2005)	Escapism	Categorised mobile phone using respondents into light user and heavy users. Some factors were used to determine mobile phone addiction which were tolerance, cutting down withdrawal, unintended use, displacement of other activities, time spent, and continued use.
Griffiths (1996)	Escapism	Addiction to mobile phone causes mood swings, withdrawal, and frequent conflicts with people, behavioural and cognitive salience, and relapse

Conclusions

There should be a balance between the time spent with mobile phones and time spent without them. If this balance is not made, then due to addition with mobile phones and technology, we will lose all affection, intimacy and closeness which come from personalised interactions. We see now a days, everyone is more comfortable hooked onto their mobile phones than interacting with nearby people. This also hampers full development of our new generation as they will find it difficult to have personalised interactions and vocal confrontations with other people. There are various negative physical and psychological effects due to cell phone addiction. Young people are more busy in taking selfies, giving pouts and poses, status updates and very less interested in affectionate interactions with people besides them. They always need validation from other people regarding whatever they upload on their smart phones and if this validation, likes and acknowledgement is not coming then they feel very much stressed and anxious and insecure. They also become highly stressed and anxious if they are without smart phones or are unable to use them.

Smart Phone craving is being discussed as evolving civic healthiness issue. It has become an imminent or urgent necessity to recognise it quickly so that proper awareness and treatment/ educational intervention can be devised. Preventive dealings to thwart needless extreme introduction to mobile usage is desirable. In addition, however we need to identify potentially prone & vulnerable sets like kids and youngsters, those are directed for different relevant programs.

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EFFECTIVENESS OF SARFAESI ACT, 2002 IN THE INDIAN BANKING INDUSTRY

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Abstract

The banking industry in India has been going through rapid changes and noteworthy development after nationalization of banks. In the varying circumstances of the operations and working system of banks in India, the NPAs (non-performing assets) have been a foremost difficulty being faced by them. The RBI and Government of India have taken a variety of measures to control non-performing assets. The modifications in the Banking Sector in India have brought many positive changes like, the enactment of the Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI) Act, 2002 has been a benchmark reform in the banking sector of India. The securitization act has provided much desired authority to the banks in India to deal with the NPAs predominantly those bad assets (bad loans) which occur because of willful defaulting of the customers.

The majority of previous researches in India are concentrated to the general review of the non-performing assets and its management. No specific study has been conducted towards judging the impact of SARFAESI Act on the Indian Banking Industry. This research paper makes an attempt to decide whether the enactment of SARFAESI Act, 2002 is able to spread its encouraging impact on the Banking Industry of India and its impact on the level of risk management of those institutions. This research study is based on the secondary data and for data analysis; the paired t-test was used. The study establishes that NPAs in Indian Banks have been constantly reducing ever since enactment and implementation of the SARFAESI Act. The outcome also shows that SARFAESI Act, 2002 leads to growth in performance, asset quality improvement, enhancement of loan portfolio and ultimately better risk management. The study suggests that banking industry of India must continue to stay focused in their hard work to improve the non-performing assets and bad loans, to preserve the encouraging and efficient tendency of improving their asset quality.

Keywords - SARFAESI Act 2002, NPA, Total Advances, Asset Quality, t-test

Introduction

The banking industry is the spine of any financial system in the world. Traditionally, the Law system in India had been quite gracious towards borrowers and notably time-consuming and incompetent. As a result, as a bank grants loan to an organization, it has very less power to bargain for the loan back or get the assets that officially securitize the loan. The Indian banking sector is constantly suffering from bad-loans, i.e. NPAs (non-performing assets). The mounting NPAs have always been a cause of distress for the whole banking industry. But the circumstances has enhanced over time. The reform measures have moreover resulted in an enhancement in the profitability and prosperity of banks. There has been a visible up-gradation in the quality of asset of banks. The Government of India has proactively commenced various actions to manage NPAs. In order to control and regulate the NPAs and speed up the recovery process, the Indian Government has set up DRTs and DATs and in the

year 2002 they enacted the SARFAESI Act, which is also called securitization act.

The foremost purpose behind the enactment of SARFAESI Act was the sale/ auction or securitization of NPAs or NPLs (Non-performing Loans) by banks and financial institutions in favor of ARCs (Assets Reconstruction Companies) registered with the RBI (Reserve Bank of India). The SARFAESI Act authorizes the banks and financial institutions to directly acquire the asset of the secured creditor, in case, of the Non-performing assets by giving direct notice, without the intervention of court. This has speeded the recovery process of the banks and helped the banking institutions to recovers their bad loans, which directly reflected in the enhancement of asset quality in banks and financial institutions.

Review of Literature

Review of Literature has revealed that non-performing assets acts like a worm and affects the working of the banking sector by decreasing its asset quality, profitability, net worth, liquidity, etc. The last decade has shown a significant change in the amount of NPA in the banking industry, i.e. it has decreased to a large extent. This is the result of various recovery tools and especially the enactment of SARFAESI Act in 2002. This act has provided much needed power to the banking industry to recover its dues from the defaulters with no interference of court. Hence, the act had a encouraging impact on the banking industry in India. But no study has been conducted to prove the resourcefulness of the act and to analyze the worth of this act as a risk management tool for the Indian banking industry. To fill this gap, the present was undertaken with an aim to prove that the SARFAESI Act has improved the Indian banking sector and acted as a risk management tool for the banks.

Objectives

- To study the efficacy of SARFAESI Act in enhancing the loan portfolios and improving the performance of banking industry.
- To study the impact of SARFAESI Act on asset quality of Indian banks.
- To analyze the SARFAESI Act as risk management tool for Indian banks.

Hypothesis

Based on literature review and previous studies related to the securitization act, the following Hypotheses have been formulated for authentication of this research:

Null Hypothesis (H_{01}): SARFAESI Act does not enhance the institutions' loan portfolios, liquid securities i.e. investments and has not helped the banking industry to maintain a steady performance.

Alternate Hypothesis (H_{a1}): SARFAESI Act has enhanced the institutions' loan portfolios, liquid securities i.e. investments and has helped the banking industry to maintain a steady performance.

Null Hypothesis (H_{02}): SARFAESI Act does not improve the asset quality of the banking institutions and has not helped the banking institutions in better risk management.

Alternate Hypothesis (H_{a2}): SARFAESI Act has improved the asset quality of the banking institutions and has helped the banking institutions in better risk management.

Research Methodology

The study

As the concept of risk management in the emerging scenario is quite new, the present research is

both exploratory and descriptive in nature. This paper employed the Ex Post Facto research design to compare two periods i.e. before the enactment of SARFAESI Act and after the enactment of SARFAESI Act. The model for the study was structured in a way to bring out whether the SARFAESI Act has a positive impact on the banking industry.

The study being comprehensive one covers all the three sectors (public, private and foreign) of Indian Banking Industry. To test the above mentioned hypothesis few parameters have been selected. Loans and Advances (LA), Investments(INVT), Profit after Tax(PRFT) for H_{01} and Gross NPA as a percentage of Gross Advances (GNPAGA), Net NPA as a percentage of Net Advances (NNPANA), Gross NPA as percentage of Total Assets(GNPATA), Net NPA as percentage of Total Assets(NNPATA), Net Worth(NETW) and Capital Adequacy Ratio (CAR) for H_{02}. Variable AF is used to represent the values after the enactment of SARFAESI Act and BF is used to represent the values before the enactment of Act.

Sample

The Indian banking industry comprises various commercial banks. Currently there are 21 public sector banks, 21 private sector banks and 41 foreign banks. The purposive sample is taken from the banking industry. The scope of the present study is restricted to the 21 Public sector banks, 12 private sector banks and 25 foreign banks as these banks were in existence in 2002 and 2016.

Tools used for Data Collection and Analysis

The present research mainly depends upon secondary data collected from various sources i.e., Reports on trends and progress of banking in India, annual reports of the public and private sector banks, statistical stables relating to banks in India for the period of eleven years from 2001-02 (before enactment of Act) to 2015-16(after the enactment of Act). The data analysis has been done through SPSS using paired t-test.

Results and Discussions

H_{01} Stands Rejected and H_{a1} is accepted

The null hypothesis is rejected in case of public sector banks, private sector banks and foreign banks, looking at the t-test result of public sector banks (**Refer Table 1, 2 & 3**), LA, INVT, PRFT t_c = 4.273, 5.199 and 3.240 respectively > t_t = 2.064. This result shows that there is a significant difference in the amount of loan and advances, investment, and profit before the enactment of SARFAESI Act and after its enactment. This result is further strengthened with the 2-tailed significance value of 0.00, 0.00 and 0.003 for LA, INVT and PRFT < 0.05 level of significance.

The t-test result in case of private sector banks **(Refer Table 4, 5 & 6)** shows that there is significant difference in the amount of loans and advances, investment and profit in case of Pre SARFAESI Act and Post SARFAESI Act as the LA, INVT, PRFT t_c = 8.114, 7.917 and 2.559 respectively > t_t = 2.145. This result is further supported with the 2-tailed significance value of 0.00, 0.00 and 0.023 for LA, INVT and PRFT < 0.05 level of significance.

In case of foreign banks also, the t-test result **(Refer Table 7, 8 & 9)** shows that there is significant difference in the values of the two paired variables as the LA, INVT, PRFT t_c = 2.969, 2.879 and 2.256 respectively > t_t = 2.064. This result is further supported with the 2-tailed significance value of 0.07, 0.08 and 0.033 for LA, INVT and PRFT < 0.05 level of significance.

In all the three cases, the null hypothesis stands rejected and therefore, we accept the alternate hypothesis, i.e. the SARFAESI Act has significant contribution in enhancing the bank's loan portfolios, liquid securities i.e. investments and has helped the banking industry to maintain a steady performance.

H_{02} Stands Rejected and H_{a2} is accepted

The null hypothesis is rejected in case of public sector banks, private sector banks and foreign banks, looking at the t-test result of public sector banks (**Refer Table 10, 11 & 12**), GNPAGA, NNPANA, GNPATA, NNPATA, NETW, CAR t_c = 10.025, 8.742, 9.438, 8.232, 4.531 and 3.582 respectively > t_t = 2.064. This result shows that there is a significant difference in the amount of Gross NPA to Gross Advances, Net NPA to Net Advances, Gross and Net NPA to Total Assets, Net Worth and Capital Adequacy Ratio of the banking industry before the enactment of SARFAESI Act and after its enactment. This result is further strengthened with the 2-tailed significance value of 0.00, 0.00, 0.00, 0.00, 0.00 and 0.002 for GNPAGA, NNPANA, GNPATA, NNPATA, NETW and CAR < 0.05 level of significance.

The t-test result in case of private sector banks (**Refer Table 13, 14 & 15**) shows that there is significant difference in the amount of Gross NPA to Gross Advances, Net NPA to Net Advances, Gross and Net NPA to Total Assets, Net Worth and Capital Adequacy Ratio in case of Pre SARFAESI Act and Post SARFAESI Act as the GNPAGA, NNPANA, GNPATA, NNPATA, NETW, CAR t_c = 6.271, 6.130, 6.449, 8.208, 5.426 and 2.190 respectively > t_t = 2.145. This result is further supported with the 2-tailed significance value of 0.00, 0.00, 0.00, 0.00, 0.00 and 0.46 for GNPAGA, NNPANA, GNPATA, NNPATA, NETW and CAR < 0.05 level of significance.

In case of foreign banks also, the t-test result (**Refer Table 16, 17 & 18**) shows that there is significant difference in the values of the two paired variables as the GNPAGA, NNPANA, GNPATA, NNPATA, NETW, CAR t_c = 8.489, 2.849, 2.738, 2.673, 3.345 and 2.522 respectively > t_t = 2.064. This result is further supported with the 2-tailed significance value of 0.00, 0.009, 0.011, 0.013, 0.003, and 0.019 for GNPAGA, NNPANA, GNPATA, NNPATA, NETW and CAR < 0.05 level of significance.

In all the three cases, the null hypothesis stands rejected and therefore we accept the alternate hypothesis, i.e. the SARFAESI Act has improved the asset quality of the banking institutions and has helped the institutions in better risk management.

Conclusion

The establishment of SARFAESI Act, 2002 has consequently smoothened the system for full-fledged execution and practice of securitization in India, particularly by the Indian banks from year 2000 onwards. Credit risk for banks increases where there are high incidences of non-performing loans and the study establishes that NPA in Indian Banks have been constantly declining ever since accomplishment of the SARFAESI Act 2002, therefore, the securitization act has led to significant reduction credit risk of the banks in India. The results also indicates that SARFAESI Act, 2002 helps in enhancing performance, improvement in asset quality, improvement of loan portfolio and eventually improved risk management. The study suggests that Indian banks should maintain focus on their efforts to recover their NPAs and NPLs, to uphold the encouraging and successful development of enhancing their asset quality.

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Public Sector Banks
Table 1: Statistics of Paired Samples

		Mean	N	Standard Deviation	Standard Error Mean
Pair 1	AFLA	124306.8092	21	146698.01887	29339.60377
	BFLA	18927.7080	21	23484.55473	4696.91095
Pair 2	AFINVT	49652.9088	21	56602.14595	11320.42919
	BFINVT	17847.5784	21	27322.18518	5464.43704
Pair 3	AFPRFT	.9788	21	.28547	.05709
	BFPRFT	.7080	21	.33639	.06728

Table 2: Correlations of Paired Samples

		N	Correlation	Significance
Pair 1	AFLA & BFLA	21	.996	.000
Pair 2	AFINVT & BFINVT	21	.975	.000
Pair 3	AFPRFT & BFPRFT	21	.104	.621

Table 3: T-Test result of Paired Samples

		Paired Differences					t	df	Significance (2-tailed)
		Mean	Standard Deviation	Standard Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	AFLA – BFLA	105379.1012	123320.35159	24664.07032	54474.9619	156283.2405	4.273	20	.000
Pair 2	AFINVT – BFINVT	31805.3304	30588.16291	6117.63258	19179.1573	44431.5035	5.199	20	.000
Pair 3	AFPRFT – BFPRFT	.2708	.41795	.08359	.0983	.4433	3.240	20	.003

Private Sector Banks
Table 4: Statistics of Paired Samples

		Mean	N	Standard Deviation	Standard Error Mean
Pair 1	AFLA	1800617.2667	12	828680.02114	213964.26141
	BFLA	241329.2000	12	175672.92592	45358.55443
Pair 2	AFINVT	1097279.7333	12	474407.82033	122491.57250
	BFINVT	219997.6000	12	183399.94567	47353.66235
Pair 3	AFPRFT	.6527	12	.69569	.17963
	BFPRFT	.4907	12	.51765	.13366

Table 5: Correlations of Paired Samples

		N	Correlation	Significance
Pair 1	AFLA & BFLA	12	.562	.029
Pair 2	AFINVT & BFINVT	12	.428	.111
Pair 3	AFPRFT & BFPRFT	12	.961	.000

Table 6: T-Test result of Paired Samples

| | | Paired Differences | | | | | | | |
| | | Mean | Standard Deviation | Standard Error Mean | 95% Confidence Interval of the Difference | | t | df | Significance (2-tailed) |
					Lower	Upper			
Pair 1	AFLA - BFLA	1559288.0667	744280.74716	192172.46258	1147119.1271	1971457.0062	8.114	11	.000
Pair 2	AFINVT - BFINVT	877282.1333	429167.51032	110810.57468	639617.0879	1114947.17788	7.917	11	.000
Pair 3	AFPRFT - BFPRFT	.1620	.24522	.06331	.0262	.2978	2.559	11	.023

Foreign Banks

Table 7: Statistics of Paired Samples

		Mean	N	Standard Deviation	Standard Error Mean
Pair 1	AFLA	754597.4800	25	1278605.55521	255721.11104
	BFLA	163636.7200	25	307672.04285	61534.40857
Pair 2	AFINVT	607697.4400	25	1005228.96828	201045.79366
	BFINVT	126765.9600	25	205607.95626	41121.59125
Pair 3	AFPRFT	1.9884	25	1.23289	.24658
	BFPRFT	.8280	25	2.00797	.40159

Table 8: Correlations of Paired Samples

		N	Correlation	Significance
Pair 1	AFLA & BFLA	25	.939	.000
Pair 2	AFINVT & BFINVT	25	.859	.000
Pair 3	AFPRFT & BFPRFT	25	-.214	.304

Table 9: T-Test result of Paired Samples

| | | Paired Differences | | | | | | | |
| | | Mean | Standard Deviation | Standard Error Mean | 95% Confidence Interval of the Difference | | t | df | Significance (2-tailed) |
					Lower	Upper			
Pair 1	AFLA - BFLA	590960.7600	995281.36184	199056.27237	180128.8058	1001792.7142	2.969	24	.007
Pair 2	AFINVT - BFINVT	480931.4800	835181.44975	167036.28995	136185.5214	825677.4386	2.879	24	.008
Pair 3	AFPRFT - BFPRFT	1.1604	2.57133	.51427	.0990	2.2218	2.256	24	.033

Public Sector Banks

Table 10: Statistics of Paired Samples

		Mean	N	Standard Deviation	Standard Error Mean
Pair 1	BFGNPAGA	11.4132	21	4.51467	.90293
	AFGNPAGA	2.0812	21	.67495	.13499
Pair 2	BFNNPANA	6.3416	21	3.05070	.61014
	AFNNPANA	1.0056	21	.39422	.07884
Pair 3	BFGNPATA	5.0868	21	1.92471	.38494
	AFGNPATA	1.2568	21	.38979	.07796
Pair 4	BFNNPATA	2.6668	21	1.21804	.24361
	AFNNPATA	.6272	21	.24105	.04821
Pair 5	AFNETW	10943.5208	21	12645.31649	2529.06330
	BFNETW	2054.4936	21	2935.62080	587.12416
Pair 6	AFCAR	13.3512	21	.95574	.19115
	BFCAR	11.3232	21	2.74155	.54831

Table 11: Correlations of Paired Samples

		N	Correlation	Significance
Pair 1	BFGNPAGA & AFGNPAGA	21	-.135	.519
Pair 2	BFNNPANA & AFNNPANA	21	.062	.769
Pair 3	BFGNPATA & AFGNPATA	21	-.173	.407
Pair 4	BFNNPATA & AFNNPATA	21	.012	.955
Pair 5	AFNETW & BFNETW	21	.974	.000
Pair 6	AFCAR & BFCAR	21	.079	.707

Table 12: T-Test result of Paired Samples

		Paired Differences							
					95% Confidence Interval of the Difference				Significance
		Mean	Standard Deviation	Standard Error Mean	Lower	Upper	t	df	(2-tailed)
Pair 1	BFGNPAGA – AFGNPANA	9.3320	4.65437	.93087	7.4108	11.2532	10.025	20	.000
Pair 2	BFNNPANA – AFNNPANA	5.3360	3.05176	.61035	4.0763	6.5957	8.742	20	.000
Pair 3	BFGNPATA - AFGNPATA	3.8300	2.02897	.40579	2.9925	4.6675	9.438	20	.000
Pair 4	BFNNPATA - AFNNPATA	2.0396	1.23882	.24776	1.5282	2.5510	8.232	20	.000
Pair 5	AFNETW - BFNETW	8889.0272	9808.05576	1961.61115	4840.4608	12937.5936	4.531	20	.000
Pair 6	AFCAR - BFCAR	2.0280	2.83097	.56619	.8594	3.1966	3.582	20	.002

Private Sector Banks
Table 13: Statistics of Paired Samples

		Mean	N	Standard Deviation	Standard Error Mean
Pair 1	BFGNPAGA	12.8447	12	6.64885	1.71673
	AFGNPAGA	1.6353	12	1.05440	.27224
Pair 2	BFNNPANA	8.3307	12	4.85009	1.25229
	AFNNPANA	.6440	12	.21656	.05591
Pair 3	BFGNPATA	5.7273	12	2.85850	.73806
	AFGNPATA	.8360	12	.62844	.16226
Pair 4	BFNNPATA	4.0293	12	1.72192	.44460
	AFNNPATA	.3490	12	.26271	.06783
Pair 5	AFNETW	2258.7193	12	1471.93316	380.05151
	BFNETW	295.5687	12	249.79822	64.49762
Pair 6	AFCAR	16.2800	12	14.21579	3.67050
	BFCAR	9.8473	12	5.96120	1.53918

Table 14: Correlations of Paired Samples

		N	Correlation	Significance
Pair 1	BFGNPAGA & AFGNPAGA	12	-.186	.507
Pair 2	BFNNPANA & AFNNPANA	12	-.008	.978
Pair 3	BFGNPATA & AFGNPATA	12	-.017	.951
Pair 4	BFNNPATA & AFNNPATA	12	.021	.942
Pair 5	AFNETW & BFNETW	12	.361	.187
Pair 6	AFCAR & BFCAR	12	.639	.010

Table 15: T-Test result of Paired Samples

		Paired Differences					t	df	Significance (2-tailed)
		Mean	Standard Deviation	Standard Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	BFGNPAGA – AFGNPAGA	11.2093	6.92293	1.78749	7.3755	15.0431	6.271	11	.000
Pair 2	BFNNPANA – AFNNPANA	7.6867	4.85664	1.25398	4.9971	10.3762	6.130	11	.000
Pair 3	BFGNPATA – AFGNPATA	4.8913	2.93737	.75843	3.2647	6.5180	6.449	11	.000
Pair 4	BFNNPATA – AFNNPATA	3.6803	1.73650	.44836	2.7187	4.6420	8.208	11	.000
Pair 5	AFNETW - BFNETW	1963.1507	1401.34480	361.82567	1187.1118	2739.1895	5.426	11	.000
Pair 6	AFCAR - BFCAR	6.4327	11.37442	2.93686	.1337	12.7316	2.190	11	.046

Foreign Banks
Table 16: Statistics of Paired Samples

		Mean	N	Standard Deviation	Standard Error Mean
Pair 1	BFGNPAGA	18.7600	25	8.62303	1.72461
	AFGNPAGA	2.8264	25	2.50693	.50139
Pair 2	BFNNPANA	10.4832	25	16.50629	3.30126
	AFNNPANA	1.0488	25	.94034	.18807
Pair 3	BFGNPATA	6.0816	25	9.49474	1.89895
	AFGNPATA	.7928	25	.87933	.17587
Pair 4	BFNNPATA	1.9184	25	3.15025	.63005
	AFNNPATA	.2427	25	.33643	.06729
Pair 5	AFNETW	300346.1600	25	445556.32682	89111.26536
	BFNETW	32631.8000	25	47667.99439	9533.59888
Pair 6	AFCAR	23.9644	25	22.32828	4.46566
	BFCAR	13.9888	25	11.62828	2.32566

Table 17: Correlations of Paired Samples

		N	Correlation	Significance
Pair 1	BFGNPAGA & AFGNPAGA	25	-.172	.411
Pair 2	BFNNPANA & AFNNPANA	25	-.025	.904
Pair 3	BFGNPATA & AFGNPATA	25	-.139	.507
Pair 4	BFNNPATA & AFNNPATA	25	.100	.635
Pair 5	AFNETW & BFNETW	25	.956	.000
Pair 6	AFCAR & BFCAR	25	.467	.019

Table 18: T-Test Result of Paired Samples

		Paired Differences							Significance (2-tailed)
					95% Confidence Interval of the Difference				
		Mean	Standard Deviation	Standard Error Mean	Lower	Upper	t	df	
Pair 1	BFGNPAGA – AFGNPAGA	15.9336	9.38473	1.87695	12.0598	19.8074	8.489	24	.000
Pair 2	BFNNPANA – AFNNPANA	9.4344	16.55690	3.31138	2.6000	16.2688	2.849	24	.009
Pair 3	BFGNPATA - AFGNPATA	5.2888	9.65647	1.93129	1.3028	9.2748	2.738	24	.011
Pair 4	BFNNPATA - AFNNPATA	1.6757	3.13457	.62691	.3818	2.9696	2.673	24	.013
Pair 5	AFNETW - BFNETW	267714.3600	400211.15888	80042.23178	102515.3130	432913.4070	3.345	24	.003
Pair 6	AFCAR - BFCAR	9.9756	19.77620	3.95524	1.8124	18.1388	2.522	24	.019

GOVERNMENT SCHEMES AND WOMEN'S EMPOWERMENT IN RURAL INDIA: A MICRO STUDY

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Abstract

This paper attempts to explore the status of rural women empowerment in India. Women empowerment is prerequisite for the development of nation. The empowerment, equality and autonomy of women are globally recognized as key factors of all round development and growth of a society. The Five-Year plans in India are adopted as a model of development. 'Empowerment of Women' was the key theme of the Ninth Five Year Plan. Similarly, Tenth Five Year Plan also stressed on Economic Empowerment as one of the sector-specific 3-fold strategy for empowering women with the view of making all potential women economically independent and self-reliant.

Empowerment of women means the improvement in economic, social and political status of women in general and the traditionally underprivileged ones in backward and rural society. This study is based on primary data collected from a cluster of villages under Mahapura Gram Panchayat, Sanganer tehsil, Jaipur district. The study reveals that rural women fall under middle empowerment level and there is a lack of awareness of the government empowerment schemes. The study concludes by an observation that the status of rural women empowerment is not satisfactory. It leads to low level of awareness about government schemes and these women fail to avail the extended benefits from these schemes. So, it is imperative to address the endogenous factors in line with exogenous factors through government schemes to empower women. Women are empowered at different dimensions, in the present study we have different levels of empowerment of women but Empowerment is something an individual or a group of individuals evolves over time. The focus should be on removing various socio- cultural barriers and developing an endogenous development strategy. Few suggestions based on the study are: Skills Acquisition and Capacity-Building, Conducting Camps and workshops at regular intervals to demystify various myths, conducting Family development initiatives to change discriminatory traditional and cultural norms, collecting information about the complaints regarding the schemes to improve the quality of the services.

Key words: Women Empowerment, Government Schemes, Awareness, Endogenous Development

Introduction

"*There is no chance of the welfare of the world unless the condition of women is improved. It is not possible for a bird to fly on only one wing.*" – Swami Vivekanada

Women empowerment has become a raging issue globally including India over the last few decades. The empowerment, autonomy and equality of women are globally recognised as key factors of all round development and growth of a society. Although women constitute 50 per cent of the world's total population yet they're facing problems of gender inequality in almost every field all over the world.

Empowerment is defined by the Oxford dictionary as "the process of becoming stronger and more confident, especially in controlling one's life and claiming one's rights." Women empowerment refers to the eco-system, which makes them politically active, economically productive and independent, and enables them to take effective decisions about themselves.

According to United Nations Guidelines on Women's Empowerment, "Women Empowerment has five components: Women's sense of self-worth; their right to have and to determine choices; their right to have access to opportunities and resources; their right to have the power to control their own lives, both within and outside the home and their ability to influence the direction of social change to create a more just social and economic order, nationally and internationally" (UN Secretariat).

The concept of women empowerment has two dimensions – Static and Dynamic Concept. According to static concept women is empowered when they have the capability to influence the decisions that have direct and indirect impact on their lives. "Women empowerment refers to the ability of women to transform economic and social development, when empowered, to fully participate in the decisions that affect their lives through leadership, training, coaching, consulting and the provision of enabling tools for women to lead within their communities, regions and countries" (Sida, 2006). According to Kabeer, "Women's empowerment is about the process by which those who have the ability to make strategic life choices acquire such ability." This concept may propose that those women who lack an effective voice could be given one. Whereas, according to the dynamic concept, empowerment is a process of developing the capability of women to participate effectively in decision making in areas that directly or indirectly affect their lives. Thus, Empowerment is not only to create conditions to enhance their chances of becoming empowered, but also it is something that an individual person or a group of people acquires over time.

The difference between these two is significant as it leads to forming different empowerment strategies. The Static concept leads to adopt exogenous empowerment strategies whereas the Dynamic concept may adopt endogenous empowerment strategies. The exogenous empowerment strategies suggest a top down approach where disempowered individuals or groups can be empowered by external entities. Whereas, the endogenous strategies suggest a bottom up approach, which support the fundamental principle that external entities can only act as facilitators by creating enabling conditions so that disempowered groups can empower themselves.

Status of Women in India

Current framework of international development recognizes women empowerment as an immense effective strategy for the versatile development of the society. Though India is rapidly developing economically and technologically but women, especially in the rural areas continue to be discriminated and their status in the society is still a source of concern. Across the nation, women constitute a disproportionate share of the chronically poor population. Though the constitution provides legal equality for men and women but social and economic equality is yet to achieve. This is the fact why rural women continue to be recipients of welfare services and remain a silent observer in decision-making process with poor access to education, health care and other basic facilities of life.

Women Empowerment is affected by many different variables in India, such as geographical location, level of exposure, level of education, gender, social status, age, etc. Government of India has passed and amended several women specific legislations and implemented a gamut of

programs and schemes aimed at empowering women and ensuring their well-being and economic independence. Women empowerment policies and schemes exist at the national, state and local levels. These policies and schemes focus on several important sectors such as health, equal economic opportunities, education, hygiene, contribution in decision making process, political participation, etc. The scope of such schemes has been extended to gender equality, eventually, lead to both social and economic empowerment of women in the society.

Some major government initiatives are:

- Ministry of Women & Child developed was formed in 1985
- National Policy for Empowerment of Women (2001)
- Empowerment of women was an important approach adopted in the Tenth Five Year Plan (2002-2007) for development of women.
- Protection of Women from Domestic Violence Act, 2005
- Women's Reservation Bill was passed on 9th March 2010
- SABLA
- Support to Training and Employment Program for Women (STEP)
- Indira Gandhi Matritva Sahyog Yojana (IGMSY)
- Kishori Shakti Yojna
- Beti Bachao, Beti Padhao
- Ajeeveka

Despite the effective implementation of the above schemes and programmes, there are substantial gaps between achievements of the policy on paper and actual scenario. India ranks 130 among the 155 nations on Gender Inequality Index. Regardless of repeated claims of progress by the Government, according to the Global Gender Gap Index India is simply not doing enough for the women. In India, women account for 48 per cent of the total population of 1.3 billion, the sex ratio is 944 females per 1000 males, the literacy rate of women is 65.5 per cent whereas that of male is 82 per cent (even below to world' average 79.7%), Work Participation rate is 28.8 per cent females in comparison to 83 per cent males, 14 per cent of entrepreneurs in India are women entrepreneurs, 10% participation in parliament and etc.

Status of Women in Rajasthan

The condition of women in Rajasthan, in comparison to the other states is deplorable. Rajasthan is disreputable for child marriages and is among one of the states having worst sex ratios in the country- 928 females per 1000 males and the sex ratio of children (0-6 years) is 883 which is way below than the country average of 914 due to reasons of infanticide, high infant mortality rate and child mortality rate. There is no such programme implemented till date which can change and challenge these deep rooted social dogmas.

The age of marriage is lower than the prescribed legal age, 49 per cent in age group 15-19 are already married, including 11 per cent who are married but the gauna has not been performed. In the same age group the rural- urban break up shows that 57 per cent rural girls are already married compared to 27 per cent in urban areas. The female literacy rate is a shocking 52 per cent. About 60

per cent women depend on their husbands or families for any medical assistance and basic needs. Women in the rural areas are also not financially stable as there is a lack of employment opportunities. To tackle such social issues and to empower women in the state the State Government is running various schemes and programs with focus on the rural areas but the results are far from being satisfactory.

Literature Review

A. Sundaram (2011) in his study tried to highlight the current status of women in Mizoram and the factors which act as obstacle in acquiring equal status with men. He concluded that effective implementation and utilization of women empowerment programme will safeguard the interests of women.

Study by Anupam Hazra (2011) reiterates that the role of women and participation in the society must be given high priority because women have a fundamental right to enjoy equality in all aspects of life as well as their capacity in playing a crucial role in the sustainable development process.

Duflo E. (2011) in her study contends that the correlation of development and empowerment are perhaps too feeble to be self-sustaining. This paper states that continuous policy commitment may be needed in order to bring about equality between men and women.

Hashemi, Schuler, Riley (1996) in the paper titled "Rural credit programs and Women's Empowerment in Bangladesh" states findings from two programs providing credit to women in rural area, it was found that the programs have significant effects on 8 dimensions of women empowerment. A combination of information collected via case study and sample survey are used by the authors to reason that the success of Grameen Bank in empowering women is due to its central focus on credit, and its skilful use of rules to ensure smooth functioning of the loan program.

Kunja Kusum Kakati (1990) in her paper studies the socio-economic status of educated working women of Kamrup district and it states that even with of legal and constitutional provisions, women remain economically dependent, educationally backward and socially discriminated. Her study reveals wide gaps between the rights and privileges that a woman is given in theory by the constitution as a worker and rights she has in reality. It is found that in matters of decision making power working women were significant than the nonworking women.

Swati Mutalik (1991) attempts to explore the nature of influence of formal education on social awareness. Her study finds that education has significant correlation with the acquisition of social awareness. Highly educated women belonging to high economic status had higher level of social awareness but readiness for action was absent in them. Therefore, it is necessary to motivate these women for action.

Rationale of the Study

The constitution of India states equal rights for both men and women and makes equal provision to improve the status of women in the society, yet majority of them are still unable to enjoy and access the rights and utilise the opportunities guaranteed to them. The government has come up with a plethora of schemes and allocated specific funds for empowering women with emphasis on the rural areas the results are not satisfactory. Despite running various schemes, the benefits are not derived by the women as there is a lack of awareness, and even if they are aware about certain schemes they

do not know the procedure to derive the benefit or even if they are registered for a scheme they do not receive any assistance.

Hence even though there are various schemes, these schemes are not properly Communicated, they are not Converged, thus not resulting in Capacity Building. (i.e. Empowerment). This study tries to review the reasons behind this gap so the effectiveness of the schemes can be enhanced.

Objectives of the Study

The core objectives of the study are as follows:

- To know the status of women in Rajasthan.
- To explore the level of women empowerment in the rural areas of Jaipur.
- To explore the level of awareness of government schemes among the women of rural areas of Jaipur.
- To examine the impact of women empowerment on the awareness level.

Research Methodology

The research design is exploratory in nature based on survey conducted to find the level of Empowerment and Awareness of women in the rural areas in Jaipur district. Primary data has been collected. Judgement sampling method has been used to select a sample of 50 women of the rural area, those who are registered with the Anganwadi and frequently visit the Anganwadi, these women belong to cluster of villages under the Mahapura Grampanchayat, Sanganer tehsil in Jaipur district. Other information has been collected from the Anganwadi workers and the Sarpanch of the village.

Tool of data collection used is a questionnaire divided in two parts-

Part A is based on women empowerment scale (Hashemi, Schuler, & Riley, 1996) and responses have been collected on a 5 point Likert scale (1 = strongly disagree - 5 = strongly agree) to check the Empowerment level on 3 dimensions taken from the Women Empowerment scale, these are:

- Women's mobility,
- Freedom from Family Domination,
- Economic Security and Contribution.

It consists of 18 questions in total, broken down into 8 questions for Women's mobility subscale, 4 questions for Freedom from Family Domination subscale and 6 questions for Economic Security and Contribution subscale.

Part B of the questionnaire is used for the awareness level of 9 running Rajasthan government scheme has been collected on a 5 point Likert scale (1 = Not at all aware - 5 = Extremely Aware). The 9 schemes are considered as follows:

- Beti Bachao, Beti Padhao
- Bhamasha Yojna
- Mukhyamantri Balika Sambal Yojna
- Janani Suraksha Yojna
- Mukhyamantri Shubhlakshmi Yojna

- Kaleva Yojna
  - Kishori Shakti Yojna
  - Sabla Yojna
  - Mukhyamantri Humari Betiyan Yojna

The Women Empowerment Level and the Awareness Level was divided into 3 categories and the ranges were determined based on Mean (+/-) 1 S.D, and the categories were:

- Low Empowerment/Awareness Level
- Medium Empowerment/Awareness Level
- High Empowerment/Awareness Level.

Simple linear regression has been used to examine the impact of the empowerment level on awareness level. The data was calculated using IBM SPSS version 21 and MS excel 2016.

Analysis

The present study focuses on finding the level of socio-economic Women Empowerment and Awareness Level of government schemes in the rural areas of Jaipur and to examine the impact of Women Empowerment on the Awareness Level. The data collected on the Women Empowerment Scale has been analysed in two parts:

a) Women Empowerment level

b) Awareness level.

And an attempt has been made to find out the impact of Empowerment level on the Awareness level. The lower limits and the upper limits for both empowerment and awareness level are being calculated with the formula = mean (+/-) 1 S.D., It is assumed that the data is normally distributed and thus the range has been divided into three levels i.e., Below average, Average and Above average.

Part A: Women Empowerment Level

Table 1: Empowerment Level

Levels	Frequency	Percentage
Low Empowerment Level (<35)	7	14%
Medium Empowerment Level (35-50)	34	68%
High Empowerment Level (>50)	9	18%
Total	50	100%

**Mean = 42.68000, SD = 7.34969

(Refer Table 1) Empowerment level depicts that 68 percent of the sample falls under Medium empowerment level followed by 18 percent under High empowerment level which is comparatively higher than 14 percent falling under Low empowerment level.

Part B: Awareness Level

Table 2: Awareness Level

Levels	Frequency	Percentage
Low Awareness Level (<12)	11	22%
Medium Awareness Level (12-19)	32	64%
High Awareness Level (>19)	5	10%
Total	50	100%

(**Refer Table 2)** Awareness level depicts that 64 percent of the sample comes under Medium awareness level followed by 22 percent having Low awareness level which is much greater than 10 per cent of the sample in High awareness level.

Impact of Women Empowerment on Awareness Level

Table 3: Impact of women Empowerment Level on Awareness Level

R	R Square	F	Constant	Coefficient
.443	.196	11.699	.801 (0.007)	.402 (0.001)

(**Refer Table 3**) depicts the impact of empowerment on Awareness Level. 44 percent variation in awareness level is due to women empowerment level, it is a good fit model.

The impact is significant because at 95 per cent confidence level, the value is less than .05.

Findings and Discussion

Findings

The major findings of the study are:

- Out of the sample of 50 women, it is found that majority of them 68 percent fall under medium level of empowerment
- Similarly, 64 percent of the sample have medium awareness level of the various schemes run by the government.
- There exists a significant impact of Women Empowerment on the Awareness Level.

Discussion

The findings of the study reflect that there is a significant impact of Women empowerment on Awareness Level and in both the cases, majority of the sample comes under the middle level.

Women are empowered at different levels at different dimensions; in the present study also we have different levels of women empowerment, following the endogenous strategy of empowerment we establish that empowerment cannot be given to an individual or a group, it is something that evolves over time. The concept of empowerment has two dimensions – Static supports the view that women empowerment can be developed by following an exogenous strategy whereas Dynamic supports the view that empowerment can be enhanced by following an endogenous strategy. Thus, empowerment cannot be given to people, but encouraging conditions can be generated for increasing chances of becoming empowered on their own. Thus the focus should be on removing

certain socio-cultural barriers such as antagonism of men, domestic and family restrictions, dearth of access to information, cultural barriers, lack of education and vocational skills, traditional stereotypes, and low self-confidence Garba (1997). These will help in developing an ecosystem that positively impact empowerment and increase the efficiency and reach of the schemes.

A study by Garba (1999) supports the same theory and states that in terms of effectiveness, endogenous strategies of empowerment are likely to be more effective as compared to exogenous strategies of empowerment as it focuses on fulfilling the real needs and in terms of appropriateness, a dynamic concept of empowerment is more appropriate than a static concept as it forms a basis to endogenous empowerment strategies.

The challenge and task are to develop the capacity of women so that they can perform their role properly to make a difference. Extended policy interventions with effective implementation; awareness building at family, institution and community levels; better follow-up and intensified efforts for integrating gender dimensions in policy-formulation are required for getting the better outcomes and to encourage the participation of women in the mainstream of each socio and economic affairs.

Suggestions

The findings of the study suggest:

- Women education has to be made compulsory. Educated woman is prerequisite condition for women empowerment and enhance the effectiveness of the various schemes.

- A proper assessment of the skills and capacities, actually possessed by women, are identified for effective capacity building and skill development. Proper need assessment can help in finding out the actual gaps. So by imparting relevant training can ensure the identified gaps are filled.

- Camps and workshops can be conducted at regular intervals to demystify various myths.

- Family development initiatives can be conducted to change discriminatory traditional and cultural norms.

- Additional efforts from the government as well as NGOs are suggested to target women in the rural areas and increase their awareness about the various schemes so that they can derive the benefits.

- Proper evaluation of existing schemes at each level of the government is required. It must be ensured that the benefits should reach to right parson.

- It is also necessary to gather data regarding the complaints related to various schemes as it'll improve the quality of such schemes and policies and help solve problems.

- Proper laws should be formulated and implemented for women empowerment. Women should be made aware and informed about these laws.

- Several NGO's E.g.: CARE India, AZAD foundation aims at developing the status of rural women to enhance their dignity and decision making.

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INTERNET OF THINGS APPLICATION TO CREATE AN EMERGENCY PANIC BUTTON SYSTEM FOR ENHANCING PERSONAL SECURITY

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Abstract

In the present scenario, due to the increased cases of crime all over the world, security and its related technologies need to be constantly updated in order to allow people to take care of themselves and protect themselves from dangerous situations This paper aims to successfully propose a technique for increasing personal security by making use of a very affordable and reliable emergency push button system. This system will notify the loved ones of the owners (in any part of the world) whenever the user is in trouble and presses the button. This proposed system is extremely cost effective and reliable thus making it within the reach of every household. Whenever the user detects a threat, he/she can press the button and the system will send an email and SMS notification to the loved ones of the user. The components used to build this system are extremely sturdy, portable, easily available and affordable particularly when implemented commercially.

Keywords: Security, Cost, Internet of things, Digital Push Button

Introduction

Crimes such as harassment, abduction etc. are constantly on the rise. To be safe from such situations it is essential that individuals protect themselves by keeping safety devices and staying alert. An emergency button system such as the one proposed in this paper could notify the loved ones of the user as soon as the button is pressed by the user, thus preventing such crimes from happening by calling the necessary help immediately.

Although works related to location tracking etc. have been reported before, this paper particularly aims at creating a miniature system that would notify the loved ones of the user whether they are in any part of the world, that too at a very affordable cost.

This system makes use of the ESP-8266 WiFi enabled module with the latest NodeMCU firmware installed on it. It also uses the IFTTT (If This Then That) technology which is upcoming and ever expanding. The coding language used here is .lua. The fundamental concept used is The Internet of Things i.e. IoT.

A work proposed by Blase Ur et al on IFTTT titled 'Trigger-Action Programming in the Wild: An Analysis of 200,000 IFTTT Recipes' introduces the reader to the IFTTT service and lays down and explains the trigger-action programming technique used in it.

The Internet of Things (IoT) is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction.

The IFTTT (If This Then That) is a freely available web-based service that can be used by people to create applets. These are chains of simple conditional statements. Changes occurring in web services like Facebook, Gmail, or Pinterest initiate a trigger for the applet [For instance, an applet

may send an SMS when a particular web URL is accessed.]

The system proposed would make use of the following components:

1. ESP8266 Development Board
2. A digital emergency button
3. ESPlorer IDE
4. Use of the lua language
5. IFTTT (trigger event and applet)
6. Amazon Alexa

In the proposed system, the digital button would be connected to the ESP8266 development board. The ESP8266 Board would access the IFTTT trigger event on the pressing of the button. This would generate an email that would be sent onto the recipient's email address with the time and other details of the pressing of the button. Further, if the notification is not checked an urgent message would be delivered by the Alexa or a Google home device connected to the recipient's email alarming the listener.

Constraints

Internet connectivity is required whenever the button is pushed to notify the loved ones of the user. However, in certain remote areas, internet connectivity may not be available. If this happens, then, even if the user presses the button the email notification will not be received by the recipient. However, as soon as Internet is connected again the pending email notification will be sent to the recipient. But such delays during emergencies will make the system useless, as the purpose of the emergency panic button is not served. Another instance of this is the requirement of wireless fidelity network across the rural areas. However, soon free wi-fi services would be enabled across the globe, so this issue might not be a barrier to the safety of people later on.

Another constraint is that the miniature push button system needs to be carried everywhere by the user just like a mobile phone. Although, it is extremely small, handy, and easy to carry, yet, forgetting to carry it during an outing would render it useless.

Proposed Work

The main contribution of this work is to propose a system to alert the user's relatives and family members as soon as the user presses the button. This system makes use of the ESP-8266 WiFi enabled module with the latest Node MCU firmware installed on it along with a digital push button. The programming language used is lua. The fundamental concept used is The Internet of Things i.e. IoT and IFTTT (If This Then That). The project will be completed within a period of 2 to 3 months which includes collecting all the required materials, formulating the code, creating the digital button circuit, and tranferring the code onto the ESP8266 chip.

The project is making use of a Wi-Fi enabled chip (ESP8266), hence it is essential to have Wi-Fi or Mobile hotspot or any other form of internet connection at all times for the system to keep funtioning.

The system requires a very low budget. The entire system can be successfully completed within a budget of approximately $100-150 which includes purchasing all the components, downloading the firmwares, and programming the chip. If contructed without the Amazon Alexa, the project can be

made within a budget of $70-$100.

System Components

1. **Microcontroller:** The ESP8266 NodeMCU Wi-Fi Development board: This chip was produced by Chinese Manufacturer- Espressif. It is a very low cost WiFi chip with full TCP/IP stack and microcontroller capabilities. Buttons and sensors can be integrated with this chip with utmost ease. The ESP8266 chip has minimal external components and is extremely small in size. It is hence very suitable for our emergency button system.

2. **NodeMCU Firmware:** The NodeMCU firmware is an open source IoT platform. This firmware supports the lua language which shall be used in programming our system. The code will be transferred successfully to the ESP8266 chip only after this firmware has been successfully flashed onto the chip.

3. **IFTTT** is a web-based free service that is used by people to create small applets that allow the user to link various web services such as gmail, facebook etc. depending on the needs of the various users.

4. **ESPlorer IDE:** ESPlorer is an Integrated Development Environment (IDE) that is used by developers working with the NodeMCU firmware. It allows the developers to write code in the lua language and transfer it onto the ESP8266 chip.

5. **Device - PC/Tablet/Smartphone:** This could be any device capable of making use of the internet. The cloud services will allow to send messages and data those whose information was feeded by the user. With IFTTT maximum of five users can receive the messages.

6. **Digital Push Button:** The digital push button is readily available online on websites such as Ebay, Amazon, etc. It can be easily integrated with the Arduino or ESP8266 chip to achieve the required results.

Proposed Method

In this section, a detailed explanation of the step-by-step procedure from building the circuit to getting the mobile application up and running shall be provided.

1. The connections are made and the circuit consisting of the Push Button is set up.

2. Next, the latest NodeMCU firmware is flashed onto the ESP8266 NodeMCU Development board via the NodeMCU flasher application.

3. The Digital Push Button circuit is created.
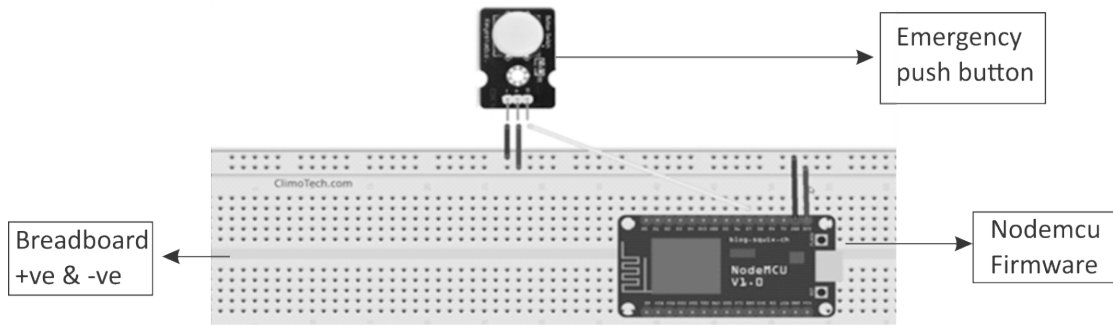
Figure 1:The Circuit Showing Connections

(Yellow wire: Data pin; Black wire: Ground; Red Wire: GPIO)

4   Next, the program code is written in lua language and is sent onto the ESP8266 NodeMCU development board via the ESPlorer IDE.

5   IFTTT web service is used to create an applet that links the push button circuit to the emails of the loved ones of the user. An appropriate trigger is chosen for instance : Say a simple phrase from the available triggers offered by IFTTT services. Now to trigger an event we specify the message Emergency Button Pressed which is later used in the code to link it with the IFTTT service. This is a unique key and is required to be tested. **(Refer Figure 1,2,3,4)**


Figure 2 : Choose the Appropriate Trigger.
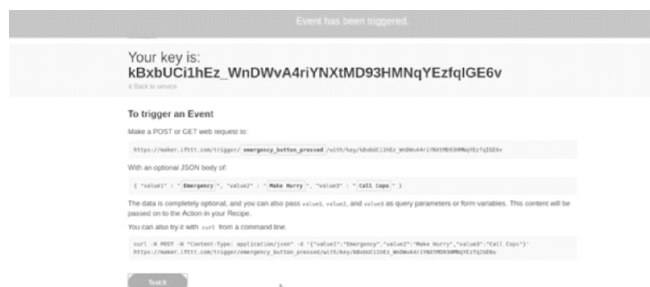
Figure 3: Putting Necessary Values i.e: "Emergency", Hurry" and "Call Cops".

6   The email recipients also has the option of connecting Amazon Alexa or Google home device to their email services. So that, when an email notification is received, it is read out by the Alexa or Google Home device. However this step does not affect the overall system circuit in any manner
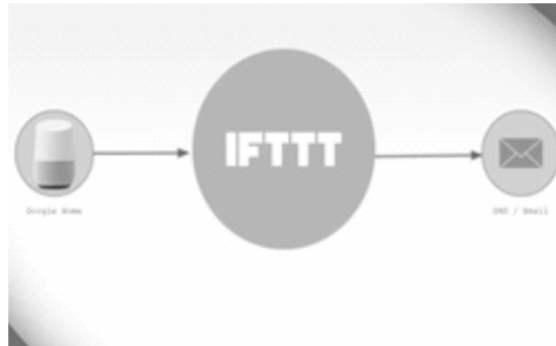
Figure 4: Chart Showing Google Home SMS/Email and IFTTT Connection

Project Analysis and Feasibility

The proposed project is feasible due to the following advantages:

- It is extremely easy to make and thus requires a minimal budget to be created successfully.

- The system would be extremely sturdy and accurate (with an accuracy of nearly 99%).

- The created system is very small and easy to carry.

Nowadays, Wi-Fi and internet connectivity are readily available in almost every part of the world. Hence, the system would be useful everywhere the person goes. Moreover, due to the advancement in technology, internet services will soon be available in even the most remote areas of the world. Hence in the future, this system would be even more viable

Observations

It was observed, that whenever the Digital Push Button was pressed, an email notification was successfully received by the loved ones of the user. Moreover, the user can edit the applet commands to receive customised messages such as "Help me!", "I am in danger" etc. in the email.

The following readings were observed on the ESPlorer IDE as soon as the Push button was pressed:
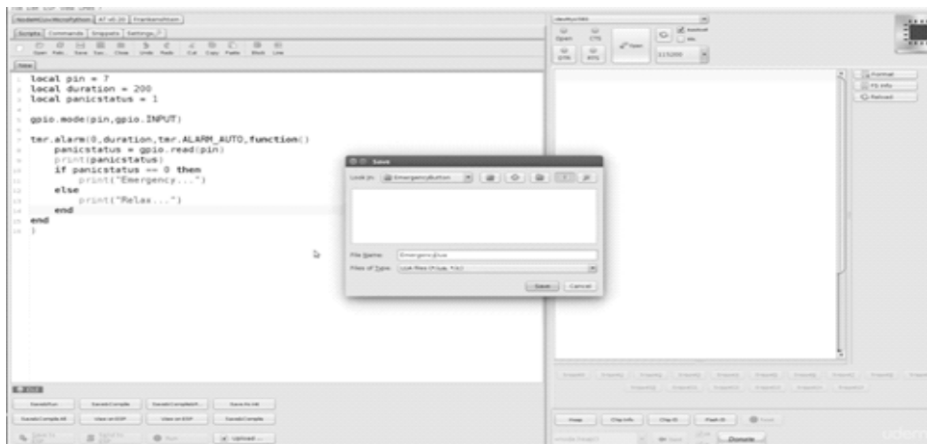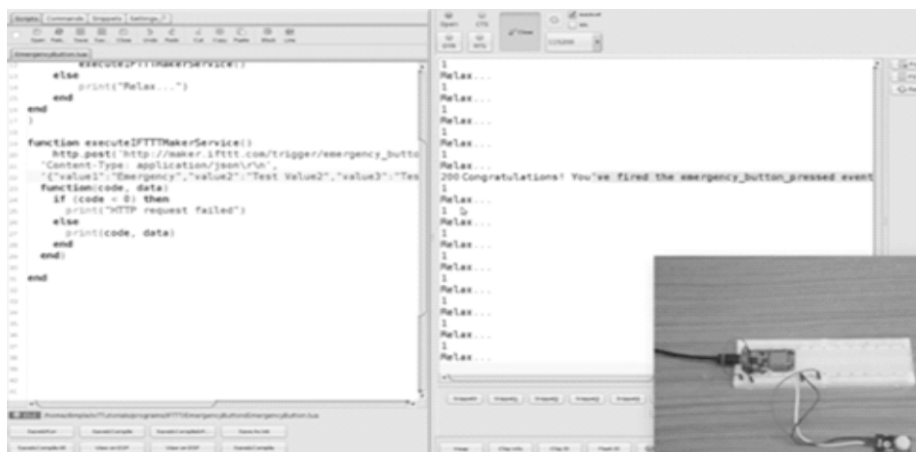
Figure 5: Code

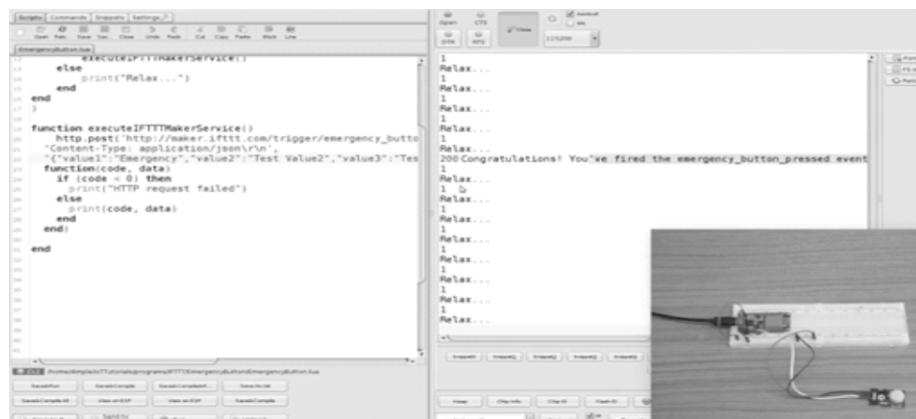**Figure 6: Transferring the Code to the Chip and Pressing the Push Button.**
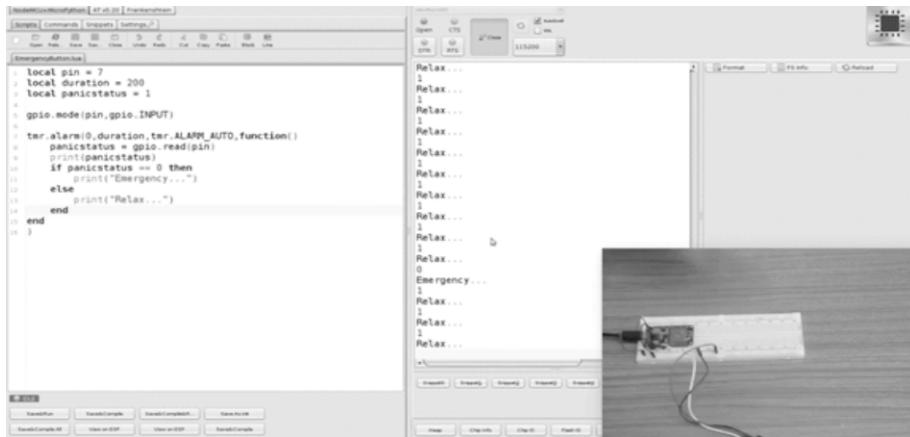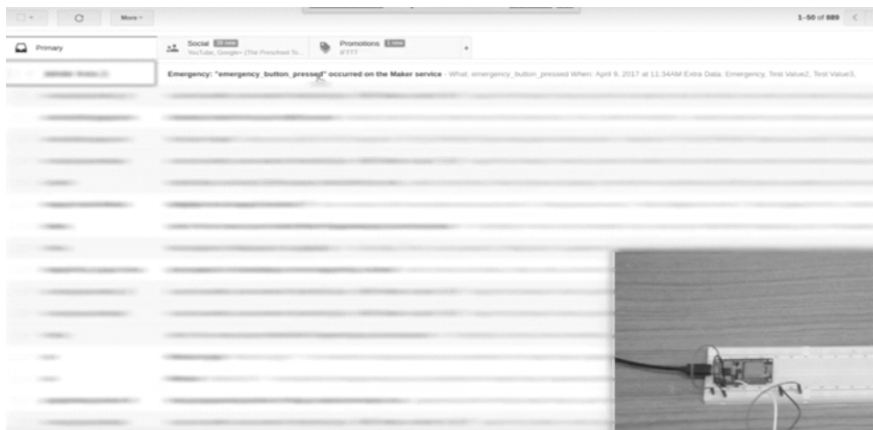

Figure 7: Copy Pasting the Values from Maker Service

Figure 8: The Chip Displaying Emergency Message

Ultimately, the mail is delivered to the recepients by the person by pressing the button. Stating the message

Figure 9: Inbox of Mail Displaying the Mail with the Emergency Message.

(The image has been blurred to protect the privacy of the author)

Here, whenever the push button is pressed, the message 'You've fired the emergency_button_ pressed event' is published (as per our lua code). **(Refer Table 1)**

Table1 : Result Before and After the Button was Pressed

Message on ESP8266 (before pressing the button)	Message of ESPlorer IDE (before pressing the button)	Message on ESP8266 (after pressing the button)	Message on ESPlorer IDE (after pressing the button)
1	Relax1….	1	Relax1….
1	Relax1….	1	Relax1….
1	Relax1….	0	Emergency 0 (after 200ms)
1	Relax1….	1	Relax1….
1	Relax1….	1	Relax1….
1	Relax1….	1	Relax1….
1	Relax1….	1	Relax1….

Literature Review

A few similar works have been proposed earlier by various authors that make use of push buttons, or IFTTT etc. For instance, a work relating to the field of IFTTT includes 'Trigger-Action Programming in the Wild: An Analysis of 200,000 IFTTT Recipes' by Blase Ur et al (https://www.blaseur.com/papers/chi16-ifttt.pdf). This paper introduces the reader to the IFTTT web service and explains the trigger-action programming technique used in it. It explains the entire methodology of how IFTTT works, in detail, by explaining each and every term associated with it. This includes Trigger Channel, Trigger, Action Channel, Action, ID, Adoptions, Date, Description. This work analysis a data set of 224,590 recipes that are created by 106,452 authors using IFTTT. The work also analysis the explosion of channels and connections by showing that the number of new channels being added, new recipes being written, and distinct users writing recipes each month have increased over time. The paper also went on to conclude that supporting everyday uses in the IoT still remains a challenge. In the real world, a recipe can fail to complete for reasons ranging from network failures to a device being unplugged, raising questions about handling failures. Furthermore, debugging IFTTT recipes is difficult or impossible, yet obvious solutions would raise privacy concerns.

Another work proposed by Nivedita Majumdar et al titled 'Emergency Panic Button using Microcontrollers' (N. Majumdar, et al, 2014) aims at creating an emergency panic button using an Arduino Uno Board and GSM module, and a push button that can send SMS notifications to the user's loved ones in case of emergencies. In this case, the GSM module is present with a SIM card, and is hence getting the required Internet connectivity via the service provider of the SIM. This work was published in International Journal of Computer Applications Volume 99. However, contrary to the system proposed in this work, which makes use of the ESP8266 chip, this system uses the Arduino module. In this work, a signal is sent to the GSM Module through the Arduino Board. This in turn will send an emergency message to the user's contact. This contact must be pre-defined in the system and will be sent the exact GPS co-ordinates of the position of the user via the text message. This information can be utilised by the emergency contact to pin-point the user's exact location on Google Maps and thus track the user as early as possible.

Another work titled 'Near Real-Time Tracking of IoT Device Users' by Jinseong Kim et al (J. Kim, J. Jang and I. Jung, 2016) proposes a simple tracking scheme of Internet of Things (IoT) devices. On the basis of timed snapshots of IoT devices, this work attempts to track the movements and locations of the devices' owners indirectly and efficiently. To reduce the overhead incurred by real-time tracking of the (mobile) IoT devices, this proposed scheme by Jinseong Kim et al adopts quasi-real-time

tracking utilizing the LIDx protocol and its period, and collects only a small amount of information in each snapshot, such as, time, remaining energy in the mobile device, and the type of wireless communications interface. In this scenario the users are traced without authentication. Hence, their privacy is protected, since their identities and the locations associated with their identities are concealed. The author claims that this proposed simple location tracking is expected to be helpful in rescuing the persons in danger because of disasters or accidents in basements or closed spaces such as ships, which are areas outside of the range of GPS or with weak and unstable public communication signals.

Conclusion

This paper successfully gives a technique for aiding the security of every household by creating a reliable EMERGENCY PUSH BUTTON system that protects every individual from burglaries, thefts, or any unauthorized invasion that might cause threat. The concept of Internet Of Things (IoT) and IFTTT services are the key aspects of this system. The accuracy of the proposed system is almost 99 percent and it is extremely reliable yet affordable. This system is very sturdy and reliable, and can act as a huge boon to the security industry if implemented commercially.

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ALGORITHMS TO LIVE BY: THE COMPUTER SCIENCE OF HUMAN DECISIONS

Brian Christian, Tom Griffiths
Henry Holt and Co.
Pages 368

Decision making is probably the most repetitive and routine task that human beings perform on an everyday basis. Working or not-working, in office or on vacations, baby-sitting or being at leisure, playing or researching, making tea or gardening, buying a saree or buying a mobile handset, decisions, decisions and decisions… we have to be at them all the time.

We all want our decisions to be timely, informed and unbiased. The problems that are encountered during the process of making a decision are how much to survey?, how long?, how much data to collect, how many options to try, how to arrange, how to accommodate/ fill a space/ time? etc. As we struggle to work out these issues for unstructured decisions, how we wish we could have a flow chart for it! Brian and Tom have thus picked an ever relevant topic as people are always looking for ways to ease the task of decision making.

Decision making necessitates prediction as well as judgment to solve a problem at hand, and algorithms have been defined as a finite sequence of steps to solve a problem with or without a computer, it therefore seems logical that algorithms that have been developed to solve specific problem types could be a great help in making our generic and specific decisions. With the growing emphasis on AI based decision making, algorithms will dominate the decision making function. Christian and Giffith have set a stage for things to come.

With a right blend of academic range comprising degrees in arts and science and philosophy, Brian has a very appropriate background to address the complex problem of decision making. Tom Griffiths is an Associate Professor in Psychology and Cognitive Science at the Berkeley Institute of Data Science where he is also the Director of the Institute of Cognitive and Brain Sciences. As a researcher, the key question he strives to answer is how to refer to processes of thinking and learning in mathematical terms. His research explores link between human and machine learning, with knowledge from Statistics and Artificial Intelligence to comprehend how individuals decipher the challenging computational problems they come across in daily life.

The book starts with the stating of the objective of finding the right balance between 'looking and leaping' for taking timely and effective decisions. As the authors say, they have applied the lens of Computer Science to everyday life, to obtain practical, concrete suggestions on 'how to solve specific problems'. Taking eleven types of problems, the vital mathematical structures of these challenges and how computers are engineered to handle them, is discussed in the chapters that follow the introduction.

The book has eleven chapters, each dedicated to a particular problem type, and the suitable famous algorithm to solve such problems. The chapters have been titled using Computer Science or Mathematics terms, and given a tagline to reflect the kind of problem in decision making that these algorithms could address.

The first chapter is, Optimal Stopping with the tag line, 'When to stop looking'. As the reader sails

through the chapter, (s)he realizes, Optimal stopping is Catch-22! It discusses the classic Secretary Problem explained as anyone could understand, in its various forms. In one's search for a secretary, one could fail either due to early stopping or late stopping, so one needs to do 'optimal stopping', and for this one has to follow the 'Look-Then-Leap' Rule. The question however still remains, how long to 'look' and when to 'leap'! The question has an answer, yes, the 'When to stop looking' question HAS an answer, and that is, 37! Look for the first 37% and then leap for the next best. The authors have explained several variants, based on specific parameters and conditions, of Optimal stopping, including time, full information, threshold, when to quit, and their combinations.

The Latest vs. the Greatest is the theme of the next chapter titled 'Explore/Exploit'. After 'When to stop?', 'What's New? Or What's Best?' is the question. In Computer Science jargon, it's the 'multi-armed bandit problem'. The explore/exploit tradeoff to improve decisions is discussed in a fascinating manner citing interesting examples to make a case for each of the solutions including, Seizing the interval, 'Win-Stay, Lose-Shift', Gittins Index, Upper-Confidence Bound Algorithms. The chapter gives some important life lessons too!

Sorting, is making order, and it is the very heart of what computers do, say the authors. The first code ever written for a "stored program" computer was a program for efficient sorting! Reading the third chapter makes the reader feel that (s)he is learning 'sorting' all over again, and in such a simple way, the concepts that seemed so difficult to understand in the classrooms just appear to be flowing in so easily. The 'full' sorter algorithms, bubble sort, insertion sort, merge sort and their complexities constant time, linear time, and quadratic time are discussed very lucidly to conveniently involve non-Maths, non-Computer Science readers. Also the rough and practical, Bucket Sort is handled smoothly to convey the hazards of mess and the hazards of order! Single elimination, round-robin, ladder, comparison counting and decentralized sorting are aptly explained through interesting incidents and cases from the sports world, animal world and human sense of order.

The chapter Caching is tagged with the line, 'Forget about it'… and we thought caching was about remembering! It is to highlight, forgetting is as important a function as remembering! The decisions that it helps us take are about organizing our files, desks, closets, life! The authors have included discussions on caching algorithms, eviction techniques, significance of time, money and geography in memory management using interesting examples from a library. They have also provided factual references to related people and events during the course of discussions, this makes the read appealing. The salt and pepper generation would find the section on tyranny of experience delightful.

Scheduling is chapter 5, it is, as the authors say, about what to do, when, and in what order. Time management guides are the perennial best-sellers, indicating that scheduling is a problem that can be approached in different ways and also that everyone is still struggling with the problem! There is no perfect solution despite so many publications, tools, the Gantt Charts and sharp ones scratching their heads. Handling deadlines is still deadly! The authors in their interesting style, discuss several strategies and algorithms ranging from Earliest due date, Moore's algorithm, and Shortest processing time. The narration is smooth and free flowing, the reader understands even some core Computer Science concepts very easily through the text. Concepts of ping attack, denial of service, context switching, interrupt coalescing are all very aptly interwoven with the real world situations.

Bayes's Rule is all about predicting the future, the authors present an interesting account of the sequence of events to the discovery of Bayes's paper, which they call 'one of the most important

papers in all of Mathematics'. He had abandoned the paper, unpublished and moved on to other things, it was after his death in 1761, almost fifteen years after he wrote the rule, that his friend Richard Price showed it the light of the day. The extensions of Bayes's Rule, Laplace's Law and Copernican Principle are discussed in detail while highlighting the importance of priors. The concepts are explained with real life problems and experiments that find solution in Bayes's rule.

Overfitting, as the authors opine is over-sensitivity to the witnessed data in designing a model. The inclusion of each and every element maps the model with the observed data, however it inhibits generalization to other conditions, and estimations based on fresh data may be less reliable. To avoid overfitting certain factors may purposely be left out, forfeits may be levied for including factors in analysis, or the analysis may be stopped early. These strategies are often used in Computer Science applications, and also by us humans, and can produce improved judgments. Christian and Griffith have simplified the explanation for the readers and in some cases the Overfitting seems to be Oversimplified!

Relaxation comes in to play when we face the problem, 'What do we do when a problem proves to be very tough?', the solution is, 'relaxation' or in simpler terms, solving an easier problem than the real one. The authors discuss Constraint Relaxation and Lagrangian Relaxation as well as a relaxation method for researchers confronted with discrete optimization problem, Continuous Relaxation!

Randomness reflects uncertainty and disorder and the term 'Randomized Algorithms' seems like an oxymoron! Brian and Tom show its Not! Concepts of Sampling, Trade-offs, the algorithms, are discussed in the context of randomness which is, as they say, 'when to leave it to chance'! The simplified lettering encapsulates the complexities of Computer Science and the readers become a part of the script by the authors. As we contemplate imbibing randomness, Michael Rabin seems so very appropriate about it when he says, 'It is efficient, it works, but why and how is absolutely mysterious'.

The chapter, Networking begins with a notable narration of the history of electronic communication. The authors write how long-distance telegraph, telephone, cell phone, text messages and internet began and with what message. It's like the history of over a century, from 1844 to 1992 summarized effectively in to less than 10 sentences. Then begins the interweaving of technical jargon, protocol, TCP, circuit switching, packet switching, exponential backoff, AIMD algorithms etc., with situations of our day to day decisions.

Game theory, chapter 11, has the sub title 'The mind of others' and it is the story of 'I think I know what you think but have no idea what you think I think' to 'Hell is other people' visiting algorithmic game theory along the way. The chapter helps the reader understand how rational individuals make decisions and how others' decisions influence theirs. The most famous example of this, the prisoner's dilemma is discussed, also citing the 'other side' of it. Complete with the stimulating quotes and circumstances the chapter makes an interesting read.

In Conclusion, the authors talk about Computational Kindness, the bridge from Computer Science to ethics. They state rightly that the chief goal of design ought to be protecting people from unnecessary tension, friction and mental labour, and computational solutions could be kind enough as subtle alterations in design can drastically change the kind of cognitive problem faced by users. It is a matter of algorithms showing a bias toward simpler solution, of trading off of the costs of error against the

costs of delay, and taking chances to find kinder solutions.

'Algorithms to live by' is a very good, simple read, a book that teachers of Computer Science would appreciate, as it very effectively presents answers to the pertinent question that they are confronted with frequently, 'Why are we learning this?'. The examples and instances discussed in the book provide a good starting point for beginners to understand the utility of algorithms. For someone familiar with algorithms, the book is more of a welcome refresher. Though the authors have used a conversational and engaging style of writing, part of the content could be somewhat challenging for novices. That however is no roadblock for the eager. And believe it or not, we may actually begin to learn to live by the wisdom of Computer Science!

REACH : HOW TO BUILD CONFIDENCE AND STEP OUTSIDE YOUR COMFORT ZONE

Dr. Andy Molinsky
Penguin Random House
Pages 280

It is true that no one in this world likes to budge beyond the comfort zone; however that's where the unexplained happens. It's where we can grow, develop and learn in a manner that augments our prospects beyond what we envisage is plausible. Reach: How to build Confidence and Step outside Your Comfort Zone is a book worth appreciation. We should be grateful to the author for writing an insightful and useful book for practitioners which provides the significance of striding outside the comfort zone. Moreover, it is a credible book that makes a persuasive debate that all of us confront tasks at work which compel us outside our comfort zones and not a soul ever succeeds at a high level or accomplishes substantial goals without learning to confront them. In an ideal model of world, nobody ought to reach beyond their comfort zone to be successful at work, and all the tasks and responsibilities which need to be executed would fit absolutely with our personalities. But unfortunately, this is not usually the case. Generally, when we develop, learn and advance in our jobs and in our careers, we constantly face situations where we need to adapt and adjust our behavior. Therefore, we can say that it is the reality of the world in which we work today.

With a blend of research and copious examples, Dr. Andy Molinsky has presented the proposal to develop skill and courage, to take the leap, devoid of which we might overlook on imperative opportunities for advancement. Although, stretching outside our comfort zone requires serious effort and work and also entails motivation but motivation alone doesn't work as what people truly require is a concrete road map regarding how to progress from place of fear, avoidance and paralysis to the point of truly being enthusiastic and proficient to take that leap and initiate a more positive cycle of learning and development.

Moreover, it has also been commonly observed that people often feel overwhelmed or occasionally even hopeless, when they have to act outside their comfort zones, however the reality is that they face a set of very predictable and identifiable challenges.

Therefore, the author of the book has very aptly made an effort to outline the guidelines for overcoming such challenges.

Dr. Molinsky, has also attempted to explain why it is so hard to act outside one's comfort zone and has prescribed ways to develop the courage and ability to flex the behavior with success.

The book consists of four parts:

The author strove exceedingly well to surface the strategies of reaching beyond the comfort zone by recognizing the predictable reasons which essentially impede people from moving out of the comfort zone. According to Dr. Molinsky, once, these predictable reasons are identified; an individual can build up a plan for addressing them.

The first chapter of the book reveals a set of core psychological barriers which people more often face while trying to act outside their comfort zones. Also, it has been observed that people often evade situations and tasks that terrify them, which certainly is the most natural reaction and perhaps it also

helps people to endure in life threatening situations. However, when people apply similar tactics in circumstances which are not truly life-threatening, then they indeed get a relief from anxiety and fear but that is simply temporary relief. Consequently, they also limit their opportunities which could be convincing and meaningful. In the second chapter of the book the author has exposed an array of impressive tactics that people commonly use to shun situations beyond their comfort zones. This chapter highlights some of the tactics like full-on avoidance; to do the task, but only partway-and not so well; or to procrastinate.

Progressing, the second part of the book focuses on how to successfully reach outside the comfort zone. It gives insight and shares the perspective that in whatever state of affairs people are or they face, they should take the leap and act outside their own personal comfort zone. Besides this, Dr. Molinsky, in this part of the book has also offered the best scaffolding by accentuating on paraphernalia that provide confidence, courage and capability to take that leap and truly commit to act outside the comfort zone. Making headway, in the third chapter of the book, the author has highlighted on one of the critical resources for behavior flexing; i.e. Conviction, which means having a deep sense of purpose in whatever a person is doing and for whatever reason he is doing. The author, in this chapter has very finely, with the help of examples, brought out the different sources of conviction. Moving ahead, the fourth chapter of the book makes an attempt to explain customization as another resource for behavior flexing. In this chapter the author has stressed on discovering one's own mode of performing the task. Not only this, the author has also conferred about customizing the words, body language, timing, and moreover the context to create the conditions for successful behavior flexing. Further, in the fifth chapter of the book, the author has brought out the third important resource for behavior flexing- clarity. Dr. Molinsky has explicated clarity as the ability to gain perspective on the challenges that one faces and the way one might be avoiding the situation. Likewise, the author has very well elucidated clarity as an antidote to avoidance and as a regulator to distorted thinking. The author has further in this chapter talked about the different ways of achieving clarity. In the sixth chapter, the author has made an effort to coherently bring out the surprising benefits of taking a leap. Moreover, he has revealed the most surprising aspects of his research and has discussed the incredibly powerful effect of simply giving something an attempt. The author has also talked about two core epiphanies people often have when they are taking the leap: one is to comprehend that facing a situation and taking a challenge is not so awful and the second is to recognize that one is more capable of doing the task than one thought to be.

Further, the part three of the book focuses on different ways of building the resilience necessary to integrate this challenging new behavior into more enduring behavioral repertoire. In chapter seven, the author has discussed a series of resources which are at the disposal of people for making their flexing behavior permanent. While, the majority of people can muster up the courage to act outside their comfort zones in "one-off" situation but the genuine trick lies in making behavior flexing fasten: to make it part of their personal repertoires. The first resource mentioned in this chapter is a thoughtful and effective routine of practice to integrate a fledgling new skill into one's permanent bag of tricks. Further, the author has advised to, practice in situations, that provide a "Just Right" challenge and to perform in settings that provide a realistic preview of what one will ultimately experience. Dr. Molinsky has also emphasized on creating forcing mechanisms to "avoid avoidance". Progressing, the second resource mentioned in this chapter, is a mind-set that supports learning and experimentation. Here, the author has highlighted the critical mental contrivance for building resilience to act outside one's

comfort zone by noticing, appreciating and internalizing the small wins. On the move, the third resource mentioned by Dr. Molinsky, in this chapter is a healthy support system as others help us; inspire us and provide us with strategies to get where we want to go and also endow us with inspiration and courage to make it happen. The eighth chapter of the book talks about five key Myths and Realities of acting outside the comfort zone. The first myth mentioned is that all it takes to step outside the comfort zone is to take a leap, whereas, the reality is that very few people suddenly "leap" outside their comfort zones; rather, that leap is the result of considerable thinking and deliberation. Second Myth says that magic can happen only outside the comfort zone whereas the reality is that "magic" can happen both inside and outside the comfort zone. The third myth is when a person assumes that he/she is the only one who struggles with situations outside his/her comfort zone though the reality is that nearly everyone struggles with situations outside their comfort zones. The fourth myth is getting out of one's comfort zone is just about "sucking it up" while the reality is that "sucking it up" is important, but so too are other strategies, which, in fact, can ultimately make "sucking it up" less necessary. The fifth myth is that with adequate inspiration, anyone can stretch outside their comfort zone but the reality is that anyone can do it, but it takes more than inspiration; it takes effort, persistence, strategy and a fanatical understanding of the challenges. Further, in the concluding part four of the book, the author has provided the practical tools for applying Reach to one's own life.

The book represents the expert insights for getting outside one's comfort zone. What it takes to come out of comfort zone is time, effort, strategy and determination. However, with a solid plan in place and the courage to take it forward, one's results can be extraordinary.

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